

# Market Maps

## Regional Factor Indicator Report



July 2020

### Quality bias holds despite Q2 risk rally

#### Defensive undercurrents persist

Quality and Profitability continued to dominate this year, as the robust risk-on rebound in Size in May cooled in June amid growing uncertainties about the post-lockdown recovery.

#### Healthy balance sheets retain their appeal

Quality and Profitability benefited from the strong investor preference for stocks offering high ROA and ROE and low debt this year. Tilts to outperforming sectors also helped.

#### Macro sensitivity has increased

Swings in US Treasuries and commodity prices have become bigger drivers of factor returns across developed markets. Not so much in emerging markets.

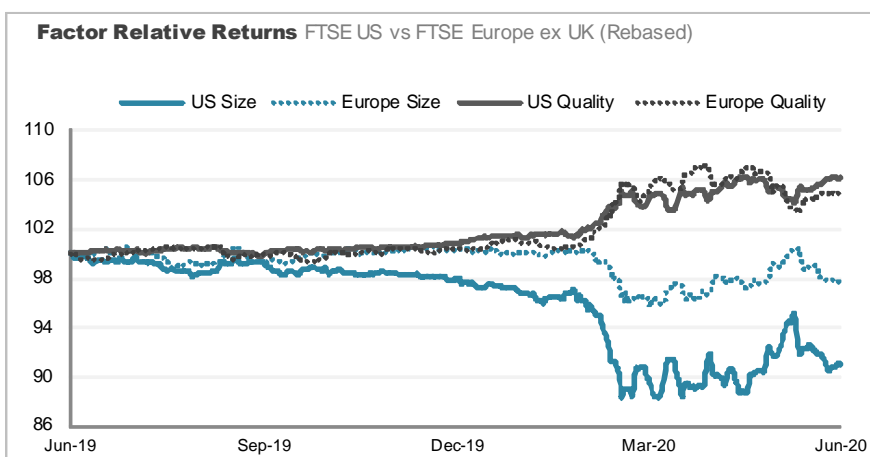
#### UK Size reclaims leadership

Once again, UK factors strayed from global patterns: UK Size reclaimed the lead after sharply lagging in the Q1 meltdown, while Low Vol and Profitability remain the strongest-performing defensive factors YTD.

#### TABLE OF CONTENTS

Global View .....	2
US .....	11
UK .....	19
Europe ex UK.....	27
Japan .....	35
Asia Pacific ex Japan .....	43
Emerging Markets .....	51
Appendix .....	59
Glossary .....	60

### Regional Factor Indicator Performance Highlights



**+9.6%**  
US  
Low Debt/Equity  
YTD Outperformance

**+7.0%**  
UK  
High ROE  
YTD Outperformance

**+5.8%**  
Japan  
Low Debt/Equity  
YTD Outperformance

**+11.7%**  
Emerging Markets  
Low Debt/Equity  
YTD Outperformance

#### FOR PROFESSIONAL INVESTORS ONLY

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Equity market data based on FTSE Global Equity Index Series and FTSE Global Factor Index Series. Results shown for regional Factor Indicators represent hypothetical, historical performance. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

**Important information:** While the Factor Indicators use the same calculation methodology as the official FTSE Russell Factor Indexes, they differ in terms of the range of components incorporated into the calculation. Consequently, the Factor Indicator and official FTSE Russell factor index data may differ. Please see the FTSE Russell website for information about the official factor indexes and Appendices I and II of this report for further details on rules-based factors indicator calculations and construction methodology.

