**Internet Appendix "Does Academic Research Destroy Stock Return Predictability?"**

**R. David McLean and Jeffrey Pontiff***

## Table IA.I
## Main Regression Using Alternative Standard Error Specifications

This table replicates regressions (1) and (2) from Table II of the paper using different standard error methods. We report (in parentheses) (i) heteroscedasticity-consistent standard errors, (ii) standard errors estimated by clustering on time, and (iii) standard errors estimated using a FGLS method under the assumption of contemporaneous cross-sectional correlation between panel portfolio residuals (as is done in the paper). The results show that the FGLS standard errors used in the paper are the most conservative.

| | 97 Predictors | | | 85 Predictors | | |
|---|---|---|---|---|---|---|
| Variable | (1) Robust Standard Errors | (2) Clustered Standard Errors | (3) FGLS Standard Errors | (4) Robust Standard Errors | (5) Clustered Standard Errors | (6) FGLS Standard Errors |
| S | -0.150** | -0.150** | -0.150*** | -0.180*** | -0.180*** | -0.180** |
| | (0.059) | (0.060) | (0.077) | (0.065) | (0.067) | (0.085) |
| P | -0.337*** | -0.337*** | -0.337*** | -0.387*** | -0.387*** | -0.387*** |
| | (0.042) | (0.072) | (0.090) | (0.047) | (0.080) | (0.097) |
| Observations | 51,706 | 51,706 | 51,709 | 44,195 | 44,195 | 44,195 |
| Predictors | 97 | 97 | 97 | 83 | 83 | 83 |

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**Table IA.II**
**Alternative Pre- and Post-Publication Correlation Regressions**

This table provides alternative specifications to the regression in Table VII of the paper. The regressions model the returns of each predictor relative to the returns of other predictors. The dependent variable is a predictor's monthly long-short return. Post-Publication (P) is equal to one if the month is after the official publication date and zero otherwise. In-Sample Index Return is the equal-weighted return of all other unpublished predictor portfolios. Post-Publication Index Return is an equal-weighted return of all other published predictor portfolios. Standard errors (in parentheses) are computed under the assumption of contemporaneous cross-sectional correlations between panel portfolio residuals. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

| Variables | (1) | (2) |
|---|---|---|
| In-Sample Index Return | 0.578*** | |
| | (0.020) | |
| P x In-Sample Index Return | -0.296*** | |
| | (0.040) | |
| Post-Publication (P) | -0.085 | -0.476*** |
| | (0.061) | (0.076) |
| Post Publication Index Return | | -0.030** |
| | | (0.013) |
| P x Post-Pub. Index Return | | 0.699*** |
| | | (0.058) |
| Constant | 0.244*** | 0.572*** |
| | (0.031) | (0.048) |
| Observations | 51,487 | 43,109 |
| Predictors | 97 | 97 |

**Table IA.III**
**Anomaly Database and Methodology**

This table provides the author (s), original sample period, and construction of the 97 predictors that we consider in our study. Unless otherwise noted, all data are from the CRSP and Compustat databases. For predictors with accounting data updated annually (e.g., earnings-to-price, accruals), variables constructed using data from year *t* are used to forecast returns for 12 months beginning in July of year *t*+1, unless otherwise noted. For predictors that are updated on a monthly interval (e.g., momentum, long-term reversal), variables constructed in month *t* are used to forecast returns in month *t*+1, unless otherwise noted.

| Predictor | Author(s) (Journal and Year of Publication) | Original Sample Period | Construction |
|---|---|---|---|
| 52-Week High | George and Hwang (JF 2004) | 1963-2001 | Price scaled by the highest price or bid/ask average during the last 12 months. Updated monthly. |
| Accruals | Sloan (AR 1996) | 1962-1991 | Accruals = ((ΔCA - ΔCash) - (ΔCL - ΔSTD - ΔTP) – Dep) / Average Assets; ΔCA = Change in Current Assets; ΔCash = Change in Cash and Cash Equivalents; ΔCL = Change in Current Liabilities; ΔSTD = Change in Debt Included in Current Liabilities; ΔTP = Change in Income Taxes Payable; and Dep = Depreciation and Amortization Expense. Average Assets = (Assets + Assets (t-1))/2 Updated annually. Exclude if price<$5. |
| Advertising / Market Value of Equity | Chan et al. (2001) | 1975-1996 | Advertising expenses scaled by market value of equity. Updated annually. |
| Amihud's Measure (Illiquidity) | Amihud (JFM 2002) | 1964-1997 | Daily absolute value of return scaled by dollar trading volume on the same day. Averaged over the previous year. Updated monthly. Exclude if price<$5. |

