

Variants rise in factor style performance

April 2021

Research Signals

Global stocks continue to press forward, with several countries reaching new record highs. Equity markets are supported by an improved economic outlook including that captured by an accelerated upturn in manufacturing activity at the quickest pace in over a decade, according to the J.P.Morgan Global Manufacturing PMI. However, cost inflationary pressures also remain strong and inconsistencies are seen regionally in combating coronavirus cases and its variants, raising some concerns about the fragility of the recovery. As such, variations in factor style performance across regions were also observed in April (Table 1).

- US: Traders took cues from the securities lending market, as Demand Supply Ratio ascended to the top spot in factor performance among large caps
- Developed Europe: Investors favored high quality firms and those with positive earnings revisions, as gauged respectively by Net Operating Asset Turnover and 3-M Revision in FY2 EPS Forecasts
- Developed Pacific: Price Momentum measures such as Rational Decay Alpha outperformed in Japan, displacing value's four-month string as a leading style
- Emerging markets: 3-M Revision in FY2 EPS Forecasts was a positive signal, while 2-Year Ahead EPS Growth underperformed

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Table 1

Global factor quantile return spread (%) performance snapshot, Apr 2021

Factor	Factor Group	US Large Cap	US Small Cap	Developed Europe	Developed Pacific ex Japan	Japan Standard Cap	Emerging Markets
Book-to-Market		-2.55	1.93	-0.47	-0.22	-3.48	2.29
Forward 12-M EPS-to-Enterprise Value	Deep Value	4.63	9.06	1.67	1.38	1.55	2.41
TTM EBITDA-to-Enterprise Value		4.17	5.31	0.90	1.17	0.57	1.22
TTM Free Cash Flow-to-Enterprise Value		2.99	4.90	1.05	-1.01	0.11	1.05
Industry Relative Leading 4-QTRs EPS to Price		1.85	5.78	2.15	-2.09	0.04	1.53
Industry Relative TTM Dividend Yield	Relative Value	-0.80	1.59	-0.75	1.91	0.86	0.04
Fixed Assets Turnover Ratio	Management Quality	-0.09	4.00	-0.61	0.84	0.38	-1.52
Inventory Turnover Ratio		0.77	5.30	-0.77	2.46	0.35	-1.17
Net Operating Asset Turnover		0.61	1.77	1.45	-0.64	-1.21	1.10
Change in Accruals to Assets	Earnings Quality	0.30	3.57	0.16	-1.59	1.66	-0.08
Change in TTM COGS vs. Inventory Level		0.53	1.17	0.30	1.39	-0.64	2.05
Change in TTM Sales vs. Accounts Receivable		-0.46	-1.20	-0.04	-0.86	-0.33	1.40
Working Capital Accruals		-2.51	-0.30	0.60	0.05	-0.49	-2.82
1-yr Growth in TTM Free Cash Flow	Historical Growth	1.62	1.90	1.50	1.38	1.25	0.14
Reinvestment Rate		3.22	5.62	4.67	-1.60	-0.21	-1.94
Average Monthly Trading Volume-to-Market Cap	Liquidity, Risk & Size	-4.23	-6.74	-1.28	2.46	-2.42	2.57
60-Month Beta		-0.11	-2.15	-0.63	0.07	-3.61	-1.30
Asset Quality Index		0.33	0.20	-1.02	1.24	-1.35	-1.70
Operating Leverage		1.58	-0.65	1.31	1.46	-0.02	0.57
Natural Logarithm of Market Capitalization		-2.01	-6.29	1.42	2.63	0.01	-0.29
2-Year Ahead EPS Growth	Earnings Momentum	-1.02	-0.97	-1.65	-3.82	-0.80	-4.92
3-M Revision in FY2 EPS Forecasts		2.92	3.50	1.22	2.04	2.55	3.39
Real Earnings Surprise		2.11	3.56	-1.22	0.71	-0.89	1.74
24-Month Value at Risk	Price Momentum	2.07	0.79	0.72	0.03	-2.68	0.39
5-day Industry Relative Return		2.48	2.86	2.14	-1.04	-1.98	-2.60
Industry-adjusted 12-month Relative Price Strength		1.48	2.62	2.41	0.26	0.21	1.22
Rational Decay Alpha		0.57	-0.36	2.20	3.64	1.14	0.55
Demand Supply Ratio	Short Sentiment	5.26	8.02	2.63	1.28	1.11	-1.77
Implied Loan Rate		4.70	6.63	1.27	1.55	-2.36	1.10

Source: IHS Markit

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United States

US Large Cap

The US manufacturing sector improved in April at its strongest rate since data collection began in May 2007, with the manufacturing PMI posting at 60.5, up from 59.1 in March. Overall growth was supported by quicker expansions in output and new orders, while firms sought to pass on supplier price hikes through marked upticks in output charges. Equities continued their upward momentum from the first quarter, with stocks finishing the month near historic highs set during the month.

