Funding conditions, transaction costs and the performance of anomalies

Online Appendix

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1 Anomalies

1.1 Annually Rebalanced Anomalies

1. **Size (SIZE)**:

   Follows Fama and French (1993). $SIZE = ME_{Jun}$. We use the CRSP end of June price times shares outstanding.

2. **Realized Volatility (REALVOL)**:

   Follows Ang et al. (2006). $REALVOL = \frac{252}{N} \sum_{t=1}^{N} r_t^2$. N is the number of available returns for the stock for the given year. Rebalanced annually.

3. **Investment-to-Capital (IK)**:

   Follows Xing (2007). $IG = CAPX/PPENT$. Investment to capital is the ratio of capital expenditure ($CAPX$) over property, plant, and equipment ($PPENT$).

4. **Investment Growth (IG)**:

   Follows Xing (2007). $IG = CAPX/CAPX_{-12}$. Investment growth is the percentage change in capital expenditure (Compustat item CAPX).

5. **Net Operating Assets (NOA)**:

   Follows Hirshleifer et al. (2004).

$$NOA = (AT - CHE) - (AT - DLC - DLTT - MIB - PSTK - CEQ),$$

   where AT is total assets, CHE is cash and short-term investments, DLC is debt in current liabilities, $DLTT$ is long term debt, MIB is non-controlling interest, $PSTK$ is preferred capital stock, and CEQ is common equity. Updated annually.

6. **Asset Growth (AG)**:

   Follows Cooper et al. (2008). $AG = AT/AT_{-12}$. Rebalanced annually.

7. **Investment-to-Assets (IA)**:

   Follows Chen et al. (2011). $IA = \frac{PPEGT - PPEGT_{-12} + INVT - INVT_{-12}}{ATQ_{-12}}$. Investment-to-Assets is the annual change in $PPEGTQ$ which is property, plant, and equipment (Compustat item PPEGT) plus annual change in $INVT$ which is total inventories (Compustat item INVT) divided by lagged total assets (AT).

8. **Leverage (LEV)**:

   Follows Bhandari (1988). $LEV = (AT/ME)_{Dec}$. Market leverage is the ratio of total assets (Compustat item AT) over the market value of equity. Both are measured in December of the same year.

9. **Return on Assets (annual) (ROAA)**:

   Follows Chen et al. (2011). $ROAA = IB/AT$. Net income scaled by total assets. Updated annually.

10. **Gross Profitability (GPROF)**:

    Follows Novy-Marx (2013). $GPROF = GP/AT$, where GP is gross profits and AT is total assets. Rebalanced annually.

11. **Gross Margins (GMARGINS)**:

    Follows Novy-Marx (2013). $GMARGINS = GP/SALE$, where GP is gross profits and $SALE$ is total revenues. Rebalanced annually.

12. **Piotroski's F-score (FSCORE)**:

Follows Piotroski (2001). $FSCORE = 1_{IB>0} + 1_{\Delta ROA>0} + 1_{CFO>0} + 1_{CFO>IB} + 1_{\Delta DTA<0|DLTT=0|DLTT_{-12}=0} + 1_{\Delta ATL>0} + 1_{EqIss\leq 0} + 1_{\Delta GM>0} + 1_{\Delta ATO>0}$, where IB is income before extraordinary items, ROA is income before extraordinary items scaled by lagged total assets, CFO is cash flow from operations, DTA is total long-term debt scaled by total assets, $DLTT$ is total long-term debt, ATL is total current assets scaled by total current liabilities, $EqIss$ is the difference between sales of common stock and purchases of common stock recorded on the cash flow statement, GM equals one minus the ratio of cost of goods sold and total revenues, and ATO equals total revenues, scaled by total assets. Rebalanced annualy.

13. **Asset Turnover (ATURNOVER)**:

    Follows Soliman (2008). $ATURNOVER = SALE/AT$. Sales to total assets. Rebalanced annually.

14. **Sales-to-Price (SP)**:

    Follows Barbee Jr et al. (1996). $SP = SALE/ME_{Dec}$. Total revenues divided by stock price. Updated annually.

15. **Accruals (ACC)**:

    Follows Sloan (1996).

$$ACC = \frac{\Delta ACT - \Delta CHE - \Delta LCT + \Delta DLC + \Delta TXP - \Delta DP}{(AT + AT_{-12})/2}$$

    , where ΔACT is the annual change in total current assets, ΔCHE is the annual change in total cash and short-term investments, ΔLCT is the annual change in current liabilities, ΔDLC is the annual change in debt in current liabilities, ΔTXP is the annual change in income taxes payable, ΔDP is the annual change in depreciation

and amortization, and $(AT + AT_{-12})/2$ is average total assets over the last two years. Rebalanced annually.

16. **Growth in Long Term Net Operating Assets (GLTNOA)**:

    Follows Fairfield et al. (2003). $GLTNOA = GRNOA - ACC$. Growth in Net Operating Assets minus Accruals. $NOA = (RECT + INVT + ACO + PPENT + INTAN + AO - AP - LCO - LO)/AT$, $GRNOA = NOA - NOA_{-12}$, $ACC = ((RECT - RECT_{-12}) + (INVT - INVT_{-12}) + (ACO - ACO_{-12}) - (AP - AP_{-12}) - (LCO - LCO_{-12}) - DP)/((AT + AT_{-12})/2)$, where $RECT$ = Receivables, $INVT$ = Total Inventory, ACO = Current Assets, AP =Accounts Payable, LCO = Current Liabilities (Other), DP = Depreciation and Amortization, AT = Assets, $PPENT$ = Property, Plant, and Equipment (net), $INTAN$ = Intangible Assets, AO = Assets (Other), LO = Liabilities (Other). Updated annually.

17. **Share Issuance (annual) (NISSA)**:

    Follows Pontiff and Woodgate (2008). $NISSA = shrout_{Jun}/shrout_{Jun-12}$, where $shrout$ is the number of shares outstanding. Change in real number of shares outstanding from past June to June of the previous year. Excludes changes in shares due to stock dividends and splits, and companies with no changes in $shrout$.

1.2 Monthly Rebalanced Anomalies

1. **Standardized Unexpected Earnings (SUE)**:

    Follows Foster et al. (1984). $SUE = \frac{IBQ - IBQ_{-12}}{\sigma_{IBQ_{-24}:IBQ_{-3}}}$, where IBQ is income before extraordinary items (updated quarterly), and $\sigma_{IBQ_{-24}:IBQ_{-3}}$ is the standard deviation of IBQ in the past two years skipping the most recent quarter. Earnings surprises are measured by Standardized Unexpected Earnings (SUE), which is the change in the

most recently announced quarterly earnings per share from its value announced four quarters ago divided by the standard deviation of this change in quarterly earnings over the prior eight quarters. Rebalanced monthly.

2. **Return on Market Equity (ROME)**:

   Follows Chen et al. (2011). $ROME = IBQ/ME_{-4}$, where IBQ is income before extraordinary items (updated quarterly), and ME is market value of equity. Rebalanced monthly.

3. **Return on Book Equity (ROBE)**:

   Follows Chen et al. (2011). $ROBE = IBQ/BEQ_{-3}$, where IBQ is income before extraordinary items (updated quarterly), and BEQ is book value of equity. Rebalanced monthly.

4. **Sales Growth (SG)**:

   Follows Lakonishok et al. (1994). $SG = SALE/SALE_{-12}$. Sales growth is the percent change in net sales over turnover (Compustat item SALE).

5. **Industry Momentum (INDMOM1)**:

   Follows Moskowitz and Grinblatt (1999). $INDMOM1 = rank(r^{ind}_{t-l})$. In each month, the Fama and French 49 industries are sorted on their value-weighted past month's performance and assigned to 10 industry deciles. Then, all firms in decile 10(from the 5 winner industries) form the value-weighted long portfolio and allfirms in decile 1 (the 5 loser industries) form the short portfolio. Rebalanced monthly.

6. **Industry Momentum (INDMOM6)**:

   Follows Moskowitz and Grinblatt (1999). $INDMOM6 = rank(\sum_{l=1}^{6} r^{ind}_{t-l})$. In each month, the Fama and French 49 industries are sorted on their value-weighted past 6

months' performance and assigned to 10 industry deciles. Then, all firms in decile 10(from the 5 winner industries) form the value-weighted long portfolio and allfirms in decile 1 (the 5 loser industries) form the short portfolio. Rebalanced monthly.

