Supplementary Appendix: "An Augmented q-factor Model with Expected Growth" (for Online Publication Only)

Kewei Hou* — Ohio State and CAFR

Haitao Mo† — LSU

Chen Xue‡ — U. of Cincinnati

Lu Zhang§ — Ohio State and NBER

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Abstract

This Supplementary Appendix details mathematical derivation, portfolio construction, and supplementary results for our manuscript to appear at *Review of Finance*.

*Fisher College of Business, The Ohio State University, 820 Fisher Hall, 2100 Neil Avenue, Columbus OH 43210; and China Academy of Financial Research (CAFR). Tel: (614) 292-0552. E-mail: hou.28@osu.edu.

†E. J. Ourso College of Business, Louisiana State University, 2931 Business Education Complex, Baton Rouge, LA 70803. Tel: (225) 578-0648. E-mail: haitaomo@lsu.edu.

‡Lindner College of Business, University of Cincinnati, 2906 Woodside Drive, 2338 Lindner Hall, Cincinnati, OH 45221. Tel: (513) 556-7078. E-mail: xuecx@ucmail.uc.edu.

§Fisher College of Business, The Ohio State University, 760A Fisher Hall, 2100 Neil Avenue, Columbus OH 43210; and NBER. Tel: (614) 292-8644. E-mail: zhanglu@fisher.osu.edu.

A Derivations

This proof follows Liu, Whited, and Zhang (2009). Let i be the index of individual firms, $i = 1, 2, \ldots N$, q_{it} the Lagrangian multiplier for the capital accumulation equation $A_{it+1} = (1-\delta)A_{it} + I_{it}$. Form the Lagrangian function for the equity value maximization problem of firm i:

$$\mathcal{L} = \ldots + X_{it}A_{it} - \frac{a}{2}\left(\frac{I_{it}}{A_{it}}\right)^2 A_{it} - I_{it} - q_{it}(A_{it+1} - (1-\delta)A_{it} - I_{it})$$
$$+E_t\left[M_{t+1}\left[X_{it+1}A_{it+1} - \frac{a}{2}\left(\frac{I_{it+1}}{A_{it+1}}\right)^2 A_{it+1} - I_{it+1} - q_{it+1}(A_{it+2} - (1-\delta)A_{it+1} - I_{it+1})\right]\right] + \ldots \tag{A.1}$$

The first-order conditions with respect to I_{it} and A_{it+1} are, respectively,

$$q_{it} = 1 + a\frac{I_{it}}{A_{it}}; \tag{A.2}$$

$$q_{it} = E_t\left[M_{t+1}\left[X_{it+1} + \frac{a}{2}\left(\frac{I_{it+1}}{A_{it+1}}\right)^2 + (1-\delta)q_{it+1}\right]\right]. \tag{A.3}$$

To show the marginal q equals the average q, we start with $P_{it} + D_{it} = V_{it}$ and expand V_{it}:

$$P_{it} + X_{it}A_{it} - \frac{a}{2}\left(\frac{I_{it}}{A_{it}}\right)^2 A_{it} - I_{it} = X_{it}A_{it} - a\frac{I_{it}}{A_{it}}I_{it} + \frac{a}{2}\left(\frac{I_{it}}{A_{it}}\right)^2 A_{it} - I_{it}$$
$$- q_{it}(A_{it+1} - (1-\delta)A_{it} - I_{it}) + E_t\left[M_{t+1}\left(X_{it+1}A_{it+1} - a\frac{I_{it+1}}{A_{it+1}}I_{it+1}\right.\right.$$
$$\left.\left.+\frac{a}{2}\left(\frac{I_{it+1}}{A_{it+1}}\right)^2 A_{it+1} - I_{it+1} - q_{it+1}(A_{it+2} - (1-\delta)A_{it+1} - I_{it+1}) + \ldots\right)\right]. \tag{A.4}$$

Substituting equations (A.2) and (A.3), and using the linear homogeneity of adjustment costs:

$$P_{it} = \left(1 + a\frac{I_{it}}{A_{it}}\right)I_{it} + q_{it}(1-\delta)A_{it} = q_{it}A_{it+1}. \tag{A.5}$$

Finally, we are ready to show the equivalence between the stock and the investment returns:

$$r^S_{it+1} = \frac{P_{it+1} + X_{it+1}A_{it+1} - (a/2)\left(I_{it+1}/A_{it+1}\right)^2 A_{it+1} - I_{it+1}}{P_{it}}$$
$$= \frac{q_{it+1}(I_{it+1} + (1-\delta)A_{it+1}) + X_{it+1}A_{it+1} - (a/2)\left(I_{it+1}/A_{it+1}\right)^2 A_{it+1} - I_{it+1}}{q_{it}A_{it+1}}$$
$$= \frac{(1-\delta)q_{it+1} + X_{it+1} + (a/2)\left(I_{it+1}/A_{it+1}\right)^2}{q_{it}} = r^I_{it+1}, \tag{A.6}$$

in which the second equality follows from equation (A.2), and the third equality follows from the linear homogeneity of the adjustment costs function. Let $\Phi_{it} \equiv (a/2)\left(I_{it}/A_{it}\right)^2 A_{it}$, its linear homogeneity means that $\Phi_{it} = I_{it}\partial\Phi_{it}/\partial I_{it} + K_{it}\partial\Phi_{it}/\partial K_{it}$.

B Factor Models

We detail the factor models other than the q-factor and q^5 models in our empirical horse race.

Fama and French (2015) incorporate two factors that are similar to our investment and Roe factors into their original 3-factor model to form their 5-factor model. RMW is the high-minus-low operating profitability factor, in which operating profitability is total revenue minus cost of goods sold, minus selling, general, and administrative expenses, and minus interest expense, all scaled by the book equity. CMA is the low-minus-high investment factor. RMW and CMA are formed via independent 2×3 sorts by interacting operating profitability, and separately, investment-to-assets, with size. Fama and French (2018) further add the momentum factor, UMD, from Jegadeesh and Titman (1993) and Carhart (1997), into their 5-factor model to form their 6-factor model. UMD is formed in each month t by interacting prior 11-month returns (skipping month $t-1$) with size. We obtain the data of the Fama-French five and six factors from Kenneth French's Web site.

Fama and French (2018) also introduce an alternative 6-factor model, in which RMW is replaced by a cash-based profitability factor, denoted RMWc.[1] Their cash profitability measure is a variant of Ball et al.'s (2016), with the book equity (not book assets) as the denominator, and without adding back R&D expenses. The construction of RMWc is analogous to RMW. Because the RMWc data are not provided on Kenneth French's Web site, to facilitate comparison, we reproduce RMWc based on the same Fama-French sample that includes financial firms.[2]

Barillas and Shanken (2018) also propose a 6-factor model, including the market factor, SMB from the Fama-French (2015) 5-factor model, the investment and Roe factors from the q-factor model, the Asness-Frazzini (2013) monthly sorted HML factor, denoted HML^{m}, and the momentum factor, UMD. Barillas and Shanken argue that their 6-factor model outperforms the q-factor model and the Fama-French 5-factor model in their Bayesian comparison tests. Asness and Frazzini construct HML^{m} from monthly sequential sorts on, first, size, and then book-to-market, in which the market equity is updated monthly, and the book equity is from the fiscal year ending at least six months ago. To ease comparison, we obtain the HML^{m} data from the AQR's Web site.

Stambaugh and Yuan (2017) group 11 anomalies into two clusters based on pairwise cross-sectional correlations. The first cluster, denoted MGMT (management) contains net stock issues, composite issues, accruals, net operating assets, investment-to-assets, and the change in gross property, plant, and equipment plus the change in inventories scaled by lagged book assets. The second cluster, denoted PERF (performance), includes failure probability, O-score, momentum, gross profitability, and return on assets. The variables in each cluster are realigned to yield positive low-minus-high returns. The composite scores, MGMT and PERF, are defined as a stock's equal-weighted rankings across all the variables within a given cluster. Stambaugh and Yuan form their factors from monthly independent 2×3 sorts from interacting size with each of the composite scores.

However, as shown in Hou et al. (2019), Stambaugh and Yuan (2017) deviate from the traditional factor construction per Fama and French (1993) in two important aspects. First, the

[1] Cash-based profitability is revenues (Compustat annual item REVT) minus cost of goods sold (item COGS, zero if missing), minus selling, general, and administrative expenses (item XSGA, zero if missing), minus interest expense (item XINT, zero if missing) minus change in accounts receivable (item RECT), minus change in inventory (item INVT), minus change in prepaid expenses (item XPP), plus change in deferred revenue (item DRC plus item DRLT), plus change in trade accounts payable (item AP), and plus change in accrued expenses (item XACC), scaled by the book equity. At least one of the three items (COGS, XSGA, and XINT) must be nonmissing.

[2] Our reproduction results are fairly close to Fama and French's (2018). In their July 1963–June 2016 sample, our reproduced RMWc earns on average 0.32% per month ($t = 4.68$), compared to 0.36% ($t = 4.71$) reported in their Table 1.

NYSE-Amex-NASDAQ breakpoints of 20th and 80th percentiles are used, as opposed to the common NYSE breakpoints of 30th and 70th, when sorting on the composite scores. Second, the size factor contains stocks only in the middle portfolios of the composite score sorts, as opposed to stocks from all portfolios. Hou et al. show that the Stambaugh-Yuan factors are sensitive to their factor construction, and their nontraditional construction exaggerates their factors' explanatory power. In our sample from January 1967 to December 2018, the replicated MGMT and PERF factors based on the traditional approach earn on average 0.45% per month ($t = 4.53$) and 0.51% ($t = 3.95$), whereas the original factors earn 0.55% ($t = 4.37$) and 0.72% ($t = 4.74$), respectively, over the same sample period. To level the playing field, we opt to use the replicated factors via the traditional approach. Section C details our replication procedure.

Daniel, Hirshleifer, and Sun (2019) propose a 3-factor model that includes the market factor, a financing factor (FIN), and a post-earnings-announcement-draft factor (PEAD). FIN is based on the Pontiff-Woodgate (2008) 1-year net issuance and the Daniel-Titman (2006) 5-year composite issuance. PEAD is formed on cumulative abnormal returns around the most recent earnings announcement, Abr. FIN is from annual sorts, and PEAD monthly sorts, both 2×3 with size.

However, as shown in Hou et al. (2019), Daniel, Hirshleifer, and Sun (2019) also deviate from the traditional approach. First, only Abr is used, even though standardized unexpected earnings, Sue, and revisions in analysts earnings forecasts, Re, are perhaps more commonly used measures of post-earnings-announcement-draft (Chan, Jegadeesh, and Lakonishok 1996). Second, the NYSE breakpoints of the 20th and 80th percentiles are adopted, instead of the common 30th and 70th percentiles. Finally, the net issuance sort and its combination with the composite issuance sort seem nonstandard.[3] Hou et al. show that the Daniel-Hirshleifer-Sun factors are also sensitive to the factor construction, and their nontraditional construction exaggerates the factors' explanatory power.

To ensure that we compare apples with apples, we replicate the Daniel-Hirshleifer-Sun factors via the traditional approach. We form the replicated PEAD factor by sorting on the simple average of a stock's percentile rankings on Sue, Abr, and Re (if available). An advantage is that doing so allows us to start the sample in January 1967, which is the same starting point for all the other factors. In contrast, Daniel et al. (2019) start only in July 1972. We use the same composite score approach from Stambaugh and Yuan (2017) to combine the two share issuance measures. We then split stocks on the composite FIN and PEAD scores based on their NYSE breakpoints of the 30th and 70th percentiles. From January 1967 to December 2018, the replicated FIN and PEAD factors earn on average 0.3% per month ($t = 2.43$) and 0.7% ($t = 7.82$), whereas the original factors, which start from July 1972, earn 0.78% ($t = 4.41$) and 0.62% ($t = 7.93$), respectively. Section D details our replication procedure and the results with the PEAD factor based on Abr only.

C Replicating the Stambaugh-Yuan (2017) Factors

To make the document self-contained, we furnish the details of replicating the Stambaugh-Yuan factors as in Hou et al. (2019).

[3] Daniel, Hirshleifer, and Sun (2019) first split all repurchasing firms (with negative net issuance) into two groups based on the NYSE median. Second, all equity issuing firms (with positive net issuance) are split into three groups based on the NYSE breakpoints of the 30th and 70th percentiles. Third, firms with the most negative net issuance are assigned to the low net issuance portfolio, those with the most positive net issuance to the high portfolio, and all other firms to the middle portfolio. Finally, if a firm belongs to the high portfolios per both issuance measures, or to the high portfolio per one issuance measure, but missing the other, the firm is assigned to the high FIN portfolio. If a firm belongs to the low portfolios per both measures, or to the low portfolio per either one, but missing the other, the firm belongs to the low FIN portfolio. In all the other cases, the firm belongs to the middle FIN portfolio.

C.1 Factor Construction

We describe below the 11 anomaly variables used to construct the Stambaugh-Yuan factors (Appendix C.2). At the beginning of each month, we rank stocks into percentiles (1 to 100) based on each anomaly. The rankings are created such that high rankings are associated with lower future average returns. The first composite measure, MGMT (management), is the average of the six percentile rankings in net stock issues, composite equity issuance, accruals, net operating assets, investment-to-assets, and changes in property, plant, and equipment plus change in inventory scaled by assets. The second composite measure, PERF (performance), is the average of the five percentile rankings in failure probability, O-score, momentum, gross profitability, and return on assets. In any given month, an anomaly variable needs at least 30 stocks with non-missing values in order to be included in the composite measure. In addition, we compute a composite measure for a stock only if it has non-missing values for at least three of the component anomalies.

We replicate the Stambaugh-Yuan factors from two separate, independent 2×3 sorts, with one on size and MGMT, and another on size and PERF. At the beginning of each month t, we sort stocks by the NYSE median size into two groups, small and big. Independently, we split stocks based on MGMT, and separately, on PERF, into three groups, low, median, and high, with the 30th and 70th percentiles of the NYSE breakpoints. Taking intersections yields six size-MGMT and six size-PERF portfolios. Monthly value-weighted portfolio returns are calculated for the current month t, and the portfolios are rebalanced at the beginning of month $t + 1$. The MGMT factor is the average of the returns on the two low MGMT portfolios minus the average of the returns on the two high MGMT portfolios. The PERF factor is the average of the returns on the two low PERF portfolios minus the average of the returns on the two high PERF portfolios. Finally, each of the two independent sorts yields a size factor, which is the average of the returns on the three small portfolios minus the average of the returns on the three big portfolios. We take the average of the two size factors as the size factor in the replicated Stambaugh-Yuan model.

C.2 Variable Definitions

Net stock issues is the annual change in the log of the split-adjusted shares outstanding. The split-adjusted shares outstanding is shares outstanding (Compustat annual item CSHO) times the adjustment factor (item AJEX). At the beginning of each month, we use the latest net stock issues from fiscal year ending at least four months ago. Following Stambaugh and Yuan (2017), at the beginning of month t, we measure composite equity issuance as the growth rate in market equity minus the cumulative stock return from month $t - 16$ to $t - 5$ (skipping month $t - 4$ to $t - 1$).

Following Sloan (1996), we measure accruals as changes in noncash working capital minus depreciation, in which the noncash working capital is changes in noncash current assets minus changes in current liabilities less short-term debt and taxes payable. In particular, accruals equals $(\text{dCA} - \text{dCASH}) - (\text{dCL} - \text{dSTD} - \text{dTP}) - \text{DP}$, in which dCA is the change in current assets (Compustat annual item ACT), dCASH is the change in cash or cash equivalents (item CHE), dCL is the change in current liabilities (item LCT), dSTD is the change in debt included in current liabilities (item DLC), dTP is the change in income taxes payable (item TXP), and DP is depreciation and amortization (item DP). Missing changes in income taxes payable are set to zero. We scale accruals by average total assets from the previous and current years. At the beginning of each month, we use the latest accruals from fiscal year ending at least four months ago.

We measure net operating assets as operating assets minus operating liabilities. Operating assets are total assets (Compustat annual item AT) minus cash and short-term investment (item CHE).

Operating liabilities are total assets minus debt included in current liabilities (item DLC, zero if missing), minus long-term debt (item DLTT, zero if missing), minus minority interests (item MIB, zero if missing), minus preferred stocks (item PSTK, zero if missing), and minus common equity (item CEQ). We scale net operating assets by one-year-lagged total assets. At the beginning of each month, we use the latest net operating assets from fiscal year ending at least four months ago.

We measure investment-to-assets as the annual change in total assets (Compustat annual item AT) scaled by one-year-lagged total assets. At the beginning of each month, we use the latest asset growth from fiscal year ending at least four months ago. Changes in PPE and inventory-to-assets are measured as the annual change in gross property, plant, and equipment (Compustat annual item PPEGT) plus the annual change in inventory (item INVT) scaled by one-year-lagged total assets (item AT). At the beginning of each month, we use the latest investment-to-assets from fiscal year ending at least four months ago.

At the beginning of month t, we follow Campbell, Hilscher, and Szilagyi (2008, Table IV, Column 3) to construct failure probability:

$$\begin{aligned} \mathrm{Fp}_t \equiv & -9.164 - 20.264\mathrm{NIMTAAVG}_t + 1.416\mathrm{TLMTA}_t - 7.129\mathrm{EXRETAVG}_t \\ & + 1.411\mathrm{SIGMA}_t - 0.045\mathrm{RSIZE}_t - 2.132\mathrm{CASHMTA}_t + 0.075\mathrm{MB}_t - 0.058\mathrm{PRICE}_t \end{aligned} \tag{B.1}$$

in which

$$\mathrm{NIMTAAVG}_{t-1,t-12} \equiv \frac{1-\phi^3}{1-\phi^{12}}\left(\mathrm{NIMTA}_{t-1,t-3} + \cdots + \phi^9\mathrm{NIMTA}_{t-10,t-12}\right) \tag{B.2}$$

$$\mathrm{EXRETAVG}_{t-1,t-12} \equiv \frac{1-\phi}{1-\phi^{12}}\left(\mathrm{EXRET}_{t-1} + \cdots + \phi^{11}\mathrm{EXRET}_{t-12}\right), \tag{B.3}$$

and $\phi = 2^{-1/3}$. NIMTA is net income (Compustat quarterly item NIQ) divided by the sum of market equity (share price times the number of shares outstanding from CRSP) and total liabilities (item LTQ). The moving average NIMTAAVG captures the idea that a long history of losses is a better predictor of bankruptcy than one large quarterly loss in a single month. EXRET $\equiv \log(1+R_{it}) - \log(1+R_{\mathrm{S\&P500},t})$ is the monthly log excess return on each firm's equity relative to the S&P 500 index. The moving average EXRETAVG captures the idea that a sustained decline in stock market value is a better predictor of bankruptcy than a sudden stock price decline in a single month.

TLMTA is total liabilities divided by the sum of market equity and total liabilities. SIGMA is the annualized three-month rolling sample standard deviation: $\sqrt{\frac{252}{N-1}\sum_{k\in\{t-1,t-2,t-3\}} r_k^2}$, in which k is the index of trading days in months $t-1, t-2$, and $t-3$, r_k is the firm-level daily return, and N is the total number of trading days in the three-month period. SIGMA is treated as missing if there are less than five nonzero observations over the three months in the rolling window. RSIZE is the relative size of each firm measured as the log ratio of its market equity to that of the S&P 500 index. CASHMTA, aimed to capture the liquidity position of the firm, is cash and short-term investments (Compustat quarterly item CHEQ) divided by the sum of market equity and total liabilities (item LTQ). MB is the market-to-book equity, in which we add 10% of the difference between the market equity and the book equity to the book equity to alleviate measurement issues for extremely small book equity values (Campbell, Hilscher, and Szilagyi 2008). For firm-month observations that still have negative book equity after this adjustment, we replace these negative values with \$1 to ensure that the market-to-book ratios for these firms are in the right tail of the distribution. PRICE is each firm's log price per share, truncated above at \$15. We further eliminate stocks with prices less than \$1 at the portfolio formation date. Variables requiring quarterly accounting data are from fiscal quarter ending at least four months ago to ensure the availability of balance sheet items. We winsorize the variables on the right-hand side of equation (B.1) at the 1th and 99th percentiles of their distributions each month.

We follow Ohlson (1980, Model One in Table 4) to construct O-score:

$$\begin{aligned} O \equiv & -1.32 - 0.407\log(\text{TA}) + 6.03\text{TLTA} - 1.43\text{WCTA} + 0.076\text{CLCA} \\ & - 1.72\text{OENEG} - 2.37\text{NITA} - 1.83\text{FUTL} + 0.285\text{INTWO} - 0.521\text{CHIN}, \end{aligned} \quad \text{(B.4)}$$

in which TA is total assets (Compustat annual item AT). TLTA is the leverage ratio defined as total debt (item DLC plus item DLTT) divided by total assets. WCTA is working capital (item ACT minus item LCT) divided by total assets. CLCA is current liability (item LCT) divided by current assets (item ACT). OENEG is one if total liabilities (item LT) exceeds total assets and zero otherwise. NITA is net income (item NI) divided by total assets. FUTL is the fund provided by operations (item PI plus item DP) divided by total liabilities. INTWO is equal to one if net income is negative for the last two years and zero otherwise. CHIN is $(\text{NI}_s - \text{NI}_{s-1})/(|\text{NI}_s| + |\text{NI}_{s-1}|)$, in which NI_s and NI_{s-1} are the net income for the current and prior years. We winsorize all non-dummy variables on the right-hand side of equation (B.4) at the 1th and 99th percentiles of their distributions each year. At the beginning of each month, we use the latest O-score from fiscal year ending at least four months ago.

At the beginning of each month t, we measure momentum as the 11-month cumulative return from month $t-12$ to $t-2$ (skipping month $t-1$). Gross profitability is total revenue (Compustat annual item REVT) minus cost of goods sold (item COGS) divided by total assets (item AT, the denominator is current, not lagged, total assets). At the beginning of each month, we use the latest gross profitability from fiscal year ending at least four months ago.

Return on Assets is income before extraordinary items (Compustat quarterly item IBQ) divided by one-quarter-lagged total assets (item ATQ). At the beginning of each month, we use return on assets computed with quarterly earnings from the most recent earnings announcement dates (item RDQ). For a firm to enter our sample, we require the end of the fiscal quarter that corresponds to its most recent return on assets to be within six months prior to the portfolio formation. This restriction is imposed to exclude stale earnings information. To avoid potentially erroneous records, we also require the earnings announcement date to be after the corresponding fiscal quarter end.

D Replicating the Daniel-Hirshleifer-Sun (2019) Factors

We replicate the Daniel-Hirshleifer-Sun factors as in Hou et al. (2019). We replicate the post-earnings-announcement-draft factor (PEAD) by combining standardized unexpected earnings (Sue), the 4-day cumulative abnormal return around the most recent quarterly earnings announcement dates (Abr), and revisions in analysts' earnings forecasts (Re).

Sue is the change in split-adjusted quarterly earnings per share (Compustat quarterly item EPSPXQ divided by item AJEXQ) from its value four quarters ago divided by the standard deviation of this change in quarterly earnings over the prior eight quarters (six quarters minimum). Before 1972, we use the most recent Sue with earnings from fiscal quarters ending at least four months prior to the portfolio formation. Starting from 1972, we use Sue with quarterly earnings from the most recent quarterly earnings announcement dates (Compustat quarterly item RDQ). For a firm to enter our portfolio formation, we require the end of the fiscal quarter that corresponds to its most recent Sue to be within six months prior to the portfolio formation. Abr is measured as a stock's daily return minus the value-weighted market's daily return cumulated from two days prior to and one day after the most recent quarterly earnings announcement dates. To measure Re, because analysts' earnings forecasts from the Institutional Brokers' Estimate System (IBES) are not necessarily revised each month, we construct a 6-month moving average of past revisions, $\sum_{\tau=1}^{6}(f_{it-\tau} - f_{it-\tau-1})/p_{it-\tau-1}$, in which $f_{it-\tau}$ is the consensus mean forecast (IBES unadjusted file, item MEANEST) issued in month $t-\tau$ for firm i's current fiscal year earnings (fiscal period indicator = 1), and $p_{it-\tau-1}$ is the prior month's share price (unadjusted file, item PRICE). We require both earnings forecasts and share prices to be denominated in US dollars (currency code = USD). We also adjust for any stock splits and require a minimum of four monthly forecast changes when constructing Re.

At the beginning of each month t, we calculate a stock's NYSE percentiles on each of the three PEAD variables, and then take their simple average as the stock's ranked PEAD value. When taking the simple average, we use the available NYSE percentiles, allowing us to extend the sample backward to January 1967. This approach follows Stambaugh and Yuan (2017).

We use the same approach to replicate the financing factor (FIN) by combining the net share issuance and the composite share issuance in annual sorts. At the end of June of each year t, net share issuance is the natural log of the ratio of split-adjusted shares outstanding for fiscal year ending in calendar year $t-1$ (the common share outstanding, Compustat annual item CSHO, times the adjustment factor, item AJEX) to the split-adjusted shares outstanding for fiscal year ending in $t-2$. The composite share issuance is the log growth rate of the market equity not attributable to stock return, $\log(\mathrm{Me_t}/\mathrm{Me_{t-5}}) - r(t-5,t)$, in which $r(t-5,t)$ is the cumulative log stock return from the last trading day of June in year $t-5$ to the last trading day of June in year t, and Me_t is the market equity from CRSP on the last trading day of June in year t.

Finally, armed with the composite FIN and PEAD scores, we split stocks based on their NYSE breakpoints of the 30th and 70th percentiles in double 2×3 sorts with size.

Table A.1 : Explaining the Average Returns Across the Expected Growth Deciles with the q^5 Model, January 1967–December 2018, 624 Months

We use the log of Tobin's q, log(q), cash flow, Cop, and the change in return on equity, dRoe, to form the expected investment-to-assets changes, $E_t[\text{d}^\tau\text{I/A}]$, with τ ranging from 1 to 3 years. At the beginning of each month t, we calculate $E_t[\text{d}^\tau\text{I/A}]$ by combining the three most recent predictors (winsorized at the 1–99% level) with the average cross-sectional slopes. The most recent predictors, log(q) and Cop, are from the most recent fiscal year ending at least four months ago as of month t, and dRoe uses the latest announced earnings, and if not available, the earnings from the most recent fiscal quarter ending at least four months ago. The slopes in calculating $E_t[\text{d}^\tau\text{I/A}]$ are estimated from the prior 120-month rolling window (30 months minimum), in which $\text{d}^\tau\text{I/A}$ uses data from the fiscal year ending at least four months ago as of month t, and the regressors are further lagged accordingly. For instance, for $\tau = 1$, the regressors used in the latest monthly cross-sectional regression are further lagged by 12 months relative to the most recent predictors used in calculating $E_t[\text{d}^1\text{I/A}]$. Cross-sectional regressions are estimated via weighted least squares with the market equity as weights. At the beginning of each month t, we sort all stocks into deciles based on the NYSE breakpoints of the ranked $E_t[\text{d}^\tau\text{I/A}]$ values, and compute value-weighted decile returns for the current month t. The deciles are rebalanced at the beginning of month $t+1$. For each decile and the high-minus-low decile, we report the q^5-factor regressions, including the intercept, α_{q^5}, and the loadings on the market, size, investment, Roe, and expected growth factors ($\beta_{\text{Mkt}}, \beta_{\text{Me}}, \beta_{\text{I/A}}, \beta_{\text{Roe}}$, and β_{Eg}, respectively). The t-values are adjusted for heteroscedasticity and autocorrelations. $\overline{|\alpha_{q^5}|}$ is the mean absolute alpha for a given set of deciles, and p_{q^5} the p-value from the GRS test on the null that the alphas across the deciles are jointly zero.