Value measures extended their strong performance among US large caps in April (Table 2), led by Leading 12-Month Median Earnings Yield (5.13%). However, top performance was turned in by Demand Supply Ratio (5.26%), a Short Sentiment factor measuring the amount of stock borrowed relative to lendable inventory, which has recorded three months of positive performance following January's headline underperformance during the manic trading in highly shorted stocks (Figure 1). Factors which trailed for the month (Table 3) include Street Consensus Rating (-5.62%), Slope of 5-yr TTM EPS Trend Line (-3.85%) and Implied Volatility (-3.22%).

Table 2

US Large Cap top decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
Demand Supply Ratio	5.26	Short Sentiment
Active Utilization	5.24	Short Sentiment
Utilization	5.16	Short Sentiment
Leading 12-Month Median Earnings Yield	5.13	Deep Value
1-Month Realized Stock Return Volatility	5.13	Liquidity, Risk & Size
CV of Prior 90-Day Closing Prices	5.10	Price Momentum
Leading 12-Month Mean Earnings Yield	5.02	Deep Value
60-Day Residual Risk	4.99	Liquidity, Risk & Size
Operating Cash Flow Profit Margin	4.93	Management Quality
20-Day Volume Volatility to Price Volatility	4.85	Liquidity, Risk & Size
Slope of 52 Week Price Trend Line	4.75	Price Momentum
Implied Loan Rate	4.70	Short Sentiment
TTM Core Earnings-to-Price	4.66	Deep Value
Forward 12-M EPS-to-Enterprise Value	4.63	Deep Value
Time Weighted Earnings Yield	4.63	Deep Value