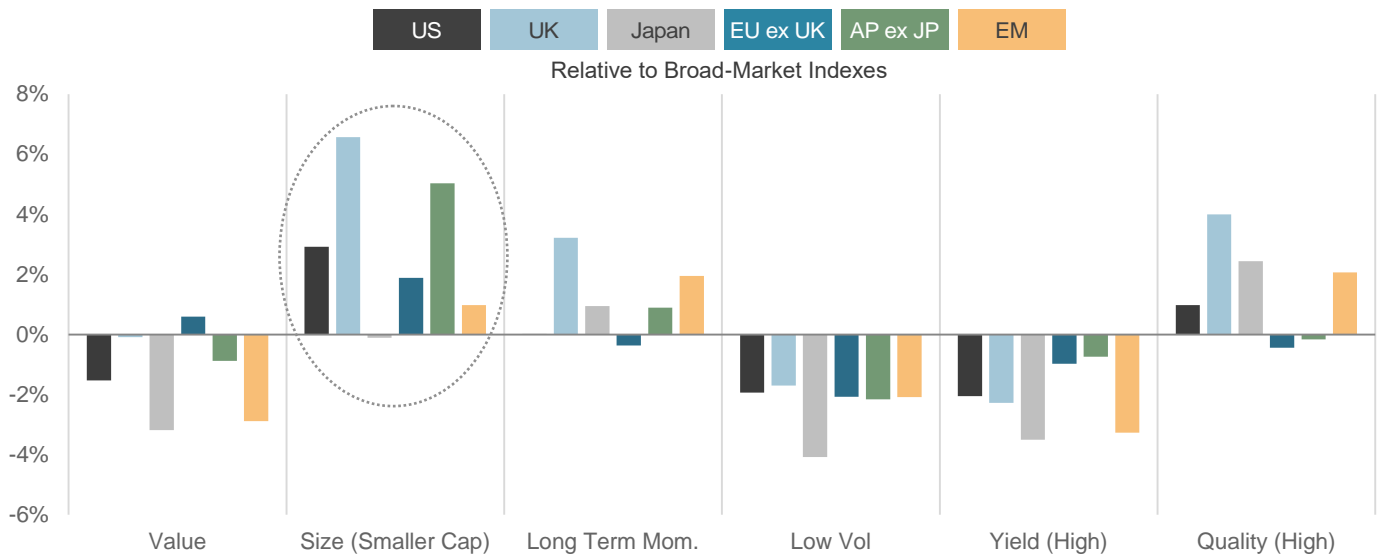


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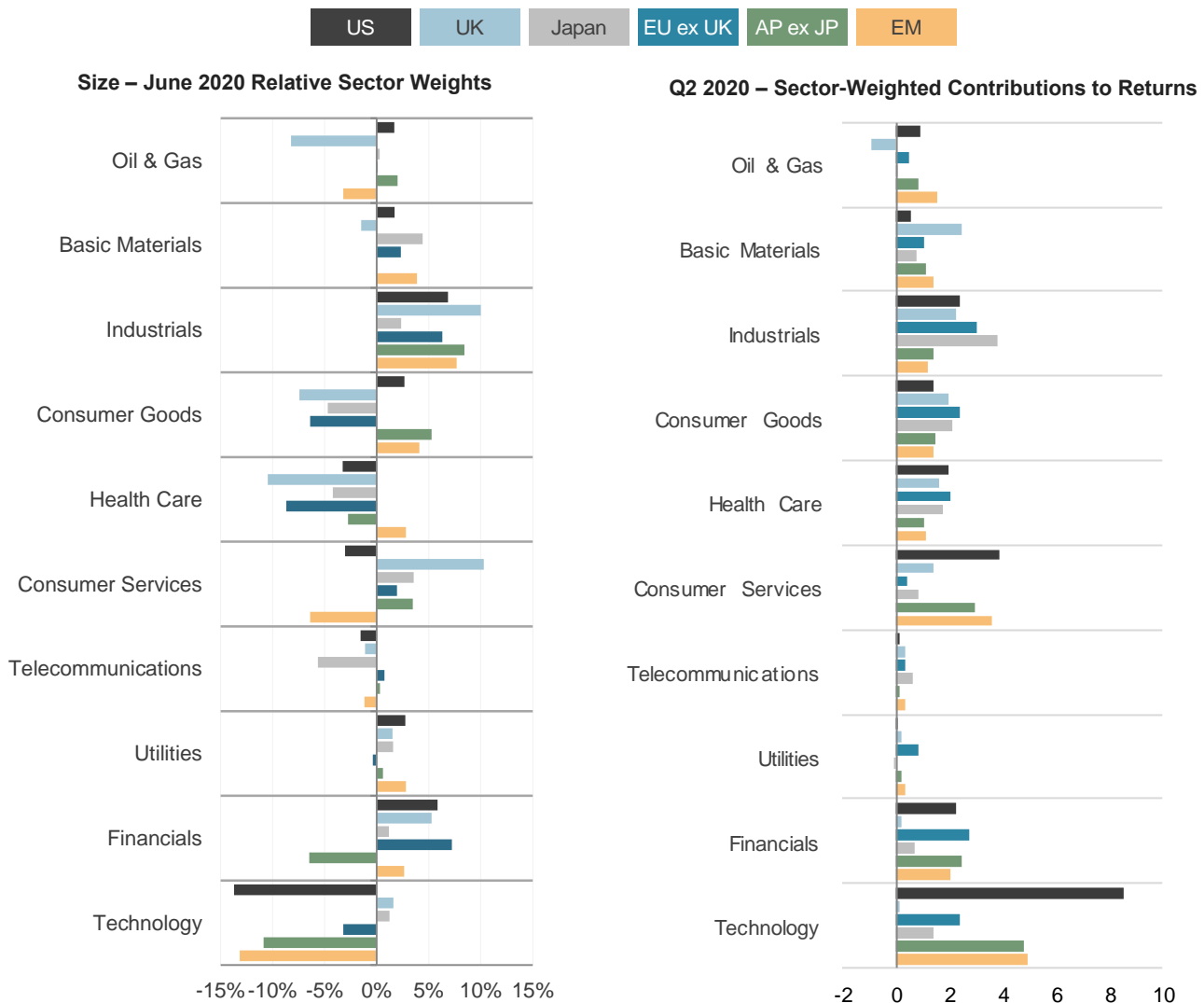
# Global View – Factor Indicator Performance & Sector Weights