	Low	2	3	4	5	6	7	8	9	High	H−L
	Panel A: $\tau = 1$ ($\overline{\lvert\alpha_{q^5}\rvert} = 0.07$ and $p_{q^5} = 0.13$)										
α_{q^5}	0.09	0.17	0.12	0.03	−0.05	0.04	0.12	0.02	0.00	−0.06	−0.15
β_{Mkt}	1.09	1.04	1.04	1.04	1.00	0.97	0.97	1.02	1.01	1.05	−0.04
β_{Me}	0.23	0.07	0.05	−0.02	−0.04	−0.10	−0.07	−0.12	−0.01	0.05	−0.18
$\beta_{\text{I/A}}$	−0.33	0.03	0.02	0.09	0.27	0.07	0.02	−0.03	−0.25	−0.39	−0.06
β_{Roe}	−0.10	0.22	0.09	0.09	0.07	0.07	0.03	−0.06	0.00	0.00	0.10
β_{Eg}	−0.76	−0.77	−0.53	−0.26	−0.16	−0.08	−0.07	0.22	0.43	0.74	1.50
t_{q^5}	0.95	2.08	1.20	0.38	−0.51	0.44	1.34	0.16	0.00	−0.69	−1.50
t_{Mkt}	47.59	52.34	40.87	51.56	35.52	41.19	48.58	39.53	57.58	51.98	−1.35
t_{Me}	7.11	1.66	1.75	−0.50	−1.02	−1.93	−2.15	−3.16	−0.49	1.27	−3.63
$t_{\text{I/A}}$	−5.54	0.36	0.40	1.94	3.91	1.03	0.28	−0.28	−4.00	−6.74	−1.03
t_{Roe}	−2.41	3.68	1.51	2.11	1.29	1.20	0.76	−0.78	0.08	0.02	2.49
t_{Eg}	−12.27	−12.42	−8.83	−4.83	−2.52	−1.52	−1.02	4.25	9.42	12.13	26.75

	Low	2	3	4	5	6	7	8	9	High	H−L
					Panel B: $\tau = 2$ ($\overline{\lvert\alpha_{q^5}\rvert} = 0.07$ and $p_{q^5} = 0.49$)						
α_{q^5}	0.14	0.15	0.03	−0.08	0.00	0.05	−0.05	−0.06	−0.06	0.09	−0.05
β_{Mkt}	1.11	1.02	1.06	1.04	0.96	0.95	0.98	1.03	0.98	1.07	−0.04
β_{Me}	0.11	0.08	−0.11	0.02	−0.06	−0.03	−0.04	0.00	0.06	0.10	−0.01
$\beta_{\text{I/A}}$	−0.42	−0.20	−0.12	0.07	0.12	0.16	0.15	0.16	−0.26	−0.26	0.15
β_{Roe}	−0.01	0.15	0.03	0.11	0.19	0.06	0.13	0.03	−0.10	−0.09	−0.08
β_{Eg}	−0.73	−0.49	−0.29	−0.15	−0.18	0.01	0.10	0.34	0.51	0.71	1.44
t_{q^5}	1.55	1.88	0.34	−1.14	−0.03	0.57	−0.70	−0.61	−0.70	0.75	−0.43
t_{Mkt}	41.67	46.08	32.12	55.67	44.96	43.98	47.02	47.92	37.55	49.15	−1.19
t_{Me}	3.13	2.46	−1.72	0.56	−2.03	−1.01	−1.10	−0.02	1.09	1.98	−0.12
$t_{\text{I/A}}$	−7.01	−4.18	−1.79	1.45	2.08	2.46	2.77	2.12	−4.02	−2.59	1.25
t_{Roe}	−0.10	2.82	0.47	3.16	4.80	1.11	2.65	0.58	−1.40	−1.33	−0.80
t_{Eg}	−11.13	−8.44	−4.47	−2.73	−3.22	0.22	1.91	5.40	7.70	10.33	18.05
					Panel C: $\tau = 3$ ($\overline{\lvert\alpha_{q^5}\rvert} = 0.09$ and $p_{q^5} = 0.12$)						
α_{q^5}	0.05	0.13	−0.05	−0.09	0.03	−0.16	0.11	−0.11	−0.04	0.09	0.05
β_{Mkt}	1.10	1.05	1.05	1.01	0.95	1.00	0.99	1.00	1.02	1.04	−0.06
β_{Me}	0.13	−0.05	−0.05	0.02	−0.03	−0.08	0.01	0.09	0.03	0.16	0.03
$\beta_{\text{I/A}}$	−0.45	−0.26	0.00	0.12	0.08	0.19	0.11	−0.04	−0.10	−0.18	0.28
β_{Roe}	0.12	0.11	0.12	0.24	0.16	0.13	0.09	−0.13	−0.06	−0.18	−0.30
β_{Eg}	−0.66	−0.43	−0.22	−0.20	−0.07	0.08	0.08	0.45	0.50	0.76	1.41
t_{q^5}	0.49	1.64	−0.64	−1.14	0.41	−1.62	1.20	−1.13	−0.43	0.81	0.38
t_{Mkt}	43.04	39.21	40.42	50.58	47.05	51.25	42.83	41.19	38.11	39.53	−1.42
t_{Me}	3.70	−0.98	−1.00	0.77	−0.95	−1.88	0.48	1.32	0.80	2.83	0.44
$t_{\text{I/A}}$	−8.06	−4.29	−0.05	1.96	1.35	2.45	1.68	−0.40	−1.40	−1.43	2.03
t_{Roe}	1.88	2.25	2.28	6.07	3.38	2.15	2.18	−2.30	−0.77	−2.48	−2.92
t_{Eg}	−9.66	−6.96	−3.57	−3.47	−1.10	1.40	1.42	5.43	7.97	9.33	14.84

Table A.2 : Properties of the Expected Growth Factor Formed with the Composite Score That Aggregates $\log(q)$, Cop, and dRoe, R^C_{Eg}, January 1967–December 2018, 624 Months

We form the composite score across the log of Tobin's q, $\log(q)$, cash flow, Cop, and the change in return on equity, dRoe. For each portfolio formation month, we form the composite score by equal-weighting a stock's percentile rankings across the three variables (each realigned to yield a positive slope in forecasting returns). At the beginning of each month t, we use the median NYSE market equity to split stocks into two groups, small and big, based on the beginning-of-month market equity. Independently, we sort all stocks into three groups, low, median, and high, based on the NYSE breakpoints for the low 30%, middle 40%, and high 30% of the ranked values of the composite score at the beginning of month t. Taking the intersections, we form six portfolios. We calculate value-weighted portfolio returns for the current month t, and rebalance the portfolios at the beginning of month $t+1$. The expected growth factor, R^C_{Eg}, is the difference (high-minus-low), each month, between the simple average of the returns on the two high composite score portfolios and the simple average of the returns on the two low composite score portfolios. Panel A reports for the expected growth factor, R^C_{Eg}, its average return, $\overline{R}^C_{\text{Eg}}$, and alphas, factor loadings, and R^2s from the single factor model with only the benchmark expected growth factor, R_{Eg}, from the q-factor model, and the q-factor model augmented with the benchmark R_{Eg}. The t-values adjusted for heteroscedasticity and autocorrelations are in parentheses. The panel also reports for the benchmark R_{Eg}, its average return, and alphas, factor loadings, and R^2s from the single factor model with only the alternative expected growth factor, R^C_{Eg}, and the q-factor model augmented with R^C_{Eg}. Panel B reports the correlations of R^C_{Eg} with other factors.

Panel A: Properties of the expected growth factors, R^C_{Eg} and R_{Eg}

$\overline{R}^C_{\text{Eg}}$	α	β_{Eg}	R^2				
0.86	0.26	0.72	0.40				
(9.37)	(3.14)	(10.42)					
	α	β_{Mkt}	β_{Me}	$\beta_{\text{I/A}}$	β_{Roe}	R^2	
	0.45	−0.03	0.03	0.66	0.30	0.50	
	(6.33)	(−1.50)	(1.21)	(11.92)	(6.60)		
	α	β_{Mkt}	β_{Me}	$\beta_{\text{I/A}}$	β_{Roe}	β_{Eg}	R^2
	0.12	0.03	0.07	0.55	0.15	0.50	0.61
	(1.75)	(1.40)	(3.43)	(11.70)	(2.85)	(10.60)	
$\overline{R}_{\text{Eg}}$	α	β^C_{Eg}	R^2				
0.84	0.36	0.56	0.40				
(10.27)	(4.86)	(16.23)					
	α	β_{Mkt}	β_{Me}	$\beta_{\text{I/A}}$	β_{Roe}	β^C_{Eg}	R^2
	0.48	−0.09	−0.10	−0.07	0.17	0.43	0.56
	(6.40)	(−5.94)	(−4.66)	(−1.25)	(6.13)	(7.76)	

Panel B: Correlations of R^C_{Eg} with other factors

R_{Eg}	R_{Mkt}	R_{Me}	$R_{\text{I/A}}$	R_{Roe}
0.634	−0.342	−0.163	0.608	0.373

Table A.3 : Monthly Cross-sectional Regressions of Future Log Growth Rates of Gross Asset Growth on log(q), Cop, and dRoe, July 1963–December 2018, 666 Months

For each month, we perform cross-sectional regressions of future τ-year-ahead log growth rates of gross asset growth, denoted $\text{dlog}^\tau(1+\text{I/A})$, in which $\tau = 1, 2, 3$, on the log of Tobin's q, $\log(q)$; cash flows, Cop; and the change in return on equity, dRoe. We measure current gross asset growth from the most recent fiscal year ending at least four months ago, and calculate $\text{dlog}^\tau(1+\text{I/A})$ as the log of gross asset growth from the subsequent τ-year-ahead fiscal year end minus the current log gross asset growth. All the cross-sectional regressions are estimated via weighted least squares with the market equity as the weights. We winsorize the cross section of each variable each month at the 1–99% level. We report the average slopes, their t-values adjusted for heteroscedasticity and autocorrelations (in parentheses), and goodness-of-fit coefficients (R^2, in percent). In addition, at the beginning of each month t, we calculate the expected τ-year-ahead log growth of gross asset growth, $E_t[\text{dlog}^\tau(1 + \text{I/A})]$, by combining the most recent winsorized predictors with the average cross-sectional slopes. The most recent predictors, $\log(q)$ and Cop, are from the most recent fiscal year ending at least four months ago as of month t, and dRoe is based on the latest announced earnings, and if not available, the earnings from the most recent fiscal quarter ending at least four months ago. The average slopes in calculating $E_t[\text{dlog}^\tau(1 + \text{I/A})]$ are estimated from the prior 120-month rolling window (30 months minimum), in which the dependent variable, $\text{dlog}^\tau(1+\text{I/A})$, uses data from the fiscal year ending at least four months ago as of month t, and the regressors are further lagged accordingly. For instance, for $\tau = 1$, the regressors used in the latest monthly cross-sectional regression are further lagged by 12 months relative to the most recent predictors used in calculating $E_t[\text{dlog}^1(1 + \text{I/A})]$. We report time-series averages of cross-sectional Pearson and rank correlations between $E_t[\text{dlog}^\tau(1 + \text{I/A})]$ calculated at the beginning of month t and the realized $\text{dlog}^\tau(1+\text{I/A})$. The p-values testing that a given correlation is zero are in brackets.

τ	$\log(q)$	Cop	dRoe	R^2	Pearson	Rank
1	−0.018	0.338	0.665	6.62	0.151	0.217
	(−5.25)	(14.47)	(8.43)		[0.00]	[0.00]
2	−0.048	0.468	0.763	8.79	0.152	0.222
	(−10.14)	(13.99)	(10.50)		[0.00]	[0.00]
3	−0.064	0.502	0.602	9.06	0.156	0.219
	(−13.24)	(14.02)	(9.23)		[0.00]	[0.00]

Table A.4 : Properties of the Expected Growth Factor, R^L_{Eg}, Formed on the Expected Log Growth of Gross Asset Growth, January 1967–December 2018, 624 Months

The log of Tobin's q, $\log(q)$; cash flows, Cop; and change in return on equity, dRoe, are used to form the expected 1-year-ahead log growth of gross asset growth, $E_t[\mathrm{dlog}^1(1+\mathrm{I/A})]$. At the beginning of month t, $E_t[\mathrm{dlog}^1(1+\mathrm{I/A})]$ combines the most recent predictors (winsorized at the 1–99% level) with average Fama-MacBeth slopes. The most recent $\log(q)$ and Cop are from the most recent fiscal year ending at least four months ago as of month t, and dRoe uses the latest announced earnings, and if not available, the earnings from the most recent fiscal quarter ending at least four months ago. The average slopes in calculating $E_t[\mathrm{dlog}^\tau(1+\mathrm{I/A})]$ are from the prior 120-month rolling window (30 months minimum), in which $\mathrm{dlog}^1(1+\mathrm{I/A})$ uses data from the fiscal year ending at least four months ago as of month t, and the regressors are further lagged. The regressions are estimated via weighted least squares with the market equity as the weights. At the beginning of each month t, we use the median NYSE market equity to split stocks into two groups, small and big, on the beginning-of-month market equity. Independently, we sort stocks into three $E_t[\mathrm{dlog}^1(1+\mathrm{I/A})]$ groups, low, median, and high, on the NYSE breakpoints for the low 30%, middle 40%, and high 30% of its ranked values at the beginning of month t. Taking the intersections, we form six portfolios. We calculate value-weighted portfolio returns for the current month t, and rebalance the portfolios at the beginning of month $t+1$. The expected growth factor, R^L_{Eg}, is the difference (high-minus-low), each month, between the simple average of the returns on the two high $E_t[\mathrm{dlog}^1(1+\mathrm{I/A})]$ portfolios and the simple average of the returns on the two low $E_t[\mathrm{dlog}^1(1+\mathrm{I/A})]$ portfolios. Panel A reports for the expected growth factor, R^L_{Eg}, its average return, $\overline{R}^L_{\mathrm{Eg}}$, and alphas, factor loadings, and R^2s from the single factor model with only the benchmark expected growth factor, R_{Eg}, from the q-factor model, and the q-factor model augmented with the benchmark R_{Eg}. The t-values adjusted for heteroscedasticity and autocorrelations are in parentheses. The panel also reports for the benchmark R_{Eg}, its average return, and alphas, factor loadings, and R^2s from the single factor model with only the alternative expected growth factor, R^L_{Eg}, and the q-factor model augmented with R^L_{Eg}. Panel B reports the correlations of R^L_{Eg} with other factors.

Panel A: Properties of the expected growth factors, R^L_{Eg} and R_{Eg}

$\overline{R}^L_{\mathrm{Eg}}$	α	β_{Eg}	R^2				
0.84	0.01	1.00	0.97				
(10.24)	(0.41)	(92.31)					
	α	β_{Mkt}	β_{Me}	$\beta_{\mathrm{I/A}}$	β_{Roe}	R^2	
	0.67	−0.11	−0.08	0.19	0.34	0.46	
	(9.62)	(−6.75)	(−3.17)	(4.15)	(10.35)		
	α	β_{Mkt}	β_{Me}	$\beta_{\mathrm{I/A}}$	β_{Roe}	β_{Eg}	R^2
	0.02	−0.01	0.00	−0.02	0.04	0.97	0.97
	(1.15)	(−1.28)	(0.84)	(−1.18)	(2.49)	(73.67)	
$\overline{R}_{\mathrm{Eg}}$	α	β^L_{Eg}	R^2				
0.84	0.02	0.97	0.97				
(10.27)	(0.77)	(59.63)					
	α	β_{Mkt}	β_{Me}	$\beta_{\mathrm{I/A}}$	β_{Roe}	β^L_{Eg}	R^2
	0.02	0.00	−0.01	0.03	−0.03	0.98	0.97
	(1.07)	(0.23)	(−1.84)	(1.79)	(−1.85)	(82.13)	

Panel B: Correlations of R^L_{Eg} with other factors

R_{Eg}	R_{Mkt}	R_{Me}	$R_{\mathrm{I/A}}$	R_{Roe}
0.985	−0.458	−0.364	0.319	0.542

Table A.5 : Monthly Cross-sectional Regressions of Future Investment-to-assets Changes on log(q), Cop, dRoe, and Past Investment-to-assets Changes, July 1963–December 2018, 666 Months

For each month, we perform cross-sectional regressions of future τ-year-ahead investment-to-assets changes, d^{τ}I/A, in which $\tau = 1, 2$, and 3, on the log of Tobin's q, log(q), cash flows, Cop, the change in return on equity, dRoe, as well as on past investment-to-assets changes, d^{s}I/A, in which $s = -1, -1/2, -1/4$, and 0. Current investment-to-assets is from the most recent fiscal year ending at least four months ago, and d^{τ}I/A is investment-to-assets from the subsequent τ-year-ahead fiscal year end minus the current investment-to-assets. d^{-1}(I/A) is 1-year-lagged investment-to-assets changes, $\mathrm{d}^{-1/2}$(I/A) 2-quarter-lagged year-to-year investment-to-assets changes, $\mathrm{d}^{-1/4}$(I/A) 1-quarter-lagged year-to-year investment-to-assets changes, and d^{0}(I/A) is current investment-to-assets changes (current investment-to-assets minus 1-year-lagged investment-to-assets). The cross-sectional regressions are estimated via weighted least squares with the market equity as weights. We winsorize each variable each month at the 1–99% level. We report the average slopes, the t-values adjusted for heteroscedasticity and autocorrelations (in parentheses), and goodness-of-fit coefficients, R^2. At the beginning of each month t, we calculate the expected I/A changes, $E_t[\mathrm{d}^{\tau}\mathrm{I/A}]$, by combining the most recent winsorized predictors with the average cross-sectional slopes. The most recent predictors, log(q) and Cop, are from the most recent fiscal year ending at least four months ago as of month t, and dRoe is based on the latest announced earnings, and if not available, the earnings from the most recent fiscal quarter ending at least four months ago. The average slopes in calculating $E_t[\mathrm{d}^{\tau}\mathrm{I/A}]$ are from the prior 120-month rolling window (30 months minimum), in which the dependent variable, d^{τ}I/A, uses data from the fiscal year ending at least four months ago as of month t, and the regressors are further lagged accordingly. For instance, for $\tau = 1$, the regressors used in the latest monthly cross-sectional regression are further lagged by 12 months relative to the most recent predictors used in calculating $E_t[\mathrm{d}^{1}\mathrm{I/A}]$. We report time-series averages of cross-sectional Pearson and rank correlations between $E_t[\mathrm{d}^{\tau}\mathrm{I/A}]$ calculated at the beginning of month t and the realized τ-year-ahead investment-to-assets changes. The p-values testing that a given correlation is zero are in brackets..

τ	log(q)	Cop	dRoe	d^{-1}(I/A)	$\mathrm{d}^{-1/2}$(I/A)	$\mathrm{d}^{-1/4}$(I/A)	d^{0}(I/A)	R^2	Pearson	Rank
1	−0.028	0.516	0.742	−0.009				0.08	0.150	0.211
	(−5.08)	(12.76)	(6.91)	(−1.19)					[0.00]	[0.00]
2	−0.061	0.645	0.861	0.007				0.09	0.162	0.221
	(−9.04)	(12.62)	(9.37)	(0.78)					[0.00]	[0.00]
3	−0.075	0.666	0.703	−0.028				0.10	0.166	0.213
	(−11.02)	(12.32)	(7.09)	(−3.19)					[0.00]	[0.00]
1	−0.026	0.492	0.719		−0.154			0.12	0.226	0.245
	(−5.21)	(13.29)	(6.68)		(−11.94)				[0.00]	[0.00]
2	−0.062	0.642	0.831		−0.165			0.13	0.234	0.255
	(−9.41)	(12.80)	(9.02)		(−13.36)				[0.00]	[0.00]
3	−0.076	0.667	0.681		−0.157			0.13	0.233	0.246
	(−11.33)	(12.30)	(6.88)		(−13.95)				[0.00]	[0.00]
1	−0.024	0.462	0.734			−0.218		0.15	0.284	0.281
	(−4.80)	(13.75)	(6.93)			(−14.32)			[0.00]	[0.00]
2	−0.059	0.614	0.843			−0.241		0.17	0.296	0.289
	(−9.38)	(13.16)	(9.31)			(−15.36)			[0.00]	[0.00]
3	−0.075	0.643	0.682			−0.232		0.16	0.295	0.281
	(−11.59)	(12.49)	(6.96)			(−16.61)			[0.00]	[0.00]
1	−0.012	0.354	0.760				−0.450	0.27	0.434	0.374
	(−2.53)	(11.96)	(8.66)				(-42.76)		[0.00]	[0.00]
2	−0.048	0.505	0.880				−0.468	0.30	0.445	0.378
	(−8.56)	(11.88)	(11.38)				(−42.57)		[0.00]	[0.00]
3	−0.066	0.538	0.674				−0.449	0.28	0.439	0.373
	(−11.82)	(12.19)	(9.39)				(−40.26)		[0.00]	[0.00]

Table A.6 : Properties of the Alternative Expected Growth Factors with Past Investment Growth in the Forecasting Regressions, January 1967–December 2018, 624 Months

The log of Tobin's q, $\log(q)$; cash flows, Cop; change in return on equity, dRoe, and past investment-to-assets changes, d^sI/A, in which $s = -1, -1/2, -1/4$, and 0, are used to form the expected 1-year-ahead investment-to-assets changes, $E_t[d^1\text{I/A}]$. Current investment-to-assets is from the most recent fiscal year ending at least four months ago. d^1I/A is investment-to-assets from the subsequent 1-year-ahead fiscal year end minus the current investment-to-assets, d^0(I/A) is current investment-to-assets changes (current investment-to-assets minus 1-year-lagged investment-to-assets), $d^{-1/4}$(I/A) 1-quarter-lagged year-to-year investment-to-assets changes, $d^{-1/2}$(I/A) 2-quarter-lagged year-to-year investment-to-assets changes, and d^{-1}(I/A) is 1-year-lagged investment-to-assets changes. At the beginning of month t, $E_t[d^1\text{I/A}]$ combines the most recent predictors (winsorized at the 1–99% level) with average Fama-MacBeth slopes. The most recent $\log(q)$, Cop, and d^sI/A are from the most recent fiscal year ending at least four months ago as of month t, and dRoe uses the latest announced earnings, and if not available, the earnings from the most recent fiscal quarter ending at least four months ago. The average slopes in calculating $E_t[d^1\text{I/A}]$ are from the prior 120-month rolling window (30 months minimum), in which d^1I/A uses data from the fiscal year ending at least four months ago as of month t, and the regressors are further lagged. We estimate the regressions via weighted least squares with the market equity as weights. At the beginning of each month t, we use the median NYSE market equity to split stocks into two groups, small and big, based on the beginning-of-month market equity. Independently, we sort all stocks into three $E_t[d^1\text{I/A}]$ groups, low, median, and high, based on the NYSE breakpoints for the low 30%, middle 40%, and high 30% of its ranked values at the beginning of month t. Taking the intersections, we form six portfolios. We calculate value-weighted portfolio returns for the current month t, and rebalance the portfolios at the beginning of month $t+1$. The expected growth factor, R_{Eg}, is the difference (high-minus-low), each month, between the simple average of the returns on the two high $E_t[d^1\text{I/A}]$ portfolios and the simple average of the returns on the two low $E_t[d^1\text{I/A}]$ portfolios. For each expected growth factor, we report its average return, $\overline{R}_{\text{Eg}}$, and the alpha, factor loadings, and R^2 from the q-factor model. The t-values adjusted for heteroscedasticity and autocorrelations are in parentheses.

	$\overline{R}_{\text{Eg}}$	α	β_{Mkt}	β_{Me}	$\beta_{\text{I/A}}$	β_{Roe}	R^2
Benchmark	0.84	0.67	−0.11	−0.09	0.21	0.30	0.44
	(10.27)	(9.75)	(−6.38)	(−3.56)	(4.86)	(9.13)	
With d^{-1}(I/A)	0.82	0.71	−0.11	−0.08	0.10	0.26	0.35
	(10.35)	(9.38)	(−5.90)	(−2.36)	2.03	7.44	
With $d^{-1/2}$(I/A)	0.76	0.64	−0.08	−0.06	0.20	0.18	0.28
	(10.43)	(9.93)	(−3.78)	(−1.77)	4.12	4.00	
With $d^{-1/4}$(I/A)	0.71	0.61	−0.07	−0.05	0.21	0.13	0.23
	(9.93)	(8.73)	(−3.02)	(−1.45)	(4.18)	(2.36)	
With d^0(I/A)	0.47	0.44	−0.06	−0.02	0.12	0.02	0.08
	(7.02)	(5.92)	(−2.31)	(−0.45)	(1.65)	(0.35)	

Table A.7 : Monthly Cross-sectional Regressions of Future Investment-to-assets Changes on log(q), Cop, dRoe, and the Barro (1990) Variables, July 1963–December 2018, 666 Months

For each month, we perform cross-sectional regressions of future τ-year-ahead investment-to-assets changes, d^τI/A, in which $\tau = 1, 2$, and 3, on the log of Tobin's q, log(q), cash flows, Cop, the change in return on equity, dRoe, as well as on four variables from the Barro (1990) specification. Current investment-to-assets is from the most recent fiscal year ending at least four months ago, and d^τI/A is investment-to-assets from the subsequent τ-year-ahead fiscal year end minus the current investment-to-assets. The four Barro variables include (i) past investment-to-assets changes, d^sI/A, in which $s = -1, -1/2, -1/4$, and 0. d^{-1}(I/A) is 1-year-lagged investment-to-assets changes, $\mathrm{d}^{-1/2}$(I/A) 2-quarter-lagged year-to-year investment-to-assets changes, $\mathrm{d}^{-1/4}$(I/A) 1-quarter-lagged year-to-year investment-to-assets changes, and d^0(I/A) is current investment-to-assets changes (current investment-to-assets minus 1-year-lagged investment-to-assets). (ii) R12x, prior 1-year stock ex-dividend returns. (iii) $\triangle$Ni/S, the first difference of the ratio of after-tax corporate profits (Compustat annual item NI) to sales (item SALE) from the fiscal year ending at least four months ago. (iv) gSale, the annual growth rate of sales from the fiscal year ending at least four months ago. The cross-sectional regressions are estimated via weighted least squares with the market equity as weights. We winsorize each variable each month at the 1–99% level. We report the average slopes, the t-values adjusted for heteroscedasticity and autocorrelations (in parentheses), and goodness-of-fit coefficients, R^2. At the beginning of each month t, we calculate the expected I/A changes, $E_t[\mathrm{d}^\tau\mathrm{I/A}]$, by combining the most recent winsorized predictors with the average cross-sectional slopes. The most recent predictors, log(q) and Cop, are from the most recent fiscal year ending at least four months ago as of month t, and dRoe is based on the latest announced earnings, and if not available, the earnings from the most recent fiscal quarter ending at least four months ago. The average slopes in calculating $E_t[\mathrm{d}^\tau\mathrm{I/A}]$ are from the prior 120-month rolling window (30 months minimum), in which the dependent variable, d^τI/A, uses data from the fiscal year ending at least four months ago as of month t, and the regressors are further lagged accordingly. For instance, for $\tau = 1$, the regressors used in the latest monthly cross-sectional regression are further lagged by 12 months relative to the most recent predictors used in calculating $E_t[\mathrm{d}^1\mathrm{I/A}]$. We report time-series averages of cross-sectional Pearson and rank correlations between $E_t[\mathrm{d}^\tau\mathrm{I/A}]$ calculated at the beginning of month t and the realized τ-year-ahead investment-to-assets changes. The p-values testing zero correlations are in brackets.