Source: IHS Markit

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Figure 1

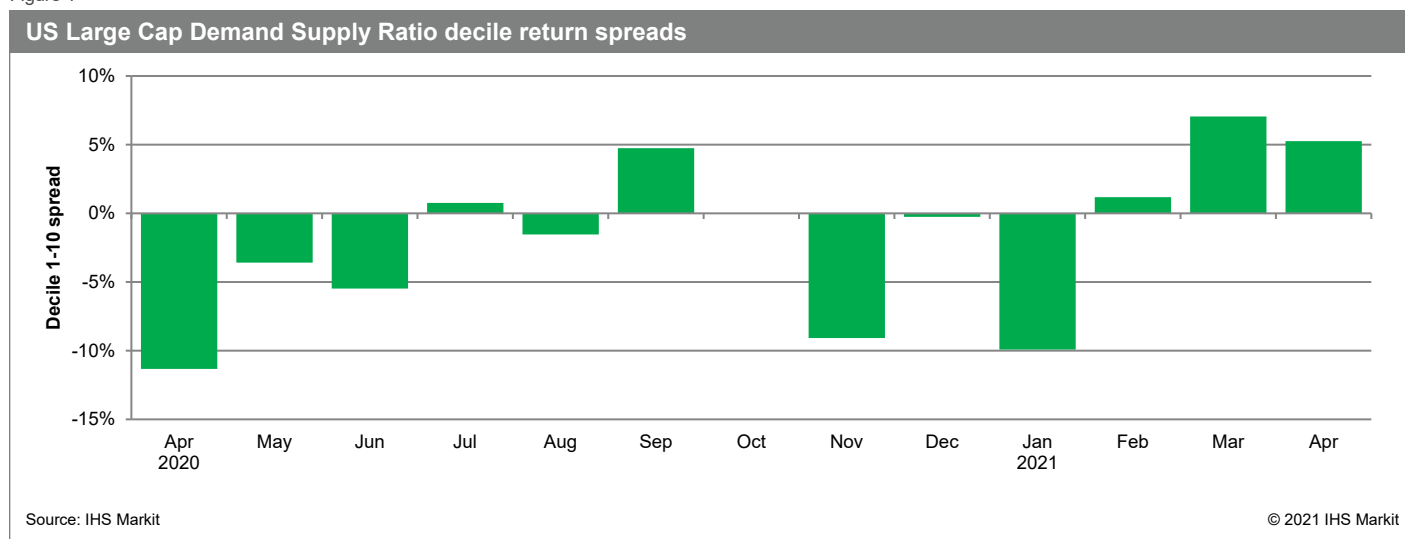


Table 3

US Large Cap bottom decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
Street Consensus Rating	-5.62	Earnings Momentum
Average Monthly Trading Volume-to-Market Cap	-4.23	Liquidity, Risk & Size
Slope of 5-yr TTM EPS Trend Line	-3.85	Historical Growth
36-Month Sharpe Ratio	-3.52	Price Momentum
Implied Volatility	-3.22	Liquidity, Risk & Size
Average Payable Period	-3.16	Management Quality
1-yr Change in Total Assets	-3.04	Historical Growth
Natural Logarithm of Closing Price	-3.01	Liquidity, Risk & Size
6-Month Nominal Change in 18-Month Alpha	-3.00	Price Momentum
Slope of 3-yr TTM Free Cash Flow Trend Line	-2.78	Historical Growth

Source: IHS Markit

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US Small Cap

Top small cap factor performance diverged from that of large caps in April (Table 4), with measures favoring low risk topping the leaderboard. Distress Measure (10.91%) turned in the top spread, continuing an increasing trend since November (Figure 2), resulting in a remarkable improvement of 37.1 percentage points over the period. Other outperformers include Operating Profit Margin (9.22%) and Forward 12-M EPS-to-Enterprise Value (9.06%), while Implied Volatility (-6.98%) and Natural Logarithm of Market Capitalization (-6.29%) were among the weakest performers (Table 5).

Table 4

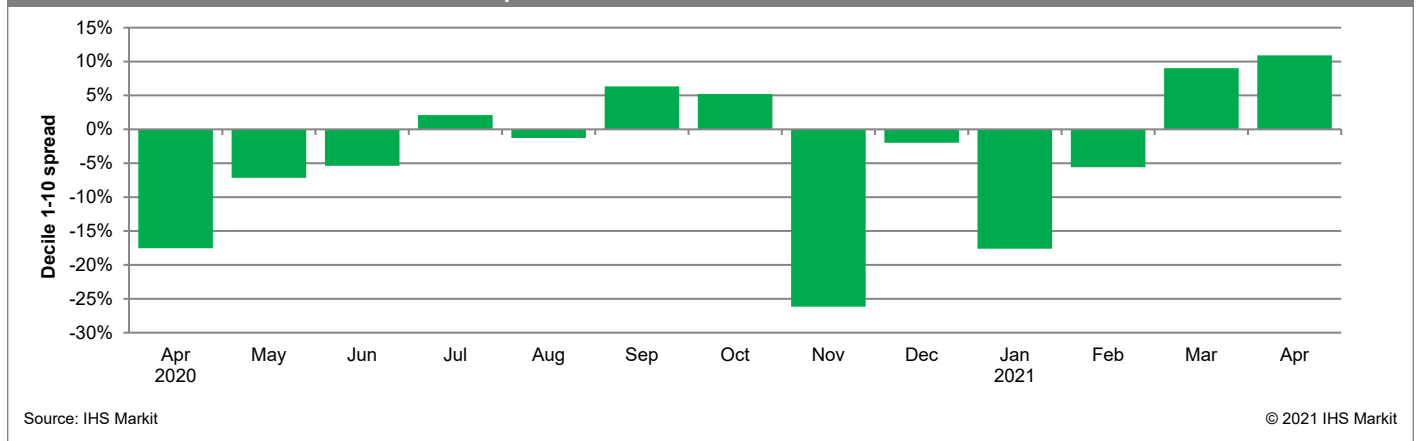
US Small Cap top decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
Distress Measure	10.91	Liquidity, Risk & Size
60-Day Residual Risk	10.77	Liquidity, Risk & Size
Operating Cash Flow Ratio	9.57	Liquidity, Risk & Size
1-Month Stock Return Interquartile Range	9.30	Liquidity, Risk & Size
Operating Profit Margin	9.22	Management Quality
Forward 12-M EPS-to-Enterprise Value	9.06	Deep Value
1-Month Realized Stock Return Volatility	8.76	Liquidity, Risk & Size
At the Money Call Option Implied Volatility	8.41	Liquidity, Risk & Size
Cash Earnings Return On Equity	8.41	Management Quality
Operating Cash Flow Profit Margin	8.33	Management Quality
Revenue per Employee	8.26	Management Quality
Time Weighted Earnings Yield	8.09	Deep Value
Oper Cash Flow Return on Invested Capital	8.07	Management Quality
Demand Supply Ratio	8.02	Short Sentiment
At the Money Put Option Implied Volatility	7.97	Liquidity, Risk & Size

