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| **Table 1 - Sample Distribution** | | | | | | | | | |
| ***Year*** | ***N*** | ***Per cent*** |  | ***Industry*** | ***N*** | ***Per cent*** | ***Industry*** | ***N*** | ***Per cent*** |
| 1990 | 3,539 | 3.82 |  | AERO | 521 | 0.56 | MACH | 3,726 | 4.02 |
| 1991 | 3,577 | 3.86 |  | AGRIC | 347 | 0.37 | MEALS | 2,041 | 2.2 |
| 1992 | 3,552 | 3.83 |  | AUTOS | 1,670 | 1.8 | MEDEQ | 3,655 | 3.94 |
| 1993 | 3,742 | 4.04 |  | BEER | 401 | 0.43 | MINES | 583 | 0.63 |
| 1994 | 3,942 | 4.25 |  | BLDMT | 2010 | 2.17 | OIL | 4,972 | 5.36 |
| 1995 | 4,259 | 4.6 |  | BOOKS | 819 | 0.88 | OTHER | 1,138 | 1.23 |
| 1996 | 4,478 | 4.83 |  | BOXES | 301 | 0.32 | PAPER | 1475 | 1.59 |
| 1997 | 4,707 | 5.08 |  | BUSSV | 12056 | 13.01 | PERSV | 1,204 | 1.3 |
| 1998 | 4,871 | 5.26 |  | CHEM | 2,188 | 2.36 | RTAIL | 5,512 | 5.95 |
| 1999 | 4,717 | 5.09 |  | CHIPS | 6,888 | 7.43 | RUBBR | 944 | 1.02 |
| 2000 | 4,524 | 4.88 |  | CLTHS | 1,469 | 1.58 | SHIPS | 174 | 0.19 |
| 2001 | 4,315 | 4.66 |  | CNSTR | 1,223 | 1.32 | SMOKE | 138 | 0.15 |
| 2002 | 4,224 | 4.56 |  | COAL | 200 | 0.22 | SODA | 302 | 0.33 |
| 2003 | 4,079 | 4.4 |  | COMPS | 4312 | 4.65 | STEEL | 1,545 | 1.67 |
| 2004 | 3,979 | 4.29 |  | DRUGS | 6,054 | 6.53 | TELCM | 3760 | 4.06 |
| 2005 | 3,781 | 4.08 |  | ELCEQ | 1,753 | 1.89 | TOYS | 869 | 0.94 |
| 2006 | 3,665 | 3.95 |  | FABPR | 388 | 0.42 | TRANS | 3006 | 3.24 |
| 2007 | 3,487 | 3.76 |  | FOOD | 1788 | 1.93 | TXTLS | 559 | 0.6 |
| 2008 | 3,404 | 3.67 |  | FUN | 1,646 | 1.78 | WHLSL | 3,819 | 4.12 |
| 2009 | 3,369 | 3.63 |  | GOLD | 842 | 0.91 |  |  |  |
| 2010 | 3,241 | 3.5 |  | GUNS | 221 | 0.24 |  |  |  |
| 2011 | 3,117 | 3.36 |  | HLTH | 1969 | 2.12 |  |  |  |
| 2012 | 3,074 | 3.32 |  | HSHLD | 1793 | 1.93 |  |  |  |
| 2013 | 3,044 | 3.28 |  | LABEQ | 2,406 | 2.6 |  |  |  |
| Total | 92,687 | 100 |  |  |  |  |  |  |  |

This table represents the sample distribution by year and industry using the Fama-French 48-sector classification codes. The initial sample comprises firms covered in Standard & Poor’s Compustat Fundamental Annual Database from 1990-2013. We exclude financial institutions (SIC 6000-6999) and utilities (SIC 4900-4999) since they tend to be highly regulated. We further eliminate firms that are not listed on both Compustat and The Center for Research in Security Prices (CRSP) databases, which we use to calculate the valuation and real activities manipulation measures. There are 92,687 firm-year observations equivalent to 9,987 firms in the final sample.

