Low risk shares enjoy calendardriven bounce

September 2022

Research Signals

The month of September lived up to its reputation as a risk-off month in stock markets, fortifying positive performance for 60-Month Beta across each of our coverage regions (Table 1). It was a rough month for stocks on increasing concerns about the impact of interest rate hikes by central banks fighting inflation at a time of slowing global economic activity, as confirmed by the manufacturing sector's dip into contraction territory, according to the J.P.Morgan Global Manufacturing PMITM.

- US: The most highly shorted shares, as measured by Demand Supply Ratio, sold off last month
- Developed Europe: Price Momentum remained a highly favored theme, with Rational Decay Alpha posting its fourth consecutive month of positive performance
- Developed Pacific: Low risk shares returned to favor, as gauged by 60-Month Beta
- Emerging markets: High momentum shares, such as those gauged by Industry-adjusted 12-month Relative Price Strength, outperformed last month



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Table 1

Global factor quantile returr	າ spread (%) perfor	mance sna	pshot, Se	ptember 2	022		
			US		Developed	Japan	
		US Large	Small	Developed	Pacific ex	Standard	Emerging
Factor	Factor Group	Сар	Сар	Europe	Japan	Cap	Markets
Book-to-Market	_	-3.16	-4.50	-1.06	-1.29	4.17	-2.89
Forward 12-M EPS-to-Enterprise Value	– Deep Value	-0.44	3.66	3.24	2.00	-2.10	-1.61
TTM EBITDA-to-Enterprise Value		-0.31	1.50	-1.93	1.53	-1.35	-1.96
TTM Free Cash Flow-to-Enterprise Value		4.26	4.14	5.03	0.91	0.72	0.63
Industry Relative Leading 4-QTRs EPS to Price	 Relative Value 	0.97	5.29	0.92	1.62	0.59	-0.94
Industry Relative TTM Dividend Yield	- Relative value	0.38	-1.59	0.64	2.71	0.69	-1.10
Fixed Assets Turnover Ratio		1.85	-1.05	4.53	-1.61	-3.41	-0.84
Inventory Turnover Ratio	ManagementQuality	-2.17	0.17	0.12	-0.57	-0.80	0.65
Net Operating Asset Turnover	_ quanty	0.78	-2.18	0.22	-1.56	-2.36	-0.70
Change in Accruals to Assets		1.99	1.15	2.50	-0.45	2.79	-0.40
Change in TTM COGS vs. Inventory Level	- Fornings Quality	1.45	0.89	3.86	1.20	1.98	0.41
Change in TTM Sales vs. Accounts Receivable	 Earnings Quality 	-1.07	-0.24	-1.24	-0.31	-1.31	0.48
Working Capital Accruals		-0.41	-2.77	-0.53	-0.24	-0.66	-0.75
1-yr Growth in TTM Free Cash Flow	_ Historical Growth	2.54	3.44	2.70	1.61	-0.95	-0.78
Reinvestment Rate	_ Thotomodi Growth	-1.18	1.91	-1.39	0.91	-4.54	0.63
Average Monthly Trading Volume- to-Market Cap		-4.28	-8.98	-1.38	2.39	-2.40	-5.00
60-Month Beta	_	6.16	7.68	3.54	1.51	9.34	4.01
Asset Quality Index	Liquidity, Risk &Size	-0.69	-0.97	0.20	0.77	0.56	0.41
Operating Leverage	_ 0120	0.98	2.17	-0.22	-1.72	0.31	1.56
Natural Logarithm of Market Capitalization	_	-2.90	-8.84	-2.33	6.57	1.51	-2.37
2-Year Ahead EPS Growth		0.67	-5.47	-2.67	-0.64	0.04	2.58
3-M Revision in FY2 EPS Forecasts	Earnings Momentum	4.59	4.11	4.04	2.12	-0.21	2.84
Real Earnings Surprise	_	-0.39	-2.88	0.25	2.83	-2.72	1.53
24-Month Value at Risk		6.22	7.66	4.38	10.23	5.25	6.36
5-day Industry Relative Return	-	-4.85	-3.12	-3.33	-0.75	-0.86	0.79
Industry-adjusted 12-month Relative Price Strength	Price Momentum	3.55	5.83	0.65	5.78	-1.25	3.05
Rational Decay Alpha	_	-0.81	3.15	1.26	6.53	-3.61	0.66
Demand Supply Ratio	Object Occurs	5.59	6.96	4.88	5.01	1.90	7.97
Implied Loan Rate	 Short Sentiment 	3.42	3.96	1.59	4.30	1.15	2.05