τ	log(q)	Cop	dRoe	d^{-1}(I/A)	$\mathrm{d}^{-1/2}$(I/A)	$\mathrm{d}^{-1/4}$(I/A)	d^0(I/A)	R12x	$\triangle$Ni/S	gSale	R^2	Pearson	Rank
1	0.017	0.337	0.398	0.038				0.111	0.173	−0.453	0.21	0.339	0.339
	(3.26)	(11.87)	(5.83)	(6.45)				(17.27)	(4.58)	(−30.96)		[0.00]	[0.00]
2	−0.005	0.428	0.507	0.058				0.108	−0.019	−0.517	0.25	0.374	0.363
	(−1.01)	(13.80)	(7.74)	(8.46)				(15.78)	(−0.60)	(−36.07)		[0.00]	[0.00]
3	−0.014	0.446	0.380	0.031				0.081	0.077	−0.551	0.27	0.363	0.358
	(−2.82)	(13.58)	(7.16)	(4.32)				(12.97)	(2.71)	(−37.04)		[0.00]	[0.00]
1	0.011	0.337	0.381		−0.104			0.107	0.168	−0.392	0.23	0.354	0.345
	(2.38)	(12.26)	(5.73)		(−9.39)			(17.47)	(4.49)	(−28.43)		[0.00]	[0.00]
2	−0.012	0.441	0.501		−0.101			0.103	−0.025	−0.458	0.26	0.392	0.372
	(−2.49)	(14.40)	(7.65)		(−10.29)			(15.35)	(−0.80)	(−33.35)		[0.00]	[0.00]
3	−0.019	0.457	0.375		−0.087			0.075	0.071	−0.506	0.28	0.377	0.367
	(−4.08)	(13.61)	(7.18)		(−10.98)			(12.63)	(2.56)	(−35.43)		[0.00]	[0.00]
1	0.012	0.319	0.393			−0.174		0.109	0.183	−0.378	0.25	0.390	0.369
	(2.44)	(11.96)	(6.07)			(−12.64)		(18.64)	(4.90)	(−27.88)		[0.00]	[0.00]
2	−0.012	0.430	0.508			−0.185		0.105	−0.007	−0.440	0.29	0.427	0.391
	(−2.42)	(14.00)	(7.90)			(−13.53)		(16.40)	(−0.23)	(−33.59)		[0.00]	[0.00]
3	−0.020	0.452	0.379			−0.165		0.075	0.086	−0.485	0.30	0.410	0.383
	(−4.53)	(13.36)	(7.39)			(−14.84)		(13.22)	(3.08)	(−35.44)		[0.00]	[0.00]
1	0.023	0.207	0.419				−0.414	0.121	0.292	−0.363	0.37	0.509	0.453
	(4.75)	(8.98)	(6.74)				(-40.97)	(19.57)	(7.63)	(−26.99)		[0.00]	[0.00]
2	−0.003	0.325	0.536				−0.419	0.117	0.093	−0.421	0.40	0.539	0.465
	(−0.56)	(13.53)	(9.15)				(−39.84)	(19.04)	(2.79)	(−32.32)		[0.00]	[0.00]
3	−0.013	0.353	0.383				−0.391	0.084	0.174	−0.463	0.40	0.528	0.456
	(−3.16)	(13.72)	(7.57)				(−36.98)	(14.76)	(6.86)	(−34.96)		[0.00]	[0.00]

Table A.8 : Properties of the Alternative Expected Growth Factors with the Barro (1990) Variables in the Forecasting Regressions, January 1967–December 2018, 624 Months

The log of Tobin's q, $\log(q)$; cash flows, Cop; change in return on equity, dRoe, and as well as four variables from the Barro (1990) specification are used to form the expected 1-year-ahead investment-to-assets changes, $E_t[\mathrm{d}^1\mathrm{I/A}]$. Current investment-to-assets is from the most recent fiscal year ending at least four months ago. $\mathrm{d}^1\mathrm{I/A}$ is investment-to-assets from the subsequent 1-year-ahead fiscal year end minus the current investment-to-assets. The four Barro variables include (i) past investment-to-assets changes, $\mathrm{d}^s\mathrm{I/A}$, in which $s = -1, -1/2, -1/4$, and 0. $\mathrm{d}^{-1}(\mathrm{I/A})$ is 1-year-lagged investment-to-assets changes, $\mathrm{d}^{-1/2}(\mathrm{I/A})$ 2-quarter-lagged year-to-year investment-to-assets changes, $\mathrm{d}^{-1/4}(\mathrm{I/A})$ 1-quarter-lagged year-to-year investment-to-assets changes, and $\mathrm{d}^0(\mathrm{I/A})$ is current investment-to-assets changes (current investment-to-assets minus 1-year-lagged investment-to-assets). (ii) R12x, prior 1-year stock ex-dividend returns. (iii) $\triangle$Ni/S, the first difference of the ratio of after-tax corporate profits (Compustat annual item NI) to sales (item SALE) from the fiscal year ending at least four months ago. (iv) gSale, the annual growth rate of sales from the fiscal year ending at least four months ago. At the beginning of month t, $E_t[\mathrm{d}^1\mathrm{I/A}]$ combines the most recent predictors (winsorized at the 1–99% level) with average Fama-MacBeth slopes. The most recent $\log(q)$, Cop, and $\mathrm{d}^s\mathrm{I/A}$ are from the most recent fiscal year ending at least four months ago as of month t, and dRoe uses the latest announced earnings, and if not available, the earnings from the most recent fiscal quarter ending at least four months ago. The average slopes in calculating $E_t[\mathrm{d}^1\mathrm{I/A}]$ are from the prior 120-month rolling window (30 months minimum), in which $\mathrm{d}^1\mathrm{I/A}$ uses data from the fiscal year ending at least four months ago as of month t, and the regressors are further lagged. We estimate the regressions via weighted least squares with the market equity as weights. At the beginning of each month t, we use the median NYSE market equity to split stocks into two groups, small and big, based on the beginning-of-month market equity. Independently, we sort all stocks into three $E_t[\mathrm{d}^1\mathrm{I/A}]$ groups, low, median, and high, based on the NYSE breakpoints for the low 30%, middle 40%, and high 30% of its ranked values at the beginning of month t. Taking the intersections, we form six portfolios. We calculate value-weighted portfolio returns for the current month t, and rebalance the portfolios at the beginning of month $t + 1$. The expected growth factor, R_{Eg}, is the difference (high-minus-low), each month, between the simple average of the returns on the two high $E_t[\mathrm{d}^1\mathrm{I/A}]$ portfolios and the simple average of the returns on the two low $E_t[\mathrm{d}^1\mathrm{I/A}]$ portfolios. For each expected growth factor, we report its average return, $\overline{R}_{\mathrm{Eg}}$, and the alpha, factor loadings, and R^2 from the q-factor model. The t-values adjusted for heteroscedasticity and autocorrelations are in parentheses.

	$\overline{R}_{\mathrm{Eg}}$	α	β_{Mkt}	β_{Me}	$\beta_{\mathrm{I/A}}$	β_{Roe}	R^2
Benchmark	0.84	0.67	−0.11	−0.09	0.21	0.30	0.44
	(10.27)	(9.75)	(−6.38)	(−3.56)	(4.86)	(9.13)	
With $\mathrm{d}^{-1}(\mathrm{I/A})$	0.59	0.31	−0.11	0.05	0.34	0.33	0.25
	(5.52)	(1.99)	(−2.93)	(0.58)	(2.76)	(3.91)	
With $\mathrm{d}^{-1/2}(\mathrm{I/A})$	0.56	0.33	−0.10	0.03	0.34	0.27	0.23
	(5.67)	(2.31)	(−2.76)	(0.42)	(3.21)	(3.42)	
With $\mathrm{d}^{-1/4}(\mathrm{I/A})$	0.52	0.30	−0.08	0.03	0.33	0.22	0.20
	(5.33)	(2.19)	(−2.29)	(0.36)	(3.05)	(2.64)	
With $\mathrm{d}^{0}(\mathrm{I/A})$	0.42	0.24	−0.07	0.06	0.27	0.17	0.13
	(4.68)	(1.86)	(−1.80)	(0.78)	(2.54)	(1.96)	

Table A.9 : Monthly Cross-sectional Regressions of Future Investment-to-assets Changes on log(q), Cop, and dRoe, along with the Morck-Shleifer-Vishny (1990) Variables, July 1963–December 2018, 666 Months, and Properties of the Resulting Expected Growth Factor, January 1967–December 2018, 624 Months

For each month, we perform cross-sectional regressions of future τ-year-ahead investment-to-assets changes, $\mathrm{d}^{\tau}\mathrm{I/A}$, in which $\tau = 1, 2$, and 3, on the log of Tobin's q, log(q), cash flows, Cop, the change in return on equity, dRoe, as well as five other variables from the Morck-Shleifer-Vishny (1990) specification. Current investment-to-assets is from the most recent fiscal year ending at least four months ago, and $\mathrm{d}^{\tau}\mathrm{I/A}$ is investment-to-assets from the subsequent τ-year-ahead fiscal year end minus the current investment-to-assets. The five Morck et al. variables are: (i) Res, abnormal returns over the past one year (up to the beginning of month t) from the CAPM regression; (ii) gCF, the annual growth of cash flows; (iii) gSale, the annual growth rate of sales (item SALE) from the fiscal year ending at least four months ago; (iv) D_Nsi, new share dummy; and (v) D_Ndi, new debt dummy. To calculate Res, we use the prior 60-month rolling window (24 months minimum) to estimate the CAPM regression and measure Res as the intercept plus residuals. As in Morck et al., cash flows equal income before extraordinary items (Compustat annual item IB) plus depreciation (item DP) from the fiscal year ending at least four months ago. When calculating gCF, we take the absolute value of lagged cash flows (when negative) in the denominator. New share issue at the end of a fiscal year is the sale of common equity (Compustat annual item SCSTKC) for the current fiscal year divided by the total market value of common equity at the end of the last fiscal year (computed as CRSP items PRC times SHROUT). If this new share issue for the current fiscal year is unavailable, we use the growth rate of the split-adjusted shares outstanding (computed as CRSP items SHROUT times CFACSHR) from the previous fiscal year end to the current fiscal year end. D_Nsi equals one if new share issue is higher than 5%. Net debt issue is the annual growth rate of total debt (item DLTT plus item DLC) from the fiscal year ending at least four months ago. D_Ndi equals one if new debt issue is higher than 10%. We estimate the cross-sectional regressions via weighted least squares with the market equity as weights, after winsorizing each non-dummy variable each month at the 1–99% level. We report the average slopes, the t-values adjusted for heteroscedasticity and autocorrelations (in parentheses), and goodness-of-fit coefficients, R^2. At the beginning of each month t, we calculate the expected I/A changes, $E_t[\mathrm{d}^{\tau}\mathrm{I/A}]$, by combining the most recent winsorized predictors with the average cross-sectional slopes. The most recent predictors are from the most recent fiscal year ending at least four months ago as of month t, and dRoe is based on the latest announced earnings, and if not available, the earnings from the most recent fiscal quarter ending at least four months ago. The average slopes in calculating $E_t[\mathrm{d}^{\tau}\mathrm{I/A}]$ are from the prior 120-month rolling window (30 months minimum), in which the dependent variable, $\mathrm{d}^{\tau}\mathrm{I/A}$, uses data from the fiscal year ending at least four months ago as of month t, and the regressors are further lagged accordingly. For instance, for $\tau = 1$, the regressors used in the latest monthly cross-sectional regression are further lagged by 12 months relative to the most recent predictors used in calculating $E_t[\mathrm{d}^{1}\mathrm{I/A}]$. We report time-series averages of cross-sectional Pearson and rank correlations between $E_t[\mathrm{d}^{\tau}\mathrm{I/A}]$ calculated at the beginning of month t and the realized τ-year-ahead investment-to-assets changes. The p-values testing that a given correlation is zero are in brackets.

Panel A: Cross-sectional forecasting regressions

τ	log(q)	Cop	dRoe	Res	gCF	gSale	D_Nsi	D_Ndi	R^2	Pearson	Rank
1	0.031	0.175	0.424	0.099	−0.001	−0.340	−0.096	−0.108	0.25	0.396	0.408
	(6.92)	(6.65)	(6.32)	(16.73)	(−0.45)	(−30.09)	(−7.82)	(−23.42)		[0.00]	[0.00]
2	0.002	0.283	0.508	0.089	−0.011	−0.382	−0.135	−0.104	0.30	0.426	0.430
	(0.46)	(9.69)	(7.56)	(13.33)	(−4.98)	(−35.15)	(−11.71)	(−23.78)		[0.00]	[0.00]
3	−0.008	0.317	0.363	0.065	−0.013	−0.422	−0.127	−0.102	0.31	0.414	0.424
	(−1.71)	(10.10)	(7.57)	(12.37)	(−4.54)	(−35.99)	(−11.77)	(−21.28)		[0.00]	[0.00]

Panel B: Properties of the alternative expected growth factor

$\overline{R}_{\mathrm{Eg}}$	α	β_{Mkt}	β_{Me}	$\beta_{\mathrm{I/A}}$	β_{Roe}	R^2
0.63	0.43	−0.09	−0.01	0.35	0.22	0.26
(7.07)	(3.35)	(−2.91)	(−0.10)	(3.83)	(3.40)	

Table A.10 : Explaining the 150 Individual Anomalies, January 1967–December 2018, 624 Months

For each high-minus-low decile, we report the average return, $\overline{R}$, the q-factor alpha, α_q, the q^5 alpha, α_{q^5}, the Fama-French (2015) 5-factor alpha, $\alpha_{\rm FF5}$, the Fama-French (2018) 6-factor alpha, $\alpha_{\rm FF6}$, the alpha from the alternative 6-factor model with RMW replaced by RMWc, $\alpha_{\rm FF6c}$, the Barillas-Shanken (2018) 6-factor alpha, $\alpha_{\rm BS6}$, the Stambaugh-Yuan (2017) alpha, $\alpha_{\rm SY4}$, and the Daniel-Hirshleifer-Sun (2018) alpha, $\alpha_{\rm DHS}$, as well as their heteroscedasticity-and-autocorrelation-consistent t-statistics, denoted by $t_{\overline{R}}$, t_q, t_{q^5}, $t_{\rm FF5}$, $t_{\rm FF6}$, $t_{\rm FF6c}$, $t_{\rm BS6}$, $t_{\rm SY4}$, and $t_{\rm DHS}$, respectively. Also, for all the ten deciles formed on a given anomaly variable, we report the mean absolute alphas from the q-factor model, $\overline{|\alpha_q|}$, the q^5 model, $\overline{|\alpha_{q^5}|}$, the 5-factor model, $\overline{|\alpha_{\rm FF5}|}$, the 6-factor model, $\overline{|\alpha_{\rm FF6}|}$, the alternative 6-factor model, $\overline{|\alpha_{\rm FF6c}|}$, the Barillas-Shanken 6-factor model, $\overline{|\alpha_{\rm BS6}|}$, the Stambaugh-Yuan model, $\overline{|\alpha_{\rm SY4}|}$, and the Daniel-Hirshleifer-Sun model, $\overline{|\alpha_{\rm DHS}|}$, as well as the p-values from the GRS test on the null hypothesis that all the alphas across a given set of deciles are jointly zero. The p-values are denoted by p_q, p_{q^5}, $p_{\rm FF5}$, $p_{\rm FF6}$, $p_{\rm FF6c}$, $p_{\rm BS6}$, $p_{\rm SY4}$, and $p_{\rm DHS}$, respectively. Table 4 describes the anomaly symbols. Hou, Xue, and Zhang (2019) detail variable definition and portfolio construction.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Sue1	Abr1	Abr6	Abr12	Re1	Re6	$R^6$1	$R^6$6	$R^6$12	R^{11}1	R^{11}6	R^{11}12	Im1	Im6	Im12	Rs1	dEf1	dEf6	dEf12	Nei1
$\overline{R}$	0.45	0.73	0.36	0.25	0.78	0.48	0.66	0.83	0.55	1.18	0.80	0.45	0.66	0.60	0.61	0.36	0.94	0.56	0.33	0.33
$t_{\overline{R}}$	3.50	5.74	3.80	3.23	3.40	2.38	2.38	3.66	3.04	4.20	3.26	2.12	2.87	3.13	3.55	2.64	4.55	3.33	2.47	3.07
α_q	0.05	0.65	0.34	0.26	0.14	0.00	0.10	0.30	0.18	0.38	0.17	0.05	0.27	0.10	0.29	0.28	0.56	0.17	0.06	0.11
α_{q^5}	−0.07	0.52	0.24	0.18	0.10	−0.08	−0.38	−0.16	−0.10	−0.19	−0.20	−0.13	−0.11	−0.32	0.00	0.12	0.50	0.17	0.04	−0.01
α_{FF5}	0.48	0.84	0.50	0.41	0.79	0.57	0.81	1.00	0.78	1.30	1.03	0.76	0.71	0.66	0.79	0.56	1.05	0.69	0.47	0.38
α_{FF6}	0.26	0.64	0.32	0.26	0.38	0.20	−0.13	0.19	0.19	0.24	0.18	0.18	0.06	−0.01	0.26	0.44	0.73	0.38	0.23	0.24
α_{FF6c}	0.22	0.65	0.32	0.25	0.40	0.20	−0.10	0.16	0.12	0.22	0.11	0.07	0.06	−0.05	0.18	0.41	0.63	0.35	0.20	0.21
α_{BS6}	0.12	0.68	0.33	0.26	0.12	0.00	−0.06	0.14	0.12	0.17	0.08	0.06	0.17	−0.06	0.19	0.42	0.54	0.17	0.08	0.14
α_{SY4}	0.27	0.72	0.39	0.32	0.58	0.33	0.02	0.29	0.31	0.31	0.30	0.32	0.13	0.07	0.33	0.39	0.87	0.46	0.30	0.27
α_{DHS}	−0.35	0.29	0.10	0.05	−0.33	−0.45	−0.59	−0.22	−0.30	−0.27	−0.42	−0.54	−0.19	−0.27	−0.08	−0.20	0.21	−0.19	−0.25	−0.29
t_q	0.39	4.52	3.07	3.08	0.61	0.00	0.25	1.04	0.92	1.03	0.61	0.27	0.94	0.43	1.39	2.04	2.62	1.08	0.51	1.15
t_{q^5}	−0.52	3.80	2.21	1.94	0.44	−0.42	−1.13	−0.64	−0.48	−0.58	−0.77	−0.58	−0.39	−1.36	0.01	0.90	2.22	0.99	0.36	−0.05
t_{FF5}	3.70	6.07	4.99	5.53	3.33	2.75	2.47	3.75	4.15	3.87	3.88	3.92	2.64	2.89	4.16	4.18	4.79	4.06	3.75	3.99
t_{FF6}	2.23	4.88	3.70	4.21	2.05	1.24	−0.68	1.92	1.76	2.01	1.51	1.27	0.34	−0.05	1.79	3.34	3.88	3.07	2.38	2.56
t_{FF6c}	1.84	4.71	3.48	3.74	2.17	1.28	−0.52	1.57	1.13	1.85	0.94	0.50	0.32	−0.33	1.24	3.09	3.20	2.76	1.98	2.09
t_{BS6}	1.05	4.67	3.35	3.44	0.68	−0.01	−0.31	1.23	0.88	1.40	0.54	0.32	0.81	−0.39	1.12	3.30	2.91	1.41	0.83	1.55
t_{SY4}	2.28	5.30	3.99	4.40	2.67	1.85	0.07	1.44	2.06	1.30	1.48	1.90	0.57	0.39	1.90	3.07	4.44	3.20	2.93	2.57
t_{DHS}	−3.19	2.32	1.14	0.76	−1.77	−2.71	−1.74	−0.94	−2.02	−0.90	−1.80	−3.06	−0.75	−1.37	−0.49	−1.41	1.17	−1.56	−2.57	−2.14
$\overline{\lvert\alpha_q\rvert}$	0.09	0.12	0.08	0.07	0.10	0.11	0.15	0.07	0.05	0.11	0.08	0.08	0.12	0.11	0.12	0.07	0.15	0.11	0.10	0.09
$\overline{\lvert\alpha_{q^5}\rvert}$	0.08	0.11	0.06	0.05	0.09	0.10	0.21	0.13	0.09	0.17	0.14	0.11	0.07	0.09	0.07	0.07	0.16	0.13	0.10	0.08
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.19	0.15	0.09	0.08	0.18	0.16	0.14	0.17	0.15	0.24	0.21	0.15	0.22	0.21	0.21	0.15	0.26	0.16	0.14	0.14
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.12	0.12	0.06	0.05	0.08	0.07	0.19	0.09	0.06	0.13	0.08	0.06	0.11	0.11	0.11	0.11	0.18	0.10	0.07	0.09
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.11	0.12	0.06	0.05	0.08	0.06	0.19	0.10	0.07	0.13	0.10	0.08	0.10	0.10	0.10	0.11	0.17	0.09	0.06	0.08
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.11	0.13	0.08	0.08	0.09	0.09	0.19	0.11	0.08	0.16	0.12	0.10	0.15	0.15	0.14	0.11	0.15	0.12	0.11	0.09
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.11	0.13	0.08	0.07	0.10	0.09	0.17	0.09	0.06	0.12	0.08	0.07	0.07	0.08	0.09	0.09	0.20	0.12	0.09	0.12
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.12	0.12	0.09	0.07	0.21	0.20	0.30	0.18	0.15	0.24	0.20	0.20	0.12	0.13	0.12	0.12	0.18	0.17	0.15	0.12
p_q	0.02	0.00	0.00	0.00	0.09	0.01	0.00	0.00	0.03	0.00	0.01	0.01	0.56	0.05	0.09	0.01	0.00	0.00	0.01	0.04
p_{q^5}	0.26	0.00	0.00	0.01	0.39	0.07	0.00	0.00	0.07	0.01	0.01	0.01	0.82	0.12	0.21	0.05	0.01	0.00	0.02	0.22
p_{FF5}	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
p_{FF6}	0.00	0.00	0.00	0.00	0.18	0.07	0.00	0.00	0.01	0.00	0.00	0.01	0.31	0.02	0.01	0.00	0.00	0.00	0.01	0.01
p_{FF6c}	0.03	0.00	0.00	0.01	0.33	0.30	0.00	0.00	0.00	0.00	0.00	0.01	0.49	0.10	0.07	0.03	0.01	0.00	0.04	0.11
p_{BS6}	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.01
p_{SY4}	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.14	0.07	0.00	0.00	0.00	0.00	0.00
p_{DHS}	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.02	0.01	0.01	0.00	0.00	0.00	0.02

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	52w6	52w12	$\epsilon^6 6$	$\epsilon^6 12$	$\epsilon^{11} 1$	$\epsilon^{11} 6$	$\epsilon^{11} 12$	Sm1	Sm12	Ilr1	Ilr6	Ilr12	Ile1	Cm1	Cm12	Sim1	Cim1	Cim6	Cim12	Bm
$\overline{R}$	0.59	0.47	0.46	0.37	0.61	0.49	0.33	0.50	0.15	0.61	0.33	0.33	0.56	0.71	0.13	0.78	0.75	0.32	0.29	0.43
$t_{\overline{R}}$	2.19	2.02	4.03	4.05	3.90	3.80	2.96	2.26	2.08	3.02	3.33	4.24	3.50	3.65	2.03	3.68	3.46	3.09	3.72	2.14
α_q	0.08	0.10	0.29	0.22	0.27	0.21	0.13	0.53	−0.03	0.65	0.18	0.18	0.30	0.64	0.04	0.59	0.66	0.12	0.12	0.11
α_{q^5}	−0.33	−0.15	0.08	0.04	0.01	0.02	0.00	0.38	−0.13	0.41	0.00	0.01	0.09	0.60	−0.03	0.22	0.39	−0.13	−0.11	0.05
α_{FF5}	0.78	0.70	0.50	0.44	0.56	0.54	0.42	0.60	0.11	0.71	0.35	0.37	0.66	0.69	0.11	0.76	0.74	0.29	0.31	−0.11
α_{FF6}	0.05	0.15	0.24	0.20	0.20	0.21	0.15	0.52	−0.03	0.57	0.09	0.11	0.45	0.67	0.01	0.61	0.63	0.04	0.07	−0.09
α_{FF6c}	0.04	0.08	0.22	0.17	0.22	0.20	0.13	0.49	−0.07	0.55	0.07	0.08	0.39	0.64	0.00	0.57	0.56	0.06	0.05	−0.09
α_{BS6}	−0.09	−0.02	0.21	0.18	0.15	0.14	0.11	0.58	−0.06	0.67	0.13	0.11	0.39	0.68	0.01	0.59	0.68	0.07	0.06	−0.31
α_{SY4}	0.09	0.22	0.29	0.24	0.26	0.26	0.19	0.58	−0.01	0.59	0.14	0.14	0.41	0.66	0.01	0.58	0.60	0.05	0.07	−0.01
α_{DHS}	−0.67	−0.59	0.10	0.00	0.07	0.00	−0.08	0.50	−0.07	0.42	−0.01	−0.01	0.00	0.69	0.00	0.47	0.43	0.00	−0.01	0.76
t_q	0.30	0.60	1.99	1.76	1.40	1.29	0.90	2.02	−0.38	2.68	1.42	1.77	1.76	2.72	0.41	2.01	2.56	0.75	1.02	0.71
t_{q^5}	−1.48	−0.92	0.53	0.30	0.07	0.10	−0.02	1.34	−1.58	1.67	−0.02	0.11	0.48	2.52	−0.29	0.73	1.38	−0.79	−0.94	0.32
t_{FF5}	3.21	4.03	3.83	3.98	3.12	3.60	3.25	2.59	1.32	3.09	3.03	3.75	4.04	3.24	1.33	2.85	3.14	2.09	2.78	−0.99
t_{FF6}	0.47	1.40	2.12	2.34	1.36	1.83	1.56	2.25	−0.46	2.66	1.05	1.85	2.74	2.85	0.07	2.43	2.78	0.37	0.93	−0.82
t_{FF6c}	0.37	0.75	1.90	1.92	1.43	1.67	1.32	1.93	−1.03	2.36	0.83	1.34	2.37	2.65	−0.03	2.19	2.49	0.61	0.68	−0.74
t_{BS6}	−0.70	−0.21	1.68	2.01	0.92	1.13	1.11	2.41	−0.99	2.94	1.43	1.82	2.24	2.96	0.15	2.26	2.87	0.63	0.76	−2.39
t_{SY4}	0.53	1.67	2.16	2.30	1.48	1.86	1.69	2.26	−0.09	2.66	1.43	1.82	2.48	2.79	0.16	2.14	2.55	0.37	0.74	−0.05
t_{DHS}	−2.84	−3.44	0.69	0.04	0.39	0.03	−0.71	1.85	−0.91	1.82	−0.06	−0.06	0.03	2.75	0.04	1.52	1.77	−0.03	−0.15	3.70
$\overline{\lvert\alpha_q\rvert}$	0.06	0.04	0.07	0.06	0.08	0.06	0.06	0.12	0.10	0.18	0.09	0.08	0.11	0.19	0.11	0.14	0.19	0.06	0.06	0.08
$\overline{\lvert\alpha_{q^5}\rvert}$	0.13	0.08	0.06	0.06	0.06	0.04	0.04	0.11	0.09	0.10	0.04	0.03	0.06	0.16	0.09	0.07	0.13	0.06	0.05	0.09
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.16	0.15	0.08	0.07	0.15	0.12	0.08	0.16	0.16	0.21	0.15	0.14	0.19	0.19	0.08	0.18	0.21	0.07	0.08	0.05
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.07	0.04	0.05	0.05	0.06	0.05	0.04	0.14	0.12	0.17	0.09	0.09	0.13	0.19	0.09	0.14	0.19	0.05	0.05	0.05
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.06	0.04	0.04	0.04	0.06	0.03	0.03	0.15	0.15	0.17	0.09	0.09	0.12	0.18	0.09	0.14	0.18	0.05	0.05	0.06
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.07	0.05	0.06	0.07	0.08	0.06	0.06	0.14	0.13	0.20	0.13	0.13	0.14	0.24	0.16	0.15	0.19	0.07	0.06	0.11
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.08	0.06	0.06	0.06	0.08	0.07	0.05	0.12	0.08	0.15	0.05	0.06	0.10	0.17	0.07	0.14	0.18	0.06	0.05	0.06
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.22	0.19	0.04	0.05	0.06	0.05	0.06	0.10	0.04	0.14	0.13	0.13	0.13	0.22	0.11	0.13	0.17	0.10	0.08	0.19
p_q	0.32	0.01	0.00	0.00	0.02	0.02	0.05	0.30	0.31	0.07	0.35	0.11	0.16	0.09	0.06	0.46	0.00	0.06	0.01	0.12
p_{q^5}	0.15	0.00	0.02	0.00	0.73	0.40	0.30	0.58	0.04	0.73	0.25	0.35	0.86	0.11	0.19	0.99	0.14	0.27	0.18	0.31
p_{FF5}	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.04	0.00	0.01	0.00	0.00	0.07	0.03	0.08	0.00	0.06	0.00	0.53
p_{FF6}	0.15	0.05	0.00	0.00	0.21	0.17	0.22	0.09	0.07	0.05	0.31	0.07	0.02	0.07	0.14	0.41	0.01	0.26	0.14	0.48
p_{FF6c}	0.26	0.25	0.01	0.00	0.57	0.39	0.31	0.05	0.02	0.07	0.44	0.14	0.10	0.10	0.05	0.42	0.02	0.32	0.16	0.62
p_{BS6}	0.12	0.01	0.00	0.00	0.02	0.02	0.03	0.10	0.07	0.01	0.05	0.01	0.03	0.02	0.03	0.37	0.00	0.02	0.01	0.00
p_{SY4}	0.16	0.01	0.00	0.00	0.04	0.05	0.06	0.39	0.43	0.26	0.29	0.14	0.14	0.07	0.29	0.41	0.01	0.13	0.06	0.59
p_{DHS}	0.00	0.00	0.17	0.01	0.45	0.12	0.10	0.54	0.80	0.08	0.20	0.10	0.09	0.03	0.05	0.27	0.00	0.00	0.00	0.01