7. **Composite Issuance (CISS)**:

   Follows Daniel and Titman (2006). $CISS = \log(\frac{ME_{t-13}}{ME_{t-60}}) - \sum_{l=13}^{60} r_{t-l}$, where r is the log return on the stock and ME is total market equity. Updated monthly.

8. **Momentum (11m) (MOM11)**:

   Follows Jegadeesh and Titman (1993). $MOM11 = \sum_{l=2}^{12} r_{t-l}$. Cumulated past performance in the previous 11 months by skipping the most recent month. Rebalanced monthly.

9. **Momentum (6m) (MOM6)**:

   Follows Jegadeesh and Titman (1993). $MOM6 = \sum_{l=2}^{7} r_{t-l}$. Cumulated past performance in the previous 6 months by skipping the most recent month. Rebalanced monthly.

10. **Long-term Reversals (LTREV)**:

    Follows De Bondt and Thaler (1985). $LTREV = \sum_{l=13}^{60} r_{t-l}$. Cumulative returns from $t-60$ to $t-13$. Updated monthly.

11. **Short-term Reversal (STREV)**:

    Follows Jegadeesh (1990). $STREV = r_{t-1}$. Return in the previous month. Updated monthly.

12. **Seasonality (SEASON)**:

    Follows Heston and Sadka (2008). $SEASON = \sum_{l=1}^{5} r_{t-l\times 12}$. Average monthly return in the same calendar month over the last 5 years. As an example, the average return

from prior Octobers is used to predict returns this October. The firm needs at least one year of data to be included in the sample. Updated monthly.

13. **Momentum-Reversal (MOMREV)**:

    Follows Jegadeesh and Titman (1993). $MOMREV = \sum_{l=14}^{19} r_{t-l}$. Buy and hold returns from $t-19$ to $t-14$. Updated monthly.

14. **Share Issuance (monthly) (NISSM)**:

    Follows Pontiff and Woodgate (2008). $NISSM = shrout_{t-1}/shrout_{t-13}$, where $shrout$ is the number of shares outstanding. Change in real number of shares outstanding from $t-13$ to $t-1$. Excludes changes in shares due to stock dividends and splits, and companies with no changes in $shrout$.

15. **Industry Relative Reversals (INDRREV)**:

    Follows Da et al. (2013). $INDRREV = r_{-1} - r_{-1}^{ind}$, where r is the return on a stock and r^{ind} is return on its industry. Difference between a stocks'prior month's return and the prior month's return of its industry (based on the Fama and French 49 industries). Updated monthly.

16. **Price (PRICE)**:

    Follows Blume and Husic (1973). $PRICE = log(ME/shrout)$, where ME is market equity and $shrout$ is the number of shares outstanding. Log of stock price. Updated monthly.

17. **Share Volume (SHVOL)**:

    Follows Datar et al. (1998). $SHVOL = \frac{1}{3}\sum_{i=1}^{3} volume_{t-i}/shrout_t$. Average number of shares traded over the previous three months scaled by shares outstanding. Updated monthly.

2 Tables

Table 1: **Summary statistics for the estimated transaction costs - VIX and TR**

The results are based on a year-by-year analysis for two periods depending on the financial risk variable considered, January 1990 to June 2018 for the VIX and January 2008 to December 2014 for tail risk. Estimations are done using daily returns and daily equally-weighted market index returns. The transaction cost from the Hasbrouck (2009) model is given by $2\hat{c}$ and the transaction cost from the Hasbrouck model with financial risk as s conditioning variable $2c_{\hat{FR}} = 2(c_0 + c_1.FR$. The skewness and kurtosis coefficients are robust measures proposed by Hinkley (1975) and Crow and Siddiqui (1967) (see section 4.1.1 in the main text).

	H-Model	**VIXH-Model**	**H-Model**	**TRH-Model**
Period	Jan 1990 - Jun 2018	Jan 1990 - Jun 2018	Jan 2008 - Dec 2014	Jan 2008 - Dec 2014
Moments				
Mean	0.0281	0.0575	0.0176	0.0196
Standard deviation	0.0351	0.2755	0.0175	0.0195
Skewness ($SK_{(0.1)}$)	0.5198	0.6372	0.4670	0.4726
Kurtosis (KR)	4.6323	7.4069	3.8719	3.9494
Quantiles				
Q(5%)	0.0039	0.0053	0.0027	0.0032
Q(10%)	0.0059	0.0077	0.0041	0.0047
Q(25%)	0.0103	0.0135	0.0070	0.0079
Q(50%)	0.0184	0.0261	0.0126	0.0140
Q(75%)	0.0336	0.0530	0.0226	0.0248
Q(90%)	0.0578	0.1094	0.0360	0.0400
Q(95%)	0.0819	0.1805	0.0477	0.0532

Table 2: **Average H-Model and VIXH-Model transaction costs for anomaly-based decile portfolios**

The results are based on a year-by-year analysis for the period January 1990 to June 2018. For each anomaly, we rank firms by using data on characteristics from CRSP and COMPUSTAT. Estimations are done using daily returns and daily equally-weighted market index returns. The transaction cost from the Hasbrouck (2009) model (H model) is given by $2\hat{c}$ and the transaction cost from the Hasbrouck model with the VIX (VIXH model) is given by $2c_{\hat{VIX}} = 2(c_0 + c_1.VIX)$ where the VIX is the CBOE volatility index. Pr is the proportion of stock-years for which the Bayes factor preferred the VIXH Model to the H Model.

Anomalies rebalanced annualy					**Anomalies rebalanced monthly**				
Anomaly	T-cost	D1	D5	D10	Anomaly	T-cost	D1	D5	D10
SIZE	$2 \times c$	0.061	0.024	0.013	SUE	$2 \times c$	0.030	0.030	0.029
	$2 \times c_{vix}$	0.127	0.039	0.020		$2 \times c_{vix}$	0.052	0.052	0.048
	Pr	0.56	0.77	0.92		Pr	0.76	0.76	0.77
REALVOL	$2 \times c$	0.007	0.019	0.085	ROME	$2 \times c$	0.014	0.009	0.011
	$2 \times c_{vix}$	0.016	0.035	0.182		$2 \times c_{vix}$	0.027	0.012	0.016
	Pr	0.68	0.81	0.57		Pr	0.95	0.98	0.96
IK	$2 \times c$	0.047	0.028	0.036	ROBE	$2 \times c$	0.034	0.027	0.034
	$2 \times c_{vix}$	0.092	0.049	0.071		$2 \times c_{vix}$	0.060	0.048	0.060
	Pr	0.63	0.77	0.74		Pr	0.72	0.77	0.73
IG	$2 \times c$	0.045	0.026	0.036	SG	$2 \times c$	0.039	0.025	0.035
	$2 \times c_{vix}$	0.086	0.046	0.064		$2 \times c_{vix}$	0.071	0.041	0.063
	Pr	0.66	0.81	0.71		Pr	0.70	0.78	0.73
NOA	$2 \times c$	0.050	0.031	0.014	INDMOM1	$2 \times c$	0.022	0.015	0.024
	$2 \times c_{vix}$	0.100	0.054	0.022		$2 \times c_{vix}$	0.038	0.025	0.043
	Pr	0.63	0.73	0.89		Pr	0.83	0.83	0.83
AG	$2 \times c$	0.046	0.025	0.031	INDMOM6	$2 \times c$	0.021	0.015	0.027
	$2 \times c_{vix}$	0.086	0.042	0.055		$2 \times c_{vix}$	0.035	0.026	0.049
	Pr	0.68	0.77	0.77		Pr	0.83	0.81	0.81
IA	$2 \times c$	0.046	0.029	0.031	CISS	$2 \times c$	0.017	0.021	0.032
	$2 \times c_{vix}$	0.086	0.048	0.054		$2 \times c_{vix}$	0.030	0.035	0.063
	Pr	0.67	0.77	0.78		Pr	0.79	0.81	0.78
LEV	$2 \times c$	0.023	0.019	0.025	MOM11	$2 \times c$	0.058	0.019	0.028
	$2 \times c_{vix}$	0.041	0.029	0.041		$2 \times c_{vix}$	0.116	0.032	0.048
	Pr	0.83	0.86	0.74		Pr	0.64	0.78	0.81
ROAA	$2 \times c$	0.054	0.025	0.028	MOM6	$2 \times c$	0.054	0.020	0.031
	$2 \times c_{vix}$	0.107	0.042	0.049		$2 \times c_{vix}$	0.109	0.033	0.055
	Pr	0.65	0.75	0.78		Pr	0.66	0.77	0.78
GPROF	$2 \times c$	0.048	0.030	0.034	LTREV	$2 \times c$	0.053	0.019	0.021
	$2 \times c_{vix}$	0.098	0.053	0.063		$2 \times c_{vix}$	0.106	0.030	0.033
	Pr	0.67	0.77	0.73		Pr	0.65	0.78	0.85
GMARGINS	$2 \times c$	0.044	0.030	0.034	STREV	$2 \times c$	0.048	0.021	0.038
	$2 \times c_{vix}$	0.085	0.053	0.063		$2 \times c_{vix}$	0.092	0.038	0.068
	Pr	0.69	0.75	0.75		Pr	0.69	0.76	0.74
FSCORE	$2 \times c$	0.043	0.028	0.025	SEASON	$2 \times c$	0.042	0.019	0.031
	$2 \times c_{vix}$	0.087	0.051	0.043		$2 \times c_{vix}$	0.080	0.032	0.055
	Pr	0.67	0.75	0.79		Pr	0.71	0.78	0.77
ATURNOVER	$2 \times c$	0.042	0.032	0.034	MOMREV	$2 \times c$	0.050	0.020	0.030
	$2 \times c_{vix}$	0.088	0.057	0.063		$2 \times c_{vix}$	0.099	0.034	0.052
	Pr	0.68	0.77	0.71		Pr	0.68	0.77	0.79
SP	$2 \times c$	0.028	0.017	0.028	NISSM	$2 \times c$	0.027	0.026	0.025
	$2 \times c_{vix}$	0.054	0.026	0.046		$2 \times c_{vix}$	0.048	0.044	0.045
	Pr	0.74	0.89	0.77		Pr	0.81	0.78	0.76
ACC	$2 \times c$	0.046	0.026	0.035	INDRREV	$2 \times c$	0.048	0.020	0.038
	$2 \times c_{vix}$	0.087	0.042	0.062		$2 \times c_{vix}$	0.092	0.036	0.068
	Pr	0.69	0.79	0.74		Pr	0.69	0.77	0.74
GLTNOA	$2 \times c$	0.026	0.040	0.016	PRICE	$2 \times c$	0.065	0.019	0.012
	$2 \times c_{vix}$	0.045	0.072	0.026		$2 \times c_{vix}$	0.117	0.030	0.020
	Pr	0.82	0.66	0.89		Pr	0.57	0.77	0.91
NISSA	$2 \times c$	0.025	0.030	0.027	SHVOL	$2 \times c$	0.037	0.025	0.029
	$2 \times c_{vix}$	0.045	0.051	0.045		$2 \times c_{vix}$	0.076	0.041	0.053
	Pr	0.76	0.72	0.82		Pr	0.55	0.79	0.85