Source: IHS Markit © 2022 IHS Markit

United States

US Large Cap

The US manufacturing sector saw a slight uptick in operating conditions in September, with the headline PMI figure posting at 52.0, up from 51.5 in August, supported by renewed expansions in output and new orders. While the survey also signaled softening cost pressures among manufacturers, the higher-than-expected mid-month Consumer Price Index report sparked an extension of the August stock market rout.

Investors took on a risk-off stance in September, as confirmed by the list of top performing factors for US large caps (Table 2), led by measures such as 20-Day Volume Volatility to Price Volatility (7.17%) and 1-Month Stock Return Interquartile Range (6.78%). Utilization (6.34%), a Short Sentiment measure of the proportion of inventories in lending programs out on loan, also embodied a decrease in investors' risk appetite last month (Figure 1), as investors sold off the most highly shorted shares. However, Price Momentum metrics such as 1-Year Price Momentum Indicator (5.61%) continued to outperform, while the weakest performing factors for the month (Table 3) include Net Cash to Equity (-6.62%) and 5-yr Relative TTM Sales-to-Price (-5.05%).

Table 2

US Large Cap top decile return spread factor performan	ce, September 2022	
Factor	Decile spread (%)	Factor group
20-Day Volume Volatility to Price Volatility	7.17	Liquidity, Risk & Size
Debt to Market Cap	7.10	Liquidity, Risk & Size
1-Month Stock Return Interquartile Range	6.78	Liquidity, Risk & Size
6-Month Nominal Change in 18-Month Alpha	6.70	Price Momentum
Utilization	6.34	Short Sentiment
24-Month Value at Risk	6.22	Price Momentum
Active Utilization	6.21	Short Sentiment
60-Month Beta	6.16	Liquidity, Risk & Size
26-Week Relative Price Strength	6.04	Price Momentum
50-200 Day Stock Price Ratio	5.83	Price Momentum
52-Week High	5.66	Price Momentum
1-Year Price Momentum Indicator	5.61	Price Momentum
Demand Supply Ratio	5.59	Short Sentiment
Short Interest	5.47	Short Sentiment
2-Year Trough Gross Margin	5.23	Management Quality

Source: IHS Markit

Figure 1

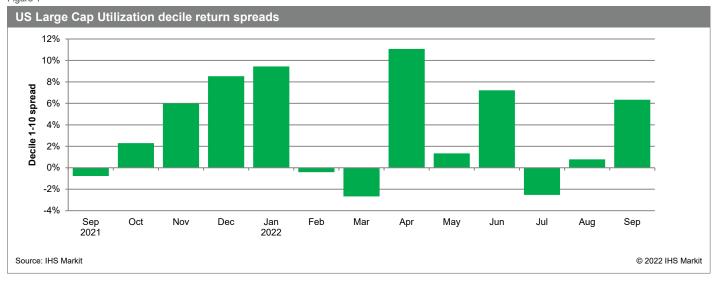


Table 3

Factor	Decile spread (%)	Factor group
Net Cash to Equity	-6.62	Liquidity, Risk & Size
Market Leverage	-6.61	Liquidity, Risk & Size
Net Debt Ratio	-5.74	Management Quality
Current Ratio	-5.16	Liquidity, Risk & Size
Total Debt to Total Assets	-5.07	Liquidity, Risk & Size
5-yr Relative TTM Sales-to-Price	-5.05	Relative Value
Comprehensive Debt to Total Assets	-5.03	Liquidity, Risk & Size
5-day Industry Relative Return	-4.85	Price Momentum
60-Month Alpha	-4.77	Price Momentum
Net Current Assets-to-Price	-4.62	Deep Value