	41 Ep^{q}1	42 Ep^{q}6	43 Ep^{q}12	44 Cp^{q}1	45 Cp^{q}6	46 Nop	47 Em	48 Em^{q}1	49 Sp	50 Sp^{q}1	51 Sp^{q}6	52 Sp^{q}12	53 Ocp	54 Ocp^{q}1	55 Ia	56 Ia^{q}6	57 Ia^{q}12	58 dPia	59 Noa	60 dNoa
$\overline{R}$	0.83	0.53	0.37	0.53	0.40	0.60	−0.44	−0.59	0.42	0.52	0.49	0.46	0.59	0.55	−0.37	−0.41	−0.38	−0.44	−0.47	−0.49
$t_{\overline{R}}$	4.47	3.08	2.30	2.58	2.10	3.30	−2.34	−2.72	2.05	2.16	2.17	2.18	2.73	2.04	−2.46	−2.45	−2.48	−3.40	−3.59	−3.74
α_{q}	0.33	0.04	−0.07	0.34	0.25	0.34	−0.15	−0.35	−0.09	0.16	0.10	0.01	0.31	0.44	0.10	−0.07	0.05	−0.16	−0.50	−0.11
α_{q^5}	0.46	0.09	−0.04	0.50	0.34	0.18	0.00	−0.37	0.02	0.32	0.24	0.15	0.21	0.35	0.07	0.01	0.10	−0.17	−0.15	−0.09
α_{FF5}	0.36	0.06	−0.08	0.01	−0.06	0.21	0.02	−0.22	−0.27	−0.22	−0.24	−0.25	−0.03	0.12	0.05	0.04	0.08	−0.27	−0.56	−0.22
α_{FF6}	0.49	0.15	−0.03	0.37	0.21	0.22	0.05	−0.35	−0.18	0.12	0.04	−0.06	0.06	0.41	0.05	−0.02	0.06	−0.25	−0.48	−0.19
α_{FF6c}	0.44	0.10	−0.07	0.34	0.18	0.16	0.17	−0.25	−0.19	0.11	0.03	−0.06	0.01	0.40	0.02	−0.08	0.01	−0.27	−0.45	−0.18
α_{BS6}	−0.07	−0.32	−0.44	−0.02	−0.10	0.13	0.22	−0.08	−0.46	−0.24	−0.27	−0.35	−0.16	0.31	0.16	0.03	0.13	−0.15	−0.63	−0.04
α_{SY4}	0.62	0.27	0.09	0.42	0.28	0.17	−0.08	−0.44	−0.12	0.14	0.08	−0.01	0.25	0.56	0.19	0.17	0.24	−0.04	−0.22	−0.06
α_{DHS}	0.85	0.50	0.37	1.09	0.92	0.37	−0.60	−0.74	0.64	1.07	0.98	0.83	0.90	1.01	−0.37	−0.58	−0.44	−0.41	−0.35	−0.37
t_{q}	1.42	0.23	−0.44	1.61	1.37	2.50	−0.88	−1.49	−0.48	0.60	0.45	0.07	1.74	1.55	0.89	−0.69	0.51	−1.32	−3.00	−0.83
t_{q^5}	2.05	0.50	−0.28	2.56	2.02	1.25	−0.02	−1.61	0.10	1.32	1.17	0.84	1.18	1.42	0.55	0.05	0.91	−1.36	−1.00	−0.63
t_{FF5}	2.12	0.41	−0.67	0.07	−0.41	1.80	0.16	−1.20	−1.98	−1.11	−1.49	−1.74	−0.19	0.59	0.42	0.47	0.90	−2.48	−3.66	−1.57
t_{FF6}	2.99	1.12	−0.26	2.73	1.74	1.89	0.38	−2.05	−1.38	0.66	0.25	−0.44	0.42	2.69	0.44	−0.25	0.63	−2.16	−3.44	−1.40
t_{FF6c}	2.74	0.74	−0.57	2.59	1.52	1.33	1.24	−1.45	−1.43	0.60	0.22	−0.50	0.05	2.61	0.20	−0.87	0.06	−2.23	−3.07	−1.41
t_{BS6}	−0.43	−2.30	−3.60	−0.14	−0.79	0.94	1.41	−0.50	−3.11	−1.23	−1.71	−2.42	−1.01	1.97	1.45	0.22	1.24	−1.23	−4.43	−0.33
t_{SY4}	3.37	1.72	0.67	2.69	1.95	1.34	−0.46	−2.30	−0.81	0.67	0.45	−0.06	1.48	2.96	1.58	1.67	2.29	−0.33	−1.57	−0.43
t_{DHS}	4.01	2.86	2.43	5.52	5.40	3.18	−3.51	−3.63	3.17	3.84	4.14	3.94	4.57	4.10	−2.20	−3.32	−2.51	−2.68	−2.49	−2.63
$\overline{\lvert\alpha_{q}\rvert}$	0.16	0.12	0.10	0.16	0.14	0.12	0.11	0.17	0.06	0.07	0.07	0.07	0.10	0.18	0.08	0.07	0.07	0.10	0.12	0.09
$\overline{\lvert\alpha_{q^5}\rvert}$	0.19	0.15	0.13	0.22	0.18	0.11	0.11	0.20	0.07	0.10	0.07	0.06	0.11	0.16	0.09	0.05	0.05	0.11	0.09	0.06
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.13	0.09	0.07	0.09	0.10	0.10	0.09	0.15	0.10	0.10	0.11	0.11	0.05	0.10	0.10	0.06	0.05	0.09	0.11	0.08
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.17	0.11	0.08	0.15	0.10	0.09	0.08	0.16	0.08	0.06	0.06	0.07	0.07	0.16	0.08	0.05	0.05	0.09	0.11	0.08
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.16	0.10	0.07	0.16	0.12	0.09	0.08	0.15	0.09	0.07	0.07	0.07	0.08	0.16	0.09	0.05	0.05	0.07	0.10	0.06
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.12	0.13	0.12	0.12	0.14	0.13	0.12	0.15	0.16	0.10	0.12	0.15	0.12	0.14	0.10	0.08	0.08	0.12	0.14	0.08
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.20	0.15	0.11	0.18	0.14	0.12	0.10	0.18	0.06	0.05	0.04	0.05	0.10	0.22	0.09	0.08	0.07	0.10	0.08	0.07
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.28	0.20	0.16	0.30	0.24	0.12	0.17	0.25	0.20	0.29	0.25	0.21	0.18	0.32	0.10	0.17	0.14	0.08	0.11	0.10
p_{q}	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.30	0.40	0.35	0.17	0.05	0.20	0.00	0.04	0.06	0.00	0.00	0.05
p_{q^5}	0.00	0.00	0.00	0.00	0.00	0.15	0.03	0.00	0.43	0.37	0.57	0.47	0.13	0.15	0.01	0.33	0.52	0.00	0.01	0.38
p_{FF5}	0.01	0.00	0.06	0.05	0.04	0.01	0.01	0.00	0.04	0.46	0.21	0.07	0.41	0.57	0.00	0.14	0.14	0.01	0.00	0.02
p_{FF6}	0.00	0.00	0.03	0.00	0.01	0.02	0.02	0.00	0.09	0.69	0.53	0.19	0.38	0.04	0.01	0.10	0.10	0.02	0.00	0.05
p_{FF6c}	0.00	0.00	0.13	0.00	0.01	0.06	0.04	0.00	0.23	0.70	0.65	0.47	0.28	0.05	0.03	0.28	0.35	0.13	0.03	0.23
p_{BS6}	0.02	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.15	0.00	0.01	0.01	0.00	0.00	0.05
p_{SY4}	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.44	0.75	0.76	0.32	0.13	0.04	0.01	0.01	0.01	0.01	0.01	0.17
p_{DHS}	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.01

	61 dLno	62 Ig	63 2Ig	64 Nsi	65 dIi	66 Cei	67 Ivg	68 Ivc	69 Oa	70 dWc	71 dCoa	72 dNco	73 dNca	74 dFin	75 dFnl	76 dBe	77 Dac	78 Poa	79 Pta	80 Pda
$\overline{R}$	−0.32	−0.42	−0.32	−0.67	−0.29	−0.57	−0.31	−0.41	−0.29	−0.47	−0.28	−0.39	−0.37	0.27	−0.26	−0.31	−0.45	−0.43	−0.43	−0.56
$t_{\overline{R}}$	−2.41	−3.44	−2.41	−4.74	−2.71	−3.42	−2.40	−3.17	−2.36	−3.70	−2.14	−3.39	−3.16	2.43	−2.53	−1.99	−3.47	−3.29	−3.31	−4.54
α_q	0.07	−0.03	0.07	−0.36	0.08	−0.31	−0.02	−0.26	−0.57	−0.58	0.07	−0.06	0.00	0.41	−0.01	0.08	−0.74	−0.22	−0.23	−0.52
α_{q^5}	0.11	−0.13	0.01	−0.15	0.06	−0.03	0.09	−0.02	−0.20	−0.23	0.14	0.00	0.00	0.14	0.02	0.13	−0.31	−0.05	−0.07	−0.18
α_{FF5}	−0.04	−0.15	−0.06	−0.33	−0.02	−0.31	−0.09	−0.34	−0.54	−0.57	0.04	−0.19	−0.12	0.48	−0.11	0.09	−0.71	−0.21	−0.19	−0.53
α_{FF6}	0.00	−0.12	0.01	−0.31	0.06	−0.27	−0.04	−0.28	−0.48	−0.51	0.04	−0.16	−0.11	0.46	−0.09	0.09	−0.69	−0.18	−0.19	−0.48
α_{FF6c}	−0.07	−0.16	−0.02	−0.25	0.06	−0.19	−0.02	−0.23	−0.32	−0.36	0.06	−0.17	−0.14	0.34	−0.08	0.04	−0.59	−0.08	−0.16	−0.45
α_{BS6}	0.05	0.01	0.10	−0.29	0.23	−0.12	0.05	−0.23	−0.55	−0.47	0.15	−0.08	−0.02	0.50	−0.06	0.13	−0.79	−0.14	−0.12	−0.53
α_{SY4}	0.22	−0.02	0.09	−0.20	0.08	−0.23	0.02	−0.17	−0.46	−0.49	0.12	0.00	0.03	0.37	−0.01	0.24	−0.57	−0.22	−0.11	−0.37
α_{DHS}	−0.17	−0.34	−0.29	−0.34	−0.15	−0.31	−0.21	−0.45	−0.34	−0.33	−0.32	−0.32	−0.32	0.25	−0.18	−0.32	−0.49	−0.33	−0.31	−0.50
t_q	0.43	−0.30	0.61	−2.83	0.82	−2.49	−0.14	−1.99	−4.25	−4.38	0.65	−0.52	−0.01	2.97	−0.05	0.64	−5.33	−1.73	−1.75	−3.40
t_{q^5}	0.68	−1.01	0.11	−1.12	0.52	−0.20	0.73	−0.17	−1.30	−1.77	1.18	0.01	0.01	0.97	0.16	0.94	−2.16	−0.38	−0.60	−1.22
t_{FF5}	−0.27	−1.35	−0.55	−2.91	−0.24	−3.04	−0.78	−2.85	−4.31	−4.40	0.39	−1.62	−1.03	4.08	−1.04	0.83	−5.47	−1.86	−1.60	−3.77
t_{FF6}	0.02	−1.11	0.08	−2.70	0.62	−2.46	−0.36	−2.35	−3.49	−3.93	0.37	−1.40	−0.97	3.81	−0.87	0.84	−5.08	−1.60	−1.58	−3.28
t_{FF6c}	−0.50	−1.35	−0.20	−2.07	0.60	−1.78	−0.14	−1.84	−2.13	−2.60	0.53	−1.42	−1.18	2.63	−0.72	0.33	−4.12	−0.71	−1.35	−2.99
t_{BS6}	0.34	0.07	0.77	−2.19	2.11	−0.90	0.45	−1.72	−3.79	−3.28	1.31	−0.74	−0.20	3.64	−0.56	1.05	−5.52	−1.11	−0.87	−3.34
t_{SY4}	1.56	−0.15	0.77	−1.78	0.78	−2.02	0.18	−1.37	−3.39	−3.88	1.05	−0.03	0.24	2.93	−0.09	2.00	−3.95	−1.82	−0.95	−2.68
t_{DHS}	−0.96	−2.87	−1.67	−3.01	−1.19	−2.79	−1.60	−2.86	−2.36	−2.13	−2.12	−2.31	−2.28	2.15	−1.43	−1.76	−3.45	−2.53	−2.55	−3.37
$\overline{\lvert\alpha_q\rvert}$	0.05	0.09	0.08	0.13	0.07	0.12	0.10	0.07	0.14	0.13	0.08	0.10	0.10	0.08	0.08	0.08	0.15	0.11	0.09	0.18
$\overline{\lvert\alpha_{q^5}\rvert}$	0.07	0.11	0.08	0.10	0.06	0.07	0.09	0.09	0.06	0.10	0.08	0.07	0.05	0.06	0.05	0.06	0.06	0.07	0.10	0.09
$\overline{\lvert\alpha_{\text{FF5}}\rvert}$	0.05	0.07	0.05	0.12	0.05	0.10	0.10	0.07	0.12	0.12	0.05	0.08	0.09	0.09	0.09	0.06	0.14	0.09	0.07	0.17
$\overline{\lvert\alpha_{\text{FF6}}\rvert}$	0.06	0.08	0.06	0.12	0.04	0.11	0.09	0.07	0.12	0.12	0.05	0.08	0.09	0.09	0.09	0.06	0.14	0.09	0.07	0.16
$\overline{\lvert\alpha_{\text{FF6c}}\rvert}$	0.06	0.07	0.05	0.11	0.04	0.08	0.10	0.07	0.07	0.09	0.07	0.06	0.06	0.08	0.07	0.06	0.12	0.06	0.06	0.13
$\overline{\lvert\alpha_{\text{BS6}}\rvert}$	0.06	0.10	0.10	0.14	0.08	0.13	0.13	0.10	0.14	0.15	0.10	0.10	0.12	0.09	0.09	0.12	0.17	0.10	0.09	0.19
$\overline{\lvert\alpha_{\text{SY4}}\rvert}$	0.07	0.08	0.07	0.13	0.05	0.11	0.10	0.05	0.11	0.12	0.07	0.08	0.07	0.08	0.06	0.07	0.11	0.09	0.08	0.13
$\overline{\lvert\alpha_{\text{DHS}}\rvert}$	0.07	0.11	0.10	0.12	0.08	0.10	0.10	0.09	0.09	0.09	0.10	0.12	0.11	0.07	0.06	0.11	0.11	0.09	0.11	0.13
p_q	0.66	0.00	0.03	0.00	0.29	0.00	0.04	0.42	0.00	0.00	0.06	0.00	0.00	0.02	0.05	0.16	0.00	0.00	0.03	0.00
p_{q^5}	0.53	0.00	0.07	0.06	0.60	0.57	0.02	0.26	0.52	0.10	0.13	0.36	0.81	0.60	0.60	0.74	0.48	0.12	0.01	0.17
p_{FF5}	0.83	0.04	0.43	0.00	0.44	0.00	0.02	0.18	0.00	0.00	0.43	0.02	0.01	0.00	0.05	0.37	0.00	0.02	0.11	0.00
p_{FF6}	0.83	0.04	0.30	0.00	0.67	0.00	0.04	0.22	0.01	0.00	0.44	0.03	0.03	0.01	0.03	0.53	0.00	0.05	0.13	0.00
p_{FF6c}	0.77	0.16	0.54	0.00	0.73	0.04	0.02	0.20	0.29	0.12	0.27	0.19	0.33	0.18	0.38	0.56	0.00	0.40	0.33	0.01
p_{BS6}	0.54	0.00	0.01	0.00	0.02	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00
p_{SY4}	0.53	0.01	0.07	0.00	0.60	0.01	0.01	0.66	0.00	0.00	0.18	0.04	0.07	0.02	0.21	0.30	0.00	0.03	0.01	0.00
p_{DHS}	0.60	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.04	0.04	0.01	0.00	0.02	0.08	0.40	0.02	0.01	0.10	0.00	0.00

	81 Roe1	82 Roe6	83 dRoe1	84 dRoe6	85 dRoe12	86 Roa1	87 dRoa1	88 dRoa6	89 Ato	90 Cto	91 Rna^{q}1	92 Rna^{q}6	93 Ato^{q}1	94 Ato^{q}6	95 Ato^{q}12	96 Cto^{q}1	97 Cto^{q}6	98 Cto^{q}12	99 Gpa	100 Gla^{q}1
$\overline{R}$	0.69	0.41	0.76	0.37	0.25	0.58	0.56	0.29	0.40	0.34	0.65	0.43	0.67	0.59	0.49	0.47	0.45	0.41	0.41	0.56
$t_{\overline{R}}$	3.24	2.03	5.78	3.35	2.59	2.77	3.91	2.17	2.32	2.06	2.92	2.11	3.85	3.49	3.02	2.72	2.69	2.49	2.97	3.86
α_q	−0.04	−0.18	0.36	−0.01	−0.07	0.03	0.09	−0.16	0.43	0.05	0.19	0.09	0.42	0.41	0.39	−0.05	−0.02	0.00	0.21	0.26
α_{q^5}	−0.20	−0.33	0.08	−0.19	−0.17	−0.22	−0.15	−0.25	0.10	0.04	−0.05	−0.17	0.15	0.15	0.14	−0.14	−0.10	−0.09	0.05	0.04
α_{FF5}	0.47	0.25	0.78	0.39	0.26	0.49	0.52	0.26	0.42	0.08	0.52	0.33	0.54	0.53	0.48	0.08	0.09	0.10	0.26	0.41
α_{FF6}	0.30	0.10	0.55	0.21	0.12	0.26	0.30	0.06	0.39	0.06	0.38	0.23	0.44	0.42	0.38	0.04	0.04	0.05	0.23	0.33
α_{FF6c}	0.22	0.02	0.56	0.20	0.10	0.16	0.28	0.06	0.31	0.02	0.29	0.13	0.40	0.37	0.32	−0.05	−0.06	−0.05	0.19	0.27
α_{BS6}	−0.07	−0.21	0.36	−0.03	−0.08	−0.02	0.12	−0.16	0.63	0.13	0.18	0.09	0.56	0.57	0.56	0.00	0.04	0.07	0.33	0.34
α_{SY4}	0.32	0.12	0.56	0.18	0.11	0.28	0.35	0.09	0.23	−0.05	0.41	0.27	0.30	0.28	0.25	−0.09	−0.07	−0.05	0.08	0.26
α_{DHS}	−0.41	−0.60	0.13	−0.16	−0.18	−0.43	−0.04	−0.21	0.24	0.09	−0.20	−0.26	0.39	0.30	0.24	−0.06	−0.04	−0.03	0.12	0.13
t_q	−0.36	−1.54	2.64	−0.13	−0.87	0.28	0.57	−1.18	2.82	0.33	1.47	0.70	2.50	2.53	2.51	−0.33	−0.14	−0.02	1.55	1.94
t_{q^5}	−1.75	−2.93	0.57	−1.68	−1.84	−2.01	−0.82	−1.74	0.63	0.22	−0.36	−1.42	0.88	0.90	0.90	−0.81	−0.63	−0.55	0.36	0.28
t_{FF5}	3.71	2.10	5.67	3.38	2.67	3.65	3.50	1.98	3.15	0.58	3.94	2.76	3.42	3.65	3.49	0.55	0.66	0.73	2.11	3.08
t_{FF6}	2.55	0.88	4.49	2.05	1.36	2.30	2.04	0.51	2.94	0.47	3.05	2.08	2.97	3.08	2.88	0.25	0.29	0.40	1.90	2.55
t_{FF6c}	1.47	0.14	4.36	1.90	1.09	1.15	1.89	0.47	2.23	0.11	2.02	1.02	2.57	2.51	2.30	−0.34	−0.36	−0.35	1.40	1.95
t_{BS6}	−0.58	−1.74	2.84	−0.27	−0.97	−0.20	0.72	−1.26	4.57	0.87	1.43	0.75	3.65	4.03	3.98	−0.03	0.22	0.45	2.39	2.44
t_{SY4}	2.06	0.76	4.13	1.73	1.23	1.88	2.29	0.67	1.60	−0.33	2.48	1.72	2.01	2.03	1.83	−0.56	−0.47	−0.31	0.56	1.91
t_{DHS}	−2.31	−3.31	1.10	−1.61	−2.04	−2.41	−0.28	−1.60	1.39	0.50	−1.08	−1.50	1.99	1.66	1.37	−0.29	−0.20	−0.16	0.78	0.89
$\overline{\lvert\alpha_q\rvert}$	0.09	0.08	0.09	0.07	0.07	0.07	0.10	0.07	0.09	0.08	0.06	0.06	0.11	0.07	0.07	0.08	0.08	0.08	0.13	0.10
$\overline{\lvert\alpha_{q^5}\rvert}$	0.10	0.09	0.06	0.09	0.09	0.08	0.07	0.08	0.12	0.10	0.05	0.06	0.12	0.12	0.12	0.11	0.11	0.11	0.06	0.09
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.11	0.08	0.16	0.09	0.05	0.14	0.16	0.10	0.10	0.06	0.15	0.11	0.15	0.12	0.10	0.06	0.06	0.06	0.11	0.13
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.07	0.04	0.10	0.06	0.04	0.07	0.10	0.05	0.10	0.05	0.11	0.08	0.11	0.08	0.07	0.06	0.06	0.06	0.12	0.12
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.05	0.04	0.09	0.05	0.03	0.07	0.11	0.06	0.11	0.04	0.10	0.08	0.13	0.09	0.09	0.06	0.06	0.06	0.12	0.13
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.09	0.09	0.10	0.08	0.08	0.09	0.12	0.09	0.13	0.10	0.12	0.12	0.12	0.11	0.11	0.09	0.08	0.09	0.19	0.17
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.08	0.05	0.10	0.06	0.05	0.07	0.11	0.05	0.08	0.08	0.10	0.06	0.12	0.09	0.08	0.08	0.08	0.08	0.08	0.08
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.16	0.16	0.08	0.09	0.10	0.14	0.09	0.08	0.08	0.08	0.07	0.07	0.10	0.07	0.05	0.06	0.06	0.06	0.08	0.07
p_q	0.02	0.08	0.03	0.07	0.03	0.70	0.34	0.04	0.00	0.13	0.21	0.36	0.01	0.04	0.03	0.36	0.03	0.01	0.05	0.07
p_{q^5}	0.00	0.01	0.45	0.07	0.06	0.55	0.48	0.09	0.00	0.10	0.70	0.60	0.01	0.01	0.01	0.03	0.01	0.01	0.67	0.20
p_{FF5}	0.01	0.05	0.00	0.01	0.11	0.03	0.00	0.03	0.01	0.74	0.00	0.03	0.00	0.00	0.00	0.62	0.10	0.06	0.02	0.00
p_{FF6}	0.19	0.42	0.00	0.13	0.19	0.52	0.11	0.26	0.00	0.68	0.03	0.10	0.00	0.01	0.01	0.59	0.13	0.12	0.02	0.01
p_{FF6c}	0.79	0.74	0.01	0.22	0.51	0.76	0.08	0.18	0.01	0.88	0.14	0.29	0.00	0.02	0.03	0.66	0.30	0.38	0.07	0.01
p_{BS6}	0.01	0.00	0.03	0.02	0.01	0.05	0.09	0.01	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00
p_{SY4}	0.07	0.28	0.00	0.07	0.12	0.34	0.09	0.18	0.03	0.16	0.05	0.44	0.00	0.02	0.01	0.19	0.03	0.02	0.17	0.11
p_{DHS}	0.00	0.00	0.17	0.02	0.00	0.13	0.24	0.02	0.08	0.20	0.88	0.42	0.00	0.14	0.39	0.49	0.05	0.07	0.45	0.27

	101 Gla^{q}6	102 Gla^{q}12	103 Ole^{q}1	104 Ole^{q}6	105 Opa	106 Ola^{q}1	107 Ola^{q}6	108 Ola^{q}12	109 Cop	110 Cla	111 Cla^{q}1	112 Cla^{q}6	113 Cla^{q}12	114 F^{q}1	115 F^{q}6	116 F^{q}12	117 Fp^{q}6	118 O^{q}1	119 Tbi^{q}12	120 Sg^{q}1
$\overline{R}$	0.38	0.34	0.67	0.43	0.47	0.78	0.55	0.51	0.68	0.61	0.52	0.49	0.48	0.53	0.49	0.38	−0.67	−0.43	0.21	0.34
$t_{\overline{R}}$	2.83	2.58	3.31	2.23	2.44	3.84	2.85	2.78	3.94	3.65	3.43	3.75	3.88	2.47	2.55	2.16	−2.24	−1.97	2.02	2.01
α_q	0.15	0.18	−0.02	−0.17	0.52	0.43	0.28	0.35	0.75	0.81	0.46	0.41	0.46	0.15	0.15	0.06	−0.24	−0.38	0.32	0.14
α_{q^5}	−0.05	−0.01	−0.23	−0.37	−0.04	−0.11	−0.23	−0.11	0.11	0.18	−0.04	−0.06	0.03	0.25	0.28	0.17	0.30	−0.06	0.36	0.00
α_{FF5}	0.28	0.27	0.24	0.04	0.59	0.72	0.52	0.53	0.84	0.88	0.60	0.55	0.58	0.39	0.38	0.26	−0.86	−0.58	0.23	0.57
α_{FF6}	0.22	0.23	0.11	−0.05	0.54	0.56	0.39	0.42	0.75	0.80	0.50	0.44	0.49	0.25	0.26	0.17	−0.36	−0.48	0.22	0.37
α_{FF6c}	0.14	0.14	0.01	−0.18	0.44	0.50	0.32	0.35	0.55	0.60	0.43	0.35	0.39	0.28	0.26	0.14	−0.34	−0.34	0.15	0.39
α_{BS6}	0.22	0.25	−0.23	−0.33	0.63	0.50	0.35	0.41	0.86	0.93	0.51	0.45	0.51	0.08	0.11	0.02	−0.28	−0.40	0.27	0.31
α_{SY4}	0.16	0.19	0.14	−0.01	0.43	0.55	0.40	0.46	0.62	0.70	0.41	0.39	0.43	0.35	0.38	0.27	−0.28	−0.41	0.36	0.47
α_{DHS}	0.01	0.03	−0.28	−0.39	0.07	0.06	−0.08	−0.02	0.26	0.26	0.12	0.12	0.17	0.08	0.07	−0.02	0.45	0.16	0.19	−0.27
t_q	1.25	1.49	−0.15	−1.21	3.41	2.93	2.11	2.82	5.57	5.78	3.17	3.13	3.83	0.70	0.93	0.43	−0.97	−2.65	2.94	0.85
t_{q^5}	−0.36	−0.07	−1.59	−2.72	−0.25	−0.84	−2.11	−1.07	0.96	1.57	−0.28	−0.51	0.28	1.27	1.66	1.21	1.30	−0.42	3.01	0.01
t_{FF5}	2.38	2.33	1.87	0.33	3.79	4.54	3.88	4.33	6.80	7.18	4.20	4.29	5.08	1.92	2.26	1.93	−3.31	−4.13	2.25	3.71
t_{FF6}	1.92	2.02	0.84	−0.48	3.86	3.94	3.24	3.84	6.44	6.71	3.79	3.96	4.79	1.28	1.57	1.30	−2.26	−3.26	1.98	2.37
t_{FF6c}	1.19	1.20	0.04	−1.19	2.87	3.05	2.23	2.69	4.75	5.16	3.17	3.01	3.76	1.39	1.47	0.98	−2.05	−2.36	1.34	2.50
t_{BS6}	1.84	2.01	−1.57	−2.43	4.04	3.53	2.74	3.36	6.47	6.77	3.74	3.77	4.74	0.43	0.69	0.18	−1.70	−2.70	2.39	1.92
t_{SY4}	1.33	1.52	0.87	−0.06	2.75	3.71	2.94	3.57	4.88	5.28	3.07	3.50	4.36	1.74	2.26	1.86	−2.05	−2.52	3.33	2.83
t_{DHS}	0.04	0.22	−1.73	−2.46	0.38	0.35	−0.46	−0.11	1.61	1.59	0.81	0.95	1.49	0.38	0.37	−0.10	1.88	0.80	1.52	−1.45
$\overline{\lvert\alpha_q\rvert}$	0.11	0.10	0.07	0.08	0.14	0.13	0.09	0.09	0.18	0.15	0.20	0.12	0.13	0.10	0.14	0.10	0.11	0.08	0.10	0.09
$\overline{\lvert\alpha_{q^5}\rvert}$	0.09	0.06	0.10	0.12	0.07	0.07	0.07	0.05	0.07	0.07	0.07	0.05	0.04	0.09	0.11	0.09	0.16	0.08	0.08	0.10
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.12	0.11	0.09	0.06	0.17	0.23	0.17	0.16	0.21	0.19	0.22	0.15	0.17	0.13	0.11	0.07	0.13	0.12	0.10	0.17
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.12	0.11	0.07	0.05	0.14	0.18	0.13	0.12	0.18	0.15	0.20	0.12	0.13	0.11	0.10	0.08	0.10	0.10	0.09	0.12
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.14	0.13	0.06	0.05	0.14	0.18	0.13	0.12	0.15	0.14	0.18	0.11	0.13	0.11	0.10	0.06	0.10	0.10	0.09	0.11
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.17	0.16	0.09	0.11	0.18	0.16	0.12	0.13	0.21	0.19	0.21	0.13	0.15	0.09	0.14	0.10	0.09	0.09	0.11	0.11
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.08	0.06	0.08	0.07	0.12	0.16	0.11	0.10	0.14	0.12	0.19	0.11	0.12	0.13	0.12	0.10	0.11	0.09	0.08	0.14
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.07	0.05	0.12	0.13	0.05	0.06	0.05	0.04	0.09	0.07	0.14	0.05	0.06	0.07	0.10	0.06	0.21	0.14	0.06	0.11
p_q	0.07	0.16	0.04	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.04
p_{q^5}	0.07	0.23	0.29	0.01	0.08	0.52	0.14	0.38	0.25	0.40	0.49	0.93	0.51	0.22	0.00	0.01	0.02	0.25	0.01	0.09
p_{FF5}	0.01	0.04	0.09	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
p_{FF6}	0.01	0.05	0.19	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.01	0.01	0.01	0.00	0.00
p_{FF6c}	0.01	0.03	0.41	0.43	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.08	0.00	0.10	0.00	0.05	0.00	0.05	0.00	0.02
p_{BS6}	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.02	0.00	0.00
p_{SY4}	0.08	0.22	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
p_{DHS}	0.40	0.61	0.01	0.00	0.40	0.71	0.48	0.50	0.06	0.26	0.01	0.68	0.34	0.27	0.02	0.08	0.00	0.03	0.12	0.01