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| **Table 2 - Sample Descriptive Statistics** | | | | | | | | | | | | | | | |
| ***Panel A – Descriptive Statistics*** | | | | | | | | | | | | | | | |
| ***Variables*** | |  |  | | ***N*** |  | ***Mean*** | | |  | ***Median*** | |  | ***Standard Deviation*** | |
| Firm Characteristics | | | | | | | | | | | | | | | |
| Assets ($ million) | |  |  | | 92,687 |  | 3,231.91 | | |  | 214.371 | |  | 17,604.08 | |
| Market cap. ($ million) | |  |  | | 92,687 |  | 3,246.443 | | |  | 200.747 | |  | 15,789.87 | |
| Market-to-book ratio | |  |  | | 92,687 |  | 3.028 | | |  | 1.875 | |  | 86.425 | |
| Debt ratio | |  |  | | 92,687 |  | 0.510 | | |  | 0.486 | |  | 0.508 | |
| Return on Assets (ROA) | |  |  | | 92,687 |  | -0.069 | | |  | 0.029 | |  | 0.998 | |
| Market share | |  |  | | 92,687 |  | 0.044 | | |  | 0.004 | |  | 0.115 | |
| Z-score | |  |  | | 89,612 |  | 4.345 | | |  | 2.963 | |  | 23.264 | |
| % institutional ownership | |  |  | | 92,687 |  | 0.286 | | |  | 0.188 | |  | 0.300 | |
| Net operating assets | |  |  | | 92,380 |  | 11.138 | | |  | 1.153 | |  | 491.660 | |
| Operating cycle | |  |  | | 90,947 |  | 102.983 | | |  | 68.291 | |  | 4,041.396 | |
| R&D expenses/assets | |  |  | | 92,687 |  | 0.057 | | |  | 0.001 | |  | 0.160 | |
| Valuation measures | | | | | | | | | | | | | | | |
| TOBIN | |  |  | | 92,687 |  | 0.331 | | |  | -0.046 | |  | 1.468 | |
| FIRMSPECIFIC | |  |  | | 92,681 |  | 0.054 | | |  | 0.034 | |  | 0.756 | |
| Earnings management measures | | | | | | | | | | | | | | | |
| ABPRODCOST | |  |  | | 92,687 |  | -0.037 | | |  | -0.043 | |  | 0.762 | |
| ABDISEXP | |  |  | | 92,687 |  | -0.037 | | |  | -0.053 | |  | 0.444 | |
| TOTRM | |  |  | | 92,687 |  | 0.000 | | |  | 0.008 | |  | 1.062 | |
| ***Panel B – Correlation Matrix*** | | | | | | | | | | | | | | | |
|  | TOBIN | | | FIRMSPECIFIC | | | |  | ABPRODCOST | | | ABDISEXP | | | TOTRM |
| TOBIN | 1 | | |  | | | |  |  | | |  | | |  |
| FIRMSPECIFIC | 0.564\*\*\* | | | 1 | | | |  |  | | |  | | |  |
| ABPRODCOST | -0.149\*\*\* | | | -0.145\*\*\* | | | |  | 1 | | |  | | |  |
| ABDISEXP | 0.137\*\*\* | | | 0.083\*\*\* | | | |  | -0.477\*\*\* | | | 1 | | |  |
| TOTRM | -0.166\*\*\* | | | -0.139\*\*\* | | | |  | 0.923\*\*\* | | | -0.764\*\*\* | | | 1 |

Panel A presents various measures of firm characteristics. Panel B presents the correlation matrix between earnings management variables and firm values. Assets represent the firm’s total asset. Market cap refers to the firm’s market capitalization. Market-to-book ratio is the market price per share divided by the book value per share. Debt ratio is total debt divided by total assets. Market share measures a firm’s market leader status in the industry at the beginning of the year and is measured as the ratio of company’s sales-to-total industry sales. We define industry using the three-digit SIC codes as in Harris (1998). Z-score is a modified version of Altman’s Z-score (Altman 1968, 2000). Net operating assets is defined in equation (11). Tobin’s Q is the sum of the market capitalization of the firm’s common equity, the liquidation value of its preferred stock, and the book value of its debt divided by the book value of the firm’s assets. Adjusted Tobin's Q (TOBIN) is the difference between a firm’s Tobin's Q and the median Tobin’s Q for all others firms in the same Fama-French 48-sector classification. The derivation of FIRMSPECIFIC is explained in equations (1) to (5). ABPRODCOST, ABDISEXP and TOTRM represent abnormal production cost, abnormal discretionary expenditure and total real earnings management as derived in equations (6), (7) and (8), respectively. \*\*\* represents statistical significance at the 1% level.

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| **Table 3 – Comparisons of Real Earnings Management between Quartiles of Valuation** | | | | | | | |
| ***Panel A - Quartiles of TOBIN*** | | | | | | | |
| Variables | Q1 | Q2 | Q3 | Q4 | Q4 - Q1 |  |  |
| ABPRODCOST | 0.138 | 0.091 | -0.075 | -0.302 | -0.440 |  |  |
| ABDISEXP | -0.092 | -0.072 | -0.042 | 0.060 | 0.151 |  |  |
| TOTRM | 0.231 | 0.163 | -0.032 | -0.363 | -0.593 |  |  |
| LAG\_ABPRODCOST | 0.0981 | 0.0526 | -0.0854 | -0.2893 | -0.387 |  |  |
| LAG\_ABDISEXP | -0.0978 | -0.0762 | -0.0390 | 0.0685 | 0.166 |  |  |
| LAG\_TOTRM | 0.1962 | 0.1289 | -0.0444 | -0.3595 | -0.556 |  |  |
| ***Panel B - Quartiles of FIRMSPECIFIC*** | | | | | | | |
| Variables | Q1 | Q2 | Q3 | Q4 | Q4 - Q1 |  |  |
| ABPRODCOST | 0.145 | -0.002 | -0.124 | -0.167 | -0.311 |  |  |
| ABDISEXP | -0.069 | -0.071 | -0.037 | 0.032 | 0.101 |  |  |
| TOTRM | 0.214 | 0.070 | -0.085 | -0.200 | -0.414 |  |  |
| LAG\_ABPRODCOST | 0.110 | -0.027 | -0.135 | -0.169 | -0.279 |  |  |
| LAG\_ABDISEXP | -0.076 | -0.071 | -0.034 | 0.037 | 0.113 |  |  |
| LAG\_TOTRM | 0.186 | 0.045 | -0.099 | -0.207 | -0.393 |  |  |