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|---|---|---|---|
| Analyst Value | Frankel and Lee (JAE 1998) | 1975-1993 | Using Compustat annual data, at each fiscal year-end we add half of the current book value per share to half of the book value per share from the previous year. For the first year with Compustat data, we simply use the current book value per share. The book value per-share measure is divided by Common Shares Used to Calculate Earnings Per Share (Basic), creating a per share measure. In non-fiscal year-ends, each month's value is the value from the last fiscal year-end. For each month, we calculate an expected return on equity by using the most recent I/B/E/S mean earnings estimate and dividing it by the book value measure from six months ago. Our analyst forecast measure is: $\left(1+\left(\frac{FROE_t-0.1}{1.1}\right)+\frac{FROE_t-0.1}{0.1X1.1}\right)\left(\frac{AvgBook_{t-6}}{P_t}\right)$ FROE is expected return on equity, AvgBook is the average book value, and P is the current stock price. |
| Asset Growth | Cooper, Guylen, and Schill (JF 2008) | 1968-2003 | Yearly percentage change in total assets. Updated annually. |
| Asset Turnover | Soliman (AR 2008) | 1984-2002 | Asset Turnover (*t*) = Sales (*t*)/ ((Net Operating Assets (*t*) + Net Operating Assets (*t*-1)) / 2); Net Operating Assets = Receivables + Total Inventory + Other Current Assets + PP&E + Intangibles - Payables - Other Current Assets - Other Liabilities. Updated annually. Exclude if price<$5. |
| Beta | Fama and MacBeth (JPE 1973) | 1926-1968 | Beta with respect to the CRSP equal-weighted return index. Estimated over the past 60 months. Updated monthly. |
| Bid-Ask Spread | Amihud and Mendelsohn (1986) | 1961-1980 | Estimates from Shane Corwin's "Monthly High-Low Spread Estimates 1926-2013" dataset. See http://www3.nd.edu/~scorwin/ . We divide each estimate by the particular stock's month-end price. |
| Book Equity / Market Equity | FF (JF 1992) | 1963-1990 | The log of: book value of equity scaled by market value of equity. Updated annually. |
| Cash Flow / Market Value of Equity | LSV (JF 1994) | 1968-1990 | Net income plus depreciation and amortization, all scaled by market value of equity. NYSE and AMEX only. Updated annually. |

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|---|---|---|---|
| Cash Flow Variance | Haugen and Baker (JFE 1996) | 1979-1993 | Variance of the monthly ratio of cash flow to market value of equity. Cash flow is net income plus depreciation and amortization, all scaled by market value of equity. Measured over the last 60 months. Exclude NASDAQ, CRSP SHRCD > 11, or price<$5. Updated monthly. |
| Change in Asset Turnover | Soliman (AR 2008) | 1984-2002 | Asset Turnover (*t*) - Asset Turnover *(t*-1). Asset Turnover is defined above. Updated annually. Exclude if price<$5. |
| Change in Forecast + Accrual | Barth and Hutton (RAS 2004) | 1981-1996 | This variable is equal to one if the firm has an increase in the mean analysts' forecast and is and below the median for the accruals variable. The variable is equal to minus one if the firm has a decrease in the mean analysts' forecast and is above the median for the accruals variable. The analysts' forecasts and accruals variables are defined above. |
| Change in Profit Margin | Soliman (AR 2008) | 1984-2002 | Profit Margin (*t*) - Profit Margin (*t*-1). Updated annually. Data from year *t* are used to forecast returns for 12 months beginning in April of year *t*+1. Exclude if price<$5. |
| Change in Recommendation | Jegadeesh et al. (JF 2004) | 1985-1998 | Using I/B/E/S data, when an analyst assigns a new strong buy recommendation, we assign a value of one to that analyst's change variable. When the analyst assigns new recommendation that is not a strong buy, we assign a value of minus one to the analyst's change variable. Cases in which the analyst's change variable is neither one nor minus one, we assign it a value of zero. Each month we average the change variable over all analysts who follow the stock, and use this average as our change in recommendation variable. |
| Coskewness | Harvey and Siddique (JF 2000) | 1963-1993 | Calculated from a rolling window using data from 60 months ago until one month ago. For each stock, we regress the return of the stock on the return of the CRSP value-weighted index (VWRETD). Each month a variable is created by multiplying the residual from this regression by the deviation of the squared VWRETD minus the average squared VWRETD, and dividing by the product of the regression's root mean square error times the average of VWRETD. The average of the aforementioned variable is Coskewness. |