	121 Oca	122 Ioca	123 Adm	124 Rdm	125 Rdm^{q}1	126 Rdm^{q}6	127 Rdm^{q}12	128 Rds^{q}6	129 Rds^{q}12	130 Ol	131 Ol^{q}1	132 Ol^{q}6	133 Ol^{q}12	134 Hs	135 Rer	136 Eprd	137 Etl	138 Alm^{q}1	139 Alm^{q}6	140 Alm^{q}12
$\overline{R}$	0.57	0.51	0.62	0.73	1.09	0.80	0.83	0.50	0.51	0.44	0.49	0.48	0.49	−0.28	0.39	−0.59	0.32	0.53	0.54	0.48
$t_{\overline{R}}$	2.91	4.20	2.60	2.96	3.04	2.31	2.62	2.00	2.01	2.75	2.71	2.73	2.94	−2.00	2.85	−3.38	2.70	2.59	2.84	2.58
α_q	0.21	0.07	0.11	0.81	1.41	1.02	0.92	0.90	0.93	0.03	0.09	0.11	0.15	−0.25	0.40	−0.58	0.24	0.25	0.23	0.12
α_{q^5}	−0.11	−0.02	0.06	0.27	1.05	0.58	0.43	0.64	0.65	0.06	0.10	0.03	0.05	−0.12	0.23	−0.48	0.18	0.26	0.23	0.16
α_{FF5}	0.37	0.27	−0.07	0.66	0.95	0.74	0.72	0.95	1.00	0.13	0.24	0.24	0.28	−0.36	0.34	−0.89	0.33	0.07	0.12	0.07
α_{FF6}	0.35	0.13	0.07	0.68	1.36	1.01	0.88	0.88	0.93	0.12	0.24	0.23	0.26	−0.30	0.32	−0.79	0.23	0.13	0.13	0.05
α_{FF6c}	0.43	0.12	0.06	0.79	1.37	1.06	0.96	0.98	1.01	0.13	0.23	0.23	0.26	−0.28	0.30	−0.84	0.29	0.13	0.13	0.04
α_{BS6}	0.33	0.05	−0.20	0.81	1.43	1.04	0.91	1.00	1.04	0.00	0.11	0.10	0.13	−0.40	0.39	−0.80	0.30	0.00	−0.02	−0.11
α_{SY4}	0.05	0.07	0.09	0.39	1.20	0.72	0.58	0.59	0.65	0.02	0.14	0.13	0.15	−0.22	0.24	−0.61	0.16	0.16	0.17	0.10
α_{DHS}	0.24	0.17	0.88	1.12	1.74	1.43	1.33	0.60	0.61	0.15	0.16	0.19	0.20	−0.14	0.20	−0.09	0.35	0.88	0.82	0.69
t_q	1.14	0.58	0.43	3.64	3.33	3.25	3.55	3.27	3.36	0.16	0.56	0.71	0.95	−1.36	2.51	−3.32	1.45	1.72	1.74	0.91
t_{q^5}	−0.56	−0.14	0.25	1.24	2.37	1.79	1.60	2.31	2.35	0.35	0.56	0.19	0.29	−0.59	1.46	−2.83	1.13	1.75	1.70	1.19
t_{FF5}	1.93	2.30	−0.37	3.06	2.60	2.43	2.81	4.25	4.41	0.87	1.47	1.52	1.86	−2.29	2.30	−5.62	2.31	0.54	1.07	0.66
t_{FF6}	1.79	1.16	0.34	3.24	3.90	3.48	3.56	3.91	4.10	0.81	1.50	1.52	1.74	−1.78	2.12	−5.04	1.74	1.05	1.21	0.46
t_{FF6c}	1.99	0.98	0.27	3.64	3.93	3.71	3.98	4.44	4.54	0.84	1.30	1.37	1.60	−1.69	1.99	−5.23	2.21	1.05	1.16	0.38
t_{BS6}	1.71	0.40	−0.92	3.58	3.73	3.28	3.36	4.73	4.93	−0.01	0.67	0.60	0.81	−2.23	2.50	−4.79	2.04	0.03	−0.14	−0.89
t_{SY4}	0.27	0.60	0.40	1.79	3.17	2.53	2.37	2.37	2.65	0.14	0.89	0.84	1.02	−1.29	1.58	−3.96	1.15	1.18	1.29	0.81
t_{DHS}	1.12	1.22	2.99	4.48	3.99	3.47	3.53	2.41	2.46	0.88	0.91	1.02	1.14	−0.91	1.14	−0.43	2.29	4.50	4.21	3.60
$\overline{\lvert\alpha_q\rvert}$	0.13	0.09	0.07	0.28	0.53	0.47	0.46	0.30	0.30	0.09	0.08	0.08	0.09	0.14	0.13	0.15	0.07	0.09	0.09	0.07
$\overline{\lvert\alpha_{q^5}\rvert}$	0.09	0.07	0.09	0.12	0.36	0.27	0.24	0.23	0.21	0.11	0.10	0.11	0.10	0.13	0.12	0.16	0.08	0.09	0.07	0.06
$\overline{\lvert\alpha_{\text{FF5}}\rvert}$	0.13	0.08	0.06	0.22	0.38	0.36	0.37	0.26	0.27	0.07	0.08	0.08	0.08	0.15	0.11	0.22	0.08	0.06	0.06	0.05
$\overline{\lvert\alpha_{\text{FF6}}\rvert}$	0.13	0.07	0.07	0.24	0.48	0.41	0.40	0.28	0.28	0.07	0.08	0.08	0.08	0.13	0.11	0.19	0.07	0.07	0.06	0.04
$\overline{\lvert\alpha_{\text{FF6c}}\rvert}$	0.16	0.05	0.06	0.24	0.46	0.40	0.39	0.26	0.26	0.06	0.09	0.08	0.08	0.13	0.11	0.21	0.08	0.08	0.06	0.06
$\overline{\lvert\alpha_{\text{BS6}}\rvert}$	0.18	0.12	0.10	0.34	0.56	0.51	0.49	0.32	0.32	0.10	0.11	0.11	0.10	0.18	0.18	0.22	0.09	0.07	0.06	0.06
$\overline{\lvert\alpha_{\text{SY4}}\rvert}$	0.08	0.07	0.06	0.18	0.45	0.35	0.33	0.26	0.25	0.07	0.06	0.07	0.07	0.11	0.09	0.15	0.07	0.08	0.08	0.06
$\overline{\lvert\alpha_{\text{DHS}}\rvert}$	0.10	0.06	0.17	0.29	0.54	0.47	0.46	0.23	0.22	0.10	0.10	0.11	0.11	0.10	0.09	0.07	0.08	0.23	0.24	0.20
p_q	0.03	0.06	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.18	0.02	0.01	0.02	0.01	0.01	0.19	0.06	0.06	0.38
p_{q^5}	0.16	0.53	0.38	0.25	0.00	0.02	0.03	0.00	0.00	0.09	0.08	0.04	0.02	0.13	0.05	0.01	0.17	0.07	0.14	0.31
p_{FF5}	0.05	0.06	0.83	0.00	0.01	0.01	0.00	0.00	0.00	0.10	0.22	0.05	0.01	0.00	0.01	0.00	0.06	0.20	0.16	0.36
p_{FF6}	0.05	0.19	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.18	0.04	0.03	0.01	0.01	0.00	0.30	0.11	0.15	0.42
p_{FF6c}	0.03	0.51	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.09	0.04	0.02	0.04	0.01	0.00	0.21	0.17	0.22	0.49
p_{BS6}	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.08	0.05	0.06	0.18
p_{SY4}	0.24	0.31	0.69	0.06	0.00	0.01	0.02	0.00	0.00	0.32	0.62	0.12	0.08	0.17	0.18	0.00	0.36	0.17	0.21	0.31
p_{DHS}	0.28	0.26	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.07	0.01	0.01	0.21	0.25	0.55	0.12	0.00	0.00	0.00

	141	142	143	144	145	146	147	148	149	150
	R_{a}^{1}	R_{n}^{1}	$R_{\mathrm{a}}^{[2,5]}$	$R_{\mathrm{a}}^{[6,10]}$	$R_{\mathrm{n}}^{[6,10]}$	$R_{\mathrm{a}}^{[11,15]}$	$R_{\mathrm{a}}^{[16,20]}$	Dtv12	Isff1	Isq1
$\overline{R}$	0.63	0.59	0.71	0.81	−0.44	0.63	0.57	−0.36	0.30	0.22
$t_{\overline{R}}$	3.31	1.97	4.31	5.09	−2.34	4.65	3.53	−2.05	3.41	2.59
α_q	0.53	−0.06	0.83	1.08	0.02	0.61	0.65	−0.13	0.31	0.28
α_{q^5}	0.43	−0.67	0.84	0.91	0.04	0.56	0.63	−0.16	0.23	0.18
α_{FF5}	0.61	0.81	0.74	1.02	−0.10	0.69	0.62	−0.07	0.33	0.26
α_{FF6}	0.42	−0.27	0.76	1.08	−0.02	0.66	0.62	−0.08	0.29	0.23
α_{FF6c}	0.34	−0.24	0.69	1.06	−0.06	0.67	0.65	−0.10	0.28	0.21
α_{BS6}	0.41	−0.20	0.80	1.07	0.29	0.59	0.61	−0.02	0.35	0.31
α_{SY4}	0.53	−0.19	0.85	0.98	−0.09	0.59	0.58	−0.03	0.27	0.23
α_{DHS}	0.27	−0.76	0.60	1.09	−0.36	0.53	0.62	−0.88	0.28	0.34
t_q	2.57	−0.15	4.28	5.13	0.09	3.68	3.48	−1.69	3.05	2.84
t_{q^5}	1.94	−1.83	4.11	4.62	0.21	3.27	3.06	−2.06	2.07	1.71
t_{FF5}	3.36	2.20	4.22	5.32	−0.59	4.08	3.93	−1.03	3.55	2.80
t_{FF6}	2.39	−1.75	4.00	5.61	−0.12	4.28	3.62	−1.02	3.17	2.45
t_{FF6c}	1.84	−1.55	3.49	5.14	−0.34	4.00	3.49	−1.24	2.93	2.16
t_{BS6}	2.03	−1.24	3.95	4.82	1.54	3.40	3.52	−0.23	3.62	3.12
t_{SY4}	2.89	−0.66	4.44	4.97	−0.49	3.99	3.23	−0.34	2.81	2.31
t_{DHS}	1.14	−2.20	2.75	5.38	−1.75	3.23	3.32	−4.20	2.84	3.00
$\overline{\lvert\alpha_q\rvert}$	0.14	0.18	0.17	0.24	0.15	0.17	0.16	0.09	0.09	0.11
$\overline{\lvert\alpha_{q^5}\rvert}$	0.12	0.24	0.17	0.20	0.10	0.17	0.16	0.09	0.08	0.09
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.16	0.17	0.15	0.23	0.15	0.19	0.16	0.05	0.08	0.09
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.12	0.20	0.15	0.24	0.14	0.18	0.16	0.05	0.08	0.08
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.11	0.21	0.14	0.24	0.15	0.19	0.18	0.05	0.08	0.07
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.12	0.22	0.16	0.24	0.15	0.18	0.16	0.06	0.10	0.12
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.13	0.18	0.16	0.22	0.13	0.16	0.14	0.07	0.09	0.10
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.10	0.32	0.11	0.24	0.15	0.15	0.15	0.37	0.08	0.09
p_q	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
p_{q^5}	0.53	0.00	0.00	0.00	0.15	0.00	0.02	0.05	0.02	0.06
p_{FF5}	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.00
p_{FF6}	0.29	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.01	0.01
p_{FF6c}	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.02	0.08
p_{BS6}	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
p_{SY4}	0.20	0.00	0.00	0.00	0.02	0.00	0.03	0.18	0.00	0.00
p_{DHS}	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00

Table A.11 : The q^5-factor Loadings for the 150 Individual Anomalies, January 1967–December 2018, 624 Months

For each of the 150 high-minus-low deciles, we show the loadings on the market, size, investment-to-assets, Roe, and expected growth factors (β_{Mkt}, β_{Me}, $\beta_{\text{I/A}}$, β_{Roe}, and β_{Eg}, respectively) in the q^5 model, as well as their heteroscedasticity-and-autocorrelation-adjusted t-values (denoted t_{Mkt}, t_{Me}, $t_{\text{I/A}}$, t_{Roe}, and t_{Eg}, respectively). Table 4 describes the anomalies. Hou, Xue, and Zhang (2019) detail variable definition and portfolio construction.

	1 Sue1	2 Abr1	3 Abr6	4 Abr12	5 Re1	6 Re6	7 R^61	8 R^66	9 R^612	10 $R^{11}1$	11 $R^{11}6$	12 $R^{11}12$	13 Im1	14 Im6	15 Im12	16 Rs1	17 dEf1	18 dEf6	19 dEf12	20 Nei1
β_{Mkt}	−0.02	−0.04	−0.02	0.00	−0.06	−0.06	−0.15	−0.02	0.02	−0.05	0.00	0.02	−0.13	−0.01	0.00	−0.02	0.02	0.06	0.03	0.03
β_{Me}	0.00	0.06	0.09	0.08	−0.17	−0.14	0.27	0.27	0.09	0.37	0.18	−0.07	0.18	0.28	0.17	−0.10	−0.05	−0.02	−0.07	−0.04
$\beta_{\text{I/A}}$	−0.14	−0.19	−0.24	−0.31	0.02	−0.15	−0.19	−0.25	−0.35	−0.20	−0.34	−0.49	−0.07	−0.10	−0.29	−0.51	−0.17	−0.31	−0.34	−0.35
β_{Roe}	0.79	0.21	0.13	0.12	1.22	1.01	0.95	0.80	0.73	1.19	1.13	1.00	0.60	0.64	0.56	0.49	0.74	0.77	0.66	0.58
β_{Eg}	0.18	0.19	0.15	0.12	0.06	0.13	0.71	0.69	0.41	0.85	0.56	0.27	0.57	0.63	0.43	0.24	0.08	0.01	0.02	0.17
t_{Mkt}	−0.42	−0.83	−0.59	−0.13	−1.08	−1.10	−1.62	−0.27	0.34	−0.56	0.02	0.39	−1.71	−0.12	0.08	−0.40	0.37	1.43	0.85	1.26
t_{Me}	0.04	0.66	1.86	2.07	−2.04	−1.70	1.38	1.64	0.68	1.80	1.05	−0.52	1.00	1.91	1.31	−1.99	−0.54	−0.23	−1.17	−1.03
$t_{\text{I/A}}$	−1.56	−1.89	−3.50	−5.58	0.13	−1.09	−0.63	−1.24	−2.21	−0.70	−1.63	−2.82	−0.26	−0.53	−1.67	−6.51	−1.26	−2.74	−4.06	−5.27
t_{Roe}	10.18	2.14	1.84	2.60	8.66	7.84	2.98	3.88	5.09	4.23	5.41	6.86	2.76	3.55	3.72	5.90	6.95	7.83	8.96	9.28
t_{Eg}	1.83	1.63	1.64	1.70	0.38	0.96	2.82	3.51	2.51	3.33	2.58	1.47	2.86	3.68	2.69	2.56	0.55	0.12	0.21	2.47

	21 52w6	22 52w12	23 ϵ^66	24 ϵ^612	25 $\epsilon^{11}1$	26 $\epsilon^{11}6$	27 $\epsilon^{11}12$	28 Sm1	29 Sm12	30 Ilr1	31 Ilr6	32 Ilr12	33 Ile1	34 Cm1	35 Cm12	36 Sim1	37 Cim1	38 Cim6	39 Cim12	40 Bm
β_{Mkt}	−0.38	−0.33	0.00	0.01	0.05	0.03	0.02	0.02	0.03	−0.14	−0.08	−0.03	−0.01	0.08	0.03	0.08	0.02	−0.03	0.00	0.01
β_{Me}	−0.33	−0.46	0.11	0.06	0.16	0.13	0.05	−0.18	0.12	−0.06	0.09	0.09	0.05	−0.16	0.10	0.10	−0.16	0.14	0.12	0.42
$\beta_{\text{I/A}}$	0.26	0.16	0.02	−0.05	0.14	0.03	−0.02	0.17	0.01	0.03	−0.05	−0.09	−0.22	0.24	−0.02	0.11	0.07	0.02	−0.09	1.34
β_{Roe}	1.10	1.00	0.14	0.20	0.28	0.29	0.28	−0.17	0.18	−0.04	0.25	0.25	0.53	−0.06	0.09	−0.04	0.05	0.18	0.18	−0.58
β_{Eg}	0.60	0.38	0.32	0.27	0.39	0.29	0.19	0.24	0.16	0.36	0.27	0.25	0.31	0.06	0.10	0.56	0.40	0.37	0.35	0.09
t_{Mkt}	−5.57	−6.69	0.07	0.17	0.84	0.61	0.52	0.31	1.51	−1.99	−2.38	−1.03	−0.16	1.10	0.95	1.05	0.35	−0.90	0.07	0.27
t_{Me}	−2.09	−4.40	1.78	1.05	2.40	1.67	0.63	−1.98	3.92	−0.67	1.20	1.60	0.53	−1.94	1.64	0.82	−1.71	1.99	2.37	5.27
$t_{\text{I/A}}$	1.33	1.16	0.27	−0.66	1.21	0.29	−0.18	0.98	0.19	0.17	−0.46	−1.23	−1.83	1.47	−0.29	0.51	0.41	0.17	−0.83	13.13
t_{Roe}	5.21	6.81	1.42	2.69	2.09	2.75	3.04	−0.99	3.59	−0.30	2.67	3.45	4.95	−0.35	1.54	−0.21	0.38	1.91	2.51	−6.42
t_{Eg}	3.55	2.70	2.93	2.89	2.50	2.12	1.65	1.36	2.86	2.25	2.83	3.63	2.53	0.35	1.89	3.15	2.43	3.77	4.90	0.78

	41 Ep^q1	42 Ep^q6	43 Ep^q12	44 Cp^q1	45 Cp^q6	46 Nop	47 Em	48 Em^q1	49 Sp	50 Sp^q1	51 Sp^q6	52 Sp^q12	53 Ocp	54 Ocp^q1	55 Ia	56 Ia^q6	57 Ia^q12	58 dPia	59 Noa	60 dNoa
β_{Mkt}	−0.01	−0.03	−0.06	0.06	0.00	−0.13	0.08	0.05	0.08	0.11	0.07	0.05	0.01	0.13	0.04	0.06	0.04	0.04	−0.06	−0.01
β_{Me}	0.29	0.25	0.26	0.18	0.17	−0.31	−0.20	0.01	0.61	0.57	0.60	0.63	0.17	0.15	−0.13	−0.19	−0.21	−0.11	0.08	0.03
$\beta_{\text{I/A}}$	0.90	0.87	0.85	1.11	1.05	0.99	−0.97	−0.76	1.18	1.14	1.16	1.14	1.41	1.15	−1.41	−1.36	−1.37	−0.88	0.11	−1.04
β_{Roe}	0.23	0.20	0.16	−0.49	−0.49	−0.01	0.22	−0.05	−0.22	−0.45	−0.41	−0.29	−0.57	−0.61	0.13	0.37	0.22	0.09	0.17	0.03
β_{Eg}	−0.20	−0.07	−0.04	−0.25	−0.13	0.24	−0.21	0.03	−0.16	−0.24	−0.21	−0.21	0.14	0.13	0.05	−0.12	−0.07	0.01	−0.53	−0.03
t_{Mkt}	−0.16	−0.60	−1.18	0.98	−0.10	−3.01	1.61	0.93	1.61	1.65	1.25	1.07	0.20	1.54	1.35	1.92	1.19	1.19	−1.62	−0.29
t_{Me}	2.20	2.08	2.39	1.36	1.44	−3.99	−2.51	0.14	4.60	3.43	4.02	4.59	1.55	0.72	−2.34	−3.53	−4.56	−2.11	0.80	0.55
$t_{\text{I/A}}$	5.53	6.55	6.78	7.14	7.48	10.17	−7.89	−5.37	9.88	6.57	7.68	8.61	10.13	5.84	−19.14	−14.29	−15.67	−9.21	0.77	−9.93
t_{Roe}	1.41	1.50	1.36	−3.15	−3.70	−0.13	1.80	−0.43	−1.92	−2.33	−2.48	−2.21	−4.57	−2.80	1.85	4.89	3.26	1.06	1.68	0.47
t_{Eg}	−1.45	−0.54	−0.35	−1.69	−1.02	2.32	−1.78	0.23	−1.36	−1.62	−1.55	−1.75	1.04	0.69	0.56	−1.34	−0.86	0.15	−5.10	−0.49

	61 dLno	62 Ig	63 2Ig	64 Nsi	65 dIi	66 Cei	67 Ivg	68 Ivc	69 Oa	70 dWc	71 dCoa	72 dNco	73 dNca	74 dFin	75 dFnl	76 dBe	77 Dac	78 Poa	79 Pta	80 Pda
β_{Mkt}	−0.07	0.00	0.06	0.01	0.03	0.17	−0.04	0.00	0.00	−0.03	0.04	−0.03	−0.05	0.01	0.03	0.03	−0.05	−0.03	0.04	−0.03
β_{Me}	−0.15	−0.15	−0.28	0.14	−0.16	0.24	0.06	−0.03	0.25	0.33	−0.04	−0.07	−0.10	−0.08	−0.08	−0.13	0.15	0.14	0.15	0.05
$\beta_{\text{I/A}}$	−0.80	−0.82	−0.80	−0.56	−0.66	−0.89	−0.88	−0.63	0.14	−0.15	−1.13	−0.77	−0.88	−0.36	−0.44	−1.33	0.45	−0.79	−0.79	−0.09
β_{Roe}	0.01	−0.11	−0.09	−0.17	−0.19	0.00	0.10	0.29	0.46	0.32	0.16	0.02	0.02	−0.09	−0.14	0.27	0.38	0.19	0.13	0.14
β_{Eg}	−0.06	0.14	0.08	−0.31	0.03	−0.43	−0.16	−0.36	−0.56	−0.52	−0.11	−0.09	−0.01	0.40	−0.04	−0.08	−0.64	−0.26	−0.23	−0.50
t_{Mkt}	−1.46	0.00	1.83	0.33	0.90	4.94	−1.08	−0.01	−0.02	−0.77	1.35	−0.78	−1.41	0.34	0.98	0.73	−1.62	−1.02	1.05	−0.82
t_{Me}	−2.30	−2.69	−4.41	1.90	−3.43	3.75	1.55	−0.63	4.64	4.03	−0.78	−1.50	−1.99	−1.72	−1.80	−1.98	2.83	3.35	2.39	0.66
$t_{\text{I/A}}$	−7.53	−11.11	−9.71	−6.97	−8.23	−12.29	−12.12	−5.82	1.41	−1.58	−17.87	−11.64	−13.44	−3.03	−6.33	−13.02	4.91	−8.24	−7.71	−0.70
t_{Roe}	0.06	−1.64	−1.16	−2.59	−2.62	−0.05	1.32	3.16	6.43	4.36	2.53	0.20	0.32	−1.05	−1.93	3.05	5.74	2.84	1.45	1.56
t_{Eg}	−0.53	1.60	0.95	−3.83	0.42	−5.04	−1.68	−3.43	−5.58	−5.45	−1.20	−1.10	−0.06	3.66	−0.42	−0.86	−6.02	−2.77	−2.32	−4.78

	81 Roe1	82 Roe6	83 dRoe1	84 dRoe6	85 dRoe12	86 Roa1	87 dRoa1	88 dRoa6	89 Ato	90 Cto	91 Rna^{q}1	92 Rna^{q}6	93 Ato^{q}1	94 Ato^{q}6	95 Ato^{q}12	96 Cto^{q}1	97 Cto^{q}6	98 Cto^{q}12	99 Gpa	100 Gla^{q}1
β_{Mkt}	−0.05	−0.09	0.06	0.06	0.02	−0.09	0.13	0.09	0.24	0.17	−0.10	−0.10	0.15	0.13	0.12	0.12	0.13	0.12	0.06	0.03
β_{Me}	−0.34	−0.40	−0.01	0.01	0.00	−0.34	0.14	0.13	0.29	0.36	−0.43	−0.46	0.43	0.38	0.33	0.32	0.31	0.30	0.05	0.14
$\beta_{\text{I/A}}$	0.10	0.01	0.10	0.12	0.09	−0.13	0.12	0.11	−1.08	−0.55	−0.20	−0.27	−0.62	−0.73	−0.80	−0.17	−0.25	−0.31	−0.37	−0.37
β_{Roe}	1.42	1.30	0.48	0.48	0.47	1.25	0.49	0.55	0.16	0.54	1.17	1.03	0.43	0.41	0.36	0.79	0.74	0.68	0.47	0.54
β_{Eg}	0.24	0.22	0.41	0.27	0.14	0.36	0.35	0.14	0.50	0.03	0.36	0.39	0.40	0.38	0.36	0.12	0.12	0.13	0.23	0.35
t_{Mkt}	−1.35	−2.45	1.56	1.62	0.78	−3.01	3.02	2.22	5.53	3.60	−2.60	−3.14	2.66	2.50	2.30	2.38	2.59	2.40	1.59	0.87
t_{Me}	−5.59	−6.27	−0.08	0.13	0.09	−6.14	2.03	1.86	5.05	4.89	−8.86	−10.84	5.54	5.56	5.81	3.03	3.35	3.52	1.10	2.80
$t_{\text{I/A}}$	1.14	0.14	1.22	1.76	1.76	−1.95	1.16	1.41	−9.62	−5.75	−2.26	−3.30	−6.62	−7.92	−8.95	−1.74	−2.62	−3.41	−4.46	−4.50
t_{Roe}	18.88	16.73	5.28	5.53	7.36	16.11	4.47	5.22	2.17	7.00	15.75	13.77	4.30	5.15	4.71	9.36	9.63	9.31	6.33	8.75
t_{Eg}	2.46	2.46	3.61	2.78	2.12	4.23	2.90	1.31	4.59	0.24	4.17	4.91	3.49	3.49	3.35	1.05	1.05	1.19	2.25	3.59