## Q2 2020 relative returns (% Local Currency) – Size rides resurgence in risk appetite

Post-lockdown optimism and unprecedented policy support, drove a robust rotation into Size in most markets at the expense of Low Volatility in the quarter. However, Quality's relative strength suggests persistent investor caution.



**Relative Size factor sector exposures vs. sector-weighted contributions to Q2 2020 returns:** Size captured large overweights in Industrials and Financials and large underweights in Technology and Health Care.

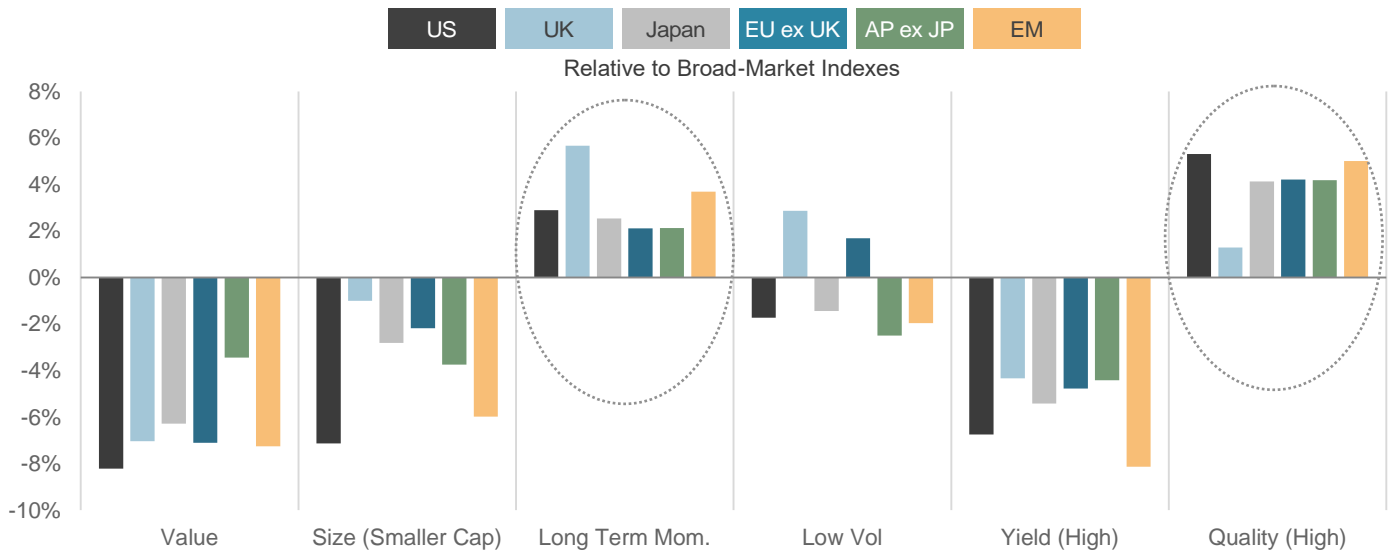


Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