Table 3: **Average H-Model and TRH-Model transaction costs for anomaly-based decile portfolios**

The results are based on a year-by-year analysis for the period January 2008 to December 2014. For each anomaly, we rank firms by using data on characteristics from CRSP and COMPUSTAT. Estimations are done using daily returns and daily equally-weighted market index returns. The transaction cost from the Hasbrouck (2009) model (H model) is given by $2\hat{c}$ and the transaction cost from the Hasbrouck model with tail risk (TRH model) is given by $2c\hat{_{TR}} = 2(c_0 + c_1.TR)$ where TR is the tail risk measure of Weller (2019). Pr is the proportion of stock-years for which the Bayes factor preferred the TRH Model to the H Model.

Anomalies rebalanced annualy					**Anomalies rebalanced monthly**				
Anomaly	T-cost	D1	D5	D10	Anomaly	T-cost	D1	D5	D10
SIZE	$2 \times c$	0.029	0.016	0.010	SUE	$2 \times c$	0.030	0.018	0.025
	$2 \times c_{tr}$	0.032	0.018	0.011		$2 \times c_{tr}$	0.033	0.019	0.027
	Pr	0.72	0.93	0.98		Pr	0.87	0.88	0.89
REALVOL	$2 \times c$	0.005	0.013	0.050	ROME	$2 \times c$	0.030	0.018	0.025
	$2 \times c_{tr}$	0.006	0.014	0.055		$2 \times c_{tr}$	0.033	0.019	0.027
	Pr	0.77	0.94	0.66		Pr	0.88	0.96	0.93
IK	$2 \times c$	0.030	0.018	0.025	ROBE	$2 \times c$	0.030	0.018	0.025
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.033	0.019	0.027
	Pr	0.76	0.92	0.85		Pr	0.86	0.89	0.86
IG	$2 \times c$	0.030	0.018	0.025	SG	$2 \times c$	0.030	0.018	0.025
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.033	0.019	0.027
	Pr	0.77	0.93	0.83		Pr	0.84	0.90	0.86
NOA	$2 \times c$	0.030	0.018	0.025	INDMOM1	$2 \times c$	0.017	0.011	0.018
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.018	0.012	0.020
	Pr	0.75	0.90	0.99		Pr	0.93	0.92	0.93
AG	$2 \times c$	0.030	0.018	0.025	INDMOM6	$2 \times c$	0.017	0.011	0.017
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.018	0.013	0.018
	Pr	0.79	0.90	0.88		Pr	0.93	0.92	0.94
IA	$2 \times c$	0.030	0.018	0.025	CISS	$2 \times c$	0.012	0.016	0.019
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.013	0.018	0.021
	Pr	0.82	0.91	0.93		Pr	0.93	0.91	0.89
LEV	$2 \times c$	0.030	0.018	0.025	MOM11	$2 \times c$	0.035	0.013	0.019
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.038	0.014	0.021
	Pr	0.89	0.91	0.74		Pr	0.77	0.91	0.89
ROAA	$2 \times c$	0.030	0.018	0.025	MOM6	$2 \times c$	0.033	0.012	0.021
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.036	0.014	0.023
	Pr	0.75	0.88	0.92		Pr	0.79	0.91	0.88
GPROF	$2 \times c$	0.030	0.018	0.025	LtrEV	$2 \times c$	0.034	0.013	0.015
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.037	0.015	0.016
	Pr	0.79	0.92	0.86		Pr	0.76	0.92	0.95
GMARGINS	$2 \times c$	0.030	0.018	0.025	StrEV	$2 \times c$	0.030	0.012	0.024
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.033	0.013	0.027
	Pr	0.83	0.91	0.89		Pr	0.82	0.90	0.85
FSCORE	$2 \times c$	0.030	0.018	0.025	SEASON	$2 \times c$	0.027	0.013	0.021
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.030	0.014	0.023
	Pr	0.76	0.86	0.93		Pr	0.82	0.91	0.88
ATURNOVER	$2 \times c$	0.030	0.018	0.025	MOMREV	$2 \times c$	0.031	0.013	0.020
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.033	0.014	0.021
	Pr	0.81	0.92	0.86		Pr	0.79	0.91	0.89
SP	$2 \times c$	0.030	0.018	0.025	NISSM	$2 \times c$	0.015	0.018	0.015
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.017	0.020	0.016
	Pr	0.79	0.93	0.81		Pr	0.91	0.89	0.90
ACC	$2 \times c$	0.030	0.018	0.025	INDRREV	$2 \times c$	0.030	0.012	0.025
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.033	0.013	0.027
	Pr	0.81	0.93	0.85		Pr	0.81	0.91	0.85
GLTNOA	$2 \times c$	0.030	0.018	0.025	PRICE	$2 \times c$	0.041	0.013	0.008
	$2 \times c_{tr}$	0.033	0.019	0.027		$2 \times c_{tr}$	0.045	0.014	0.009
	Pr	0.96	0.78	0.98		Pr	0.67	0.88	0.96
NISSA	$2 \times c$	0.015	0.019	0.015	SHVOL	$2 \times c$	0.029	0.015	0.017
	$2 \times c_{tr}$	0.015	0.019	0.016		$2 \times c_{tr}$	0.031	0.017	0.019
	Pr	0.90	0.84	0.91		Pr	0.64	0.93	0.93

Table 4: **VIXH-Model: Transaction costs and flight to quality**

The table features the average absolute change and the average change in percentage between the transaction costs estimated with the Hasbrouck (2009) model with the VIX (VIXH model) and the Hasbrouck model (H model). For the two anomalies, size and volatility, we report the changes for the ten decile portfolios. We also compute the average parameter c_1 per portfolio since this parameter measures the sensitivity of the portfolio transaction cost to the VIX. We perform an ANOVA to test the difference of all these values across the deciles.