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|---|---|---|---|
| Credit Rating Downgrade | Dichev and Piotroski (JF 2001) | 1970-1997 | Binary variable equal to one if S&P credit rating decreased during the previous year. Updated annually. |
| Debt Issuance | Spiess and Affleck-Graves (JFE 1999) | 1975-1989 | Binary variable equal to one if long-term debt issuance indicated in statement of cash flow. Updated annually. |
| Dividend Initiation | Michaely, Thaler, and Womack (1995) | 1964-1988 | Binary variable equal to one if a firm initiates a dividend during the previous 12 months, and did not pay a dividend during any of the 24 months preceding the month in which the dividend was initiated. NYSE firms only. Exclude if CRSP SHRCD > 11. Updated monthly. |
| Dividend Omission | Michaely, Thaler, and Womack (1995) | 1964-1988 | Using firms with at least 18 months of data, we identify stocks that paid dividends 3, 6, 9, 12, 15, and 18 months ago, but did not pay a dividend in the current month, or the two months before the current month. These firms are assigned a dividend ommitter indicator equal to one for the current month and the next 11 months. All other observations are assigned a value of zero. |
| Dividend Yield | Naranjo, Nimalendran, and Ryngaert (JF 1998) | 1963-1994 | Most recent dividend multiplied by four, all scaled by price. The firm had to pay a dividend during each of the last four quarters, and had to have not undergone an exchange or reorganization in the last year (CRSP distribution code = 3). NYSE only. Exclude if price < $2 or with CRSP SHRCD > 11. |
| Dividends | Hartzmark and Soliman (JFE 2013) | 1927-2011 | We create an indicator variable that is equal to one if 11 months ago the difference between the monthly CRSP return with dividends (RET) is greater than the CRSP return without dividends (RETX), or if two months ago RET>RETX. If this condition does not hold, if the stock was not included in the CRSP data 11 months ago, or if the share price is less than $5, the indicator variable is set to zero. |
| Down Forecast | Barber et al. (JF 2001) | 1985-1997 | Using I/B/E/S data, if the mean analyst earnings forecast decreases, we assign Down Forecast a value of one. If it stays the same or increases, we assign it a value of zero. |
| Earnings / Price | Basu (JF 1977) | 1964-1971 | Net income scaled by market value of equity. Sample is limited to NYSE firms. Updated annually. |

| | | | |
|---|---|---|---|
| Earnings Consistency | Alwathainani (BAR 2009) | 1971-2002 | Geometric average of Earnings Growth from *t*-1 to *t*-5. Earnings growth is: Earnings Per Share (*t*) – Earnings Per Share (*t*-1) / ((Absolute Value of Earnings Per Share (*t*-1) + Absolute Value of Earnings Per Share (*t*-2) / 2). Exclude if: price < $5; absolute value of growth > 6; if growth is positive this year, but negative last year, or vice versa. Updated annually. |
| Earnings Surprise | Foster, Olsen, and Shevlin (AR 1984) | 1974-1981 | (Earnings per Share$_t$ - Earnings per Share$_{t-4}$ - Drift) all scaled by the standard deviation of this difference over the last eight quarters. Drift is the average yearly growth in earnings per share over the last eight quarters. Updated quarterly. Exclude if price<$5. |
| Enterprise Component of Book/Price | Penman, Richardson, and Tuna (JAR 2007) | 1961-2001 | The B/P ratio can be decomposed into an enterprise book-to-price (that pertains to operations and potentially reflects operating risk) and a leverage component (that reflects financing risk). EBP = (BV+ND)/(ND+MV); BV = Book Value of Equity; ND = Cash - Long-Term Debt - Debt in Current Liabilities - Preferred Stock - Preferred Dividends in Arrears + Preferred Treasury Stock; MV = Market Value of Equity. Updated annually. Exclude if price<$5. |
| Enterprise Multiple | Loughran and Wellman (JFQA 2011) | 1963-2009 | Enterprise Value / Operating Cash Flow. Enterprise Value = Market Value of Equity + Long-Term Debt + Debt in Current Liabilities + Preferred Stock - Cash. Updated annually. |
| Exchange Switch | Dharan and Ikenberry (JF 1995) | 1962-1990 | Binary variable equal to one if during the past year a firm switched to AMEX from NASDAQ, or to NYSE from either AMEX or NASDAQ. Updated monthly. |
| Firm Age | Barry and Brown (JFE 1984) | 1931-1982 | The number of months that a firm has been listed in the CRSP database. Updated monthly. Exclude if price<$5. |
| Firm Age-Momentum | Zhang (JF 2004) | 1983-2001 | Buy-and-hold returns from *t*-6 through *t*-1. Exclude if prices < $5 and age < 12. Firms are then sorted on age, and only firms in the bottom age quintile are included. Updated monthly. |
| Forecast Dispersion | Diether, Malloy, and Scherbina (JF 2002) | 1976-2000 | Computed by dividing the I/B/E/S standard deviation of analyst earnings forecasts by the absolute value of the average forecast. If the average forecast is zero, we do not use the observation. |