	101 Gla^{q}6	102 Gla^{q}12	103 Ole^{q}1	104 Ole^{q}6	105 Opa	106 Ola^{q}1	107 Ola^{q}6	108 Ola^{q}12	109 Cop	110 Cla	111 Cla^{q}1	112 Cla^{q}6	113 Cla^{q}12	114 F^{q}1	115 F^{q}6	116 F^{q}12	117 Fp^{q}6	118 O^{q}1	119 Tbi^{q}12	120 Sg^{q}1
β_{Mkt}	0.05	0.04	−0.01	−0.02	−0.16	−0.03	−0.03	−0.06	−0.13	−0.11	−0.01	0.03	0.00	−0.09	−0.06	−0.06	0.33	0.09	−0.08	0.14
β_{Me}	0.08	0.06	−0.22	−0.28	−0.40	−0.27	−0.32	−0.32	−0.53	−0.55	−0.27	−0.27	−0.27	−0.35	−0.42	−0.43	0.38	0.77	−0.17	0.12
$\beta_{\text{I/A}}$	−0.46	−0.54	0.34	0.29	−0.58	−0.43	−0.48	−0.57	−0.32	−0.56	−0.29	−0.28	−0.32	0.40	0.33	0.31	0.36	0.28	−0.12	−0.79
β_{Roe}	0.50	0.43	1.07	0.97	0.42	0.81	0.73	0.65	0.20	0.12	0.22	0.22	0.18	0.76	0.71	0.68	−1.31	−0.62	0.04	0.66
β_{Eg}	0.30	0.30	0.31	0.29	0.82	0.84	0.79	0.72	0.97	0.93	0.77	0.73	0.66	−0.16	−0.20	−0.17	−0.84	−0.49	−0.05	0.21
t_{Mkt}	1.77	1.22	−0.34	−0.60	−4.36	−0.77	−1.02	−2.37	−3.75	−3.07	−0.26	1.21	−0.20	−1.57	−1.37	−1.47	5.25	2.39	−2.16	3.11
t_{Me}	1.70	1.51	−2.11	−3.25	−4.83	−3.69	−5.72	−5.76	−8.09	−9.19	−4.57	−5.84	−6.20	−3.30	−4.75	−5.28	2.16	14.54	−3.34	1.75
$t_{\text{I/A}}$	−6.15	−6.88	2.74	2.74	−7.09	−4.75	−6.48	−7.94	−4.42	−7.01	−3.19	−3.48	−4.52	2.84	2.92	3.29	1.56	2.78	−1.89	−7.22
t_{Roe}	8.23	6.52	10.12	9.21	6.09	10.71	11.84	9.43	3.59	1.94	3.13	4.28	3.77	6.85	7.65	7.22	−6.95	−8.65	0.58	5.34
t_{Eg}	3.38	3.39	2.66	2.60	8.07	9.14	10.39	8.73	11.84	12.27	7.00	10.18	10.81	−1.18	−1.68	−2.04	−5.50	−5.75	−0.67	1.43

	121 Oca	122 Ioca	123 Adm	124 Rdm	125 Rdm^{q}1	126 Rdm^{q}6	127 Rdm^{q}12	128 Rds^{q}6	129 Rds^{q}12	130 Ol	131 Ol^{q}1	132 Ol^{q}6	133 Ol^{q}12	134 Hs	135 Rer	136 Eprd	137 Etl	138 Alm^{q}1	139 Alm^{q}6	140 Alm^{q}12
β_{Mkt}	−0.12	−0.07	0.07	0.23	0.08	0.00	0.01	−0.08	−0.11	−0.05	−0.10	−0.12	−0.12	−0.18	0.09	0.10	0.03	0.08	0.07	0.07
β_{Me}	0.25	0.28	0.48	0.67	0.21	0.57	0.67	0.20	0.18	0.30	0.27	0.33	0.32	−0.09	−0.11	0.34	0.31	0.67	0.71	0.72
$\beta_{\text{I/A}}$	0.07	0.31	1.31	−0.10	0.47	0.51	0.61	−1.00	−1.01	0.12	0.03	0.00	−0.01	0.29	−0.16	0.47	−0.13	0.87	0.80	0.75
β_{Roe}	0.44	0.47	−0.30	−0.87	−1.15	−1.06	−0.90	−0.41	−0.41	0.58	0.67	0.59	0.56	0.03	−0.02	−0.57	0.02	−0.44	−0.34	−0.23
β_{Eg}	0.49	0.14	0.08	0.84	0.55	0.67	0.75	0.40	0.42	−0.05	0.00	0.12	0.14	−0.20	0.24	−0.14	0.09	−0.01	0.00	−0.06
t_{Mkt}	−1.94	−2.15	0.79	3.93	0.71	0.05	0.15	−1.01	−1.30	−1.02	−1.94	−2.53	−2.64	−3.66	1.69	1.73	0.63	2.17	2.38	2.32
t_{Me}	3.19	6.06	2.84	7.55	1.07	4.24	5.76	1.33	1.15	3.25	3.38	3.75	4.14	−1.11	−1.19	4.45	3.37	7.97	10.97	11.94
$t_{\text{I/A}}$	0.64	3.32	6.18	−0.69	1.65	2.58	3.68	−6.09	−6.55	1.16	0.29	−0.01	−0.14	1.91	−1.36	4.01	−0.88	8.86	9.99	9.44
t_{Roe}	3.62	6.86	−1.35	−5.83	−4.15	−6.22	−6.26	−2.27	−2.42	5.47	6.52	5.50	5.36	0.22	−0.21	−5.13	0.16	−5.17	−4.83	−3.03
t_{Eg}	3.26	1.20	0.42	5.37	2.45	3.50	4.61	2.45	2.67	−0.39	−0.03	0.95	1.23	−1.65	1.98	−1.25	0.82	−0.07	0.01	−0.72

	141 R_{a}^{1}	142 R_{n}^{1}	143 $R_{\text{a}}^{[2,5]}$	144 $R_{\text{a}}^{[6,10]}$	145 $R_{\text{n}}^{[6,10]}$	146 $R_{\text{a}}^{[11,15]}$	147 $R_{\text{a}}^{[16,20]}$	148 Dtv12	149 Isff1	150 Isq1
β_{Mkt}	0.23	−0.13	0.06	0.00	0.15	0.00	−0.06	0.14	−0.01	−0.01
β_{Me}	−0.14	0.44	−0.17	0.04	−0.29	−0.06	−0.08	−1.13	0.14	0.20
$\beta_{\text{I/A}}$	−0.21	−0.32	−0.30	−0.42	−0.81	−0.02	−0.06	−0.36	−0.07	−0.10
β_{Roe}	0.14	1.02	0.04	−0.30	−0.26	0.07	−0.01	0.28	−0.08	−0.16
β_{Eg}	0.15	0.90	−0.02	0.25	−0.04	0.08	0.02	0.04	0.12	0.15
t_{Mkt}	4.34	−1.22	1.01	−0.06	2.82	−0.07	−1.28	5.64	−0.18	−0.28
t_{Me}	−1.23	1.98	−1.67	0.47	−3.32	−0.66	−1.53	−32.45	3.75	2.80
$t_{\text{I/A}}$	−1.46	−0.97	−2.65	−2.62	−6.23	−0.18	−0.48	−7.62	−0.96	−1.42
t_{Roe}	0.99	3.17	0.32	−2.34	−1.95	0.63	−0.13	6.70	−1.40	−2.76
t_{Eg}	1.02	3.44	−0.19	1.88	−0.28	0.66	0.21	0.92	1.81	2.03

Table A.12 : Overall Performance of Factor Models, July 1972–December 2018, 558 Months

For each model, $\overline{\lvert\alpha_{\mathrm{H-L}}\rvert}$ is the average magnitude of the high-minus-low alphas, $\#_{\lvert t\rvert\geq 1.96}$ the number of the high-minus-low alphas with $\lvert t\rvert \geq 1.96$, $\#_{\lvert t\rvert\geq 3}$ the number of the high-minus-low alphas with $\lvert t\rvert \geq 3$, $\overline{\lvert\alpha\rvert}$ the mean absolute alpha across the anomaly deciles in a given category, and $\#_{p<5\%}$ the number of sets of deciles within a given category, with which the factor model is rejected by the GRS test at the 5% level. We report the results for the q-factor model (q), the q^5 model (q^5), the Fama-French (2015) 5-factor model (FF5), the Fama-French (2018) 6-factor model with RMW (FF6), the Fama-French alternaive 6-factor model with RMWc (FF6c), the Barillas-Shanken (2018) 6-factor model (BS6), the Stambaugh-Yuan (2017) 4-factor model (SY4), the Daniel-Hirshleifer-Sun (2018) 3-factor model with the PEAD factor based on the composite score of Sue, Re, and Abr (DHS), and the Daniel-Hirshleifer-Sun 3-factor model with the PEAD factor based on Abr only (DHSa).

	$\overline{\lvert\alpha_{\mathrm{H-L}}\rvert}$	$\#_{\lvert t\rvert\geq 1.96}$	$\#_{\lvert t\rvert\geq 3}$	$\overline{\lvert\alpha\rvert}$	$\#_{p<5\%}$	$\overline{\lvert\alpha_{\mathrm{H-L}}\rvert}$	$\#_{\lvert t\rvert\geq 1.96}$	$\#_{\lvert t\rvert\geq 3}$	$\overline{\lvert\alpha\rvert}$	$\#_{p<5\%}$	$\overline{\lvert\alpha_{\mathrm{H-L}}\rvert}$	$\#_{\lvert t\rvert\geq 1.96}$	$\#_{\lvert t\rvert\geq 3}$	$\overline{\lvert\alpha\rvert}$	$\#_{p<5\%}$	$\overline{\lvert\alpha_{\mathrm{H-L}}\rvert}$	$\#_{\lvert t\rvert\geq 1.96}$	$\#_{\lvert t\rvert\geq 3}$	$\overline{\lvert\alpha\rvert}$	$\#_{p<5\%}$
	Panel A: All (150)					Panel B: Momentum (39)					Panel C: Value-versus-growth (15)					Panel D: Investment (26)				
q	0.28	49	23	0.12	87	0.24	9	1	0.10	20	0.25	1	0	0.11	8	0.22	8	4	0.10	15
q^5	0.20	23	5	0.10	53	0.17	4	1	0.09	12	0.27	2	0	0.13	6	0.10	1	0	0.08	5
FF5	0.42	95	60	0.13	107	0.60	37	23	0.15	37	0.15	1	0	0.09	4	0.23	10	6	0.09	14
FF6	0.29	67	39	0.11	81	0.24	17	6	0.09	18	0.21	4	1	0.10	7	0.21	9	5	0.09	13
FF6c	0.27	51	26	0.11	64	0.23	10	4	0.10	15	0.18	3	1	0.10	5	0.18	7	2	0.08	6
BS6	0.28	54	37	0.13	125	0.21	10	4	0.12	32	0.20	3	1	0.12	11	0.22	8	6	0.12	23
SY4	0.29	64	24	0.11	83	0.32	18	6	0.10	24	0.27	5	1	0.12	8	0.19	7	3	0.09	15
DHS	0.37	66	32	0.14	98	0.26	11	3	0.13	26	0.82	15	13	0.23	15	0.32	16	3	0.11	21
DHSa	0.32	59	13	0.12	67	0.18	2	0	0.10	17	0.61	14	5	0.19	10	0.26	13	1	0.09	12
						Panel E: Profitability (40)					Panel F: Intangibles (27)					Panel G: Trading frictions (3)				
q						0.24	16	6	0.10	25	0.46	13	10	0.18	16	0.26	2	2	0.11	3
q^5						0.14	5	1	0.09	14	0.36	8	3	0.15	14	0.21	3	0	0.09	2
FF5						0.43	29	22	0.12	32	0.50	16	8	0.16	17	0.24	2	1	0.08	3
FF6						0.31	23	15	0.10	24	0.48	12	11	0.17	17	0.21	2	1	0.08	2
FF6c						0.25	17	7	0.10	20	0.49	12	11	0.17	17	0.23	2	1	0.08	1
BS6						0.30	18	13	0.12	34	0.48	13	11	0.20	22	0.26	2	2	0.10	3
SY4						0.29	21	8	0.10	23	0.38	11	6	0.15	11	0.19	2	0	0.09	2
DHS						0.18	5	1	0.09	14	0.59	16	10	0.19	19	0.50	3	2	0.18	3
DHSa						0.25	12	1	0.08	8	0.51	15	6	0.17	17	0.34	3	0	0.15	3

Table A.13 : Explaining Composite Anomalies, July 1972–December 2018, 558 Months

We form composite scores across the 150 anomalies (All) and across each category of anomalies, including momentum (Mom), value-versus-growth (VvG), investment (Inv), profitability (Prof), intangibles (Intan), and trading frictions (Fric). For a given set, we construct the composite score by equal-weighting a stock's percentile ranking for each anomaly (realigned to yield a positive slope in forecasting returns). At the beginning of each month t, we split stocks into deciles based on the NYSE breakpoints of the composite scores, and calculate value-weighted returns for month t. The deciles are rebalanced at the beginning of month $t+1$. For each model and each set of deciles, we report the high-minus-low alpha (Panel A), its t-value (Panel B), the mean absolute alpha (Panel C), and the GRS p-value (Panel D). We report the results for the q-factor model (q), the q^5 model (q^5), the Fama-French (2015) 5-factor model (FF5), the Fama-French (2018) 6-factor model (FF6), the Fama-French alternative 6-factor model with RMWc (FF6c), the Barillas-Shanken (2018) 6-factor model (BS6), the Stambaugh-Yuan (2017) model (SY4), the Daniel-Hirshleifer-Sun (2018) 3-factor model with the PEAD factor based on the composite score of Sue, Re, and Abr (DHS), and the Daniel-Hirshleifer-Sun model with the PEAD factor based on Abr only (DHSa). For the q^5 model, Panel E shows the loadings on the market, size, investment, Roe, and expected growth factors ($\beta_{\mathrm{Mkt}}, \beta_{\mathrm{Me}}, \beta_{\mathrm{I/A}}, \beta_{\mathrm{Roe}}$, and β_{Eg}, respectively) and their t-values. The t-values are adjusted for heteroscedasticity and autocorrelations.

	All	Mom	VvG	Inv	Prof	Intan	Fric
$\overline{R}$	1.66	1.03	0.78	0.65	0.81	0.94	0.25
$t_{\overline{R}}$	8.65	3.65	3.68	4.12	4.34	4.84	1.78

Panel A: The high-minus-low alpha, $\alpha_{\mathrm{H-L}}$

	All	Mom	VvG	Inv	Prof	Intan	Fric
q	0.83	0.31	0.37	0.26	0.27	0.42	0.21
q^5	0.35	−0.27	0.45	0.06	−0.16	0.46	0.20
FF5	1.29	1.16	0.11	0.26	0.59	0.42	0.19
FF6	0.89	0.24	0.25	0.24	0.41	0.52	0.16
FF6c	0.76	0.22	0.17	0.23	0.26	0.51	0.18
BS6	0.63	0.13	−0.10	0.19	0.32	0.23	0.18
SY4	0.91	0.44	0.40	0.07	0.39	0.42	0.18
DHS	0.68	−0.43	1.05	0.54	−0.12	0.85	0.58
DHSa	0.95	0.11	0.81	0.44	0.37	0.80	0.41

Panel B: $t_{\mathrm{H-L}}$

	All	Mom	VvG	Inv	Prof	Intan	Fric
q	5.17	0.87	1.87	2.46	2.07	2.44	2.18
q^5	2.34	−0.84	2.43	0.55	−1.33	2.76	2.00
FF5	7.16	3.32	0.79	2.50	4.98	2.95	2.20
FF6	6.55	1.41	2.05	2.33	3.57	3.93	1.85
FF6c	5.84	1.29	1.38	2.13	1.87	3.62	1.89
BS6	4.22	0.75	−0.71	1.67	2.31	1.63	2.04
SY4	7.25	1.84	2.47	0.67	2.89	2.82	1.91
DHS	4.26	−1.67	5.41	3.52	−0.69	4.78	4.10
DHSa	5.63	0.40	3.99	3.20	1.95	4.65	2.98

Panel C: The mean absolute alpha, $\overline{\lvert\alpha\rvert}$

	All	Mom	VvG	Inv	Prof	Intan	Fric
q	0.16	0.10	0.13	0.11	0.08	0.18	0.11
q^5	0.10	0.08	0.15	0.07	0.11	0.18	0.09
FF5	0.25	0.27	0.09	0.09	0.12	0.17	0.09
FF6	0.16	0.09	0.10	0.08	0.09	0.19	0.08
FF6c	0.14	0.10	0.08	0.06	0.07	0.19	0.07
BS6	0.13	0.09	0.10	0.10	0.09	0.15	0.12
SY4	0.17	0.11	0.14	0.08	0.10	0.17	0.10
DHS	0.15	0.15	0.31	0.13	0.10	0.27	0.14
DHSa	0.19	0.08	0.26	0.11	0.09	0.24	0.12

Panel D: The GRS p-value, p_{GRS}

	All	Mom	VvG	Inv	Prof	Intan	Fric
q	0.00	0.17	0.02	0.00	0.01	0.00	0.00
q^5	0.02	0.60	0.00	0.10	0.02	0.00	0.01
FF5	0.00	0.00	0.10	0.00	0.00	0.00	0.01
FF6	0.00	0.19	0.05	0.01	0.00	0.00	0.02
FF6c	0.00	0.13	0.11	0.05	0.11	0.00	0.07
BS6	0.00	0.20	0.04	0.00	0.00	0.00	0.00
SY4	0.00	0.03	0.01	0.00	0.00	0.00	0.00
DHS	0.00	0.00	0.00	0.00	0.11	0.00	0.00
DHSa	0.00	0.06	0.00	0.00	0.17	0.00	0.00

Panel E: The q^5 factor loadings

	All	Mom	VvG	Inv	Prof	Intan	Fric
β_{Mkt}	−0.04	−0.12	0.04	−0.03	0.04	−0.04	−0.04
β_{Me}	0.20	0.32	0.27	−0.04	−0.02	0.36	0.75
$\beta_{\mathrm{I/A}}$	0.57	−0.23	1.37	1.27	−0.40	0.79	−0.04
β_{Roe}	0.86	1.18	−0.30	−0.18	1.04	0.32	−0.21
β_{Eg}	0.70	0.85	−0.11	0.29	0.63	−0.06	0.01

	All	Mom	VvG	Inv	Prof	Intan	Fric
t_{Mkt}	−0.83	−1.42	0.78	−1.10	1.19	−0.77	−1.56
t_{Me}	3.23	1.58	1.94	−1.00	−0.40	3.02	22.48
$t_{\mathrm{I/A}}$	5.75	−0.81	9.55	19.21	−4.68	5.77	−0.67
t_{Roe}	8.74	5.33	−2.36	−2.54	14.37	2.82	−4.80
t_{Eg}	7.18	4.13	−0.79	3.79	7.02	−0.47	0.15

Table A.14 : Explaining the 150 Individual Anomalies, July 1972–December 2018, 558 Months

We examine in total 9 factor models, including the q-factor model (q), the q^5 model (q^5), the Fama-French 5-factor model (FF5), the Fama-French 6-factor model (FF6), the Fama-French alternative 6-factor model with RMW replaced by RMWc (FF6c), the Barillas-Shanken 6-factor model (BS6), the Stambaugh-Yuan 4-factor model (SY4), the Daniel-Hirshleifer-Sun (2018) 3-factor model with the PEAD factor based on the composite score of Sue, Re, and Abr (DHS), and the Daniel-Hirshleifer-Sun 3-factor model with the PEAD factor based on Abr only (DHSa). For each high-minus-low decile, we report the average return, $\overline{R}$, the q-factor alpha (α_q), the q^5 alpha (α_{q^5}), the Fama-French 5-factor alpha (α_{FF5}), the Fama-French 6-factor alpha (α_{FF6}), the alternative 6-factor alpha (α_{FF6c}), the Barillas-Shanken alpha (α_{BS6}), the Stambaugh-Yuan alpha (α_{SY4}), the Daniel-Hirshleifer-Sun alpha (α_{DHS}), and the alternative Daniel-Hirshleifer-Sun alpha (α_{DHSa}), as well as their heteroscedasticity-and-autocorrelation-consistent t-statistics, denoted by $t_{\overline{R}}$, t_q, t_{q^5}, t_{FF5}, t_{FF6}, t_{FF6c}, t_{BS6}, t_{SY4}, t_{DHS}, and t_{DHSa}, respectively. In addition, for all the ten deciles formed on a given anomaly variable, we report for all the factor models the mean absolute alphas, denoted by $\overline{|\alpha_q|}$, $\overline{|\alpha_{q^5}|}$, $\overline{|\alpha_{\mathrm{FF5}}|}$, $\overline{|\alpha_{\mathrm{FF6}}|}$, $\overline{|\alpha_{\mathrm{FF6c}}|}$, $\overline{|\alpha_{\mathrm{BS6}}|}$, $\overline{|\alpha_{\mathrm{SY4}}|}$, $\overline{|\alpha_{\mathrm{DHS}}|}$, and $\overline{|\alpha_{\mathrm{DHSa}}|}$, as well as its p-values from the GRS test on the null hypothesis that all the alphas across a given set of deciles are jointly zero. The p-values are denoted by p_q, p_{q^5}, p_{FF5}, p_{FF6}, p_{FF6c}, p_{BS6}, p_{SY4}, p_{DHS}, and p_{DHSa}, respectively. Table 4 in the main text describes the anomaly symbols. Hou, Xue, and Zhang (2019) detail variable definition and portfolio construction.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Sue1	Abr1	Abr6	Abr12	Re1	Re6	$R^6$1	$R^6$6	$R^6$12	R^{11}1	R^{11}6	R^{11}12	Im1	Im6	Im12	Rs1	dEf1	dEf6	dEf12	Nei1
$\overline{R}$	0.43	0.72	0.36	0.24	0.78	0.48	0.58	0.81	0.52	1.11	0.74	0.40	0.57	0.56	0.57	0.36	0.94	0.56	0.33	0.30
$t_{\overline{R}}$	3.19	5.62	3.71	3.12	3.40	2.38	1.90	3.28	2.65	3.64	2.78	1.74	2.31	2.71	3.06	2.49	4.55	3.33	2.47	2.65
α_q	−0.01	0.64	0.34	0.25	0.14	0.00	0.05	0.31	0.17	0.34	0.14	0.02	0.22	0.12	0.28	0.26	0.56	0.17	0.06	0.07
α_{q^5}	−0.09	0.52	0.24	0.18	0.10	−0.08	−0.40	−0.13	−0.08	−0.20	−0.20	−0.13	−0.15	−0.29	0.02	0.15	0.50	0.17	0.04	−0.04
α_{FF5}	0.42	0.83	0.49	0.40	0.79	0.57	0.75	1.00	0.76	1.25	0.99	0.72	0.64	0.65	0.77	0.55	1.05	0.69	0.47	0.36
α_{FF6}	0.18	0.64	0.32	0.26	0.38	0.20	−0.22	0.17	0.16	0.15	0.11	0.13	−0.02	−0.02	0.23	0.41	0.73	0.38	0.23	0.20
α_{FF6c}	0.15	0.65	0.32	0.25	0.40	0.20	−0.17	0.16	0.11	0.15	0.06	0.03	0.00	−0.05	0.17	0.41	0.63	0.35	0.20	0.18
α_{BS6}	0.06	0.68	0.33	0.25	0.12	0.00	−0.15	0.12	0.08	0.10	0.02	0.01	0.11	−0.05	0.15	0.40	0.54	0.17	0.08	0.10
α_{SY4}	0.24	0.72	0.39	0.32	0.58	0.33	0.03	0.35	0.35	0.34	0.33	0.34	0.10	0.12	0.36	0.39	0.87	0.46	0.30	0.24
α_{DHS}	−0.39	0.29	0.10	0.05	−0.33	−0.45	−0.68	−0.24	−0.34	−0.36	−0.50	−0.61	−0.26	−0.29	−0.13	−0.22	0.21	−0.19	−0.25	−0.31
α_{DHSa}	0.02	0.03	0.09	0.12	0.35	0.16	−0.31	0.21	0.10	0.20	0.13	−0.03	−0.21	−0.07	0.14	0.09	0.62	0.26	0.14	0.02
t_q	−0.05	4.41	2.97	2.95	0.61	0.00	0.13	1.01	0.82	0.88	0.47	0.11	0.72	0.49	1.28	1.86	2.62	1.08	0.51	0.73
t_{q^5}	−0.64	3.75	2.18	1.90	0.44	−0.42	−1.12	−0.49	−0.38	−0.56	−0.72	−0.55	−0.51	−1.20	0.09	1.08	2.22	0.99	0.36	−0.38
t_{FF5}	3.11	5.95	4.91	5.44	3.33	2.75	2.15	3.51	3.81	3.48	3.46	3.47	2.27	2.71	3.79	3.90	4.79	4.06	3.75	3.56
t_{FF6}	1.52	4.80	3.66	4.16	2.05	1.24	−1.08	1.59	1.47	1.22	0.90	0.88	−0.10	−0.13	1.52	3.03	3.88	3.07	2.38	2.08
t_{FF6c}	1.20	4.64	3.46	3.72	2.17	1.28	−0.81	1.46	0.97	1.24	0.48	0.21	0.02	−0.30	1.11	3.00	3.20	2.76	1.98	1.71
t_{BS6}	0.52	4.60	3.30	3.36	0.68	−0.01	−0.67	0.96	0.59	0.74	0.10	0.05	0.53	−0.34	0.90	3.12	2.91	1.41	0.83	1.06
t_{SY4}	1.92	5.24	3.97	4.38	2.67	1.85	0.11	1.65	2.19	1.33	1.51	1.93	0.41	0.63	1.97	3.00	4.44	3.20	2.93	2.26
t_{DHS}	−3.55	2.30	1.16	0.77	−1.77	−2.71	−1.90	−0.98	−2.29	−1.14	−2.09	−3.34	−1.04	−1.46	−0.79	−1.53	1.17	−1.56	−2.57	−2.27
t_{DHSa}	0.12	0.33	1.06	1.85	1.34	0.69	−0.85	0.75	0.51	0.57	0.42	−0.10	−0.85	−0.31	0.82	0.58	2.90	1.45	0.97	0.17
$\overline{\lvert\alpha_q\rvert}$	0.09	0.12	0.08	0.07	0.10	0.11	0.15	0.07	0.05	0.09	0.07	0.08	0.12	0.12	0.13	0.07	0.15	0.11	0.10	0.09
$\overline{\lvert\alpha_{q^5}\rvert}$	0.07	0.11	0.06	0.05	0.09	0.10	0.22	0.12	0.08	0.16	0.12	0.09	0.09	0.10	0.08	0.07	0.16	0.13	0.10	0.08
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.17	0.15	0.08	0.08	0.18	0.16	0.14	0.17	0.15	0.23	0.21	0.15	0.21	0.21	0.22	0.13	0.26	0.16	0.14	0.15
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.10	0.12	0.06	0.05	0.08	0.07	0.20	0.09	0.05	0.13	0.08	0.06	0.11	0.10	0.11	0.09	0.18	0.10	0.07	0.10
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.10	0.12	0.06	0.05	0.08	0.06	0.20	0.10	0.07	0.13	0.09	0.08	0.12	0.12	0.12	0.10	0.17	0.09	0.06	0.08
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.10	0.13	0.08	0.08	0.09	0.09	0.21	0.11	0.08	0.16	0.12	0.10	0.15	0.15	0.15	0.10	0.15	0.12	0.11	0.10
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.10	0.12	0.08	0.07	0.10	0.09	0.17	0.09	0.06	0.10	0.07	0.06	0.08	0.09	0.11	0.08	0.20	0.12	0.09	0.13
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.13	0.12	0.09	0.07	0.21	0.20	0.31	0.17	0.15	0.24	0.20	0.20	0.13	0.11	0.11	0.13	0.18	0.17	0.15	0.12
$\overline{\lvert\alpha_{\mathrm{DHSa}}\rvert}$	0.06	0.13	0.08	0.06	0.08	0.10	0.24	0.10	0.08	0.14	0.10	0.11	0.12	0.11	0.12	0.06	0.16	0.10	0.09	0.08
p_q	0.03	0.00	0.00	0.00	0.09	0.01	0.00	0.00	0.06	0.02	0.16	0.11	0.42	0.07	0.04	0.02	0.00	0.00	0.01	0.08
p_{q^5}	0.32	0.00	0.00	0.02	0.39	0.07	0.00	0.01	0.19	0.10	0.09	0.12	0.37	0.14	0.13	0.12	0.01	0.00	0.02	0.26
p_{FF5}	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
p_{FF6}	0.01	0.00	0.00	0.00	0.18	0.07	0.00	0.00	0.03	0.00	0.15	0.08	0.31	0.02	0.01	0.02	0.00	0.00	0.01	0.04
p_{FF6c}	0.08	0.00	0.00	0.01	0.33	0.30	0.00	0.00	0.01	0.00	0.06	0.06	0.28	0.04	0.01	0.06	0.01	0.00	0.04	0.19
p_{BS6}	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.02
p_{SY4}	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.03	0.01	0.70	0.13	0.03	0.01	0.00	0.00	0.00	0.01
p_{DHS}	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.05	0.01	0.01	0.00	0.00	0.00	0.03
p_{DHSa}	0.50	0.00	0.00	0.01	0.28	0.23	0.00	0.00	0.00	0.00	0.01	0.02	0.49	0.17	0.04	0.36	0.00	0.00	0.02	0.41