	Size			Volatility		
	Absolute change	Change in percentage	Parameter c_1	Absolute change	Change in percentage	Parameter c_1
Dec1	0.0651	91.84	1.5430	0.0084	129.33	0.1825
Dec2	0.0304	70.09	0.8424	0.0083	90.12	0.2240
Dec3	0.0226	68.35	0.6501	0.0093	76.65	0.2683
Dec4	0.0173	64.94	0.5243	0.0117	73.76	0.3337
Dec5	0.0147	65.01	0.4547	0.0156	82.59	0.4209
Dec6	0.0133	65.55	0.4076	0.0174	75.02	0.4875
Dec7	0.0118	65.24	0.3666	0.0214	77.57	0.5919
Dec8	0.0103	63.12	0.3290	0.0277	78.36	0.7539
Dec9	0.0087	60.82	0.2854	0.0409	86.45	1.0550
Dec10	0.0067	54.85	0.2466	0.1257	151.66	2.7129
Number of periods	342 months	342 months	29 years	348 months	348 months	29 years
Anova: F stat	113.26***	24.60***	12.80***	370.54***	148.29***	31.86***
Anova: DF Columns	9	9	9	9	9	9
Anova: DF Errors	3410	3410	280	3470	3470	280

Table 5: **TRH-Model: Transaction costs and flight to quality**

The table features the average absolute change and the average change in percentage between the transaction costs estimated with the Hasbrouck (2009) model with tail risk (TRH model) and the Hasbrouck model (H model). For the two anomalies, size and volatility, we report the changes for the ten decile portfolios. We also compute the average parameter c_1 per portfolio since this parameter measures the sensitivity of the portfolio transaction cost to the tail risk measure of Weller (2019). We perform an ANOVA to test the difference of all these values across the deciles.

	Size			Volatility		
	Absolute change	Change in percentage	Parameter c_1	Absolute change	Change in percentage	Parameter c_1
Dec1	0.0029	11.65	358.74	0.0010	25.34	104.30
Dec2	0.0023	10.31	334.45	0.0011	21.19	139.12
Dec3	0.0021	11.65	292.65	0.0012	17.53	166.57
Dec4	0.0018	11.75	286.11	0.0013	14.69	198.89
Dec5	0.0016	11.67	294.34	0.0015	13.79	236.96
Dec6	0.0015	11.95	278.13	0.0017	12.92	271.35
Dec7	0.0014	11.61	260.07	0.0019	11.84	316.61
Dec8	0.0013	12.10	245.49	0.0023	11.93	368.78
Dec9	0.0013	13.45	219.43	0.0030	11.51	445.70
Dec10	0.0011	12.56	194.96	0.0046	9.81	555.46
Number of periods	84 months	84 months	7 years	84 months	84 months	7 years
Anova: F stat	2.20**	0.20	2.59**	6.77***	6.26***	18.62***
Anova: DF Columns	9	9	9	9	9	9
Anova: DF Errors	830	830	60	830	830	60

Table 6: **Alphas (in %) of anomaly portfolios with H-Model and VIXH-Model transaction costs (January 1990 to June 2018)**

The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and its t-statistic.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	H-model net return	VIXH-model net return	Gross return	H-model net return	VIXH-model net return
SUE	α	3.0351	1.9376	1.2835	1.1977	0.4556	0.0528
	$t-stat$	24.6708	14.1835	7.7375	7.3142	2.6087	0.2802
ROME	α	0.2988	-0.6916	-1.2851	0.8183	0.0320	-0.4617
	$t-stat$	0.7799	-1.7634	-3.1567	1.4221	0.0532	-0.7374
ROBE	α	0.5691	-0.4081	-1.0698	0.0517	-0.5771	-0.9584
	$t-stat$	2.6329	-1.8187	-4.4233	0.2078	-2.2351	-3.5597
SG	α	1.3640	0.4582	-0.1095	1.4879	0.8850	0.5280
	$t-stat$	8.9523	2.8728	-0.6276	6.8122	3.9782	2.3072
INDMOM1	α	1.4009	-2.0769	-4.0539	0.6484	-1.7824	-3.0244
	$t-stat$	4.3421	-6.5027	-12.5701	1.7602	-4.8709	-8.2988
INDMOM6	α	1.3535	-0.6465	-1.7861	0.4967	-0.8999	-1.6133
	$t-stat$	3.8709	-1.8574	-5.0837	1.2259	-2.2334	-4.0004
CISS	α	0.4439	-0.3594	-0.8147	0.2970	-0.4162	-0.8111
	$t-stat$	4.9048	-3.7088	-7.9955	2.0845	-2.8362	-5.4229
MOM11	α	-0.3180	-1.6329	-2.4095	0.4984	-0.6855	-1.3577
	$t-stat$	-0.9948	-5.0956	-7.4519	1.2464	-1.7026	-3.3503
MOM6	α	0.0445	-1.6639	-2.6970	0.3160	-1.2225	-2.1082
	$t-stat$	0.1393	-5.1928	-8.3506	0.8074	-3.1338	-5.3777
LTREV	α	0.5138	-0.1671	-0.5427	0.0892	-0.4828	-0.7816
	$t-stat$	3.6989	-1.2150	-3.9328	0.4143	-2.2560	-3.6557
STREV	α	0.4948	-3.2847	-5.6201	-0.2654	-3.3165	-5.0665
	$t-stat$	1.6520	-10.7085	-16.6498	-0.7505	-9.2379	-13.4631
SEASON	α	-0.0769	-3.2449	-4.9996	-0.0070	-2.6376	-4.0055
	$t-stat$	-0.6560	-24.9703	-32.4620	-0.0347	-12.4080	-17.7888
MOMREV	α	0.4057	-1.2158	-2.1495	0.2271	-1.2563	-2.0500
	$t-stat$	2.3269	-6.9798	-12.1559	0.9190	-5.1179	-8.3225
NISSM	α	0.0635	-0.4655	-0.7915	-0.0767	-0.4785	-0.7013
	$t-stat$	0.5935	-4.2609	-7.1031	-0.5254	-3.2566	-4.7267
INDRREV	α	1.2381	-2.8854	-5.5108	0.4989	-2.9864	-5.1460
	$t-stat$	3.6784	-8.5134	-15.0468	1.4710	-8.8103	-14.2166
PRICE	α	2.0176	1.1107	0.5240	2.0947	1.2544	0.7455
	$t-stat$	8.5655	4.8181	2.3042	8.2573	4.9254	2.9086
SHVOL	α	0.3749	-0.4534	-0.9932	0.6979	0.1918	-0.1215
	$t-stat$	1.9384	-2.2602	-4.7793	3.1176	0.8708	-0.5570

Table 7: **Alphas (in %) of anomaly portfolios with H-Model and TRH-Model transaction costs (January 2008 to December 2014)**

The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and its t-statistic.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	H-model net return	TRH-model net return	Gross return	H-model net return	TRH-model net return
SUE	α	2.3495	1.5178	1.4035	0.9107	0.3347	0.2418
	$t-stat$	7.9915	5.1345	4.7333	2.9677	1.0913	0.7960
ROME	α	-0.2232	-1.2313	-1.3603	0.7849	-0.0235	-0.1405
	$t-stat$	-0.4663	-2.4447	-2.6590	0.9468	-0.0270	-0.1585
ROBE	α	0.1165	-0.5828	-0.6778	-0.0747	-0.4953	-0.5537
	$t-stat$	0.2944	-1.3937	-1.5863	-0.2350	-1.5442	-1.6930
SG	α	1.0403	0.4096	0.3225	0.8626	0.3595	0.2620
	$t-stat$	3.4539	1.3313	1.0380	1.9091	0.7837	0.5645
INDMOM1	α	1.2780	-1.4127	-1.6583	0.6416	-1.3267	-1.5441
	$t-stat$	2.1333	-2.3528	-2.7938	0.9562	-1.9717	-2.3189
INDMOM6	α	1.2831	-0.3005	-0.4533	0.4153	-0.7268	-0.8583
	$t-stat$	1.9905	-0.4853	-0.7257	0.5705	-1.0225	-1.2000
CISS	α	0.7358	0.1865	0.1272	0.5892	0.0592	0.0065
	$t-stat$	5.1519	1.2787	0.8769	2.7180	0.2697	0.0295
MOM11	α	1.0351	0.0617	-0.0449	0.2807	-0.6500	-0.7585
	$t-stat$	1.6535	0.0995	-0.0732	0.3935	-0.9141	-1.0804
MOM6	α	0.8109	-0.4554	-0.6035	0.8501	-0.3672	-0.5200
	$t-stat$	1.4410	-0.8120	-1.0901	1.2006	-0.5218	-0.7465
LTREV	α	0.6471	0.0596	0.0028	0.5692	0.1314	0.0887
	$t-stat$	2.5678	0.2355	0.0113	1.2197	0.2830	0.1922
STREV	α	0.5474	-2.2120	-2.5160	0.2828	-2.0606	-2.3466
	$t-stat$	1.0185	-4.0992	-4.7226	0.5531	-4.0224	-4.6276
SEASON	α	0.0547	-2.4777	-2.7430	0.1395	-1.9614	-2.1995
	$t-stat$	0.2892	-13.5231	-14.2060	0.4179	-5.9308	-6.5795
MOMREV	α	0.5042	-0.7065	-0.8390	0.8330	-0.3021	-0.4292
	$t-stat$	1.6041	-2.2770	-2.7149	2.3133	-0.8488	-1.2199
NISSM	α	0.1193	-0.2102	-0.2554	0.0624	-0.2925	-0.3484
	$t-stat$	0.7472	-1.3153	-1.6076	0.2293	-1.0698	-1.2668
INDRREV	α	0.7344	-2.2620	-2.6022	0.9804	-1.6386	-1.9912
	$t-stat$	1.1081	-3.3754	-3.9252	1.6911	-2.8371	-3.5053
PRICE	α	1.2042	0.6643	0.5953	1.2378	0.6907	0.6231
	$t-stat$	4.1267	2.2411	1.9815	2.6456	1.4363	1.2771
SHVOL	α	1.1571	0.6542	0.5931	0.2378	-0.0800	-0.1304
	$t-stat$	4.9370	2.6764	2.4345	0.7101	-0.2414	-0.3951