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|---|---|---|---|
| G Index | Gompers, Ishi, and Metrick (2003) | 1990-1998 | The sum of 21 corporate governance variables. A higher value of the index suggests worse corporate governance. The governance data is from Investor Responsibility Research Center (IRRC). The index can be downloaded from Andrew Metrick's website: http://faculty.som.yale.edu/andrewmetrick/data.html. |
| Gross Profitability | Novy-Marx (JFE 2013) | 1962-2010 | (Revenue(*t*) - Cost of Goods Sold (*t*)) / Assets (*t*-1). Updated annually. |
| Growth in Inventory | Thomas and Zhang (RAS 2002) | 1970-1997 | Growth in Inventory. (Inventory (t) - Inventory (t-1)) / (Assets (t) + Assets (t-1))/2. Inventory is total inventory (invt). Updated annually. |
| Growth in LTNOA | Fairfield, Whisenant, and Yohn (AR 2003) | 1964-1993 | Growth in Net Operating Assets minus Accruals. GRLTNOA=GRNOA-ACC; NOA=(RECT+INVT+ACO+PPENT+INTAN+AO-AP-LCO-LO)/AT; GRNOA=NOA-NOA(*t*-1) ACC=((RECT-RECT(*t*-1))+(INVT-INVT(*t*-1))+(ACO-ACO(*t*-1))-(AP-AP(*t*-1))-(LCO-LCO(*t*-1))-DP)/((AT+AT(*t*-1))/2); RECT = Receivables; INVT = Total Inventory; ACO = Current Assets; AP =Accounts Payable; LCO = Current Liabilities (Other); DP = Depreciation and Amortization; AT = Assets; PPENT = Property, Plant, and Equipment (net); INTAN = Intangible Assets; AO = Assets (Other); LO = Liabilities (Other). Updated annually. Exclude if price<$5. |
| G-Score | Piotroski (AR 2000) | 1976-1996 | Measure ranging from zero to nine based on the sum of the following dummy variables: one if net income > zero; one if cash flow from operations > zero; otherwise; one if return on assets (net income scaled by assets) increased during the previous year; one if cash flow from operations > net income; one if the ratio of long-term debt to total assets increased during the previous year; one if the ratio of current assets to current liabilities increased during the previous year; one if the firm issued common shares; one if the ratio of EBIT to revenues increased during the previous year; and one if the ratio of revenues to assets increased during the previous year. Limit sample to firms in the highest book-to-market quintile. Updated annually. |

| | | | |
|---|---|---|---|
| G-Score_2 | Mohanram (RAS 2005) | 1978-2001 | First, the sample is limited to firms in the lowest book-to-market quintile. Then, a measure ranging from zero to eight based on the sum of the following dummy variables: one if net income scaled by assets > industry (two-digit SIC code) median; one if cash flow scaled by assets > industry-median; one if cash flow from operations > net income; one if net income variability < median firm in the same industry; one if revenue variability is less that median firm in the same industry; one if capital expenditures scaled by assets > industry median; one if research and development expenditures scaled by assets > industry median; and one if advertising expenditures scaled by assets > industry median. Revenue and net income variability are both measured over the previous four quarters. Updated quarterly. Data from year *t* are used to forecast returns for 12 months beginning in April of year *t*+1. Exclude if price<$5. |
| Herfindahl Index | Hou and Robinson (JF 2006) | 1963-2001 | Herfindahl indices are constructed within each 3-digit SIC code, and then averaged over the last three years. Regulated industries, as defined by Barclay and Smith (1995), are not included. Index values from December are used to predict returns beginning in July of the subsequent year. Updated annually. |
| Idiosyncratic Risk | Ang et al. (JF 2006) | 1986-2000 | The standard deviation of the residual from a regression of daily stock returns on the daily innovations of the Fama and French three-factor model. Returns are market value-weighted. |
| Industry Momentum | Grinblatt and Moskwotiz (1999) | 1963-1995 | Value-weighted return from *t*-6 to *t*-1 within each industry. Industry is measured with two-digit SIC code. Updated monthly. |
| Initial Public Offering | Ritter (JF 1991) | 1975-1984 | We use Jay Ritter's data set "Founding dates for 9,902 IPOs from 1975-2014," which is available on his website, http://bear.warrington.ufl.edu/ritter/ipodata.htm. We consider IPO firms as firms that have had an IPO within the last 36 months. |
| Investment | Titman, Wei, and Xie (JFQA 2004) | 1973-1996 | CAPEX scaled by revenues, all scaled by the average CAPEX / revenues from the previous three years. Exclude if revenues <$10M. Updated annually. |