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	52w6	52w12	$\epsilon^6 6$	$\epsilon^6 12$	$\epsilon^{11} 1$	$\epsilon^{11} 6$	$\epsilon^{11} 12$	Sm1	Sm12	Ilr1	Ilr6	Ilr12	Ile1	Cm1	Cm12	Sim1	Cim1	Cim6	Cim12	Bm
$\overline{R}$	0.58	0.45	0.49	0.38	0.60	0.50	0.33	0.50	0.15	0.50	0.29	0.31	0.56	0.71	0.13	0.74	0.68	0.32	0.31	0.49
$t_{\overline{R}}$	2.00	1.83	3.91	3.80	3.51	3.58	2.69	2.26	2.08	2.31	2.79	3.62	3.25	3.65	2.03	3.19	2.84	2.85	3.67	2.27
α_q	0.07	0.08	0.32	0.22	0.26	0.22	0.11	0.53	−0.03	0.54	0.15	0.15	0.31	0.64	0.04	0.55	0.55	0.12	0.14	0.18
α_{q^5}	−0.32	−0.15	0.11	0.05	0.01	0.03	0.00	0.38	−0.13	0.30	−0.02	0.00	0.15	0.60	−0.03	0.15	0.26	−0.13	−0.09	0.11
α_{FF5}	0.76	0.67	0.52	0.45	0.54	0.54	0.41	0.60	0.11	0.60	0.32	0.35	0.64	0.69	0.11	0.70	0.64	0.30	0.34	−0.06
α_{FF6}	0.00	0.09	0.25	0.19	0.16	0.19	0.12	0.52	−0.03	0.46	0.05	0.08	0.44	0.67	0.01	0.53	0.52	0.03	0.08	−0.05
α_{FF6c}	0.00	0.03	0.23	0.17	0.19	0.19	0.12	0.49	−0.07	0.45	0.04	0.06	0.40	0.64	0.00	0.53	0.44	0.05	0.07	−0.05
α_{BS6}	−0.13	−0.08	0.21	0.18	0.10	0.12	0.09	0.58	−0.06	0.56	0.09	0.07	0.41	0.68	0.01	0.52	0.57	0.06	0.06	−0.27
α_{SY4}	0.10	0.21	0.34	0.27	0.28	0.30	0.21	0.58	−0.01	0.48	0.13	0.14	0.45	0.66	0.01	0.53	0.50	0.07	0.11	0.04
α_{DHS}	−0.68	−0.61	0.13	0.01	0.05	0.01	−0.09	0.50	−0.07	0.31	−0.05	−0.04	0.02	0.69	0.00	0.42	0.32	−0.02	0.00	0.81
α_{DHSa}	−0.25	−0.15	0.25	0.17	0.20	0.25	0.11	0.42	0.02	0.17	−0.03	0.04	0.22	0.64	0.05	0.28	0.21	0.00	0.09	0.44
t_q	0.28	0.46	2.03	1.66	1.27	1.23	0.75	2.02	−0.38	2.07	1.12	1.45	1.76	2.72	0.41	1.74	2.00	0.71	1.09	1.10
t_{q^5}	−1.33	−0.87	0.65	0.37	0.03	0.17	0.00	1.34	−1.58	1.12	−0.17	0.00	0.80	2.52	−0.29	0.47	0.88	−0.78	−0.71	0.65
t_{FF5}	2.93	3.60	3.68	3.70	2.83	3.36	2.93	2.59	1.32	2.43	2.63	3.33	3.73	3.24	1.33	2.42	2.51	2.02	2.83	−0.52
t_{FF6}	0.01	0.84	2.00	2.05	1.01	1.53	1.18	2.25	−0.46	1.99	0.55	1.27	2.51	2.85	0.07	1.97	2.13	0.28	1.06	−0.38
t_{FF6c}	−0.01	0.26	1.83	1.77	1.14	1.49	1.06	1.93	−1.03	1.80	0.50	0.94	2.23	2.65	−0.03	1.87	1.83	0.53	0.86	−0.38
t_{BS6}	−0.94	−0.61	1.62	1.80	0.61	0.93	0.85	2.41	−0.99	2.28	0.99	1.14	2.20	2.96	0.15	1.89	2.25	0.49	0.76	−1.91
t_{SY4}	0.61	1.55	2.36	2.39	1.47	1.92	1.64	2.26	−0.09	2.00	1.26	1.73	2.57	2.79	0.16	1.84	1.99	0.53	1.12	0.25
t_{DHS}	−2.73	−3.34	0.83	0.10	0.24	0.07	−0.72	1.85	−0.91	1.24	−0.42	−0.47	0.11	2.75	0.04	1.25	1.23	−0.16	−0.05	3.66
t_{DHSa}	−0.87	−0.64	1.69	1.53	1.03	1.55	0.83	1.76	0.25	0.72	−0.26	0.43	1.21	2.73	0.63	0.96	0.85	−0.04	0.89	1.96
$\overline{\lvert\alpha_q\rvert}$	0.06	0.05	0.08	0.07	0.09	0.07	0.07	0.12	0.10	0.14	0.10	0.09	0.11	0.19	0.11	0.13	0.17	0.07	0.06	0.07
$\overline{\lvert\alpha_{q^5}\rvert}$	0.12	0.07	0.06	0.06	0.06	0.04	0.04	0.11	0.09	0.08	0.07	0.04	0.07	0.16	0.09	0.07	0.11	0.07	0.05	0.08
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.16	0.15	0.09	0.07	0.15	0.12	0.08	0.16	0.16	0.18	0.15	0.15	0.19	0.19	0.08	0.17	0.19	0.07	0.08	0.04
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.07	0.04	0.05	0.05	0.07	0.05	0.04	0.14	0.12	0.13	0.10	0.09	0.12	0.19	0.09	0.13	0.16	0.06	0.05	0.04
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.07	0.03	0.04	0.04	0.06	0.04	0.03	0.15	0.15	0.14	0.11	0.11	0.13	0.18	0.09	0.15	0.16	0.06	0.05	0.04
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.08	0.06	0.07	0.07	0.09	0.07	0.07	0.14	0.13	0.17	0.14	0.14	0.15	0.24	0.16	0.14	0.17	0.08	0.06	0.09
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.08	0.06	0.07	0.06	0.09	0.08	0.06	0.12	0.08	0.12	0.06	0.06	0.11	0.17	0.07	0.14	0.16	0.07	0.05	0.05
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.22	0.19	0.04	0.06	0.06	0.05	0.06	0.10	0.04	0.11	0.10	0.10	0.12	0.22	0.11	0.13	0.14	0.11	0.08	0.21
$\overline{\lvert\alpha_{\mathrm{DHSa}}\rvert}$	0.14	0.10	0.06	0.05	0.07	0.07	0.05	0.09	0.02	0.12	0.12	0.12	0.12	0.21	0.09	0.12	0.12	0.10	0.08	0.14
p_q	0.27	0.01	0.00	0.00	0.02	0.06	0.08	0.30	0.31	0.29	0.32	0.37	0.13	0.09	0.06	0.63	0.03	0.04	0.01	0.26
p_{q^5}	0.17	0.01	0.02	0.00	0.71	0.45	0.39	0.58	0.04	0.91	0.17	0.50	0.71	0.11	0.19	0.97	0.40	0.09	0.10	0.46
p_{FF5}	0.03	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.04	0.03	0.02	0.00	0.00	0.07	0.03	0.21	0.02	0.03	0.01	0.86
p_{FF6}	0.19	0.10	0.00	0.00	0.23	0.30	0.26	0.09	0.07	0.28	0.24	0.38	0.04	0.07	0.14	0.62	0.06	0.12	0.19	0.81
p_{FF6c}	0.34	0.40	0.01	0.00	0.58	0.66	0.48	0.05	0.02	0.21	0.34	0.45	0.06	0.10	0.05	0.51	0.09	0.13	0.18	0.94
p_{BS6}	0.09	0.01	0.00	0.00	0.02	0.06	0.05	0.10	0.07	0.03	0.04	0.07	0.03	0.02	0.03	0.59	0.02	0.02	0.02	0.02
p_{SY4}	0.15	0.01	0.00	0.00	0.02	0.07	0.06	0.39	0.43	0.71	0.28	0.36	0.09	0.07	0.29	0.55	0.07	0.05	0.05	0.80
p_{DHS}	0.00	0.00	0.12	0.01	0.43	0.32	0.13	0.54	0.80	0.44	0.17	0.36	0.12	0.03	0.05	0.35	0.02	0.00	0.00	0.02
p_{DHSa}	0.07	0.23	0.09	0.03	0.25	0.22	0.19	0.61	0.99	0.67	0.27	0.49	0.21	0.05	0.05	0.42	0.06	0.00	0.02	0.64

	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
	$\mathrm{Ep^q1}$	$\mathrm{Ep^q6}$	$\mathrm{Ep^q12}$	$\mathrm{Cp^q1}$	$\mathrm{Cp^q6}$	Nop	Em	$\mathrm{Em^q1}$	Sp	$\mathrm{Sp^q1}$	$\mathrm{Sp^q6}$	$\mathrm{Sp^q12}$	Ocp	$\mathrm{Ocp^q1}$	Ia	$\mathrm{Ia^q6}$	$\mathrm{Ia^q12}$	dPia	Noa	dNoa
$\overline{R}$	0.96	0.61	0.44	0.58	0.42	0.60	−0.51	−0.59	0.48	0.60	0.56	0.52	0.59	0.55	−0.36	−0.41	−0.38	−0.45	−0.47	−0.44
$t_{\overline{R}}$	4.90	3.38	2.61	2.64	2.04	3.30	−2.63	−2.72	2.18	2.34	2.33	2.33	2.73	2.04	−2.29	−2.45	−2.48	−3.24	−3.39	−3.18
α_q	0.47	0.14	0.02	0.40	0.28	0.34	−0.24	−0.35	−0.02	0.27	0.19	0.10	0.31	0.44	0.10	−0.07	0.05	−0.18	−0.50	−0.07
α_{q^5}	0.62	0.17	0.03	0.54	0.33	0.18	−0.11	−0.37	0.09	0.41	0.31	0.22	0.21	0.35	0.04	0.01	0.10	−0.19	−0.17	−0.04
α_{FF5}	0.50	0.15	0.01	0.05	−0.06	0.21	−0.06	−0.22	−0.22	−0.14	−0.17	−0.18	−0.03	0.12	0.09	0.04	0.08	−0.28	−0.56	−0.15
α_{FF6}	0.63	0.24	0.05	0.42	0.22	0.22	−0.03	−0.35	−0.12	0.22	0.12	0.02	0.06	0.41	0.09	−0.02	0.06	−0.25	−0.47	−0.11
α_{FF6c}	0.57	0.18	0.00	0.38	0.18	0.16	0.08	−0.25	−0.15	0.18	0.09	−0.01	0.01	0.40	0.06	−0.08	0.01	−0.27	−0.47	−0.11
α_{BS6}	0.04	−0.25	−0.38	0.02	−0.09	0.13	0.16	−0.08	−0.42	−0.16	−0.20	−0.29	−0.16	0.31	0.17	0.03	0.13	−0.18	−0.63	0.01
α_{SY4}	0.74	0.35	0.17	0.43	0.26	0.17	−0.17	−0.44	−0.07	0.19	0.13	0.04	0.25	0.56	0.22	0.17	0.24	−0.04	−0.24	0.01
α_{DHS}	0.95	0.56	0.42	1.16	0.94	0.37	−0.68	−0.74	0.68	1.15	1.04	0.87	0.90	1.01	−0.35	−0.58	−0.44	−0.41	−0.37	−0.31
α_{DHSa}	1.01	0.59	0.41	0.88	0.62	0.22	−0.51	−0.72	0.43	0.81	0.69	0.57	0.53	0.74	−0.14	−0.32	−0.25	−0.28	−0.36	−0.23
t_q	1.95	0.73	0.12	1.78	1.40	2.50	−1.36	−1.49	−0.09	0.92	0.79	0.46	1.74	1.55	0.86	−0.69	0.51	−1.40	−2.82	−0.50
t_{q^5}	2.62	0.95	0.20	2.56	1.85	1.25	−0.66	−1.61	0.47	1.53	1.39	1.14	1.18	1.42	0.36	0.05	0.91	−1.44	−1.04	−0.27
t_{FF5}	2.82	1.06	0.04	0.28	−0.37	1.80	−0.46	−1.20	−1.46	−0.64	−0.96	−1.18	−0.19	0.59	0.71	0.47	0.90	−2.36	−3.45	−1.01
t_{FF6}	3.64	1.74	0.40	2.97	1.75	1.89	−0.20	−2.05	−0.85	1.11	0.76	0.13	0.42	2.69	0.80	−0.25	0.63	−2.05	−3.20	−0.78
t_{FF6c}	3.37	1.26	−0.01	2.68	1.41	1.33	0.59	−1.45	−1.04	0.96	0.61	−0.06	0.05	2.61	0.51	−0.87	0.06	−2.10	−3.03	−0.75
t_{BS6}	0.28	−1.78	−3.13	0.14	−0.74	0.94	0.98	−0.50	−2.62	−0.77	−1.20	−1.88	−1.01	1.97	1.43	0.22	1.24	−1.42	−4.21	0.04
t_{SY4}	3.82	2.14	1.15	2.62	1.77	1.34	−0.98	−2.30	−0.44	0.88	0.70	0.27	1.48	2.96	1.73	1.67	2.29	−0.34	−1.62	0.06
t_{DHS}	4.23	2.99	2.61	5.50	5.18	3.18	−3.76	−3.63	3.14	3.84	4.10	3.90	4.57	4.10	−1.94	−3.32	−2.51	−2.50	−2.53	−2.05
t_{DHSa}	4.88	3.34	2.59	3.68	2.85	2.04	−3.03	−3.84	1.96	2.63	2.57	2.43	2.46	2.63	−0.89	−2.12	−1.74	−1.99	−2.74	−1.77
$\overline{\lvert\alpha_q\rvert}$	0.17	0.13	0.09	0.17	0.13	0.12	0.11	0.17	0.06	0.07	0.06	0.06	0.10	0.18	0.08	0.07	0.07	0.11	0.13	0.09
$\overline{\lvert\alpha_{q^5}\rvert}$	0.20	0.14	0.11	0.22	0.16	0.11	0.11	0.20	0.06	0.10	0.07	0.06	0.11	0.16	0.08	0.05	0.05	0.12	0.11	0.06
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.15	0.08	0.06	0.09	0.08	0.10	0.09	0.15	0.09	0.08	0.09	0.10	0.05	0.10	0.08	0.06	0.05	0.10	0.11	0.09
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.19	0.11	0.07	0.15	0.10	0.09	0.08	0.16	0.07	0.06	0.05	0.06	0.07	0.16	0.08	0.05	0.05	0.10	0.11	0.08
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.19	0.10	0.06	0.15	0.10	0.09	0.07	0.15	0.09	0.07	0.06	0.07	0.08	0.16	0.09	0.05	0.05	0.08	0.12	0.06
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.11	0.10	0.10	0.11	0.12	0.13	0.11	0.15	0.15	0.09	0.11	0.14	0.12	0.14	0.10	0.08	0.08	0.13	0.13	0.09
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.22	0.15	0.11	0.19	0.13	0.12	0.10	0.18	0.05	0.05	0.05	0.05	0.10	0.22	0.08	0.08	0.07	0.11	0.10	0.07
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.31	0.22	0.17	0.32	0.24	0.12	0.19	0.25	0.20	0.29	0.25	0.22	0.18	0.32	0.11	0.17	0.14	0.09	0.12	0.09
$\overline{\lvert\alpha_{\mathrm{DHSa}}\rvert}$	0.29	0.20	0.14	0.28	0.18	0.09	0.15	0.25	0.14	0.23	0.19	0.16	0.14	0.28	0.08	0.11	0.11	0.08	0.11	0.09
p_q	0.00	0.00	0.01	0.01	0.00	0.01	0.02	0.00	0.57	0.62	0.51	0.16	0.05	0.20	0.00	0.04	0.06	0.00	0.00	0.05
p_{q^5}	0.00	0.00	0.01	0.00	0.00	0.15	0.09	0.00	0.71	0.50	0.58	0.30	0.13	0.15	0.08	0.33	0.52	0.00	0.00	0.60
p_{FF5}	0.01	0.01	0.34	0.22	0.14	0.01	0.08	0.00	0.15	0.76	0.55	0.12	0.41	0.57	0.01	0.14	0.14	0.00	0.00	0.03
p_{FF6}	0.00	0.00	0.18	0.00	0.02	0.02	0.15	0.00	0.30	0.74	0.70	0.18	0.38	0.04	0.03	0.10	0.10	0.01	0.00	0.08
p_{FF6c}	0.00	0.00	0.44	0.01	0.03	0.06	0.20	0.00	0.36	0.75	0.66	0.25	0.28	0.05	0.09	0.28	0.35	0.10	0.02	0.46
p_{BS6}	0.10	0.00	0.00	0.20	0.00	0.00	0.02	0.01	0.00	0.11	0.02	0.00	0.01	0.15	0.00	0.01	0.01	0.00	0.00	0.07
p_{SY4}	0.00	0.00	0.01	0.00	0.00	0.01	0.06	0.00	0.65	0.87	0.81	0.23	0.13	0.04	0.02	0.01	0.01	0.00	0.00	0.17
p_{DHS}	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.05	0.00	0.03
p_{DHSa}	0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.00	0.45	0.05	0.04	0.01	0.07	0.00	0.13	0.07	0.03	0.08	0.01	0.02

	61 dLno	62 Ig	63 2Ig	64 Nsi	65 dIi	66 Cei	67 Ivg	68 Ivc	69 Oa	70 dWc	71 dCoa	72 dNco	73 dNca	74 dFin	75 dFnl	76 dBe	77 Dac	78 Poa	79 Pta	80 Pda
$\overline{R}$	−0.30	−0.40	−0.25	−0.66	−0.27	−0.56	−0.28	−0.40	−0.29	−0.49	−0.27	−0.38	−0.37	0.24	−0.24	−0.32	−0.44	−0.45	−0.40	−0.52
$t_{\overline{R}}$	−2.18	−3.00	−1.81	−4.45	−2.24	−3.17	−2.06	−2.98	−2.25	−3.66	−1.91	−3.10	−2.89	1.95	−2.11	−1.98	−3.15	−3.24	−2.86	−3.99
α_q	0.07	−0.02	0.14	−0.35	0.11	−0.29	0.01	−0.26	−0.57	−0.60	0.07	−0.06	0.00	0.40	0.02	0.06	−0.73	−0.25	−0.20	−0.49
α_{q^5}	0.12	−0.11	0.06	−0.15	0.08	0.02	0.11	−0.06	−0.21	−0.25	0.14	0.00	0.00	0.13	0.03	0.11	−0.30	−0.07	−0.02	−0.14
α_{FF5}	−0.02	−0.11	0.02	−0.32	0.02	−0.28	−0.05	−0.32	−0.52	−0.58	0.07	−0.18	−0.10	0.46	−0.08	0.11	−0.69	−0.21	−0.14	−0.47
α_{FF6}	0.02	−0.09	0.09	−0.30	0.10	−0.22	0.01	−0.26	−0.46	−0.52	0.07	−0.14	−0.09	0.44	−0.06	0.12	−0.67	−0.18	−0.14	−0.43
α_{FF6c}	−0.05	−0.11	0.05	−0.23	0.11	−0.14	0.04	−0.24	−0.33	−0.40	0.09	−0.15	−0.11	0.35	−0.06	0.06	−0.59	−0.09	−0.10	−0.40
α_{BS6}	0.04	0.02	0.15	−0.29	0.26	−0.08	0.08	−0.24	−0.53	−0.47	0.15	−0.09	−0.03	0.49	−0.05	0.12	−0.78	−0.16	−0.08	−0.50
α_{SY4}	0.23	0.02	0.17	−0.20	0.13	−0.19	0.05	−0.17	−0.46	−0.52	0.14	0.00	0.04	0.37	0.01	0.26	−0.57	−0.22	−0.05	−0.32
α_{DHS}	−0.13	−0.30	−0.22	−0.32	−0.11	−0.29	−0.17	−0.47	−0.36	−0.35	−0.30	−0.29	−0.29	0.23	−0.15	−0.32	−0.51	−0.36	−0.27	−0.49
α_{DHSa}	0.00	−0.27	−0.20	−0.31	−0.14	−0.25	−0.14	−0.36	−0.37	−0.40	−0.18	−0.26	−0.24	0.32	−0.22	−0.05	−0.48	−0.32	−0.17	−0.39
t_q	0.41	−0.13	1.15	−2.66	1.00	−2.16	0.09	−1.87	−4.05	−4.31	0.66	−0.47	0.02	2.77	0.16	0.47	−5.01	−1.87	−1.47	−3.10
t_{q^5}	0.73	−0.83	0.41	−1.09	0.61	0.12	0.85	−0.41	−1.29	−1.82	1.08	−0.03	0.02	0.88	0.22	0.80	−1.97	−0.57	−0.18	−0.90
t_{FF5}	−0.14	−0.95	0.16	−2.68	0.24	−2.49	−0.38	−2.47	−3.94	−4.25	0.66	−1.41	−0.82	3.62	−0.73	0.94	−5.05	−1.74	−1.12	−3.23
t_{FF6}	0.15	−0.73	0.72	−2.48	0.99	−1.90	0.05	−2.03	−3.19	−3.75	0.64	−1.17	−0.77	3.42	−0.56	1.01	−4.74	−1.50	−1.11	−2.83
t_{FF6c}	−0.32	−0.87	0.42	−1.77	1.02	−1.19	0.27	−1.78	−2.11	−2.73	0.80	−1.21	−0.90	2.56	−0.51	0.56	−3.99	−0.72	−0.82	−2.59
t_{BS6}	0.27	0.12	1.07	−2.02	2.21	−0.52	0.65	−1.66	−3.52	−3.05	1.21	−0.71	−0.24	3.44	−0.40	0.87	−5.21	−1.20	−0.59	−3.05
t_{SY4}	1.61	0.19	1.32	−1.67	1.14	−1.57	0.44	−1.25	−3.28	−3.90	1.20	0.00	0.34	2.77	0.10	2.10	−3.78	−1.74	−0.42	−2.22
t_{DHS}	−0.69	−2.36	−1.18	−2.63	−0.83	−2.40	−1.25	−2.82	−2.44	−2.09	−1.88	−1.97	−1.95	1.82	−1.08	−1.66	−3.35	−2.63	−2.05	−3.17
t_{DHSa}	0.01	−2.09	−1.38	−2.80	−1.18	−2.23	−1.14	−2.52	−2.69	−2.94	−1.32	−1.94	−1.77	2.62	−1.74	−0.35	−3.33	−2.32	−1.45	−2.78
$\overline{\lvert\alpha_q\rvert}$	0.05	0.09	0.08	0.14	0.08	0.13	0.10	0.07	0.15	0.15	0.08	0.11	0.12	0.07	0.09	0.09	0.15	0.12	0.08	0.17
$\overline{\lvert\alpha_{q^5}\rvert}$	0.07	0.12	0.07	0.11	0.07	0.07	0.10	0.08	0.07	0.12	0.08	0.06	0.06	0.06	0.05	0.05	0.06	0.08	0.10	0.09
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.06	0.07	0.05	0.13	0.06	0.11	0.10	0.08	0.13	0.14	0.06	0.09	0.11	0.08	0.08	0.06	0.14	0.08	0.07	0.16
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.07	0.08	0.06	0.13	0.06	0.11	0.09	0.08	0.12	0.14	0.06	0.09	0.11	0.08	0.08	0.07	0.14	0.08	0.06	0.15
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.06	0.07	0.05	0.12	0.05	0.08	0.10	0.08	0.09	0.12	0.07	0.07	0.09	0.08	0.07	0.07	0.12	0.06	0.06	0.13
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.07	0.11	0.10	0.14	0.09	0.11	0.13	0.10	0.15	0.17	0.11	0.12	0.14	0.09	0.09	0.11	0.17	0.10	0.10	0.18
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.07	0.09	0.08	0.15	0.07	0.10	0.11	0.06	0.12	0.14	0.07	0.09	0.09	0.08	0.06	0.08	0.12	0.10	0.08	0.12
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.07	0.11	0.10	0.13	0.08	0.11	0.10	0.09	0.11	0.11	0.10	0.11	0.10	0.07	0.06	0.11	0.11	0.10	0.11	0.13
$\overline{\lvert\alpha_{\mathrm{DHSa}}\rvert}$	0.07	0.10	0.08	0.13	0.08	0.11	0.09	0.08	0.10	0.11	0.09	0.11	0.10	0.07	0.08	0.08	0.10	0.08	0.10	0.11
p_q	0.46	0.00	0.08	0.00	0.15	0.00	0.10	0.60	0.00	0.00	0.08	0.00	0.00	0.06	0.06	0.09	0.00	0.01	0.12	0.00
p_{q^5}	0.57	0.00	0.19	0.05	0.50	0.47	0.06	0.54	0.45	0.03	0.34	0.45	0.57	0.75	0.64	0.81	0.63	0.19	0.05	0.35
p_{FF5}	0.71	0.03	0.63	0.00	0.34	0.01	0.06	0.32	0.00	0.00	0.45	0.01	0.00	0.02	0.16	0.37	0.00	0.07	0.39	0.00
p_{FF6}	0.68	0.02	0.50	0.00	0.43	0.01	0.08	0.34	0.01	0.00	0.39	0.02	0.01	0.04	0.10	0.41	0.00	0.15	0.46	0.00
p_{FF6c}	0.77	0.10	0.82	0.00	0.60	0.11	0.04	0.33	0.23	0.02	0.41	0.17	0.11	0.24	0.50	0.42	0.01	0.57	0.68	0.03
p_{BS6}	0.36	0.00	0.02	0.00	0.00	0.01	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.00	0.01	0.03	0.00
p_{SY4}	0.46	0.00	0.10	0.00	0.32	0.02	0.01	0.82	0.00	0.00	0.18	0.02	0.01	0.06	0.25	0.14	0.00	0.07	0.05	0.01
p_{DHS}	0.65	0.00	0.03	0.00	0.01	0.01	0.03	0.06	0.02	0.01	0.02	0.00	0.03	0.30	0.60	0.01	0.03	0.10	0.01	0.00
p_{DHSa}	0.42	0.00	0.15	0.00	0.06	0.01	0.04	0.13	0.07	0.00	0.08	0.01	0.04	0.14	0.30	0.19	0.04	0.32	0.09	0.01