Table 8: **Time varying Alphas (in %) of anomaly portfolios with H-Model and VIXH-Model transaction costs**

The time-varying alphas are computed according to the nonparametric method of Ang and Kristensen (2012) described in section 5.3. The H net returns are computed with the Hasbrouck (2009) unconditional model while the VIXH net returns are based on the conditional version of the model with the VIX.

[1]: Number of significant $\alpha > 0$

[2]: Number of non significant α

[3]: Number of significant $\alpha < 0$

Level of significance: 5%

	Gross returns			**H net returns**			**VIXH net returns**			**Gross returns**			**H net returns**			**VIXH net returns**		
	[1]	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**
	EQUALLY-WEIGHTED PORTFOLIO									VALUE-WEIGHTED PORTFOLIO								
SUE	294	33	15	257	60	25	191	99	52	180	113	49	171	116	55	114	137	91
ROME	143	22	177	134	30	178	105	33	204	160	31	151	147	32	163	125	35	182
ROBE	183	19	140	175	18	149	131	20	191	189	22	131	178	20	144	150	20	172
SG	176	124	42	167	121	54	99	148	95	159	127	56	159	131	52	124	142	76
INDMOM1	77	217	48	15	180	147	2	101	239	52	216	74	22	207	113	4	153	185
INDMOM6	60	246	36	30	235	77	14	176	152	21	249	72	14	231	97	10	201	131
CISS	180	60	102	160	62	120	75	64	203	151	90	101	146	79	117	85	80	177
MOM11	43	262	37	29	252	61	11	190	141	36	266	40	26	262	54	12	245	85
MOM6	18	259	65	12	203	127	5	129	208	33	257	52	14	244	84	5	181	156
LTREV	135	148	59	117	158	67	65	135	142	94	130	118	89	136	117	70	115	157
STREV	30	305	7	0	216	126	0	124	218	30	309	3	5	256	81	0	174	168
SEASON	106	137	99	12	55	275	4	13	325	98	145	99	35	94	213	19	52	271
MOMREV	107	198	37	40	207	95	18	117	207	57	236	49	29	224	89	12	181	149
NISSM	144	85	113	149	74	119	74	73	195	139	79	124	153	78	111	94	84	164
INDRREV	157	130	55	51	123	168	18	76	248	145	120	77	61	123	158	23	92	227
PRICE	151	164	27	131	182	29	60	214	68	154	160	28	140	169	33	80	196	66
SHVOL	130	122	90	120	116	106	76	99	167	137	128	77	144	126	72	98	143	101

Table 9: **Time varying Alphas (in %) of anomaly portfolios with H-Model and TRH-Model transaction costs**

The time-varying alphas are computed according to the nonparametric method of Ang and Kristensen (2012) described in section 5.3. The H net returns are computed with the Hasbrouck (2009) unconditional model while the TRH net returns are based on the conditional version of the model with the tail risk measure of **?**.

[1]: Number of significant $\alpha > 0$

[2]: Number of non significant α

[3]: Number of significant $\alpha < 0$

Level of significance: 5%

	Gross returns			**H net returns**			**TRH net returns**			**Gross returns**			**H net returns**			**TRH net returns**		
	[1]	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**	**[1]**	**[2]**	**[3]**
	EQUALLY-WEIGHTED PORTFOLIO									VALUE-WEIGHTED PORTFOLIO								
SUE	65	7	12	57	11	16	52	14	18	59	6	19	50	7	27	37	21	26
ROME	30	9	45	25	16	43	19	22	43	31	46	7	24	52	8	16	57	11
ROBE	36	10	38	32	15	37	28	16	40	9	74	1	8	76	0	6	76	2
SG	58	11	15	54	11	19	49	15	20	31	37	16	27	39	18	27	38	19
INDMOM1	38	17	29	25	15	44	20	14	50	41	9	34	28	10	46	19	16	49
INDMOM6	40	14	30	28	18	38	23	19	42	37	11	36	30	10	44	24	13	47
CISS	57	10	17	39	28	17	27	26	31	56	3	25	47	23	14	37	7	40
MOM11	37	11	36	33	9	42	23	18	43	30	6	48	25	8	51	22	7	55
MOM6	36	19	29	28	19	37	22	16	46	37	7	40	29	8	47	24	9	51
LTREV	53	15	16	50	17	17	37	15	32	34	6	44	30	10	44	27	10	47
STREV	36	20	28	15	12	57	11	10	63	41	14	29	22	7	55	19	3	62
SEASON	33	22	29	6	12	66	5	4	75	29	10	45	12	4	68	8	3	73
MOMREV	49	12	23	42	10	32	28	17	39	41	6	37	31	9	44	25	9	50
NISSM	50	14	20	42	20	22	38	15	31	7	79	8	2	75	7	0	75	9
INDRREV	43	19	22	13	22	49	12	15	57	52	12	20	26	10	48	21	6	57
PRICE	56	14	14	50	17	17	43	19	22	29	55	0	26	58	0	21	53	10
SHVOL	51	14	19	39	26	19	44	13	27	12	69	3	6	75	3	5	76	3

Table 10: **Alphas (in %) of "staggered partial rebalancing" anomaly portfolios with LOT-Model and LOT-Model plus funding liquidity (FLLOT-Model) transaction costs (January 1986 to June 2018).**