| | | | |
|---|---|---|---|
| IPO and Age | Ritter (JF 1991) | 1975-1984 | We use Jay Ritter's dataset "Founding dates for 9,902 IPOs from 1975-2014," which is available on his website http://bear.warrington.ufl.edu/ritter/ipodata.htm. We consider IPO firms as firms that have had an IPO within the last 36 months. We sort all IPO stocks on age, and measure the difference in returns between the young and old IPO stocks. Young and old are defined as the highest and lowest age quintiles. We require at least 30 observations in a cross-section to estimate the effect. |
| IPO no R&D | Gou, Lev, and Shi (JBFA 2006) | 1980-1995 | This variable is equal to one if the firm is an IPO firm and had no R&D spending. We use Jay Ritter's dataset "Founding dates for 9,902 IPOs from 1975-2014," which is available on his website http://bear.warrington.ufl.edu/ritter/ipodata.htm. We consider IPO firms as firms that have had an IPO within the last 36 months. Updated monthly. |
| Lagged Momentum | Novy-Marx (JFE 2012) | 1926-2010 | Buy-and-hold returns from *t*-13 through *t*-8. Updated monthly. |
| Leverage | Bhandari (JFE 1988) | 1946-1981 | Log of long-term debt scaled by market value of equity. Updated annually. |
| Leverage Component of Book/Price | Penman, Richardson, and Tuna (JAR 2007) | 1961-2002 | The B/P ratio can be decomposed into an enterprise book-to-price (that pertains to operations and potentially reflects operating risk) and a leverage component (that reflects financing risk). BPEBP=BP-EBP; EBP is defined above; BP =(BV+TSTKP-DVPA)/MV; BV = Book Value of Equity; TSTKP = Preferred Treasury Stock; DVPA = Preferred Dividends in Arrears; MC = Market Value of Equity. Updated annually. Exclude if price<$5. |
| Long-Term Reversal | Debondt and Thaler (JF 1985) | 1926-1982 | Buy and hold returns from *t*-60 to *t*-13. Updated monthly. NYSE stocks only. |
| M/B and Accruals | Barton and Kim (QFA 2004) | 1980-1998 | Equal to one if both low book-to-market and high accrual quintiles; minus one if both high book-to-market and low accrual quintiles, and zero otherwise. Accruals are defined above Sloan (1996). We exclude firms with negative book values of equity. Updated annually. |
| Max | Bali, Cakici, and Whitelaw (JF 2010) | 1962-2005 | Maximum daily return over the past month. Updated monthly. Exclude stocks if price <$5. |
| Mergers | Langetieg (JFE 1978) | 1929-1969 | Binary variable equal to one if acquisition reported by SDC Thomson during the previous year. |

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|---|---|---|---|
| Momentum | Jegadeesh and Titman (JF 1993) | 1964-1989 | Buy-and-hold returns from *t*-6 to *t*-1. Updated monthly. Exclude if price < $5. |
| Momentum and LT Reversal | Chan and Kot (JOIM 2006) | 1965-2001 | Equal to one if both Momentum Winner and Reversal Loser, minus one if both Momentum Lose and Reversal Winner, and zero otherwise. Momentum and Long-Term Reversal are defined above (Jegadeesh and Titman (1993) and Debondt and Thaler (1985). Winners are in the top quintile, losers are in the bottom quintile. Updated monthly. Exclude if price<$5. |
| Momentum-Credit Ratings | Aramov et al. (JF 2007) | 1985-2003 | Buy-and-hold returns from *t*-6 through *t*-1. Sample is limited to firms with S&P credit ratings of BBB+ or lower. Updated monthly. |
| Momentum-Reversal | Jegadeesh and Titman (JF 1993) | 1964-1989 | Buy and hold returns from *t*-18 to *t*-13. Updated monthly. |
| Momentum-Volume | Lee and Swaminathan (JF 2000) | 1965-1995 | Buy- and- hold returns from *t*-6 through *t*-1. We limit the sample to high trading volume stocks, i.e., stocks in the highest quintile of average monthly trading volume measured over the past six months. NYSE and AMEX only. Exclude if in CRSP for less than 2 years or if price < $1. Updated monthly. |
| Net Operating Assets | Hirshleifer et al. (JAE 2004) | 1964-2002 | $NOA_t$ = (Operating $Assets_t$ - Operating $Liabilities_t$) / Total $Assets_{t-1}$; Operating Assets = Total Assets - Cash and Short-Term Investment; Operating Liabilities = Total Assets – Current Portion of Long-Term Debt - Long-Term Debt - Minority Interest (Balance Sheet) - Preferred Stock - Common Equity. Updated annually. |
| Net Working Capital Changes | Soliman (AR 2008) | 1984-2002 | Yearly change in net working capital scaled by total assets. Net working capital is measured as current assets minus current liabilities. Current assets are measured as total current assets minus cash and cash equivalents. Current liabilities are measured as total current liabilities minus debt in current liabilities. |
| Noncurrent Operating Assets Changes | Soliman (AR 2008) | 1984-2002 | Yearly change in noncurrent operating assets scaled by total assets. Noncurrent operating assets are defined as noncurrent assets minus noncurrent liabilities. Noncurrent assets are total assets minus current assets and investment and advances. Noncurrent liabilities are total liabilities minus current liabilities and long-term debt. Updated annually. |
| Operating Leverage | Novy-Marx (ROF 2010) | 1963-2008 | SG&A + Cost of Goods Sold, all scaled by lagged Assets. |