Source: IHS Markit

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Figure 2

US Small Distress Measure decile return spreads

Source: IHS Markit

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Table 5

US Small Cap bottom decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
Advertising Intensity	-7.19	Management Quality
Implied Volatility	-6.98	Liquidity, Risk & Size
Average Monthly Trading Volume-to-Market Cap	-6.74	Liquidity, Risk & Size
Natural Logarithm of Market Capitalization	-6.29	Liquidity, Risk & Size
Operating Liability Leverage	-6.25	Management Quality
Product of TTM FCF Yield and Forward ROE	-6.23	Earnings Momentum
Natural Logarithm of Closing Price	-6.06	Liquidity, Risk & Size
Attention Span Ratio	-5.68	Management Quality
Ohlson Bankruptcy Score	-5.60	Liquidity, Risk & Size
On Loan Value Concentration	-5.40	Short Sentiment

Source: IHS Markit

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Europe

The eurozone's manufacturing sector surpassed March's survey record rate in April, with the PMI posting at 62.9, up from 62.5 in March, on considerable increases in output and new orders, while lengthening supplier delivery times helped to drive rapid price increases. Growth momentum was seen across most nations, led by the Netherlands and Germany. Stocks posted record highs during April but finished the month just off those levels.

Top performing factors in Developed Europe in April (Table 6) include several Earnings Momentum measures, topped by FY1 EPS Estimates Dispersion (5.38%), which has been on an uptrend since November giving rise to a 22.8 percentage point swing in spread. High quality names also outperformed as gauged by measures such as Forward Return on Equity (5.02%), at the same time that higher financial risk firms underperformed, sending measures such as Ohlson Bankruptcy Score (-4.39%) to the furthest extreme of underperformers (Table 7).

Table 6

Developed Europe top decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
FY1 EPS Estimates Dispersion	5.38	Earnings Momentum
Forward Return on Equity	5.02	Management Quality
Std Dev of FY1 EPS Estimates-to-Price	4.98	Earnings Momentum
Slope of 52 Week Price Trend Line	4.96	Price Momentum
Std Dev of FY2 EPS Estimates-to-Price	4.96	Earnings Momentum
Slope of 66 Week Price Trend Line	4.83	Price Momentum
Operating Cash Flow to Assets	4.68	Management Quality
Reinvestment Rate	4.67	Historical Growth
Return on Assets	4.60	Management Quality
Capital Acquisition Ratio	4.49	Management Quality
FY2 EPS Forecast Dispersion	4.46	Earnings Momentum
Sustainable Growth Rate	4.38	Historical Growth
Return on Equity	4.32	Management Quality
Free Cash Flow Return on Invested Capital	4.26	Management Quality
Net Income per Employee	4.05	Management Quality