This table presents measures of real earnings management by quartiles of Valuation. In Panel A, we use Tobin’s Q to represent firm Valuation. In Panel B, we use a measure of firm-specific error devised by Rhodes-Kropf et al. (2015) to proxy for firm Valuation. Q1 represents low measures of Valuation while Q4 represents high measures of Valuation. ABPRODCOST, ABDISEXP and TOTRM represent abnormal production cost, abnormal discretionary expenditure and total real earnings management as derived in equations (6), (7) and (8), respectively. LAG represents a one-year lag. \*\*\* represents statistical significance at the 1% level.

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| **Table 4 – OLS Regressions of Firm Valuation on Real Earnings Management** | | | | | |
|  | ***Panel A – TOBIN*** | | |  | ***Panel B – FIRMSPECIFIC*** |
|  | Model 1 | Model 2 | Model 3 |  | Model 4 |
| Constant | 0.557 | 0.567 | 0.550 |  | -0.177 |
|  | (13.047\*\*\*) | (14.489\*\*\*) | (13.319\*\*\*) |  | (-9.491\*\*\*) |
| ABPRODCOST | -0.321 |  |  |  |  |
|  | (-17.93\*\*\*) |  |  |  |  |
| ABDISEXP |  | 0.375 |  |  |  |
|  |  | (15.476\*\*\*) |  |  |  |
| TOTRM |  |  | -0.230 |  | -0.103 |
|  |  |  | (-19.85\*\*\*) |  | (-22.83\*\*\*) |
| LN(LAG1\_AT) | -0.070 | -0.065 | -0.066 |  | 0.041 |
|  | (-9.251\*\*\*) | (-9.458\*\*\*) | (-8.980\*\*\*) |  | (15.317\*\*\*) |
| LAG1\_ROA | -0.535 | -0.449 | -0.500 |  | -0.100 |
|  | (-4.728\*\*\*) | (-4.887\*\*\*) | (-4.774\*\*\*) |  | (-3.757\*\*\*) |
| LAG1\_GROWTH | 0.000 | 0.000 | 0.000 |  | 0.000 |
|  | (4.630\*\*\*) | (4.456\*\*\*) | (4.592\*\*\*) |  | (1.973\*\*) |
| LAG1\_IDIORISK | 0.011 | 0.007 | 0.010 |  | 0.001 |
|  | (2.223\*\*) | (1.586 ) | (2.095\*\*) |  | (0.202 ) |
|  |  |  |  |  |  |
| F-statistics | 30.07\*\*\* | 24.35\*\*\* | 30.56\*\*\* |  | 36.30\*\*\* |
| Adj. R-squared | 0.067 | 0.052 | 0.067 |  | 0.040 |
| Year fixed effects | Yes | Yes | Yes |  | Yes |
| Clustered std. err by firms | Yes | Yes | Yes |  | Yes |
| Number of clusters | 9,897 | 9,897 | 9,897 |  | 9,896 |
| Observations | 83,935 | 83,935 | 83,935 |  | 83,930 |

In Panel A, the dependent variable is the firm’s Tobin’s Q, and in Panel B we use a measure of firm-specific error devised by Rhodes-Kropf et al. (2015) to proxy for firm Valuation. ABPRODCOST represents a firm’s abnormal production cost. ADDISEXP represents a firm’s abnormal discretionary expenditure. TOTRM is the sum of ABPRODCOST + (-1)\*ABDISEXP. LN(LAG1\_AT) is the natural log of total assets lagged by a year (i.e. in t-1). ROA is the industry-adjusted return on assets. GROWTH is the industry-adjusted sales growth rate of the firm. RISK is the annualized standard deviation of the residuals from the regressions of daily returns of the firms on the Fama-French three-factor model. LAG1 represents values lagged by a year. We control for year fixed effects and correct the standard errors for firm-clustering effect. \*\*\* and \*\* represent statistical significance at the 1% and 5% levels, respectively.