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|---|---|---|---|
| Org. Capital | Eisfeldt and Papanikolaou (JF 2013) | 1970-2008 | Using Compustat annual data, we assign Selling, General and Administrative Expense (SG&A) values that are missing to zero. For the first year a company appears in Compustat, we assign a beginning value of organizational capital by using four times the original value of SG&A. At the end of each fiscal year, we multiply the last year's organizational capital by 0.85 and add SG&A. This value is divided by total assets. |
| O-Score (More Financial Distress) | Dichev (JFE 1998) | 1981-1995 | O-Score = –1.32 – 0.407*log(Total Assets/GNP Price-Level Index) + 6.03*(Total Liabilities/Total Assets) – 1.43*(Working Capital/Total Assets) + 0.076*(Current Liabilities/Current Assets) –*(1 if Total Liabilities > Total Assets, else 0) – 2.37*(Net Income/Total Assets) – 1.83*(Funds from Operations/Total Liabilities) + 0.285*(1 if net loss for the last two years, else 0) – 0.521*(Net Income$_t$– Net Income$_{t-1}$)/(\|Net Income$_t$\| + \|Net Income$_{t-1}$\|). NYSE Only. Updated annually. SIC codes 1 to 3999 and 5000 to 5999 only. Data from year *t* are used to forecast returns for 12 months beginning in April of year *t*+1. Exclude if price < $5. |
| Pension Funding Status | Franzoni and Marin (JF 2006) | 1980-2002 | FR=(FVPA-PBO)/Market Value of Equity; Used Compustat Items:<br>pbnaa: Pension Benefits – Net Assets<br>pbnvv: Pension Benefits –Present Value of vested interests<br>pplao: Pension Plan Assets<br>pplau: Pension Plan Assets (Underfunded)<br>pbpro: Pension- Projected Benefit Obligation<br>pbpru: Pension- Projected Benefit Obligation (Underfunded)<br>1980-1986: FVPA=pbnaa; PBO=pbnvv; 1987-1997: FVPA=pplao+pplau; PBO:=pbpro+pbpru; 1998 onwards: FVPA=pplao; PBO=pbpro. Exclude if CRSP SHRCD > 11 or if price <$5. Updated annually. |
| Percent Operating Accrual | Hafzalla, Lundholm, and Van Winkle (AR 2011) | 1989-2008 | (Net Income - Cash Flow from Operations) / Absolute Value of Net Income. Updated annually. Exclude if price<$5. |

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|---|---|---|---|
| Percent Total Accrual | Hafzalla, Lundholm, and Van Winkle (AR 2011) | 1989-2008 | Net Income - ((-Sale of Common and Preferred Stock + Purchase of Common and Preferred Stock + Total Dividends + Cash Flow from Operations + Cash Flow from Financing + Cash Flow from Investment) / Absolute Value of Net Income). Updated annually. Exclude if price<$5. |
| Price | Blume and Husic (JF 1972) | 1932-1971 | Log of stock price. Updated monthly. |
| Profit Margin | Soliman (AR 2008) | 1984-2002 | EBIT / Revenues. Updated annually. Exclude if price<$5. |
| Profitability | Karthik, Bartov, and Faurel (JAE 2010) | 1976-2005 | Quarterly Earnings per Share (*t*) x Number of Shares used to compute earnings per share (*t*), all scaled by Assets (*t*-1). Updated quarterly. Exclude if price<$1. |
| Public Seasoned Equity Offerings | Loughran and Ritter (JF 1995) | 1975-1984 | Binary variable equal to one if seasoned public offering reported by SDC Thomson during the previous year. |
| R&D / Market Value of Equity | Chan et al. (2001) | 1975-1995 | R&D expenses scaled by market value of equity. Updated annually. |
| Return-on-Equity | Haugen and Baker (JFE 1996) | 1979-1993 | Net income scaled by book value of equity. Exclude if price<$5. Updated annually. |
| Revenue Surprises | Jegadeesh and Livnat (JAE 2006) | 1987-2003 | (Revenue per Share$_t$ - Revenue per Share$_{t-4}$ - Drift) all scaled by the standard deviation of this difference measured over the last 8 quarters. Drift is the average yearly growth in revenue per share over the last 8 quarters. Updated quarterly. Exclude if price<$5. |
| Sales Growth | LSV (JF 1994) | 1968-1990 | Average revenue growth rank over the past five years. Firms are ranked every year based on revenue growth. The average rank is then taken, giving growth in year *t*-1 a weight of 5, year *t*-2 a weight of 4, year *t*-3 a weight of 3, year *t*-4 a weight of 2, and year *t*-1 a weight of 5. NYSE and AMEX only. Updated annually. |
| Sales/Price | Barbee et al (FAJ - 1996) | 1979-1991 | Total revenues divided by stock price. Updated annually. |
| Seasonality | Heston and Sadka (JFE 2008) | 1965-2002 | Average monthly return in the same month over the last 20 years. As an example, the average return from prior Octobers is used to predict returns this October. The firm needs at least one year of data to be included in the sample. NYSE and AMEX only. Updated monthly. |