Source: IHS Markit

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Figure 3

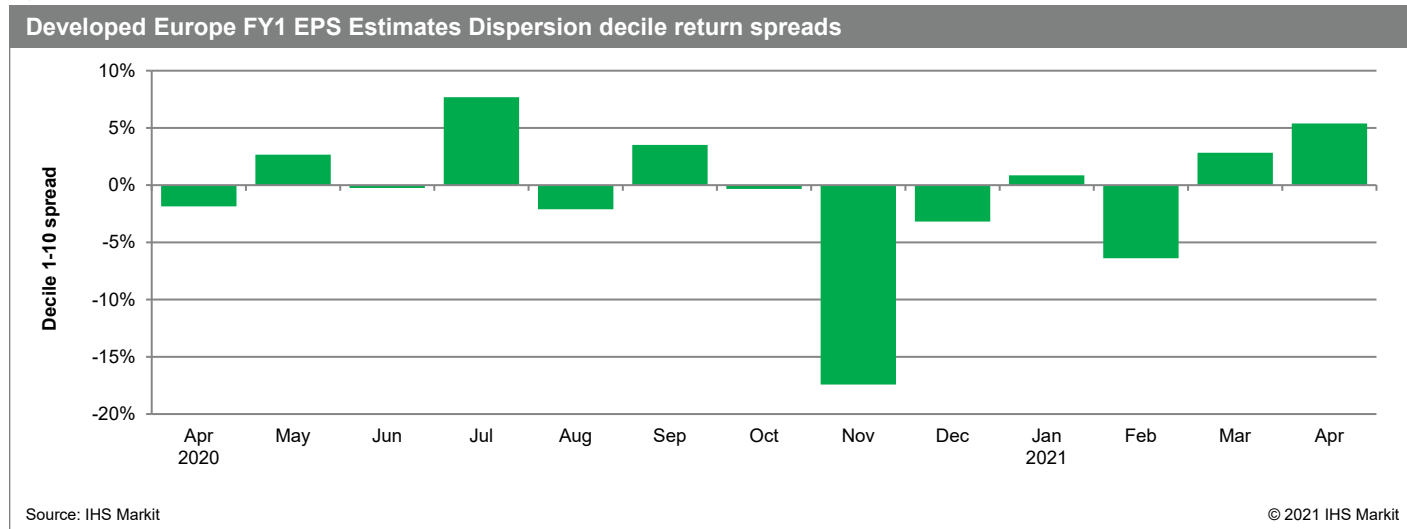


Table 7

Developed Europe bottom decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
Ohlson Bankruptcy Score	-4.39	Liquidity, Risk & Size
Altman Z Score	-4.27	Liquidity, Risk & Size
36-Month Active Return with 1-Month Lag	-4.16	Price Momentum
6-Month Nominal Change in 18-Month Alpha	-4.10	Price Momentum
1-yr Change in Total Assets	-4.05	Historical Growth
Current Liabilities-to-Price	-3.98	Liquidity, Risk & Size
Change in Net Operating Assets	-3.95	Management Quality
Tobin q	-3.60	Liquidity, Risk & Size
Flow Ratio	-3.50	Liquidity, Risk & Size
60-Month Active Return with 1-Month Lag	-3.49	Price Momentum

Source: IHS Markit

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Asia-Pacific

Manufacturing operating conditions improved in the two largest Asian economies of China and Japan in April, with input prices rising in both countries. The Japanese manufacturing sector was the stronger of the two, with the PMI rising to 53.6 in April, from 52.7 in March, the strongest improvement since April 2018 on faster increases in output and new orders. In China, the manufacturing PMI rose from an 11-month low of 50.6 in March to 51.9 in April, on stronger increases in output and new orders. Stocks were flat to down in both markets amid uncertainty on the impact of rising COVID-19 cases on the prospects for the global economic recovery.

In markets outside Japan, Historical Growth measures overtook the leaderboard (Table 8), while Deep Value factors traversed to the opposite extreme (Table 9) in April. 1-yr Change in Assets-adj TTM Cash Flow (9.41%) and Edwards-Bell-Ohlson Value-to-Price (-7.31%) captured the respective themes. A closer look at the distribution of decile returns across both factors (Figure 4) indicates that signal content was focused at the tails of both factor rankings.

In Japan, Price Momentum halted value's four-month string as a prominent style on the list of top performing factors. April's leaderboard (Table 10) is now led by 15/36 Week Stock Price Ratio (5.27%), which returned to positive territory for the first time over the same period (Figure 5). On the other hand, a broader range of styles occupied the laggard board (Table 11), including factors such as Operating Liability Leverage (-5.30%), Natural Logarithm of Closing Price (-4.87%) and US Dollar Value Sensitivity (-4.76%).