	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
	Roe1	Roe6	dRoe1	dRoe6	dRoe12	Roa1	dRoa1	dRoa6	Ato	Cto	Rna^{q}1	Rna^{q}6	Ato^{q}1	Ato^{q}6	Ato^{q}12	Cto^{q}1	Cto^{q}6	Cto^{q}12	Gpa	Gla^{q}1
$\overline{R}$	0.73	0.42	0.82	0.39	0.27	0.59	0.56	0.29	0.35	0.28	0.65	0.43	0.68	0.59	0.49	0.49	0.45	0.41	0.33	0.56
$t_{\overline{R}}$	3.16	1.90	5.90	3.29	2.59	2.80	3.91	2.17	1.87	1.65	2.92	2.11	3.86	3.48	3.00	2.77	2.68	2.47	2.32	3.86
α_q	−0.02	−0.21	0.41	0.00	−0.06	0.04	0.09	−0.16	0.39	0.01	0.19	0.09	0.43	0.41	0.40	−0.04	−0.02	0.00	0.11	0.26
α_{q^5}	−0.18	−0.36	0.15	−0.16	−0.12	−0.22	−0.15	−0.25	0.03	−0.04	−0.05	−0.17	0.16	0.15	0.15	−0.11	−0.09	−0.08	−0.09	0.04
α_{FF5}	0.50	0.24	0.83	0.40	0.28	0.51	0.52	0.26	0.40	0.06	0.52	0.33	0.56	0.54	0.49	0.10	0.10	0.11	0.18	0.41
α_{FF6}	0.31	0.08	0.58	0.21	0.13	0.28	0.30	0.06	0.37	0.05	0.38	0.23	0.46	0.44	0.40	0.06	0.05	0.07	0.16	0.33
α_{FF6c}	0.19	−0.04	0.58	0.20	0.11	0.17	0.28	0.06	0.29	−0.05	0.29	0.13	0.42	0.38	0.34	−0.03	−0.04	−0.04	0.06	0.27
α_{BS6}	−0.06	−0.24	0.41	−0.01	−0.06	−0.02	0.12	−0.16	0.60	0.10	0.18	0.09	0.58	0.58	0.57	0.00	0.03	0.07	0.25	0.34
α_{SY4}	0.34	0.10	0.63	0.21	0.14	0.29	0.35	0.09	0.23	−0.04	0.41	0.27	0.32	0.30	0.27	−0.06	−0.05	−0.03	0.00	0.26
α_{DHS}	−0.41	−0.63	0.19	−0.15	−0.17	−0.42	−0.04	−0.21	0.17	−0.01	−0.20	−0.26	0.41	0.31	0.25	−0.04	−0.03	−0.03	0.01	0.13
α_{DHSa}	0.16	−0.09	0.45	0.14	0.09	0.09	0.29	0.11	0.25	0.12	0.32	0.17	0.56	0.47	0.39	0.17	0.16	0.14	0.17	0.38
t_q	−0.17	−1.67	2.82	−0.02	−0.64	0.38	0.57	−1.18	2.43	0.04	1.47	0.70	2.55	2.54	2.53	−0.26	−0.14	−0.02	0.81	1.94
t_{q^5}	−1.49	−3.03	0.95	−1.28	−1.27	−2.01	−0.82	−1.74	0.19	−0.22	−0.36	−1.42	0.94	0.93	0.92	−0.68	−0.57	−0.50	−0.60	0.28
t_{FF5}	3.63	1.86	5.71	3.27	2.64	3.80	3.50	1.98	2.84	0.42	3.94	2.76	3.55	3.75	3.59	0.73	0.77	0.84	1.35	3.08
t_{FF6}	2.46	0.65	4.48	1.93	1.39	2.49	2.04	0.51	2.65	0.36	3.05	2.08	3.12	3.21	3.01	0.43	0.41	0.51	1.20	2.55
t_{FF6c}	1.20	−0.27	4.32	1.79	1.17	1.23	1.89	0.47	1.91	−0.33	2.02	1.02	2.71	2.63	2.42	−0.21	−0.28	−0.27	0.45	1.95
t_{BS6}	−0.46	−1.90	3.07	−0.13	−0.66	−0.14	0.72	−1.26	4.08	0.59	1.43	0.75	3.74	4.08	4.02	0.03	0.21	0.44	1.68	2.44
t_{SY4}	2.04	0.59	4.40	1.87	1.48	1.98	2.29	0.67	1.50	−0.25	2.48	1.72	2.17	2.16	1.96	−0.38	−0.35	−0.20	0.03	1.91
t_{DHS}	−2.18	−3.31	1.50	−1.44	−1.80	−2.36	−0.28	−1.60	0.92	−0.03	−1.08	−1.50	2.06	1.72	1.43	−0.23	−0.19	−0.15	0.08	0.89
t_{DHSa}	0.77	−0.45	3.18	1.11	0.82	0.43	1.78	0.72	1.33	0.66	1.63	0.96	2.96	2.60	2.21	0.91	0.86	0.80	1.10	2.41
$\overline{\lvert\alpha_q\rvert}$	0.08	0.08	0.09	0.07	0.07	0.06	0.10	0.07	0.10	0.08	0.06	0.06	0.11	0.08	0.07	0.08	0.08	0.08	0.11	0.10
$\overline{\lvert\alpha_{q^5}\rvert}$	0.10	0.11	0.07	0.07	0.07	0.08	0.07	0.08	0.14	0.12	0.05	0.06	0.13	0.12	0.12	0.11	0.11	0.11	0.06	0.09
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.11	0.07	0.15	0.09	0.06	0.15	0.16	0.10	0.11	0.06	0.15	0.11	0.15	0.12	0.10	0.06	0.06	0.06	0.10	0.13
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.06	0.04	0.10	0.05	0.05	0.07	0.10	0.05	0.10	0.06	0.11	0.08	0.12	0.09	0.08	0.07	0.06	0.06	0.11	0.12
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.04	0.03	0.09	0.05	0.03	0.07	0.11	0.06	0.13	0.06	0.10	0.08	0.13	0.09	0.09	0.06	0.07	0.06	0.11	0.13
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.09	0.09	0.10	0.08	0.08	0.09	0.12	0.09	0.13	0.09	0.12	0.12	0.13	0.11	0.11	0.09	0.08	0.08	0.18	0.17
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.08	0.05	0.11	0.06	0.05	0.07	0.11	0.05	0.10	0.08	0.10	0.06	0.12	0.09	0.08	0.08	0.09	0.08	0.07	0.08
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.18	0.18	0.09	0.08	0.09	0.14	0.09	0.08	0.09	0.07	0.07	0.07	0.10	0.07	0.05	0.06	0.06	0.06	0.06	0.07
$\overline{\lvert\alpha_{\mathrm{DHSa}}\rvert}$	0.07	0.05	0.10	0.05	0.05	0.05	0.10	0.05	0.08	0.08	0.07	0.05	0.12	0.10	0.09	0.07	0.08	0.07	0.07	0.09
p_q	0.09	0.12	0.02	0.18	0.06	0.77	0.34	0.04	0.00	0.15	0.21	0.36	0.00	0.04	0.03	0.36	0.02	0.01	0.18	0.07
p_{q^5}	0.01	0.01	0.33	0.21	0.10	0.46	0.48	0.09	0.00	0.07	0.70	0.60	0.01	0.01	0.01	0.03	0.01	0.01	0.70	0.20
p_{FF5}	0.05	0.14	0.00	0.05	0.20	0.03	0.00	0.03	0.01	0.73	0.00	0.03	0.00	0.00	0.00	0.47	0.05	0.03	0.12	0.00
p_{FF6}	0.36	0.59	0.00	0.29	0.24	0.51	0.11	0.26	0.00	0.65	0.03	0.10	0.00	0.01	0.01	0.48	0.08	0.07	0.08	0.01
p_{FF6c}	0.94	0.89	0.01	0.54	0.62	0.75	0.08	0.18	0.00	0.80	0.14	0.29	0.00	0.01	0.02	0.53	0.18	0.25	0.22	0.01
p_{BS6}	0.10	0.01	0.01	0.07	0.02	0.12	0.09	0.01	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00
p_{SY4}	0.19	0.39	0.00	0.12	0.14	0.34	0.09	0.18	0.02	0.14	0.05	0.44	0.00	0.01	0.01	0.16	0.02	0.01	0.32	0.11
p_{DHS}	0.00	0.00	0.05	0.08	0.02	0.12	0.24	0.02	0.09	0.26	0.88	0.42	0.00	0.12	0.39	0.51	0.04	0.06	0.51	0.27
p_{DHSa}	0.53	0.58	0.05	0.72	0.76	0.86	0.10	0.29	0.22	0.58	0.85	0.67	0.01	0.06	0.16	0.56	0.04	0.07	0.58	0.09

	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
	Gla^{q}6	Gla^{q}12	Ole^{q}1	Ole^{q}6	Opa	Ola^{q}1	Ola^{q}6	Ola^{q}12	Cop	Cla	Cla^{q}1	Cla^{q}6	Cla^{q}12	F^{q}1	F^{q}6	F^{q}12	Fp^{q}6	O^{q}1	Tbi^{q}12	Sg^{q}1
$\overline{R}$	0.38	0.34	0.66	0.42	0.51	0.78	0.55	0.51	0.67	0.59	0.52	0.49	0.48	0.53	0.49	0.38	−0.67	−0.43	0.19	0.30
$t_{\overline{R}}$	2.83	2.58	3.22	2.17	2.56	3.84	2.85	2.78	3.68	3.40	3.43	3.75	3.88	2.47	2.55	2.16	−2.24	−1.97	1.66	1.59
α_q	0.15	0.18	−0.05	−0.19	0.54	0.43	0.28	0.35	0.71	0.76	0.46	0.41	0.46	0.15	0.15	0.06	−0.24	−0.38	0.29	0.09
α_{q^5}	−0.05	−0.01	−0.23	−0.36	−0.03	−0.11	−0.23	−0.11	0.06	0.15	−0.04	−0.06	0.03	0.25	0.28	0.17	0.30	−0.06	0.30	−0.01
α_{FF5}	0.28	0.27	0.24	0.04	0.62	0.72	0.52	0.53	0.82	0.85	0.60	0.55	0.58	0.39	0.38	0.26	−0.86	−0.58	0.20	0.55
α_{FF6}	0.22	0.23	0.10	−0.05	0.56	0.56	0.39	0.42	0.72	0.77	0.50	0.44	0.49	0.25	0.26	0.17	−0.36	−0.48	0.18	0.33
α_{FF6c}	0.14	0.14	0.00	−0.18	0.47	0.50	0.32	0.35	0.53	0.59	0.43	0.35	0.39	0.28	0.26	0.14	−0.34	−0.34	0.09	0.36
α_{BS6}	0.22	0.25	−0.26	−0.36	0.65	0.50	0.35	0.41	0.83	0.89	0.51	0.45	0.51	0.08	0.11	0.02	−0.28	−0.40	0.22	0.26
α_{SY4}	0.16	0.19	0.14	−0.01	0.46	0.55	0.40	0.46	0.60	0.68	0.41	0.39	0.43	0.35	0.38	0.27	−0.28	−0.41	0.31	0.48
α_{DHS}	0.01	0.03	−0.30	−0.41	0.12	0.06	−0.08	−0.02	0.25	0.26	0.12	0.12	0.17	0.08	0.07	−0.02	0.45	0.16	0.16	−0.34
α_{DHSa}	0.23	0.23	0.14	−0.04	0.37	0.50	0.28	0.30	0.44	0.45	0.30	0.30	0.34	0.40	0.32	0.21	−0.07	−0.15	0.19	0.09
t_q	1.25	1.49	−0.35	−1.40	3.39	2.93	2.11	2.82	5.00	5.24	3.17	3.13	3.83	0.70	0.93	0.43	−0.97	−2.65	2.43	0.49
t_{q^5}	−0.36	−0.07	−1.55	−2.67	−0.22	−0.84	−2.11	−1.07	0.51	1.16	−0.28	−0.51	0.28	1.27	1.66	1.21	1.30	−0.42	2.35	−0.08
t_{FF5}	2.38	2.33	1.81	0.31	3.76	4.54	3.88	4.33	6.15	6.57	4.20	4.29	5.08	1.92	2.26	1.93	−3.31	−4.13	1.78	3.22
t_{FF6}	1.92	2.02	0.82	−0.49	3.81	3.94	3.24	3.84	5.71	6.07	3.79	3.96	4.79	1.28	1.57	1.30	−2.26	−3.26	1.51	1.94
t_{FF6c}	1.19	1.20	−0.01	−1.22	2.85	3.05	2.23	2.69	4.16	4.67	3.17	3.01	3.76	1.39	1.47	0.98	−2.05	−2.36	0.73	2.12
t_{BS6}	1.84	2.01	−1.85	−2.76	3.94	3.53	2.74	3.36	5.77	6.09	3.74	3.77	4.74	0.43	0.69	0.18	−1.70	−2.70	1.82	1.51
t_{SY4}	1.33	1.52	0.86	−0.05	2.83	3.71	2.94	3.57	4.43	4.87	3.07	3.50	4.36	1.74	2.26	1.86	−2.05	−2.52	2.74	2.68
t_{DHS}	0.04	0.22	−1.85	−2.58	0.63	0.35	−0.46	−0.11	1.47	1.46	0.81	0.95	1.49	0.38	0.37	−0.10	1.88	0.80	1.20	−1.70
t_{DHSa}	1.57	1.62	0.80	−0.26	1.98	2.48	1.45	1.68	2.49	2.54	1.98	2.24	2.75	1.85	1.66	1.31	−0.24	−0.75	1.68	0.44
$\overline{\lvert\alpha_q\rvert}$	0.11	0.10	0.07	0.09	0.14	0.13	0.09	0.09	0.18	0.15	0.20	0.12	0.13	0.10	0.14	0.10	0.11	0.08	0.12	0.09
$\overline{\lvert\alpha_{q^5}\rvert}$	0.09	0.06	0.10	0.12	0.07	0.07	0.07	0.05	0.08	0.06	0.07	0.05	0.04	0.09	0.11	0.09	0.16	0.08	0.08	0.10
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.12	0.11	0.09	0.06	0.17	0.23	0.17	0.16	0.21	0.19	0.22	0.15	0.17	0.13	0.11	0.07	0.13	0.12	0.12	0.16
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.12	0.11	0.07	0.05	0.14	0.18	0.13	0.12	0.18	0.15	0.20	0.12	0.13	0.11	0.10	0.08	0.10	0.10	0.10	0.11
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.14	0.13	0.06	0.06	0.14	0.18	0.13	0.12	0.16	0.15	0.18	0.11	0.13	0.11	0.10	0.06	0.10	0.10	0.11	0.11
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.17	0.16	0.10	0.12	0.17	0.16	0.12	0.13	0.21	0.18	0.21	0.13	0.15	0.09	0.14	0.10	0.09	0.09	0.13	0.11
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.08	0.06	0.08	0.07	0.13	0.16	0.11	0.10	0.15	0.12	0.19	0.11	0.12	0.13	0.12	0.10	0.11	0.09	0.10	0.14
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.07	0.05	0.12	0.14	0.06	0.06	0.05	0.04	0.09	0.08	0.14	0.05	0.06	0.07	0.10	0.06	0.21	0.14	0.08	0.12
$\overline{\lvert\alpha_{\mathrm{DHSa}}\rvert}$	0.07	0.06	0.08	0.06	0.11	0.10	0.08	0.08	0.12	0.08	0.17	0.09	0.09	0.12	0.11	0.09	0.09	0.09	0.06	0.08
p_q	0.07	0.16	0.05	0.01	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.06
p_{q^5}	0.07	0.23	0.30	0.02	0.06	0.52	0.14	0.38	0.31	0.67	0.49	0.93	0.51	0.22	0.00	0.01	0.02	0.25	0.03	0.16
p_{FF5}	0.01	0.04	0.09	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
p_{FF6}	0.01	0.05	0.20	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.01	0.01	0.01	0.00	0.02
p_{FF6c}	0.01	0.03	0.43	0.49	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.08	0.00	0.10	0.00	0.05	0.00	0.05	0.00	0.05
p_{BS6}	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.02	0.00	0.01
p_{SY4}	0.08	0.22	0.10	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
p_{DHS}	0.40	0.61	0.01	0.00	0.31	0.71	0.48	0.50	0.08	0.25	0.01	0.68	0.34	0.27	0.02	0.08	0.00	0.03	0.06	0.01
p_{DHSa}	0.33	0.42	0.16	0.13	0.04	0.13	0.16	0.09	0.01	0.13	0.00	0.40	0.06	0.07	0.01	0.07	0.03	0.12	0.14	0.24

	121 Oca	122 Ioca	123 Adm	124 Rdm	125 Rdm^{q}1	126 Rdm^{q}6	127 Rdm^{q}12	128 Rds^{q}6	129 Rds^{q}12	130 Ol	131 Ol^{q}1	132 Ol^{q}6	133 Ol^{q}12	134 Hs	135 Rer	136 Eprd	137 Etl	138 Alm^{q}1	139 Alm^{q}6	140 Alm^{q}12
$\overline{R}$	0.52	0.49	0.62	0.73	1.09	0.80	0.83	0.50	0.51	0.38	0.49	0.48	0.49	−0.31	0.40	−0.53	0.22	0.53	0.54	0.48
$t_{\overline{R}}$	2.41	3.70	2.60	2.96	3.04	2.31	2.62	2.00	2.01	2.19	2.71	2.73	2.94	−2.02	2.89	−2.89	1.75	2.59	2.84	2.58
α_q	0.16	0.06	0.11	0.81	1.41	1.02	0.92	0.90	0.93	−0.03	0.09	0.11	0.15	−0.28	0.43	−0.52	0.14	0.25	0.23	0.12
α_{q^5}	−0.23	−0.04	0.06	0.27	1.05	0.58	0.43	0.64	0.65	−0.03	0.10	0.03	0.05	−0.12	0.25	−0.45	0.04	0.26	0.23	0.16
α_{FF5}	0.32	0.27	−0.07	0.66	0.95	0.74	0.72	0.95	1.00	0.09	0.24	0.24	0.28	−0.40	0.38	−0.82	0.22	0.07	0.12	0.07
α_{FF6}	0.30	0.13	0.07	0.68	1.36	1.01	0.88	0.88	0.93	0.08	0.24	0.23	0.26	−0.33	0.35	−0.73	0.12	0.13	0.13	0.05
α_{FF6c}	0.34	0.09	0.06	0.79	1.37	1.06	0.96	0.98	1.01	0.05	0.23	0.23	0.26	−0.31	0.33	−0.80	0.18	0.13	0.13	0.04
α_{BS6}	0.29	0.05	−0.20	0.81	1.43	1.04	0.91	1.00	1.04	−0.06	0.11	0.10	0.13	−0.43	0.42	−0.76	0.21	0.00	−0.02	−0.11
α_{SY4}	−0.03	0.07	0.09	0.39	1.20	0.72	0.58	0.59	0.65	−0.02	0.14	0.13	0.15	−0.26	0.27	−0.56	0.06	0.16	0.17	0.10
α_{DHS}	0.16	0.13	0.88	1.12	1.74	1.43	1.33	0.60	0.61	0.05	0.16	0.19	0.20	−0.16	0.21	−0.03	0.25	0.88	0.82	0.69
α_{DHSa}	0.20	0.30	0.74	0.71	1.33	0.99	0.97	0.52	0.55	0.15	0.28	0.30	0.30	−0.21	0.22	−0.28	0.24	0.58	0.58	0.50
t_q	0.77	0.48	0.43	3.64	3.33	3.25	3.55	3.27	3.36	−0.16	0.56	0.71	0.95	−1.42	2.67	−2.78	0.80	1.72	1.74	0.91
t_{q^5}	−1.06	−0.26	0.25	1.24	2.37	1.79	1.60	2.31	2.35	−0.16	0.56	0.19	0.29	−0.57	1.55	−2.45	0.24	1.75	1.70	1.19
t_{FF5}	1.53	2.13	−0.37	3.06	2.60	2.43	2.81	4.25	4.41	0.58	1.47	1.52	1.86	−2.39	2.51	−4.82	1.47	0.54	1.07	0.66
t_{FF6}	1.43	1.09	0.34	3.24	3.90	3.48	3.56	3.91	4.10	0.50	1.50	1.52	1.74	−1.87	2.32	−4.29	0.87	1.05	1.21	0.46
t_{FF6c}	1.47	0.67	0.27	3.64	3.93	3.71	3.98	4.44	4.54	0.30	1.30	1.37	1.60	−1.74	2.18	−4.54	1.23	1.05	1.16	0.38
t_{BS6}	1.41	0.40	−0.92	3.58	3.73	3.28	3.36	4.73	4.93	−0.36	0.67	0.60	0.81	−2.28	2.63	−4.17	1.31	0.03	−0.14	−0.89
t_{SY4}	−0.14	0.52	0.40	1.79	3.17	2.53	2.37	2.37	2.65	−0.15	0.89	0.84	1.02	−1.40	1.70	−3.41	0.40	1.18	1.29	0.81
t_{DHS}	0.69	0.88	2.99	4.48	3.99	3.47	3.53	2.41	2.46	0.26	0.91	1.02	1.14	−0.91	1.18	−0.16	1.51	4.50	4.21	3.60
t_{DHSa}	0.94	2.20	2.72	3.02	3.03	2.54	2.78	2.23	2.33	0.87	1.72	1.71	1.83	−1.33	1.40	−1.30	1.77	2.90	3.07	2.76
$\overline{\lvert\alpha_q\rvert}$	0.13	0.11	0.07	0.28	0.53	0.47	0.46	0.30	0.30	0.09	0.08	0.08	0.09	0.14	0.13	0.13	0.07	0.09	0.09	0.07
$\overline{\lvert\alpha_{q^5}\rvert}$	0.10	0.08	0.09	0.12	0.36	0.27	0.24	0.23	0.21	0.11	0.10	0.11	0.10	0.13	0.13	0.15	0.06	0.09	0.07	0.06
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.12	0.10	0.06	0.22	0.38	0.36	0.37	0.26	0.27	0.07	0.08	0.08	0.08	0.15	0.11	0.19	0.07	0.06	0.06	0.05
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.13	0.08	0.07	0.24	0.48	0.41	0.40	0.28	0.28	0.07	0.08	0.08	0.08	0.14	0.12	0.17	0.05	0.07	0.06	0.04
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.14	0.07	0.06	0.24	0.46	0.40	0.39	0.26	0.26	0.05	0.09	0.08	0.08	0.14	0.12	0.19	0.05	0.08	0.06	0.06
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.17	0.13	0.10	0.34	0.56	0.51	0.49	0.32	0.32	0.10	0.11	0.11	0.10	0.19	0.18	0.19	0.08	0.07	0.06	0.06
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.08	0.08	0.06	0.18	0.45	0.35	0.33	0.26	0.25	0.07	0.06	0.07	0.07	0.12	0.10	0.13	0.06	0.08	0.08	0.06
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.08	0.06	0.17	0.29	0.54	0.47	0.46	0.23	0.22	0.08	0.10	0.11	0.11	0.11	0.10	0.06	0.08	0.23	0.24	0.20
$\overline{\lvert\alpha_{\mathrm{DHSa}}\rvert}$	0.09	0.09	0.16	0.22	0.45	0.36	0.37	0.24	0.22	0.09	0.10	0.12	0.11	0.08	0.08	0.09	0.06	0.16	0.18	0.16
p_q	0.06	0.06	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.18	0.02	0.01	0.06	0.00	0.03	0.33	0.06	0.06	0.38
p_{q^5}	0.26	0.48	0.38	0.25	0.00	0.02	0.03	0.00	0.00	0.09	0.08	0.04	0.02	0.27	0.03	0.01	0.54	0.07	0.14	0.31
p_{FF5}	0.15	0.07	0.83	0.00	0.01	0.01	0.00	0.00	0.00	0.30	0.22	0.05	0.01	0.00	0.01	0.00	0.29	0.20	0.16	0.36
p_{FF6}	0.11	0.17	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.18	0.04	0.03	0.03	0.01	0.00	0.63	0.11	0.15	0.42
p_{FF6c}	0.11	0.56	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.09	0.04	0.02	0.03	0.00	0.00	0.74	0.17	0.22	0.49
p_{BS6}	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.21	0.05	0.06	0.18
p_{SY4}	0.35	0.26	0.69	0.06	0.00	0.01	0.02	0.00	0.00	0.38	0.62	0.12	0.08	0.30	0.13	0.01	0.50	0.17	0.21	0.31
p_{DHS}	0.37	0.51	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.07	0.01	0.01	0.29	0.17	0.62	0.40	0.00	0.00	0.00
p_{DHSa}	0.56	0.18	0.05	0.00	0.00	0.01	0.00	0.00	0.00	0.58	0.11	0.01	0.01	0.57	0.53	0.37	0.71	0.01	0.02	0.03

	141 R_{a}^{1}	142 R_{n}^{1}	143 $R_{\mathrm{a}}^{[2,5]}$	144 $R_{\mathrm{a}}^{[6,10]}$	145 $R_{\mathrm{n}}^{[6,10]}$	146 $R_{\mathrm{a}}^{[11,15]}$	147 $R_{\mathrm{a}}^{[16,20]}$	148 Dtv12	149 Isff1	150 Isq1
$\overline{R}$	0.60	0.58	0.72	0.85	−0.57	0.65	0.58	−0.32	0.33	0.25
$t_{\overline{R}}$	2.95	1.79	4.12	4.86	−2.81	4.39	3.30	−1.71	3.57	2.78
α_q	0.47	−0.03	0.84	1.14	−0.12	0.62	0.66	−0.13	0.34	0.31
α_{q^5}	0.39	−0.60	0.80	0.99	−0.07	0.58	0.67	−0.16	0.24	0.22
α_{FF5}	0.58	0.83	0.75	1.08	−0.21	0.70	0.64	−0.06	0.37	0.30
α_{FF6}	0.37	−0.28	0.76	1.14	−0.13	0.66	0.64	−0.06	0.32	0.26
α_{FF6c}	0.31	−0.24	0.68	1.16	−0.13	0.69	0.67	−0.11	0.32	0.25
α_{BS6}	0.32	−0.19	0.80	1.14	0.17	0.59	0.62	−0.01	0.40	0.36
α_{SY4}	0.50	−0.10	0.86	1.06	−0.19	0.60	0.59	−0.03	0.30	0.26
α_{DHS}	0.21	−0.77	0.60	1.16	−0.48	0.54	0.64	−0.82	0.30	0.38
α_{DHSa}	0.40	−0.35	0.63	1.02	−0.38	0.48	0.61	−0.60	0.22	0.19
t_q	2.17	−0.06	4.09	5.08	−0.57	3.48	3.31	−1.60	3.20	3.06
t_{q^5}	1.67	−1.55	3.67	4.72	−0.33	3.12	3.00	−2.10	2.07	2.00
t_{FF5}	2.97	2.13	3.96	5.22	−1.20	3.83	3.70	−0.84	3.70	2.99
t_{FF6}	1.96	−1.75	3.69	5.54	−0.66	3.94	3.37	−0.78	3.28	2.68
t_{FF6c}	1.52	−1.42	3.20	5.17	−0.72	3.82	3.32	−1.33	3.07	2.48
t_{BS6}	1.53	−1.14	3.68	4.81	0.86	3.15	3.31	−0.14	3.90	3.41
t_{SY4}	2.55	−0.31	4.17	5.00	−1.00	3.68	3.05	−0.33	2.87	2.49
t_{DHS}	0.83	−2.15	2.55	5.40	−2.22	3.06	3.18	−3.71	2.86	3.19
t_{DHSa}	1.78	−0.94	3.02	5.08	−1.86	2.69	3.46	−2.98	2.11	2.02
$\overline{\lvert\alpha_q\rvert}$	0.11	0.17	0.16	0.25	0.16	0.17	0.16	0.10	0.10	0.11
$\overline{\lvert\alpha_{q^5}\rvert}$	0.10	0.23	0.16	0.22	0.11	0.17	0.16	0.11	0.08	0.09
$\overline{\lvert\alpha_{\mathrm{FF5}}\rvert}$	0.14	0.17	0.16	0.24	0.17	0.19	0.16	0.06	0.08	0.09
$\overline{\lvert\alpha_{\mathrm{FF6}}\rvert}$	0.10	0.20	0.14	0.26	0.16	0.18	0.16	0.06	0.08	0.09
$\overline{\lvert\alpha_{\mathrm{FF6c}}\rvert}$	0.11	0.21	0.14	0.26	0.17	0.19	0.18	0.07	0.08	0.08
$\overline{\lvert\alpha_{\mathrm{BS6}}\rvert}$	0.11	0.22	0.16	0.25	0.15	0.18	0.16	0.06	0.11	0.12
$\overline{\lvert\alpha_{\mathrm{SY4}}\rvert}$	0.12	0.18	0.16	0.24	0.15	0.16	0.14	0.08	0.09	0.11
$\overline{\lvert\alpha_{\mathrm{DHS}}\rvert}$	0.10	0.33	0.12	0.25	0.16	0.15	0.15	0.37	0.08	0.10
$\overline{\lvert\alpha_{\mathrm{DHSa}}\rvert}$	0.12	0.23	0.12	0.23	0.13	0.13	0.14	0.29	0.07	0.08
p_q	0.08	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
p_{q^5}	0.43	0.00	0.00	0.00	0.33	0.00	0.04	0.01	0.02	0.06
p_{FF5}	0.07	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.00	0.00
p_{FF6}	0.23	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.00	0.01
p_{FF6c}	0.24	0.00	0.00	0.00	0.00	0.00	0.01	0.09	0.01	0.05
p_{BS6}	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
p_{SY4}	0.11	0.00	0.00	0.00	0.01	0.00	0.08	0.08	0.00	0.00
p_{DHS}	0.04	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00
p_{DHSa}	0.11	0.00	0.00	0.00	0.04	0.00	0.02	0.00	0.00	0.04