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| **Table 5 – Panel Fixed Effect Regressions of Firm Valuation on Real Earnings Management** | | | | | |
|  | ***Panel A – TOBIN Q*** | | | | ***Panel B – FIRMSPECIFIC*** |
|  | Model 1 | Model 2 | Model 3 |  | Model 4 |
| Constant | 2.598 | 2.688 | 2.615 |  | 0.674 |
|  | (30.898\*\*\*) | (32.255\*\*\*) | (31.336\*\*\*) |  | (19.483\*\*\*) |
| ABPRODCOST | -0.182 |  |  |  |  |
|  | (-11.439\*\*\*) |  |  |  |  |
| ABDISEXP |  | 0.024 |  |  |  |
|  |  | (1.098 ) |  |  |  |
| TOTRM |  |  | -0.112 |  | -0.048 |
|  |  |  | (-9.640\*\*\*) |  | (-9.924\*\*\*) |
| LN(LAG1\_AT) | -0.463 | -0.477 | -0.464 |  | -0.118 |
|  | (-27.144\*\*\*) | (-28.108\*\*\*) | (-27.336\*\*\*) |  | (-16.512\*\*\*) |
| LAG1\_ROA | -0.108 | -0.085 | -0.095 |  | 0.014 |
|  | (-2.698\*\*\*) | (-2.383\*\*) | (-2.505\*\*) |  | (1.307 ) |
| LAG1\_GROWTH | 0.000 | 0.000 | 0.000 |  | 0.000 |
|  | (2.482\*\*) | (2.559\*\*) | (2.525\*\*) |  | (1.295 ) |
| LAG1\_IDIORISK | 0.001 | -0.001 | 0.000 |  | 0.004 |
|  | (0.282 ) | (-0.452 ) | (0.134 ) |  | (1.073 ) |
|  |  |  |  |  |  |
| F-statistics | 42.34\*\*\* | 36.38\*\*\* | 40.06\*\*\* |  | 24.18\*\*\* |
| Adj. R-squared | 0.0848 | 0.0783 | 0.0826 |  | 0.0192 |
| Rho | 0.649 | 0.655 | 0.649 |  | 0.595 |
| Year fixed effects | Yes | Yes | Yes |  | Yes |
| Number of firms | 9,897 | 9,897 | 9,897 |  | 9,896 |
| Observations | 83,935 | 83,935 | 83,935 |  | 83,930 |

In Panel A, the dependent variable is the firm’s Tobin’s Q, and in Panel B we use a measure of firm-specific error devised by Rhodes-Kropf et al. (2015) to proxy for firm Valuation. ABPRODCOST represents a firm’s abnormal production cost. ADDISEXP represents a firm’s abnormal discretionary expenditure. TOTRM is the sum of ABPRODCOST + (-1)\*ABDISEXP. LN(LAG1\_AT) is the natural log of total assets lagged by a year (i.e. in t-1). ROA is the industry-adjusted return on assets. GROWTH is the industry-adjusted sales growth rate of the firm. RISK is the annualized standard deviation of the residuals from the regressions of daily returns of the firms on the Fama-French three-factor model. LAG1 represents values lagged by a year. We control for year fixed effects and correct the standard errors for firm-clustering effect. \*\*\* and \*\* represent statistical significance at the 1% and 5% levels, respectively.

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| **Table 6 – GMM Regressions of Firm Valuation on Real Earnings Management** | | | | |
|  | ***Panel A – TOBIN Q*** |  | ***Panel B - FIRMSPECIFIC*** |  |
| Variables | Coefficient (t-stat) |  | Coefficient (t-stat) |  |
| Constant | -9.646 |  | -14.209\*\* |  |
|  | (-1.613 ) |  | (-2.209 \*\*) |  |
| TOTRM | -0.286 |  | -0.186 |  |
|  | (-3.942 \*\*\*) |  | (-4.051 \*\*\*) |  |
| LN(LAG1\_AT) | -0.611 |  | -0.013 |  |
|  | (-4.884 \*\*\*) |  | (-0.194 ) |  |
| LAG1\_ROA | -1.696 |  | -0.928 |  |
|  | (-2.997 \*\*\*) |  | (-4.080 \*\*\*) |  |
| LAG1\_GROWTH | 0.000 |  | 0.000 |  |
|  | (1.105 ) |  | (0.405 ) |  |
| LAG1\_IDIORISK | 6.656 |  | 3.186 |  |
|  | (2.805 \*\*\*) |  | (3.864 \*\*\*) |  |
|  |  |  |  |  |
| Wald Test | 960.20\*\*\* |  | 530.80\*\*\* |  |
| AR(2) p-value | 0.703 |  | 0.876 |  |
| Hansen test p-value | 0.327 |  | 0.324 |  |
| Number of firms | 9,897 |  | 9,896 |  |
| Observations | 83,935 |  | 83,930 |  |

In Panel A the dependent variable is the firm’s Tobin’s Q, and in Panel B we use a measure of firm-specific error devised by Rhodes-Kropf et al. (2015) to proxy for firm valuation. ABPRODCOST represents a firm’s abnormal production cost. ADDISEXP represents a firm’s abnormal discretionary expenditure. TOTRM is the sum of ABPRODCOST + (-1)\*ABDISEXP. LN(LAG1\_AT) is the natural log of total assets lagged by a year (i.e., in t-1). ROA is the industry-adjusted return on assets. GROWTH is the industry-adjusted sales growth rate of the firm. RISK is the annualized standard deviation of the residuals from the regressions of daily returns of the firms on the Fama-French three-factor model. LAG1 represents values lagged by a year. We control for year fixed effects and correct the standard errors for firm-clustering effect. \*\*\* and \*\* represent statistical significance at the 1% and 5% levels, respectively.