US Small Cap

After trailing the prior month, measures of risk aversion were prominent among top performing factors for small caps in September (Table 4). Product of Beta and Sigma (9.43%) demonstrates this transition, where we find systematic trading in favor of the lowest risk names in September (Figure 2), compared with a heavy tilt towards the highest risk names in August. At the same time, Price Momentum measures such as 39-Week Return with 4-week Lag (9.25%) outperformed, while factors such as Natural Logarithm of Closing Price (-9.47%) and Leading 12 Month Sales Yield (-9.25%) moved to the laggard board (Table 5).

Table 4

US Small Cap top decile return spread factor performance, September 2022 **Factor** Decile spread (%) **Factor group** 52-Week High 11.17 Price Momentum 4-52 Week Price Oscillator 10.88 Price Momentum 50-200 Day Stock Price Ratio 10.71 Price Momentum 10.19 Liquidity, Risk & Size 1-Month Stock Return Interquartile Range Std Dev of FY2 EPS Estimates-to-Price 9.52 **Earnings Momentum** Product of Beta and Sigma 9.43 Liquidity, Risk & Size 9.25 Price Momentum 39-Week Return with 4-week Lag 9-Month Active Return with 1-Month Lag 9.20 Price Momentum Std Dev of FY1 EPS Estimates-to-Price 9.05 **Earnings Momentum** 60-Day Residual Risk 8.75 Liquidity, Risk & Size 15/36 Week Stock Price Ratio 8.73 Price Momentum Fama-French Momentum 8.70 Price Momentum 8.58 CV of Prior 90-Day Closing Prices Price Momentum 26-Week Relative Price Strength 8.52 Price Momentum

Source: IHS Markit © 2022 IHS Markit

8.40

Price Momentum

Figure 2

1-Year Price Momentum Indicator

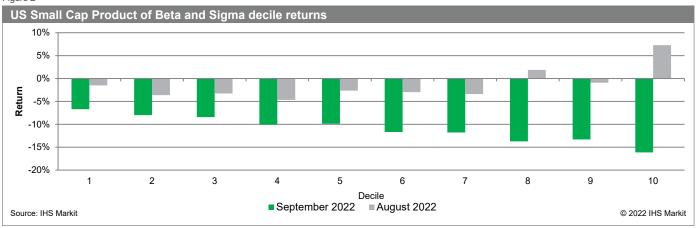


Table 5

US Small Cap bottom decile return spread factor performance, September 2022

Factor	Decile spread (%)	Factor group
Current Liabilities-to-Price	-9.78	Liquidity, Risk & Size
Natural Logarithm of Closing Price	-9.47	Liquidity, Risk & Size
Leading 12 Month Sales Yield	-9.25	Deep Value
3-Month Active Return	-9.20	Price Momentum
Market Leverage	-9.07	Liquidity, Risk & Size
Average Monthly Trading Volume-to-Market Cap	-8.98	Liquidity, Risk & Size
Time Weighted Sales Yield	-8.88	Deep Value
Natural Logarithm of Market Capitalization	-8.84	Liquidity, Risk & Size
Net Debt Ratio	-8.58	Management Quality
Net Cash to Equity	-7.61	Liquidity, Risk & Size

Source: IHS Markit © 2022 IHS Markit

Europe

The eurozone manufacturing sector fell deeper into contraction territory in September, with the PMI dipping to 48.4, from 49.6 in August, due to further slides in output and new orders. Ireland was the only monitored euro area country in expansion territory, while France and Germany recorded the worst deteriorations in manufacturing operating conditions. The region continues to be plagued by energy and inflation concerns, pushing stocks down for a second consecutive month.