Table 8

Developed Pacific exJapan top decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
1-yr Change in Assets-adj TTM Cash Flow	9.41	Historical Growth
Yearly Change in Return on Assets	8.05	Management Quality
1-yr Change in Assets-adj TTM EPS	7.91	Historical Growth
Yearly Change in ROE - Arithmetic Difference	7.19	Management Quality
3 Year Change in Gross Profit Margin	6.53	Management Quality
Yearly TTM Total Sales Growth Rate	5.23	Historical Growth
1-yr Change in Sales	5.09	Historical Growth
1-yr Change in Price-adj TTM Cash Flow	5.09	Historical Growth
24-Month Active Return with 1-Month Lag	5.02	Price Momentum
1-yr Chg in Assets-adj TTM Oper Cash Flow	4.90	Historical Growth
18-Month Active Return with 1-Month Lag	4.89	Price Momentum
1-yr Change in Price-adj TTM EPS	4.88	Historical Growth
Yearly Change In Gross Profit Margin	4.77	Management Quality
Time Weighted Earnings Revision	4.67	Earnings Momentum
1-yr Chg in Assets-adj TTM Free Cash Flow	4.64	Historical Growth

Source: IHS Markit

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Table 9

Developed Pacific exJapan bottom decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
Edwards-Bell-Ohlson Value-to-Price	-7.31	Deep Value
Current Liabilities-to-Price	-6.09	Liquidity, Risk & Size
1-yr Change in Total Assets	-5.94	Historical Growth
Liquidity Coefficient	-5.45	Liquidity, Risk & Size
36-Month Active Return with 1-Month Lag	-5.42	Price Momentum
Normalized Earnings Yield	-5.28	Deep Value
Forward Free Cash Flow-to-Price	-5.24	Deep Value
Cyclically Adjusted Earnings-to-Price	-5.02	Deep Value
3-yr Compound Annual Gross Margin Growth	-4.99	Historical Growth
Change in Net Operating Assets	-4.75	Management Quality