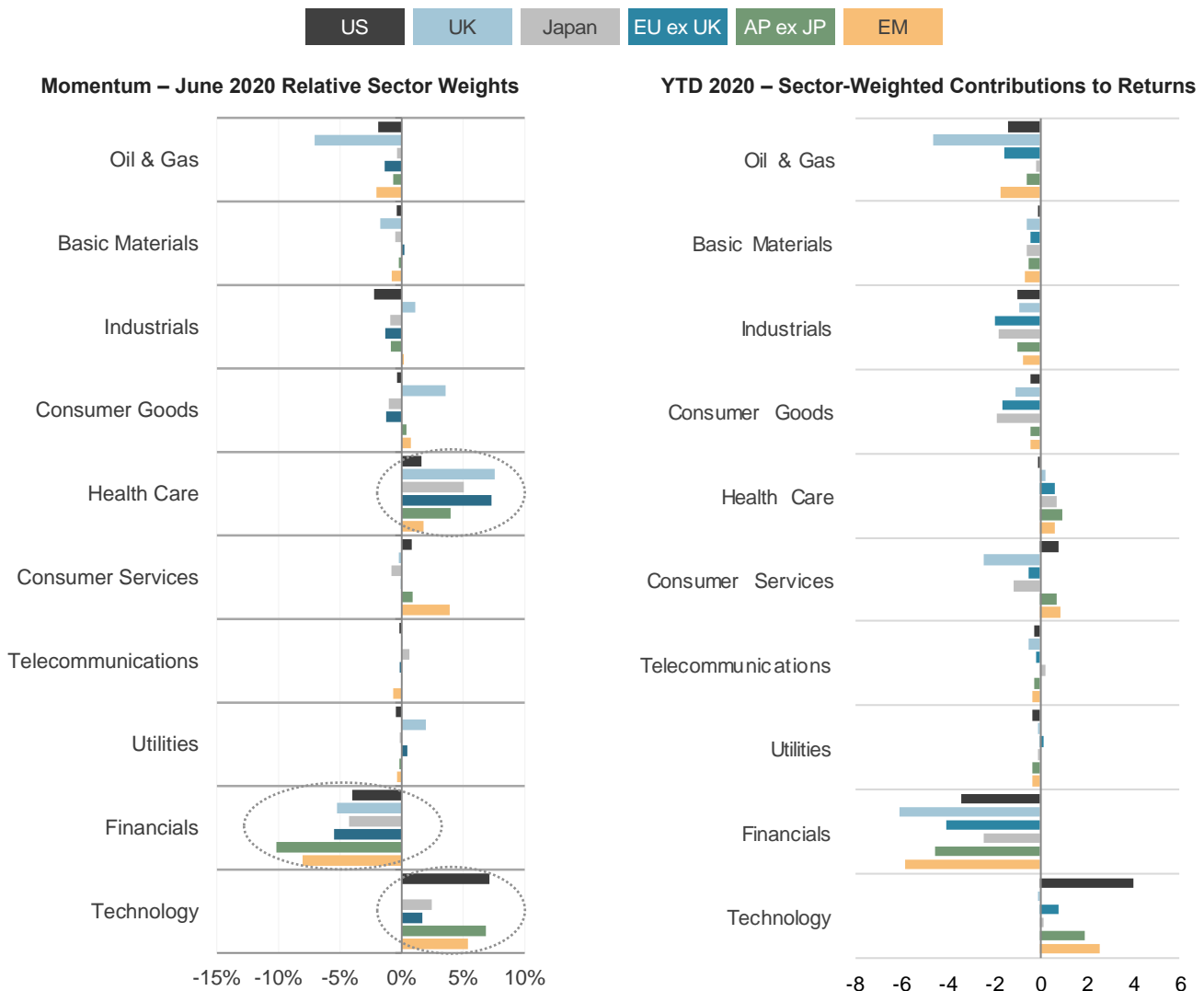
# Global View – Factor Indicator Performance & Sector Weights

## YTD 2020 relative returns (% , Local Currency) – Quality & Momentum prevail in 1H rollercoaster

The dramatic Q2 risk rally failed to topple Quality and Momentum leadership for the year so far, though it took the wind out of Low Volatility. Value, Yield and Size remained major laggards for the period, despite recent rebounds.



**Relative Momentum factor sector exposures vs. sector-weighted contributions to returns:** Momentum performance reflected big overweights in Health Care and Tech and large underweights in Financials.