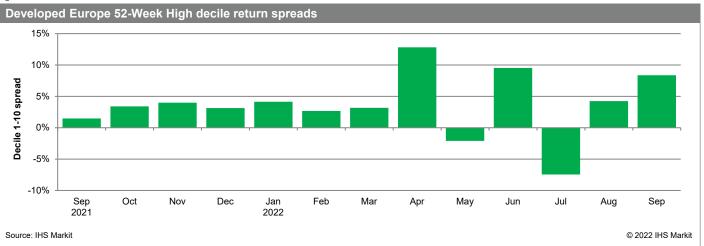
However, Price Momentum remained a dominant style among the top performing factors in Developed Europe in September (Table 6). The top performing factor in this group was 52-week High (8.36%), which has been a highly favored signal over the past year (Figure 3), with positive spreads in all but two months. Factors which underperformed in September (Table 7) include 3-Month Active Return (-5.33%) and 5-yr Relative Book-to-Market (-3.78%).

Table 6

Factor	Decile spread (%)	Factor group
North America Sales Exposure	8.92	Macro
52-Week High	8.36	Price Momentum
1-Month Stock Return Interquartile Range	8.22	Liquidity, Risk & Size
26-Week Relative Price Strength	8.10	Price Momentum
50-200 Day Stock Price Ratio	7.94	Price Momentum
15/36 Week Stock Price Ratio	7.49	Price Momentum
60-Day Residual Risk	6.64	Liquidity, Risk & Size
-Month Nominal Change in 18-Month Alpha	6.60	Price Momentum
Month Realized Stock Return Volatility	6.58	Liquidity, Risk & Size
-Month Nominal Change in 36-Month Alpha	6.53	Price Momentum
-Month Active Return with 1-Month Lag	6.53	Price Momentum
ama-French Momentum	6.22	Price Momentum
TM Capital Expenditures-to-Sales	6.15	Management Quality
Month Active Return with 1-Month Lag	6.11	Price Momentum
9-Week Return with 4-week Lag	5.95	Price Momentum



Source: IHS Markit



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Table 7

Factor	Decile spread (%)	Factor group	
3-Month Active Return	-5.33	Price Momentum	
Housing Starts Sensitivity	-4.38	Macro	
Year-over-year Change in Current Ratio	-4.03	Liquidity, Risk & Size	
5-yr Relative Book-to-Market	-3.78	Relative Value	
14 Day Relative Strength Index	-3.78	Price Momentum	
Assets Turnover Ratio	-3.65	Management Quality	
1-Month Active Return	-3.58	Price Momentum	
5-yr Relative TTM EBITDA-to-Price	-3.46	Relative Value	
Price Above Last 260-day Lowest Trading Price	-3.34	Price Momentum	
5-day Industry Relative Return	-3.33	Price Momentum	
Source: IHS Markit		© 2	2022 IHS

Asia-Pacific

Manufacturing operating conditions continued to weaken in the two largest Asian economies of China and Japan in September. In China, the manufacturing PMI signaled further contraction, slipping to 48.1 in September, from 49.5 in August, on a faster fall in new orders due to COVID-19 restrictions. In Japan, the headline PMI dipped further to 50.8 in September, from 51.5 in August, its lowest reading since January 2021, as output and new orders remained in contraction territory. Stocks continued to struggle in both countries on concerns of the global economy tipping into recession.

Low risk shares outperformed across the broader Asia-Pacific region; however, in developed markets outside Japan, this theme was accompanied by strong performance from Price Momentum factors in September (Table 8). The distribution of decile returns across two representative factors, 9-Month Active Return with 1-Month Lag (11.52%) and 60-Day Residual Risk (10.21%), demonstrate systematic trading across these two styles (Figure 4). On the other hand, the weakest performing factors for the month (Table 9) include 3-Month Active Return (-9.89%) and Market Cap per Analyst (-7.58%).

In Japan, the prevalence of the risk-off trade on the list of top performing factors in September (Table 10) was captured by 60-Month Beta (9.34%), which recorded its highest spread over the past year (Figure 5). At the opposite extreme, factors which trailed for the month (Table 11) include several Historical Growth and Management Quality metrics such as 5-Year Dividend Growth Rate (-6.66%) and Cash Flow Return on Invested Capital (-6.16%), respectively.