Source: IHS Markit

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Figure 4

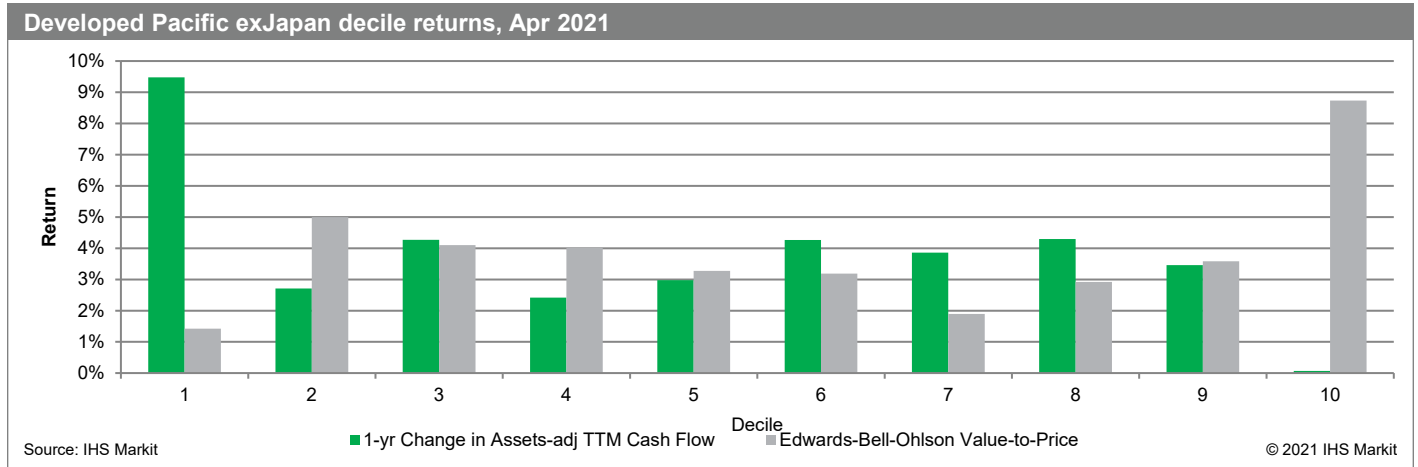


Table 10

Japan Standard Cap top decile return spread factor performance, Apr 2021

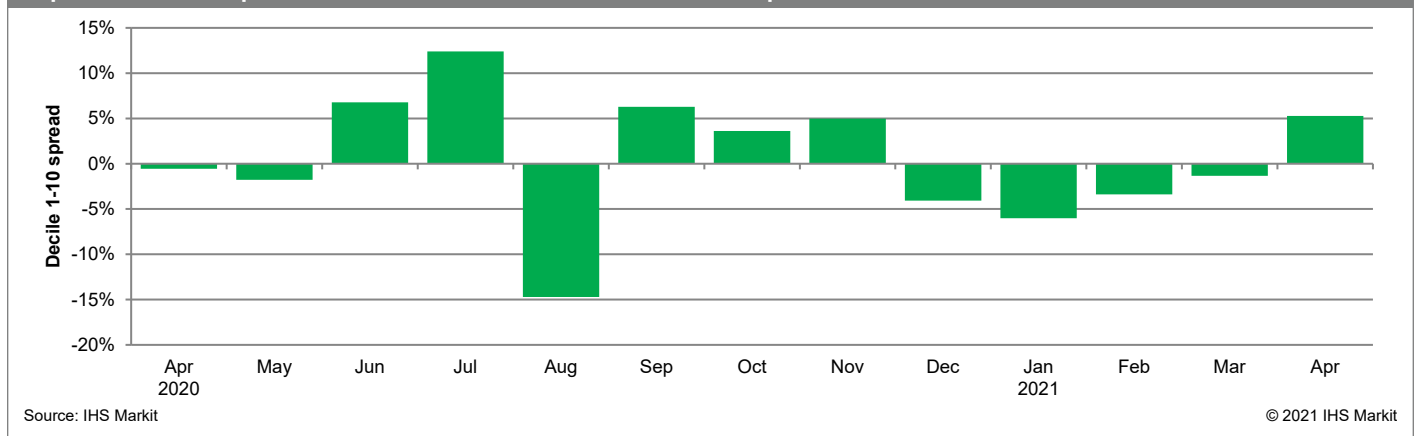
Factor	Decile spread (%)	Factor group
15/36 Week Stock Price Ratio	5.27	Price Momentum
Slope of 52 Week Price Trend Line	5.24	Price Momentum
24-Month Active Return with 1-Month Lag	5.13	Price Momentum
Fama-French Momentum	4.97	Price Momentum
Days to Cover	4.85	Short Sentiment
50-200 Day Stock Price Ratio	4.76	Price Momentum
Net Profit Margin	4.62	Management Quality
18-Month Active Return with 1-Month Lag	4.51	Price Momentum
6-Month Active Return with 1-Month Lag	4.45	Price Momentum
Industry-adjusted Doubtful Account Receivables	4.35	Earnings Quality
Profitability Ratio	4.21	Management Quality
Operating Profit Margin	4.19	Management Quality
39-Week Return with 4-week Lag	4.18	Price Momentum
Operating Cash Flow Profit Margin	3.92	Management Quality
9-Month Active Return with 1-Month Lag	3.85	Price Momentum

Source: IHS Markit

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Figure 5

Japan Standard Cap 15/36 Week Stock Price Ratio decile return spreads



Source: IHS Markit

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Table 11

Japan Standard Cap bottom decile return spread factor performance, Apr 2021

Factor	Decile spread (%)	Factor group
Operating Liability Leverage	-5.30	Management Quality
Natural Logarithm of Closing Price	-4.87	Liquidity, Risk & Size
US Dollar Value Sensitivity	-4.76	Macro
60-Month Active Return with 1-Month Lag	-4.58	Price Momentum
Cyclically Adjusted Earnings-to-Price	-4.52	Deep Value
Average Trading Volume in Preceding 6-month	-4.46	Price Momentum
Slope of 5-yr TTM EPS Trend Line	-4.18	Historical Growth
Price Above Last 260-day Lowest Trading Price	-3.96	Price Momentum
Trading Turnover Ratio	-3.96	Liquidity, Risk & Size
5-yr Relative Book-to-Market	-3.96	Relative Value

Source: IHS Markit

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Emerging Markets

We conclude with a review of top (Table 12) and bottom (Table 13) performing factors in emerging markets in April. Performance was characterized by an interesting dichotomy between earnings revision factors and earnings growth measures. For example, we highlight Averaged Last 6-M EPS Revisions for FY1 (4.58%) and 2-Year Ahead EPS Growth Percentage Change (-5.26%), whose distribution of quintile returns (Figure 6) captures the opposing trading patterns at the respective top and bottom tails of each factor. Other factor performance of interest includes outperformance from 52-Week High (5.71%) and Inflation Sensitivity (4.10%) and underperformance from Average Payable Period (-5.53%) and 2-Month Active Return (-3.68%).