The "staggered partial rebalancing" strategy entails rebalancing only a fraction of the portfolio at each rebalancing point. The portfolio is rebalanced at a relatively low frequency, with the rebalancing applied to only a portion of the portfolio at a higher frequency (e.g., quarterly rebalancing, but on only one-third of the portfolio each month). The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and its t-statistic.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	LOT-model net return	FL LOT-model net return	Gross return	LOT-model net return	FL LOT-model net return
SUE	α	2.5939	1.3505	1.3330	1.0599	0.2212	0.2094
	$t-stat$	24.9961	13.0310	12.6649	8.8133	1.7945	1.6875
ROME	α	1.8917	0.5946	0.5652	1.6371	0.6982	0.6826
	$t-stat$	6.4554	2.0351	1.8968	3.8582	1.6499	1.6006
ROBE	α	1.3654	-0.2755	-0.2991	0.2869	-0.7739	-0.7828
	$t-stat$	8.6854	-1.7408	-1.8787	1.5271	-4.0194	-4.0495
SG	α	1.1079	-0.3890	-0.4087	1.1414	0.1533	0.1440
	$t-stat$	9.2426	-3.1475	-3.2766	5.9288	0.7882	0.7411
INDMOM1	α	0.1871	-1.1281	-1.1469	0.0462	-0.8405	-0.8532
	$t-stat$	0.7597	-4.5147	-4.5660	0.1570	-2.8282	-2.8612
INDMOM6	α	0.2692	-1.0752	-1.0952	0.5092	-0.3743	-0.3867
	$t-stat$	0.9861	-3.8758	-3.9194	1.5109	-1.0981	-1.1297
CISS	α	0.1692	-0.9725	-0.9960	-0.0389	-0.9224	-0.9319
	$t-stat$	2.1761	-11.5988	-11.7600	-0.2880	-6.6057	-6.6522
MOM11	α	-0.0471	-1.5304	-1.5562	0.4599	-0.6368	-0.6485
	$t-stat$	-0.2031	-6.4552	-6.5199	1.6500	-2.2515	-2.2812
MOM6	α	0.2365	-1.2498	-1.2731	0.5458	-0.5507	-0.5608
	$t-stat$	0.9762	-5.0717	-5.1280	1.8485	-1.8466	-1.8705
LTREV	α	0.0360	-1.1867	-1.2075	-0.2564	-1.1940	-1.2024
	$t-stat$	0.2817	-9.2145	-9.3846	-1.2867	-5.9370	-5.9931
STREV	α	-0.1117	-1.6386	-1.6591	-0.3214	-1.4246	-1.4357
	$t-stat$	-0.6189	-8.7354	-8.7973	-1.2903	-5.6224	-5.6846
SEASON	α	-0.2319	-1.4400	-1.4549	-0.3334	-1.3084	-1.3169
	$t-stat$	-2.8182	-16.7333	-16.7795	-2.2037	-8.4124	-8.4699
MOMREV	α	0.1065	-1.2795	-1.2982	0.2008	-0.8625	-0.8714
	$t-stat$	0.8378	-10.0191	-10.1391	0.9749	-4.1881	-4.2361
NISSM	α	0.0811	-1.0635	-1.0872	-0.1915	-1.0180	-1.0288
	$t-stat$	0.8588	-10.8061	-10.9243	-1.5283	-7.9551	-8.0278
INDRREV	α	-0.1215	-1.7311	-1.7525	-0.2890	-1.5257	-1.5365
	$t-stat$	-0.7081	-9.6537	-9.7400	-1.3249	-6.9280	-7.0168
PRICE	α	2.3287	0.9305	0.8972	2.8927	1.7126	1.7017
	$t-stat$	14.1792	5.7883	5.6506	12.6929	7.5904	7.6257
SHVOL	α	0.4303	-0.8796	-0.9029	0.6084	-0.4019	-0.4110
	$t-stat$	2.7197	-5.2759	-5.3738	3.0721	-2.0350	-2.0839

Table 11: **Alphas (in %) of "staggered partial rebalancing" anomaly portfolios with H-Model and VIXH-Model transaction costs (January 1990 to June 2018).**

The "staggered partial rebalancing" strategy entails rebalancing only a fraction of the portfolio at each rebalancing point. The portfolio is rebalanced at a relatively low frequency, with the rebalancing applied to only a portion of the portfolio at a higher frequency (e.g., quarterly rebalancing, but on only one-third of the portfolio each month). The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and its t-statistic.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	H-model net return	VIXH-model net return	Gross return	H-model net return	VIXH-model net return
SUE	α	2.5933	1.9602	1.5733	1.1128	0.7062	0.4896
	$t-stat$	22.4308	17.1406	13.6288	8.2756	5.2175	3.5903
ROME	α	1.8546	1.2391	0.8701	1.5898	1.1638	0.9138
	$t-stat$	6.2355	4.1866	2.9087	3.7009	2.7145	2.1322
ROBE	α	1.1937	0.3713	-0.2113	0.1576	-0.3441	-0.6275
	$t-stat$	7.0380	2.1996	-1.2411	0.7974	-1.7301	-3.1130
SG	α	1.1294	0.3506	-0.1501	1.2731	0.7773	0.4938
	$t-stat$	8.4132	2.5969	-1.0902	5.9876	3.6640	2.3322
INDMOM1	α	0.1839	-0.4831	-0.8966	0.0703	-0.3639	-0.5786
	$t-stat$	0.6502	-1.7078	-3.1687	0.2113	-1.0953	-1.7416
INDMOM6	α	0.3048	-0.3801	-0.8104	0.5826	0.1415	-0.0850
	$t-stat$	0.9846	-1.2286	-2.6159	1.5470	0.3763	-0.2260
CISS	α	0.1846	-0.4147	-0.8067	0.0348	-0.4018	-0.6583
	$t-stat$	2.1536	-4.6583	-8.7598	0.2382	-2.7170	-4.4047
MOM11	α	-0.1474	-0.9058	-1.4130	0.4494	-0.0854	-0.3913
	$t-stat$	-0.5566	-3.4171	-5.3035	1.4309	-0.2718	-1.2420
MOM6	α	0.2605	-0.5014	-1.0119	0.6587	0.1184	-0.1877
	$t-stat$	0.9384	-1.8103	-3.6477	1.9784	0.3567	-0.5653
LTREV	α	0.1610	-0.4918	-0.9152	-0.1854	-0.6513	-0.8898
	$t-stat$	1.1824	-3.6210	-6.6804	-0.8554	-3.0132	-4.1241
STREV	α	-0.1267	-0.8990	-1.4067	-0.2061	-0.7450	-1.0503
	$t-stat$	-0.6089	-4.2766	-6.6104	-0.7239	-2.6122	-3.6790
SEASON	α	-0.1598	-0.7855	-1.1663	-0.1527	-0.6166	-0.8595
	$t-stat$	-1.7662	-8.5518	-12.4895	-0.9024	-3.6505	-5.0671
MOMREV	α	0.1174	-0.5943	-1.0451	0.1571	-0.3564	-0.6271
	$t-stat$	0.8415	-4.2823	-7.5169	0.6912	-1.5766	-2.7835
NISSM	α	0.1726	-0.4129	-0.7954	-0.1324	-0.5307	-0.7450
	$t-stat$	1.7237	-4.0637	-7.6989	-0.9590	-3.8389	-5.3908
INDRREV	α	-0.1438	-0.9561	-1.4995	-0.2212	-0.8218	-1.1769
	$t-stat$	-0.7291	-4.7839	-7.3819	-0.8894	-3.3105	-4.7250
PRICE	α	2.5390	1.7847	1.2407	3.0700	2.4600	2.1086
	$t-stat$	13.7191	9.8053	6.8513	11.8186	9.5876	8.3312
SHVOL	α	0.4983	-0.1924	-0.6796	0.7408	0.2357	-0.0648
	$t-stat$	2.9105	-1.0998	-3.8056	3.4411	1.1072	-0.3061

Table 12: **Alphas (in %) of "staggered partial rebalancing" anomaly portfolios with H-Model and TRH-Model transaction costs (January 2008 to December 2014).**

The "staggered partial rebalancing" strategy entails rebalancing only a fraction of the portfolio at each rebalancing point. The portfolio is rebalanced at a relatively low frequency, with the rebalancing applied to only a portion of the portfolio at a higher frequency (e.g., quarterly rebalancing, but on only one-third of the portfolio each month). The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and its t-statistic.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	H-model net return	TRH-model net return	Gross return	H-model net return	TRH-model net return
SUE	α	1.9191	1.4546	1.3979	0.9564	0.6479	0.6054
	$t-stat$	7.6004	5.7993	5.5091	3.7216	2.5186	2.3533
ROME	α	1.8850	1.2911	1.2186	1.2846	0.8696	0.8135
	$t-stat$	4.8599	3.3487	3.1380	2.6437	1.7980	1.6767
ROBE	α	0.5193	-0.0546	-0.1245	0.1680	-0.2042	-0.2493
	$t-stat$	1.7693	-0.1858	-0.4216	0.5964	-0.7197	-0.8846
SG	α	0.7745	0.2425	0.1764	1.1385	0.7689	0.7095
	$t-stat$	3.2027	0.9945	0.7157	2.7473	1.8649	1.7289
INDMOM1	α	0.4183	-0.0685	-0.1306	0.2234	-0.1132	-0.1630
	$t-stat$	0.8969	-0.1472	-0.2821	0.4354	-0.2200	-0.3172
INDMOM6	α	0.7886	0.2984	0.2397	0.8368	0.4997	0.4539
	$t-stat$	1.3181	0.5016	0.4060	1.1533	0.6904	0.6299
CISS	α	0.4398	0.0157	-0.0399	0.3798	0.0633	0.0194
	$t-stat$	3.1943	0.1124	-0.2849	1.7852	0.2953	0.0897
MOM11	α	0.9769	0.4634	0.3971	0.5291	0.1439	0.0894
	$t-stat$	1.6746	0.8025	0.6909	0.9467	0.2588	0.1619
MOM6	α	0.9733	0.4638	0.3991	0.7666	0.3743	0.3183
	$t-stat$	1.6616	0.7987	0.6915	1.4280	0.7019	0.6025
LTREV	α	0.5136	0.0236	-0.0374	0.3761	0.0313	-0.0105
	$t-stat$	1.7013	0.0784	-0.1256	0.8187	0.0685	-0.0231
STREV	α	0.0056	-0.5174	-0.5842	0.3386	-0.0536	-0.1107
	$t-stat$	0.0160	-1.4787	-1.6652	0.8284	-0.1314	-0.2725
SEASON	α	0.2831	-0.1824	-0.2391	0.5601	0.2070	0.1622
	$t-stat$	2.1037	-1.3181	-1.7316	2.0321	0.7498	0.5894
MOMREV	α	0.1934	-0.2940	-0.3542	0.6364	0.2628	0.2160
	$t-stat$	0.6764	-1.0330	-1.2472	1.9176	0.8000	0.6601
NISSM	α	0.1869	-0.1697	-0.2210	0.3340	0.0384	-0.0061
	$t-stat$	1.3238	-1.2055	-1.5867	1.3672	0.1574	-0.0249
INDRREV	α	0.4370	-0.1138	-0.1851	0.1642	-0.2597	-0.3213
	$t-stat$	1.1911	-0.3120	-0.5092	0.4221	-0.6675	-0.8315
PRICE	α	2.5725	2.0644	1.9953	2.8742	2.4488	2.3904
	$t-stat$	6.6985	5.5003	5.3980	4.9466	4.2596	4.2155
SHVOL	α	0.9657	0.4824	0.4160	0.0137	-0.3462	-0.3993
	$t-stat$	4.6900	2.3251	2.0187	0.0459	-1.1588	-1.3362