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| **Table 7 – Regressions to Derive Abnormal Real Earnings Management** | | | | |
| ***Variables*** |  | ***ABPRODCOST*** | ***ABDISEXP*** | ***TOTRM*** |
| Constant |  | 0.175 | 0.079 | 0.093 |
|  |  | (5.249\*\*\*) | (4.881\*\*\*) | (2.095\*\*) |
| MKTSHARE |  | 0.062 | 0.007 | 0.041 |
|  |  | (5.000\*\*\*) | (0.506 ) | (2.963\*\*\*) |
| ZSCORE |  | -0.037 | 0.009 | -0.029 |
|  |  | (-3.564\*\*\*) | (2.048\*\*) | (-3.348\*\*\*) |
| INSTOWN |  | -0.011 | 0.021 | -0.017 |
|  |  | (-1.167 ) | (2.310\*\*) | (-1.699\*) |
| TAX |  | -0.111 | -0.084 | -0.043 |
|  |  | (-11.479\*\*\*) | (-9.306\*\*\*) | (-4.523\*\*\*) |
| AUDITOR |  | 0.029 | -0.004 | 0.021 |
|  |  | (3.305\*\*\*) | (-0.469 ) | (2.317\*\*) |
| SOX |  | 0.102 | -0.035 | 0.090 |
|  |  | (6.688\*\*\*) | (-2.164\*\*) | (5.632\*\*\*) |
| NOA |  | 0.009 | -0.010 | 0.011 |
|  |  | (1.997\*\*) | (-2.649\*\*\*) | (2.234\*\*) |
| OPERCYCLE |  | 0.001 | -0.001 | 0.002 |
|  |  | (0.303 ) | (-0.603 ) | (0.469 ) |
| LNMKCAP |  | -0.108 | -0.020 | -0.069 |
|  |  | (-9.940\*\*\*) | (-1.919\*) | (-6.199\*\*\*) |
| XRD/AT |  | -0.040 | 0.100 | -0.072 |
|  |  | (-3.761\*\*\*) | (8.590\*\*\*) | (-6.835\*\*\*) |
| DEBT |  | 0.055 | -0.024 | 0.050 |
|  |  | (2.303\*\*) | (-2.712\*\*\*) | (2.535\*\*) |
| MKBK |  | -0.010 | 0.008 | -0.011 |
|  |  | (-2.386\*\*) | (2.396\*\*) | (-2.593\*\*\*) |
| ROA |  | -0.041 | -0.019 | -0.023 |
|  |  | (-1.799\*) | (-2.325\*\*) | (-1.572 ) |
|  |  |  |  |  |
| F-statistics |  | 18.07\*\*\* | 19.46\*\*\* | 8.57\*\*\* |
| Adj. R-squared |  | 0.0407 | 0.0253 | 0.0173 |
| Year fixed effects |  | Yes | Yes | Yes |
| Number of clusters |  | 10,446 | 10,446 | 10,446 |
| Observations |  | 88,649 | 88,649 | 88,649 |

This table presents the results of the regressions of abnormal production cost (ABPRODCOST), abnormal discretionary expenditure (ABDISEXP) and total real earnings management (TOTRM). The error terms represent the unexpected component of each of the three variables. MKTSHARE is the firm’s market share; ZScore is a modified version of Altman’s (1968, 2000) Z-score; INSTOWN represents the number of institutional investors; TAX is the marginal tax rate of the firm as calculated by Graham (2000); AUDITOR is a proxy for auditor scrutiny and equals 1 if the auditor has been with the firm more than the sample median, and 0 otherwise; SOX is an indicator variable representing the years post-Sarbanes Oxley Act of 2002; NOA refers the firm’s Net Operating Assets; OPERCYCLE refers to the firm’s operating cycle calculated as the days receivable *plus* the days’ inventory *less* the days’ payables. LNMKCAP refers to the natural logarithm of the firm’s market capitalization; XRD/AT is the ratio of research and development expenditures-to-sales; DEBT is the ratio of total debt-to-total assets; MKBK is the market-to-book ratio and ROA is the firm’s return on assets. We control for year fixed effects and correct the standard errors for firm-clustering effect. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