Table 12

Emerging Markets top quintile return spread factor performance, Apr 2021		
Factor	Decile spread (%)	Factor group
52-Week High	5.71	Price Momentum
Averaged Last 6-M EPS Revisions for FY1	4.58	Earnings Momentum
1-Year Price Momentum Indicator	4.48	Price Momentum
3-M Revision in FY1 EPS Forecasts: Dispersion Relative	4.45	Earnings Momentum
Street Revision Confidence	4.44	Earnings Momentum
Street Revision Magnitude	4.30	Earnings Momentum
Inflation Sensitivity	4.10	Macro
12-Month Active Return with 1-month Lag	3.94	Price Momentum
SG&A Expenses-to-Sales	3.88	Management Quality
Basic Defensive Interval	3.83	Liquidity, Risk & Size
30-75 Week Stock Price Ratio	3.78	Price Momentum
26-Week Relative Price Strength	3.72	Price Momentum
3-M Revision in FY2 EPS Forecasts: Dispersion Relative	3.70	Earnings Momentum
1-yr Change in Price-adj TTM EPS	3.67	Historical Growth
Shareholder Payout to Gross Profit	3.65	Management Quality

Source: IHS Markit

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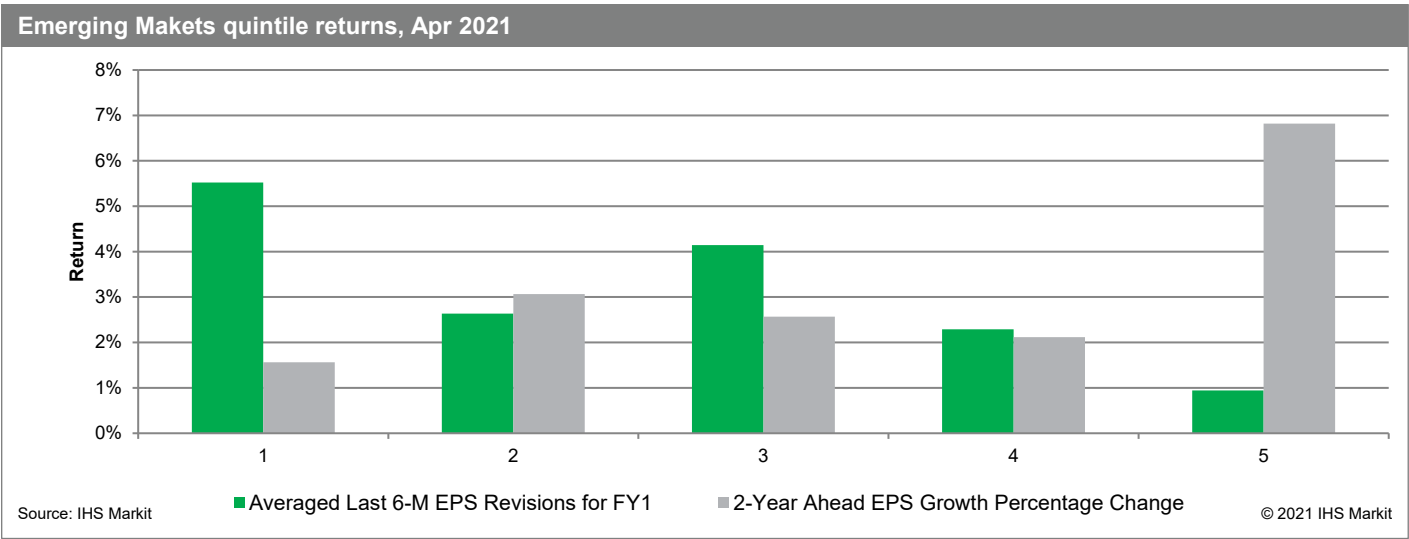
Table 13

Emerging Markets bottom quintile return spread factor performance, Apr 2021		
Factor	Decile spread (%)	Factor group
Average Payable Period	-5.53	Management Quality
2-Year Ahead EPS Growth Percentage Change	-5.26	Earnings Momentum
5-yr Relative Book-to-Market	-4.95	Relative Value
2-Year Ahead EPS Growth	-4.92	Earnings Momentum
14 Day Relative Strength Index	-4.50	Price Momentum
5-yr Relative TTM Sales-to-Price	-4.11	Relative Value
2-Month Active Return	-3.68	Price Momentum
Inventory-to-Total Assets	-3.28	Management Quality
TTM Gross Profit Margin	-3.21	Management Quality
Number of Analyst Coverage	-3.19	Liquidity, Risk & Size

Source: IHS Markit

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Figure 6



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