| | | | |
|---|---|---|---|
| Share Issuance (1-Year) | Pontiff and Woodgate (JF 2008) | 1970-2003 | Change in real number of shares outstanding from *t*-18 to *t*-6. Excludes changes in shares due to stock dividends and splits. |
| Share Issuance (5-Year) | Daniel and Titman (JF 2006) | 1968-2003 | Five-year real change in number of shares outstanding. Excludes changes in shares due to stock dividends and splits. Updated monthly. |
| Share Repurchases | Ikenberry, Lakonishok, and Vermaelen (JFE 1995) | 1980-1990 | Binary variable equal to one if repurchase of common or preferred shares indicated in statement of cash flow. Updated annually. |
| Share Volume | Datair, Naik, and Radcliffe (JFM 1998) | 1962-1991 | Average number of shares traded over the previous three months scaled by shares outstanding. Drop observations for which shares outstanding changed over the last three months. NYSE Only. Updated monthly. Exclude stocks with price<$5. |
| Short Interest | Dechow et al. (2001) | 1976-1993 | Shares Shorted / Shares Outstanding. Updated monthly. |
| Short-Term Reversal | Jegadeesh (1989) | 1934-1987 | Return in month t. Updated monthly. Eliminate stocks with price < $5. |
| Size | Banz (JFE 1981) | 1926-1975 | The log of market value of equity. Updated monthly. |
| Spinoffs | Cusatis, Miles, and Wooldridge (JFE 1993) | 1965-1988 | Spinoffs are identified by the variable ACPERM in CRSP. The variable indicates a spinoff during months *t*-1 to *t*-12, and predicts returns in month *t*+1. |
| Sustainable Growth | Lockwood and Prombutr (JFR 2010) | 1964-2007 | Growth in book value of equity. $BE_t / BE_{t-1} - 1$. Updated annually. |
| Tax | Lev and Nissim (AR 2004) | 1973-2000 | Income Tax scaled by Net Income. Following Lev and Nissim we make the following adjustments: Tax = Tax/0.48 if year>= 1973 & year<=1978<br>replace Tax = Tax/0.46 if year>= 1979 & year<=1986<br>replace Tax = Tax/0.40 if year==1987<br>replace Tax = Tax/0.34 if year>= 1988 & year<=1992<br>replace Tax = Tax/0.35 if year>= 1993. Updated annually. Exclude if price<$5. |

| | | | |
|---|---|---|---|
| Total XFIN | Bradshaw, Richardson, and Sloan (JAE 2006) | 1971-2000 | Total net external financing (Net Share Issuance + Net Debt Issuance - Cash Dividends) scaled by Total Assets. XFIN=(SSTK-DV-PRSTKC+DLTIS-DLTR)/AT; SSTK = Sale of Common and Preferred Stock; DV = Cash Dividends; PRSTKC = Purchase of Common and Preferred Stock; DLTIS = Sale of Long-Term Debt; DLTR = Purchase of Long-Term Debt. Updated annually. |
| Unexpected R&D Increases | Eberhart, Maxwell, and Siddique (JF 2004) | 1974-2001 | Binary variable equal to one if: both research and development scaled by revenue and R&D scaled by assets are greater than zero; the yearly percentage change in R&D expenditures is greater than 5%; and R&D scaled by assets increased by more than 5%. Data from year *t* are used to forecast returns for 12 months beginning in April of year *t*+1. |
| Up Forecast | Barber et al. (JF 2001) | 1985-1996 | Using I/B/E/S data, if the mean analyst earnings forecast increases, we assign Up Forecast a value of one. If it stays the same or decreases, we assign it a value of zero. |
| Volume / Market Value of Equity | Haugen and Baker (JFE 1996) | 1979-1993 | Monthly average dollar trading volume over the past 12 months scaled by shares outstanding. Exclude stocks with price<$5. Updated monthly. |
| Volume Trend | Haugen and Baker (JFE 1996) | 1979-1993 | Five-year trend in monthly trading volume scaled by average trading volume during the same five-year period. Exclude NASDAQ, CRSP SHRCD > 11, or price<$5. Updated monthly. |
| Volume Variance | Chordia, Subranhmanyam, and Anshuman (JFE 2001) | 1966-1995 | Standard deviation of monthly trading volume over the last 36 months. NYSE only. Updated monthly. |
| Z-Score (Less Financial Distress) | Dichev (JFE 1998) | 1981-1995 | Z-Score = 1.2*(Working Capital / Assets) + 1.4*(Retained Earnings / Assets) + 3.3*(EBIT / Assets) + 0.6*(Market Value of Equity / Book Value of Total Liabilities) + (Revenues / Assets). NYSE only. Updated annually. SIC codes 1 to 3999 and 5000 to 5999 only. Data from year *t* are used to forecast returns for 12 months beginning in April of year *t*+1. |