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| **Table 8 - Regressions of Valuation on Unexpected Real Earnings Management** | | |
| **Panel A – OLS Regressions** | | |
|  | ***Model 1*** | ***Model 2*** |
|  | ***TOBIN*** | ***FIRMSPECIFIC*** |
| Constant | 0.545 | -0.168 |
|  | (12.853\*\*\*) | (-8.824\*\*\*) |
| UNEXPTOTRM | -0.187 | -0.088 |
|  | (-15.453\*\*\*) | (-18.794\*\*\*) |
| LN(LAG\_1AT) | -0.062 | 0.042 |
|  | (-8.042\*\*\*) | (14.986\*\*\*) |
| LAG1\_ROA | -0.482 | -0.096 |
|  | (-4.378\*\*\*) | (-3.425\*\*\*) |
| LAG1\_GROWTH | 0.000 | 0.000 |
|  | (4.442\*\*\*) | (1.873\*) |
| LAG1\_IDIORISK | 0.011 | -0.002 |
|  | (2.317\*\*) | (-0.538 ) |
|  |  |  |
| F-statistics | 24.72\*\*\* | 29.26\*\*\* |
| Adj.-R-squared | 0.0546 | 0.0333 |
| Year fixed effects | Yes | Yes |
| Clustered std. err by firms | Yes | Yes |
| Number of clusters | 9,529 | 9,528 |
| Observations | 80,332 | 80,327 |
| **Panel B – Panel Fixed Effect Regressions** |  |  |
|  | ***TOBIN*** | ***FIRMSPECIFIC*** |
| Constant | 2.693 | 0.706 |
|  | (32.120\*\*\*) | (20.100\*\*\*) |
| UNEXPTOTRM | -0.065 | -0.027 |
|  | (-5.247\*\*\*) | (-5.356\*\*\*) |
| LN(LAG\_1AT) | -0.479 | -0.122 |
|  | (-27.972\*\*\*) | (-16.813\*\*\*) |
| LAG1\_ROA | -0.066 | 0.021 |
|  | (-1.767\*) | (1.912\*) |
| LAG1\_GROWTH | 0.000 | 0.000 |
|  | (2.536\*\*) | (1.501 ) |
| LAG1\_IDIORISK | -0.001 | 0.002 |
|  | (-0.448 ) | (0.427 ) |
|  |  |  |
| F-statistics | 37.96\*\*\* | 21.25\*\*\* |
| Adj. R-squared | 0.0815 | 0.0181 |
| Rho | 0.659 | 0.599 |
| Year fixed effects | Yes | Yes |
| Number of firms | 9,529 | 9,528 |
| Observations | 80,332 | 80,327 |
| **Panel C - GMM Regressions** |  |  |
|  | ***TOBIN*** | ***FIRMSPECIFIC*** |
| Constant | -16.379 | -11.320 |
|  | (-2.589\*\*\*) | (-2.378\*\*) |
|  |  |  |
|  |  |  |
| UNEXPTOTRM | -0.277 | -0.121 |
|  | (-3.677\*\*\*) | (-3.064\*\*\*) |
| LN(LAG\_1AT) | -0.571 | -0.003 |
|  | (-4.128\*\*\*) | (-0.055 ) |
| LAG1\_ROA | -2.710 | -0.583 |
|  | (-3.483\*\*\*) | (-1.809\*) |
| LAG1\_GROWTH | 0.000 | -0.000 |
|  | (0.901 ) | (-0.590 ) |
| LAG1\_IDIORISK | 5.631 | 2.965 |
|  | (2.360\*\*) | (4.168\*\*\*) |
|  |  |  |
| Wald Test | 894.70\*\*\* | 522.20\*\*\* |
| AR(2) p-value | 0.533 | 0.3718 |
| Hansen test p-value | 0.3123 | 0.3525 |
| Number of firms | 9,529 | 9,528 |
| Observations | 80332 | 80,327 |

In Model 1, the dependent variable is the firm’s Tobin’s Q, and in Model 2 we use a measure of firm-specific error devised by Rhodes-Kropf et al. (2015) to proxy for firm Valuation. We present our findings based on OLS regressions (Panel A), panel fixed-effect regressions in Panel B and the Generalized Methods of Moments (GMM) in Panel C. UNEXPTOTRM represents the unexpected total real earnings management derived from equation (9). LN(LAG1\_AT) is the natural log of total assets lagged by a year (i.e. in t-1). ROA is the industry-adjusted return on assets. GROWTH is the industry-adjusted sales growth rate of the firm. RISK is the annualized standard deviation of the residuals from the regressions of daily returns of the firms on the Fama-French three-factor model. LAG1 represents values lagged by a year. We control for year fixed effects and correct the standard errors for firm-clustering effect. \*\*\* and \*\* represent statistical significance at the 1% and 5% levels, respectively.