Table 8

Developed Pacific exJapan top decile return spread factor performance, September 2022 **Factor** Decile spread (%) **Factor group** 52-Week High 14.44 Price Momentum 9-Month Active Return with 1-Month Lag 11.52 Price Momentum 6-Month Active Return with 1-Month Lag 11.47 Price Momentum 39-Week Return with 4-week Lag 11.26 Price Momentum 50-200 Day Stock Price Ratio 11.24 Price Momentum 26-Week Relative Price Strength 10.79 Price Momentum 10.48 6-Month Nominal Change in 18-Month Alpha Price Momentum 24-Month Value at Risk 10.23 Price Momentum 60-Day Residual Risk 10.21 Liquidity, Risk & Size 10.12 Liquidity, Risk & Size Stock Return Volatility Regression Error of 60-Month CAPM 9.64 Liquidity, Risk & Size 12-Month Active Return with 1-month Lag 9.64 Price Momentum 9.21 30-75 Week Stock Price Ratio Price Momentum 1-Month Stock Return Interquartile Range 9.20 Liquidity, Risk & Size

Source: IHS Markit © 2022 IHS Markit

9.16

Price Momentum

Figure 4

Fama-French Momentum

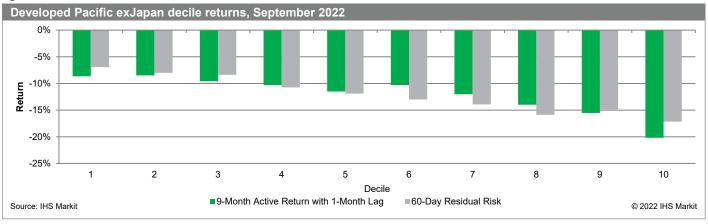


Table 9

Factor	Decile spread (%)	Factor group
3-Month Active Return	-9.89	Price Momentum
EMEA Sales Exposure	-8.46	Macro
2-Month Active Return	-8.17	Price Momentum
Market Cap per Analyst	-7.58	Liquidity, Risk & Size
3-yr Compound Annual Sales Growth	-6.86	Historical Growth
5-yr Relative Book-to-Market	-5.82	Relative Value
1-Month Active Return	-5.82	Price Momentum
Cash to Enterprise Value	-5.12	Deep Value
Yield Curve Slope Sensitivity	-4.80	Macro
Attention Span Ratio	-4.68	Management Quality

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Factor	Decile spread (%)	Factor group
Average Trading Volume in Preceding 6-month	9.66	Price Momentum
60-Month Beta	9.34	Liquidity, Risk & Size
Trading Turnover Ratio	8.66	Liquidity, Risk & Size
Product of Beta and Sigma	8.65	Liquidity, Risk & Size
1-Month Stock Return Interquartile Range	8.15	Liquidity, Risk & Size
Acquisition Multiple	7.50	Deep Value
Stock Return Volatility	7.36	Liquidity, Risk & Size
6-Month Active Return with 1-Month Lag	6.53	Price Momentum
-Month Realized Stock Return Volatility	6.46	Liquidity, Risk & Size
Market Volatility Sensitivity	6.31	Macro
24-Month Residual Return Variance	6.09	Price Momentum
60-Day Residual Risk	6.07	Liquidity, Risk & Size
ōbin q	6.07	Liquidity, Risk & Size
Market Volatility Sensitivity	6.31	Macro
24-Month Residual Return Variance	6.09	Price Momentum