Table 13: **Alphas (in %) of (Annually Rebalanced) anomaly portfolios with H-Model and FLH-Model transaction costs (January 1986 to June 2018)**

The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and the t-statistic of α_i.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	H-model net return	FLH-model net return	Gross return	H-model net return	FLH-model net return
SIZE	α	0.2279	0.0573	0.0273	0.6316	0.5841	0.5748
	$t-stat$	2.3235	0.6027	0.2853	4.9007	4.5782	4.5128
REALVOL	α	0.9380	0.7500	0.7205	1.5493	1.5005	1.4893
	$t-stat$	3.4286	2.7533	2.6411	4.2112	4.0862	4.0550
IK	α	-0.2069	-0.4194	-0.4516	0.4537	0.4114	0.4021
	$t-stat$	-1.5850	-2.9360	-3.1092	2.2071	2.0093	1.9647
IG	α	-0.0531	-0.2605	-0.2931	-0.1760	-0.2167	-0.2261
	$t-stat$	-0.4530	-2.0354	-2.2513	-0.9758	-1.2010	-1.2537
NOA	α	1.5671	1.3783	1.3470	1.5429	1.4999	1.4897
	$t-stat$	10.1137	9.2520	9.0537	7.8550	7.6541	7.6073
AG	α	0.4176	0.2161	0.1837	0.7040	0.6639	0.6542
	$t-stat$	3.1205	1.6023	1.3504	4.0560	3.8280	3.7718
IA	α	0.1939	0.0101	-0.0204	-0.1813	-0.2183	-0.2269
	$t-stat$	1.4863	0.0736	-0.1463	-1.0065	-1.2136	-1.2620
LEV	α	0.8701	0.7108	0.6881	1.0026	0.9718	0.9639
	$t-stat$	3.2907	2.6753	2.5903	3.5108	3.3957	3.3687
ROAA	α	0.6431	0.4217	0.3891	-0.4497	-0.4940	-0.5033
	$t-stat$	3.4586	2.1752	1.9891	-1.8538	-2.0390	-2.0773
GPROF	α	0.4886	0.2626	0.2299	0.6491	0.6089	0.5994
	$t-stat$	2.5757	1.3279	1.1513	3.1328	2.9346	2.8877
GMARGINS	α	0.1943	-0.0202	-0.0524	-0.0039	-0.0432	-0.0518
	$t-stat$	1.6962	-0.1607	-0.4090	-0.0276	-0.3005	-0.3604
FSCORE	α	0.4880	0.3070	0.2770	0.1525	0.1153	0.1064
	$t-stat$	4.1520	2.3279	2.0528	1.1045	0.8312	0.7659
ATURNOVER	α	0.3298	0.1130	0.0811	0.6954	0.6558	0.6469
	$t-stat$	1.9626	0.6434	0.4568	3.6029	3.3868	3.3362
SP	α	0.3650	0.2045	0.1814	0.3585	0.3243	0.3176
	$t-stat$	1.3674	0.7651	0.6761	1.3624	1.2280	1.2023
ACC	α	0.5282	0.3310	0.3004	0.2405	0.1987	0.1900
	$t-stat$	5.0304	2.9592	2.6296	1.1832	0.9766	0.9334
GLTNOA	α	0.5401	0.4047	0.3766	-0.0399	-0.0727	-0.0813
	$t-stat$	6.1114	4.5415	4.1732	-0.3199	-0.5812	-0.6489
NISSA	α	0.0184	-0.1249	-0.1533	0.1002	0.0672	0.0584
	$t-stat$	0.1627	-1.1193	-1.3675	0.6789	0.4571	0.3972

Table 14: **Alphas (in %) of (Annually Rebalanced) anomaly portfolios with LOT-Model and LOT-Model plus Funding Liquidity transaction costs (January 1986 to June 2018)**

The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and the t-statistic of α_i.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	LOT-model net return	FL LOT-model net return	Gross return	LOT-model net return	FL LOT-model net return
SIZE	α	0.2279	-0.0845	-0.0910	0.6316	0.3598	0.3576
	$t-stat$	2.3235	-0.8401	-0.9016	4.9007	2.7685	2.7562
REALVOL	α	0.9380	0.5906	0.5836	1.5493	1.2581	1.2486
	$t-stat$	3.4286	2.1527	2.1197	4.2112	3.4264	3.3872
IK	α	-0.2069	-0.6074	-0.6134	0.4537	0.1913	0.1837
	$t-stat$	-1.5850	-3.8135	-3.8540	2.2071	0.9321	0.8927
IG	α	-0.0531	-0.4403	-0.4489	-0.1760	-0.4263	-0.4330
	$t-stat$	-0.4530	-3.0709	-3.1337	-0.9758	-2.3055	-2.3480
NOA	α	1.5671	1.2074	1.2021	1.5429	1.2776	1.2687
	$t-stat$	10.1137	8.0326	7.9764	7.8550	6.4318	6.3795
AG	α	0.4176	0.0347	0.0278	0.7040	0.4565	0.4499
	$t-stat$	3.1205	0.2408	0.1921	4.0560	2.5676	2.5196
IA	α	0.1939	-0.1596	-0.1682	-0.1813	-0.4117	-0.4182
	$t-stat$	1.4863	-1.0667	-1.1162	-1.0065	-2.2624	-2.2991
LEV	α	0.8701	0.5422	0.5360	1.0026	0.7974	0.7875
	$t-stat$	3.2907	1.9762	1.9482	3.5108	2.7075	2.6592
ROAA	α	0.6431	0.2226	0.2170	-0.4497	-0.7232	-0.7307
	$t-stat$	3.4586	1.0751	1.0480	-1.8538	-2.9513	-2.9817
GPROF	α	0.4886	0.0679	0.0594	0.6491	0.4051	0.3969
	$t-stat$	2.5757	0.3239	0.2832	3.1328	1.9052	1.8642
GMARGINS	α	0.1943	-0.2130	-0.2202	-0.0039	-0.2480	-0.2548
	$t-stat$	1.6962	-1.4857	-1.5337	-0.0276	-1.6350	-1.6708
FSCORE	α	0.4880	0.1444	0.1380	0.1525	-0.0779	-0.0853
	$t-stat$	4.1520	0.9703	0.9239	1.1045	-0.5287	-0.5771
ATURNOVER	α	0.3298	-0.0726	-0.0789	0.6954	0.4522	0.4460
	$t-stat$	1.9626	-0.3877	-0.4217	3.6029	2.2554	2.2224
SP	α	0.3650	0.0274	0.0202	0.3585	0.1350	0.1260
	$t-stat$	1.3674	0.0994	0.0720	1.3624	0.4905	0.4534
ACC	α	0.5282	0.1503	0.1391	0.2405	-0.0204	-0.0278
	$t-stat$	5.0304	1.1924	1.0927	1.1832	-0.0978	-0.1331
GLTNOA	α	0.5401	0.2682	0.2598	-0.0399	-0.2453	-0.2519
	$t-stat$	6.1114	2.7948	2.6959	-0.3199	-1.8655	-1.9193
NISSA	α	0.0184	-0.2555	-0.2626	0.1002	-0.1055	-0.1122
	$t-stat$	0.1627	-2.2132	-2.2559	0.6789	-0.7121	-0.7519

