

# RELEASE NOTES FOR MAY 2025 UPDATE

Chen Xue<sup>1</sup>

May 3, 2025

In this release, we extend the sample period for testing portfolios data through the end of 2024. We also expand testing portfolios from 195 to 199 anomalies, which are grouped into six categories: momentum (42), value-growth (32), investment (32), profitability (50), intangibles (33), and frictions (10). The main sample period is from January 1967 to December 2024.

## Anomaly Selection

The anomalies are a subset of the 452 anomalies in Hou, Xue, and Zhang (2020).<sup>2</sup> We first include the 158 anomalies that are significant ( $|t| \geq 1.96$ ) in their original sample from January 1967 to December 2016. We then add anomalies that have become significant in subsequent sample extensions, including 11 anomalies for the period through December 2018 (Hou, Mo, Xue, and Zhang 2021), one through December 2019 (R&D capital-to-assets, Rca), two through December 2020 (supplier industry momentum with a 12-month holding period, Sim12, and quarterly taxable income-to-book income with a 6-month holding period, Tbi<sup>q</sup>6), one through December 2021 (return on assets with a 6-month holding period, Roa6), five through December 2022 (customer momentum with a 6-month holding period, Cm6, quarterly investment-to-assets with a 1-month holding period, Ia<sup>q</sup>1, change in long-term investments, dLti, net external financing, Nxf, and disparity between long- and short-term earnings growth forecasts with a 1-month holding period, Dls1), two through December 2023 (quarterly return on net operating assets with a 12-month holding period, Rna<sup>q</sup>12, and quarterly profit margin with a 1-month holding period, Pmq1), and four through December 2024 (gross profits-to-lagged assets, Gla, quarterly operating profits-to-lagged equity with a 12-month holding period, Ole<sup>q</sup>12, cash flow volatility with a 1-month holding

---

<sup>1</sup> Associate Professor of Finance, Lindner College of Business, University of Cincinnati, 2338 Lindner Hall, 2906 Woodside Dr, Cincinnati, OH 45221. Tel: (513) 556-7078. E-mail: xuecx@ucmail.uc.edu.

<sup>2</sup> Hou, Kewei, Chen Xue, and Lu Zhang, 2020, Replicating anomalies, *Review of Financial Studies* 33, 2019-2133.

period, Vcfl, and quarterly asset liquidity with a 1-month holding period, Ala<sup>q1</sup>).<sup>3</sup> We also include expected growth from the expected growth factor of Hou, Mo, Xue, and Zhang (2021), with 1-, 6-, and 12-month holding periods.

We include 12 anomalies that, albeit insignificant, are prominent in the empirical asset pricing literature, including standardized unexpected earnings (6-month holding period, Sue6), long-term reversal (1-month holding period, Rev1), dividend yield (Dp), payout yield (Op), total accruals (Ta), operating profits-to-equity (Ope), market equity (Me), idiosyncratic volatility per the Fama-French 3-factor model (1-month holding period, Ivff1), idiosyncratic volatility per the Hou-Xue-Zhang  $q$ -factor model (1-month holding period, Ivq1), total volatility (1-month holding period, Tv1), market beta (1-month holding period,  $\beta 1$ ), and short-term reversal (Srev).

Finally, for anomalies that have become insignificant over time since the first release of our data library, we continue their coverage to maintain backward compatibility with prior releases.

### **The Number of Significant Anomalies**

Among the 452 anomalies in Hou, Xue, and Zhang (2020), the number of significant anomalies at the 5% level declines over time from 158 to 142 as shown in Table A. In particular, the number of significant anomalies drops from 29 to 9 in the value-versus-growth category and from 28 to 21 in the investment category. In contrast, the number of significant profitability anomalies increases from 35 to 44. The number of significant anomalies is more stable for the other categories.

### **Technical Document**

We have updated the Technical Document that details the construction of our testing portfolios data. Notably, we added the descriptions for testing portfolios related to four anomalies (Gla, Ole<sup>q12</sup>, Vcfl, Ala<sup>q1</sup>) that have become significant in the latest sample period.

---

<sup>3</sup> Hou, Kewei, Haitao Mo, Chen Xue, and Lu Zhang, 2021, An augmented  $q$ -factor model with expected growth, *Review of Finance* 25, 1-41. The 11 anomalies from the December 2018 extension are prior 11-month returns with a 12-month holding period ( $R^{11}12$ ), 52-week high with a 12-month holding period (52w12), segment momentum with a 12-month holding period (Sm12), asset turnover (Ato), capital turnover (Cto), quarterly O-score with a 1-month holding period (O<sup>q1</sup>), quarterly taxable income-to-book income with a 12-month holding period (Tbi<sup>q12</sup>), quarterly sales growth with a 1-month holding period (Sg<sup>q1</sup>), quarterly R&D expense-to-sales with 6- and 12-month holding periods (Rds<sup>q6</sup> and Rds<sup>q12</sup>), as well as the nonannual component of year 1-lagged return ( $R^1_t$ ).

<b>Table A: Number of Significant Anomalies</b>							
Period	Mom (57)	V-G (69)	Inv (38)	Prof (79)	Intan (103)	Fric (106)	Total (452)
1967-2016	36	29	28	35	26	4	158
1967-2018	39	15	26	40	27	3	150
1967-2019	39	13	24	38	26	2	142
1967-2020	39	5	26	35	30	3	138
1967-2021	37	10	25	39	28	2	141
1967-2022	39	15	30	41	26	3	154
1967-2023	37	12	25	40	26	2	142
1967-2024	39	9	21	44	26	3	142

**Next Update**

We plan to update our data in March 2026, with the sample extended through December 2025.