Source: IHS Markit © 2022 IHS Markit

Figure 5

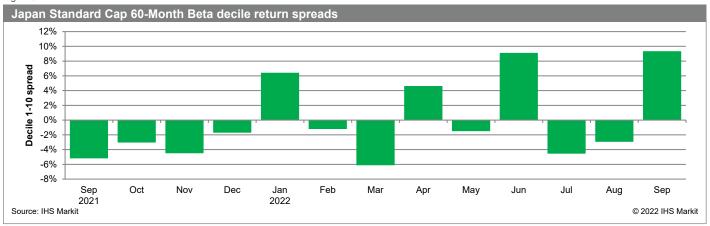


Table 11

Factor	Decile spread (%)	Factor group	
5-Year Dividend Growth Rate	-6.66	Historical Growth	
3-yr Compound Annual Sales Growth	-6.17	Historical Growth	
Cash Flow Return on Invested Capital	-6.16	Management Quality	
North America Sales Exposure	-5.59	Macro	
3-yr Growth in TTM Cash Flow	-5.48	Historical Growth	
Forward Return on Equity	-5.44	Management Quality	
Yearly TTM Total Sales Growth Rate	-5.29	Historical Growth	
Return on Invested Capital	-5.13	Management Quality	
3-yr Change in Assets-adj TTM EPS	-5.03	Historical Growth	
Number of Analyst Coverage	-5.02	Liquidity, Risk & Size	

September 2022

Emerging Markets

Lastly, we review top (Table 12) and bottom (Table 13) performing factors in emerging markets in September. Like most of our other coverage universes, Price Momentum was a positive signal last month. However, in this case, it occupied nearly the totality of the leaderboard, led by 26-Week Relative Price Strength (8.88%). On the contrary, factors which lagged for the month include 3-Month Active Return (-7.07%) and Cash-to-Price (-5.91%). We also highlight the weakest performer, North America Sales Exposure (-7.17%), which has struggled of late (Figure 6), after a strong finish to the prior year and the opening months of this year.

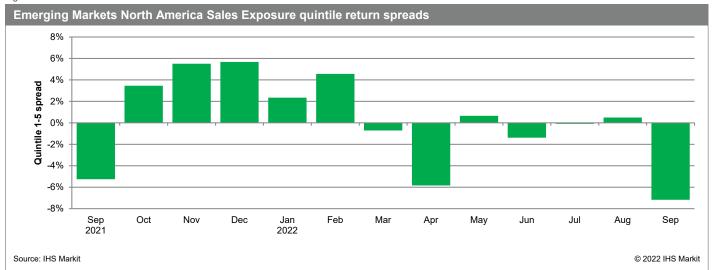
Table 12

Factor	Decile spread (%)	Factor group
26-Week Relative Price Strength	8.88	Price Momentum
52-Week High	8.73	Price Momentum
50-200 Day Stock Price Ratio	8.45	Price Momentum
15/36 Week Stock Price Ratio	7.97	Price Momentum
39-Week Return with 4-week Lag	7.86	Price Momentum
6-Month Active Return with 1-Month Lag	6.67	Price Momentum
12-Month Active Return with 1-month Lag	6.63	Price Momentum
24-Month Value at Risk	6.36	Price Momentum
9-Month Active Return with 1-Month Lag	6.28	Price Momentum
Fama-French Momentum	6.26	Price Momentum
CV of Prior 90-Day Closing Prices	5.86	Price Momentum
1-Year Price Momentum Indicator	5.71	Price Momentum
60-Day Residual Risk	5.28	Liquidity, Risk & Size
Average Trading Volume in Preceding 6-month	5.26	Price Momentum
30-75 Week Stock Price Ratio	5.10	Price Momentum

Table 13

Factor	Decile spread (%)	Factor group	
North America Sales Exposure	-7.17	Macro	
3-Month Active Return	-7.07	Price Momentum	
Cash to Enterprise Value	-6.58	Deep Value	
Cash-to-Price	-5.91	Deep Value	
2-Month Active Return	-5.45	Price Momentum	
Average Monthly Trading Volume-to-Market Cap	-5.00	Liquidity, Risk & Size	
Attention Span Ratio	-4.79	Management Quality	
_eading 12 Month Book Yield	-4.15	Deep Value	
5-yr Relative TTM EBITDA-to-Price	-4.13	Relative Value	
Change in QTR Sales vs. Gross Margin	-4.06	Earnings Quality	
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Figure 6



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