| | | | |
|---|---|---|---|
| ΔCAPEX-ΔIndustry CAPEX | Abarbanell and Bushee (AR 1998) | 1974-1988 | ΔCAPEX = CAPEX at time *t* minus the average value of capex from *t*-1 and *t*-2, all scaled by the average value of CAPEX from t-1 and t-2. ΔIndustry CAPEX is the two-digit SIC industry average of ΔCAPEX. Updated annually. |
| ΔSales-ΔInventory | Abarbanell and Bushee (AR 1998) | 1974-1988 | ΔSales = Sales at time *t* minus the average value of sales from *t*-1 and *t*-2, all scaled by the average value of sales from *t*-1 and *t*-2. Inventory is computed using total inventories. Updated annually. |
| ΔSales-ΔSG&A | Abarbanell and Bushee (AR 1998) | 1974-1988 | ΔSales = Sales at time *t* minus the average value of sales from *t*-1 and *t*-2, all scaled by the average value of sales from *t*-1 and *t*-2. ΔSG&A is computed similarly. Updated annually. |

## Table IA.IV
## Predictor Types

In Table IV of the paper we split our predictors into four groups: (i) event, (ii) market, (iii) valuation, and (iv) fundamentals. Event predictors are those based on corporate events or changes in performance. Examples of event predictors are share issues, changes in financial analyst recommendations, and unexpected increases in R&D spending. Market predictors are predictors that can be constructed using only financial data, such as volume, prices, returns, and shares outstanding. Momentum, long-term reversal, and market value of equity (size) are included in our sample of market predictors. Valuation predictors are ratios, where one of the numbers reflects a market value and the other reflects fundamentals. Examples of valuation predictors include sales-to-price and book-to-market. Fundamental predictors are those constructed solely with financial statement data. Leverage, taxes, and accruals are examples of fundamental predictors. We list the four groups of predictors below. Each predictor is defined in detail in the table above.

**Table IA.IV (Continued)**

| Event | Market | Valuation | Fundamental |
|---|---|---|---|
| Change in Asset Turnover | 52-Week High | Advertising/MV | Accruals |
| Change in Profit Margin | Age-Momentum | Analyst Value | Age |
| Change in Recommendation | Amihud's Measure | Book-to-Market | Asset Growth |
| Chg. Forecast + Accrual | Beta | Cash Flow/MV | Asset Turnover |
| Debt Issuance | Bid/Ask Spread | Dividends | Cash Flow Variance |
| Dividend Initiation | Coskewness | Earnings-to-Price | Earnings Consistency |
| Dividend Omission | Idiosyncratic Risk | Enterprise Component of B/P | Forecast Dispersion |
| Dividends | Industry Momentum | Enterprise Multiple | G Index |
| Down Forecast | Lagged Momentum | Leverage Component of B/P | Gross Profitability |
| Exchange Switch | Long-term Reversal | Marketing/MV | G-Score |
| Growth in Inventory | Max | Org. Capital | G-Score 2 |
| Growth in LTNOA | Momentum | R&D/MV | Herfindahl |
| IPO | Momentum and Long-term Reversal | Sales/Price | Investment |
| IPO + Age | Momentum-Ratings | | Leverage |
| IPO no R&D | Momentum-Reversal | | M/B and Accruals |
| Mergers | Price | | NOA |
| Post Earnings Drift | Seasonality | | Operating Leverage |
| R&D Increases | Short Interest | | O-Score |
| Ratings Downgrades | Short-term Reversal | | Pension Funding |
| Repurchases | Size | | Percent Operating Accrual |
| Revenue Surprises | Volume | | Percent Total Accrual |
| SEOs | Volume Trend | | Profit Margin |
| Share Issuance 1-Year | Volume Variance | | Profitability |
| Share Issuance 5-Year | Volume-Momentum | | ROE |
| Spinoffs | Volume/MV | | Sales Growth |
| Sustainable Growth | | | Tax |
| Total External Finance | | | Z-Score |
| Up Forecast | | | |
| ΔCapex - ΔIndustry CAPEX | | | |
| ΔNoncurrent Op. Assets | | | |
| ΔSales - ΔInventory | | | |
| ΔSales - ΔSG&A | | | |
| ΔWork. Capital | | | |