Table 15: **Alphas (in %) of (Annually Rebalanced) anomaly portfolios with H-Model and VIXH-Model transaction costs (January 1990 to June 2018)**

The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and the t-statistic of α_i.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	H-model net return	VIXH-model net return	Gross return	H-model net return	VIXH-model net return
SIZE	α	0.2848	0.1225	0.0005	0.6556	0.5208	0.4273
	$t-stat$	2.6526	1.1717	0.0042	4.6860	3.7726	3.0388
REALVOL	α	1.1126	0.9343	0.7749	1.5172	1.3765	1.2469
	$t-stat$	3.6330	3.0705	2.5366	3.7253	3.3944	3.0695
IK	α	-0.0766	-0.2829	-0.4366	0.5063	0.3802	0.3016
	$t-stat$	-0.5380	-1.8290	-2.5463	2.2675	1.7114	1.3518
IG	α	0.0799	-0.1220	-0.2657	-0.1029	-0.2244	-0.3045
	$t-stat$	0.6107	-0.8614	-1.6969	-0.5230	-1.1356	-1.5186
NOA	α	1.6558	1.4706	1.3272	1.7675	1.6373	1.5463
	$t-stat$	9.5664	8.8064	7.9551	8.0810	7.5059	7.0927
AG	α	0.4246	0.2280	0.0858	0.8048	0.6850	0.6086
	$t-stat$	2.8598	1.5299	0.5516	4.1479	3.5077	3.0870
IA	α	0.2640	0.0836	-0.0392	-0.1881	-0.2985	-0.3625
	$t-stat$	1.8131	0.5467	-0.2408	-0.9618	-1.5283	-1.8511
LEV	α	0.8421	0.6896	0.5909	0.8151	0.7264	0.6660
	$t-stat$	3.2411	2.6406	2.2315	2.8785	2.5454	2.2988
ROAA	α	0.4998	0.2841	0.1159	-0.2815	-0.4144	-0.4963
	$t-stat$	2.5269	1.3784	0.5269	-1.1259	-1.6574	-1.9722
GPROF	α	0.3372	0.1189	-0.0726	0.4394	0.3230	0.2495
	$t-stat$	1.6559	0.5678	-0.3258	2.1080	1.5446	1.1815
GMARGINS	α	0.1669	-0.0422	-0.2168	-0.4075	-0.5244	-0.6019
	$t-stat$	1.2773	-0.2960	-1.3423	-2.5316	-3.2439	-3.6773
FSCORE	α	0.5172	0.3424	0.2137	0.1644	0.0542	-0.0119
	$t-stat$	4.1546	2.4650	1.3860	1.1529	0.3709	-0.0795
ATURNOVER	α	0.3249	0.1145	-0.0583	0.7338	0.6172	0.5420
	$t-stat$	1.8071	0.6136	-0.2924	3.4425	2.8645	2.4769
SP	α	0.2300	0.0758	-0.0360	0.2541	0.1552	0.1082
	$t-stat$	0.8629	0.2846	-0.1322	0.9673	0.5829	0.4030
ACC	α	0.5804	0.3878	0.2523	0.3587	0.2339	0.1605
	$t-stat$	5.1768	3.2700	1.9412	1.6412	1.0686	0.7289
GLTNOA	α	0.6358	0.5013	0.4094	0.0109	-0.0878	-0.1388
	$t-stat$	6.6933	5.2612	4.1117	0.0802	-0.6370	-0.9871
NISSA	α	-0.0328	-0.1710	-0.2665	0.1265	0.0279	-0.0304
	$t-stat$	-0.2655	-1.4023	-2.1381	0.7792	0.1733	-0.1877

Table 16: **Alphas (in %) of (Annually Rebalanced) anomaly portfolios with H-Model and TRH-Model transaction costs (January 2008 to December 2014)**

The performance of a strategy is measured by its *alpha*, that is the intercept in the regression $R_{it} - R_{ft} = \alpha_i + \beta_1.(R_{Mt} - R_{ft}) + \beta_2.SMB_t + \beta_3.HML_t + \epsilon_{it}$, where R_{it} is the total return of the strategy portfolio i, R_{ft} is the risk-free rate of return measured by the T-bill rate, R_{Mt} is the total market portfolio return, $R_{it} - R_{ft}$ is the excess return of the strategy, $R_{Mt} - R_{ft}$ is the excess return on the market portfolio, SMB_t is the size premium (small minus big), HML_t is the value premium (high minus low), all evaluated in month t, and β_1, β_2, and β_3 denote the factor loadings of the strategy portfolio. Fore each strategy, we report α_i (in %) and the t-statistic of α_i.

Anomaly		Equally-weighted			Value-weighted		
		Gross return	H-model net return	TRH-model net return	Gross return	H-model net return	TRH-model net return
SIZE	α	0.3130	0.2418	0.2263	0.0138	-0.0424	-0.0544
	$t-stat$	2.4553	1.7933	1.6448	0.0933	-0.2704	-0.3412
REALVOL	α	1.5399	1.4569	1.4391	1.7190	1.6540	1.6281
	$t-stat$	2.5336	2.3839	2.3467	2.4640	2.3641	2.3121
IK	α	0.0967	-0.0069	-0.0250	0.3344	0.2737	0.2613
	$t-stat$	0.4664	-0.0323	-0.1150	0.9849	0.8031	0.7676
IG	α	0.5040	0.4020	0.3842	0.1054	0.0452	0.0320
	$t-stat$	1.5217	1.1797	1.1208	0.6076	0.2488	0.1730
NOA	α	1.0485	0.9532	0.9339	0.9773	0.9151	0.8988
	$t-stat$	4.2987	4.0089	3.9375	4.6798	4.5234	4.4997
AG	α	0.0172	-0.0783	-0.0950	0.1667	0.1068	0.0943
	$t-stat$	0.0630	-0.2864	-0.3471	0.5725	0.3605	0.3166
IA	α	0.3839	0.2937	0.2787	0.4355	0.3782	0.3669
	$t-stat$	1.3341	0.9730	0.9119	1.3500	1.1370	1.0916
LEV	α	0.7924	0.6760	0.6567	0.7434	0.6807	0.6583
	$t-stat$	2.8588	2.3925	2.3210	1.8687	1.6993	1.6419
ROAA	α	-0.0472	-0.1484	-0.1662	0.4163	0.3539	0.3429
	$t-stat$	-0.2181	-0.6913	-0.7717	1.4719	1.2604	1.2209
GPROF	α	0.1023	0.0009	-0.0164	0.2353	0.1762	0.1642
	$t-stat$	0.4439	0.0037	-0.0684	0.6766	0.5027	0.4661
GMARGINS	α	0.0792	-0.0197	-0.0378	0.1432	0.0861	0.0744
	$t-stat$	0.4491	-0.1073	-0.2014	0.5912	0.3564	0.3083
FSCORE	α	0.6605	0.5724	0.5566	0.1883	0.1307	0.1191
	$t-stat$	3.3101	2.6665	2.5352	1.0681	0.7190	0.6487
ATURNOVER	α	0.2564	0.1541	0.1351	0.3148	0.2532	0.2413
	$t-stat$	1.2504	0.7295	0.6304	0.9880	0.7904	0.7490
SP	α	0.2042	0.0991	0.0798	0.0105	-0.0557	-0.0681
	$t-stat$	0.5811	0.2811	0.2260	0.0318	-0.1719	-0.2106
ACC	α	0.4319	0.3390	0.3225	0.4157	0.3544	0.3413
	$t-stat$	2.4840	1.8539	1.7316	1.4499	1.2350	1.1869
GLTNOA	α	0.5032	0.4355	0.4230	0.0360	-0.0106	-0.0196
	$t-stat$	2.8699	2.4433	2.3504	0.2660	-0.0746	-0.1359
NISSA	α	-0.0127	-0.0729	-0.0854	0.3213	0.2697	0.2554
	$t-stat$	-0.1235	-0.6818	-0.7851	1.1997	0.9937	0.9324

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