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| **Table 9 – Robustness Check – Industry-Adjusted Real Earnings Management Measures** | | | | | | | | | | | | | |
| ***Panel A – Summary statistics of industry-adjusted real earnings management variables*** | | | | | | | | | | | | | |
| Variables |  | |  | Mean | | | Median | | | | Stdev | | |
| Industry-adjusted production costs |  | |  | 0.1638 | | | -0.0115 | | | | 0.7221 | | |
| Industry-adjusted discretionary expenditure |  | |  | 0.0789 | | | 0.0139 | | | | 0.4102 | | |
| Industry-adjusted total real earnings management |  | |  | 0.0849 | | | -0.0254 | | | | 0.7855 | | |
| ***Panel B – Correlation matrix between firm valuation measures and industry-adjusted real earnings management variables*** | | | | | | | | | | | | | |
|  | *TOBIN* | | | | *FIRMSPECIFIC* | | | | Industry-adjusted production costs | Industry-adjusted discretionary expenditure | | | Industry-adjusted total real earnings management |
| *TOBIN* | 1 | | | |  | | | |  |  | | |  |
| *FIRMSPECIFIC* | 0.566\*\*\* | | | | 1 | | | |  |  | | |  |
| Industry-adjusted production costs | -0.0178\*\*\* | | | | -0.0065\*\* | | | | 1 |  | | |  |
| Industry-adjusted discretionary expenditure | 0.314\*\*\* | | | | 0.156\*\*\* | | | | 0.118\*\*\* | 1 | | |  |
| Industry-adjusted total real earnings management | -0.181\*\*\* | | | | -0.0756\*\*\* | | | | 0.855\*\*\* | -0.415\*\*\* | | | 1 |
| ***Panel C - OLS Regressions of Firm Valuation on Real Earnings Management*** | | | | | | | | | | | | | |
|  | | ***Dependent variable = TOBIN Q*** | | | | | | | | |  | ***Dependent variable = FIRMSPECIFIC*** | |
| Variables | | Model 1 | | | | Model 2 | | Model 3 | | |  | Model 4 | |
| Constant | | 0.602 | | | | 0.214 | | 0.528 | | |  | 2.240 | |
|  | | (14.317\*\*\*) | | | | (5.575\*\*\*) | | (14.019\*\*\*) | | | | (81.541\*\*\*) | |
| ADJ. PRODCOST | | -0.020 | | | |  | |  | | |  |  | |
|  | | (-1.349 ) | | | |  | |  | | |  |  | |
| ADJ. DISEXP | |  | | | | 1.044 | |  | | |  |  | |
|  | |  | | | | (15.827\*\*\*) | |  | | |  |  | |
| ADJ. TOTRM | |  | | | |  | | -0.288 | | |  | -0.123 | |
|  | |  | | | |  | | (-16.001\*\*\*) | | | | (-11.074\*\*\*) | |
| LN(LAG1\_AT) | | -0.075 | | | | -0.003 | | -0.056 | | |  | 0.063 | |
|  | | (-10.050\*\*\*) | | | | (-0.496 ) | | (-8.396\*\*\*) | | | | (15.285\*\*\*) | |
| LAG1\_ROA | | -0.477 | | | | -0.120 | | -0.285 | | |  | -0.061 | |
|  | | (-4.842\*\*\*) | | | | (-1.785\*) | | (-3.574\*\*\*) | | | | (-2.508\*\*) | |
| LAG1\_GROWTH | | 0.000 | | | | 0.000 | | 0.000 | | |  | 0.000 | |
|  | | (4.418\*\*\*) | | | | (3.247\*\*\*) | | (4.469\*\*\*) | | | | (2.131\*\*) | |
| LAG1\_IDIORISK | | 0.009 | | | | -0.002 | | 0.004 | | |  | -0.001 | |
|  | | (2.029\*\*) | | | | (-0.788 ) | | (0.826 ) | | |  | (-0.163 ) | |
|  | |  | | | |  | |  | | |  |  | |
| F-statistics | | 14.62\*\*\* | | | | 20.25\*\*\* | | 18.80\*\*\* | | |  | 13.95\*\*\* | |
| Adj. R-squared | | 0.040 | | | | 0.100 | | 0.050 | | |  | 0.020 | |
| Year fixed effects | | Yes | | | | Yes | | Yes | | |  | Yes | |
| Clustered std. err by firms | | Yes | | | | Yes | | Yes | | |  | Yes | |
| Number of firms | | 9,897 | | | | 9,897 | | 9,896 | | |  | 9,896 | |
| Observations | | 83,935 | | | | 83,935 | | 83,930 | | |  | 83,930 | |

In Panel A, we report the summary statistics of the industry-adjusted real earnings management measures. Industry-adjusted production cost (ADJ. PRODCOST) is calculated as the difference between the production cost of firm *i* in year *t* and the median production cost of all firms in the same industry (as per Fama-French 48 sector classification) in the same year. Similarly, industry-adjusted discretionary expenditure (ADJ. DISEXP) is calculated as the difference between the discretionary expenditure of firm *i* in year *t* and the median production cost of all firms in the same industry in the same year. We calculate industry-adjusted total real earnings management (ADJ. TOTRM) as ADJ. PRODCOST + (-1) \* (ADJ. DISEXP). In Panel B, we report the correlation matrix between the industry-adjusted real earnings management measures and firm valuation measures. TOBIN Q and FIRMSPECIFIC are firm valuation measures. In Panel C, we perform the OLS regressions of firm valuation measures on industry-adjusted real earnings management measures. LN(LAG1\_AT) is the natural log of total assets lagged by a year (i.e. in t-1). ROA is the industry-adjusted return on assets. GROWTH is the industry-adjusted sales growth rate of the firm. RISK is the annualized standard deviation of the residuals from the regressions of daily returns of the firms on the Fama-French three-factor model. LAG1 represents values lagged by a year. We control for year fixed effects and correct the standard errors for firm-clustering effect. \*\*\* and \*\* represent statistical significance at the 1% and 5% levels, respectively.

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| **Table 10 – Panel Fixed Effect Regressions and GMM Regressions of Firm Valuation on Industry-Adjusted Real Earnings Management Measures** | | | | | | |
| ***Panel A – Panel fixed effect regressions*** | | |  | ***Panel B – GMM regressions*** | | |
| Variables | *TOBIN Q* | *FIRMSPECIFIC* |  | Variables | *TOBIN* *Q* | *FIRMSPECIFIC* |
| Constant | 2.649 | 3.471 |  | Constant | -9.428 | -37.662 |
|  | (29.544\*\*\*) | (65.912\*\*\*) | |  | (-1.895\*) | (-6.249\*\*\*) |
| ADJ. TOTRM | -0.092 | -0.088 |  | ADJ. TOTRM | -0.285 | -0.116 |
|  | (-4.061\*\*\*) | (-6.300\*\*\*) | |  | (-2.485\*\*) | (-2.19\*\*) |
| LN(LAG1\_AT) | -0.473 | -0.168 |  | LN(LAG1\_AT) | -0.700 | -0.184 |
|  | (-25.722\*\*\*) | (-15.466\*\*\*) | |  | (-3.136\*\*\*) | (-2.084\*\*) |
| LAG1\_ROA | -0.017 | 0.01 |  | LAG1\_ROA | -1.841 | -1.274 |
|  | (-0.513 ) | (0.652) |  |  | (-3.014\*\*\*) | (-2.290\*\*) |
| LAG1\_GROWTH | 0.001 | 0.001 |  | LAG1\_GROWTH | 0.001 | 0.001 |
|  | (2.529\*\*) | (2.091\*\*) |  |  | (0.725) | (1.198) |
| LAG1\_IDIORISK | -0.002 | 0.005 |  | LAG1\_IDIORISK | 0.108 | 0.329 |
|  | (-0.495) | (0.708) |  |  | (0.476) | (0.132) |
|  |  |  |  |  |  |  |
| F-statistics | 31.15 | 19.35 |  |  |  |  |
| Adj. R-squared | 0.0812 | 0.0207 |  | Wald Test | 365.7 | 550.7 |
| Rho | 0.679 | 0.555 |  | AR(2) p-value | 0.41 | 0.342 |
| Year fixed effects | Yes | Yes |  | Hansen Test p-value | 0.4319 | 0.2761 |
| Number of firms | 9,897 | 9,896 |  | Number of firms | 9,897 | 9,896 |
| Observations | 83,930 | 83,930 |  | Number of observations | 83,935 | 83,930 |

We perform the panel fixed effect regressions (in Panel A) and GMM regressions (in Panel B) of firm valuation on industry-adjusted real earnings management measures. The dependent variables are TOBIN Q and FIRMSPECIFIC, alternatively. Industry-adjusted production cost (ADJ. PRODCOST) is calculated as the difference between the production cost of firm *i* in year *t* and the median production cost of all firms in the same industry (as per Fama-French 48 sector classification) in the same year. Similarly, industry-adjusted discretionary expenditure (ADJ. DISEXP) is calculated as the difference between the discretionary expenditure of firm *i* in year *t* and the median production cost of all firms in the same industry in the same year. We calculate industry-adjusted total real earnings management (ADJ. TOTRM) as ADJ. PRODCOST + (-1) \* (ADJ. DISEXP). LN(LAG1\_AT) is the natural log of total assets lagged by a year (i.e. in t-1). ROA is the industry-adjusted return on assets. GROWTH is the industry-adjusted sales growth rate of the firm. RISK is the annualized standard deviation of the residuals from the regressions of daily returns of the firms on the Fama-French three-factor model. LAG1 represents values lagged by a year. We control for year fixed effects and correct the standard errors for firm-clustering effect. \*\*\* and \*\* represent statistical significance at the 1% and 5% levels, respectively.