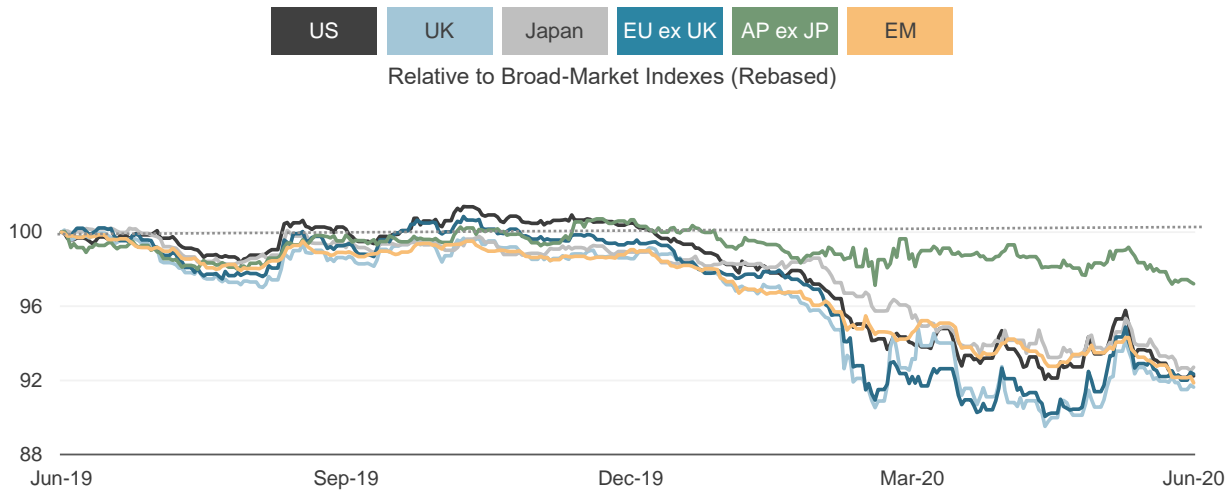


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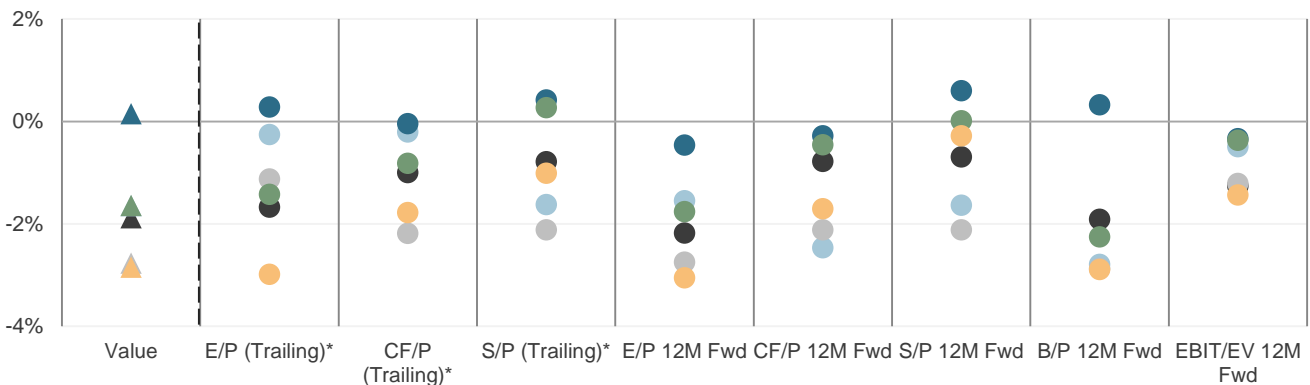
# Global View – Factor Indicator Performance & Component Drivers

## Value Indicator

Value failed to make much progress in Q2, as rebounds in May — particularly those in the UK, US and Europe — were largely erased by June end. This perpetuated the factor’s long-running stretch of underperformance globally.



**Q2 2020 Relative Component Returns:** Amid widespread relative losses, trailing multiples generally outperformed forward-looking metrics. The notable exception was Europe, where most metrics outperformed (as did price/sales in Asia Pacific).



**YTD 2020 Relative Components Returns:** Amid broad underperformance, US Value did the worst, with forward price/book lagging most. Asia Pacific Value suffered the least, lifted by the outperformance of EV/EBIT, price/sales and price cash flow.



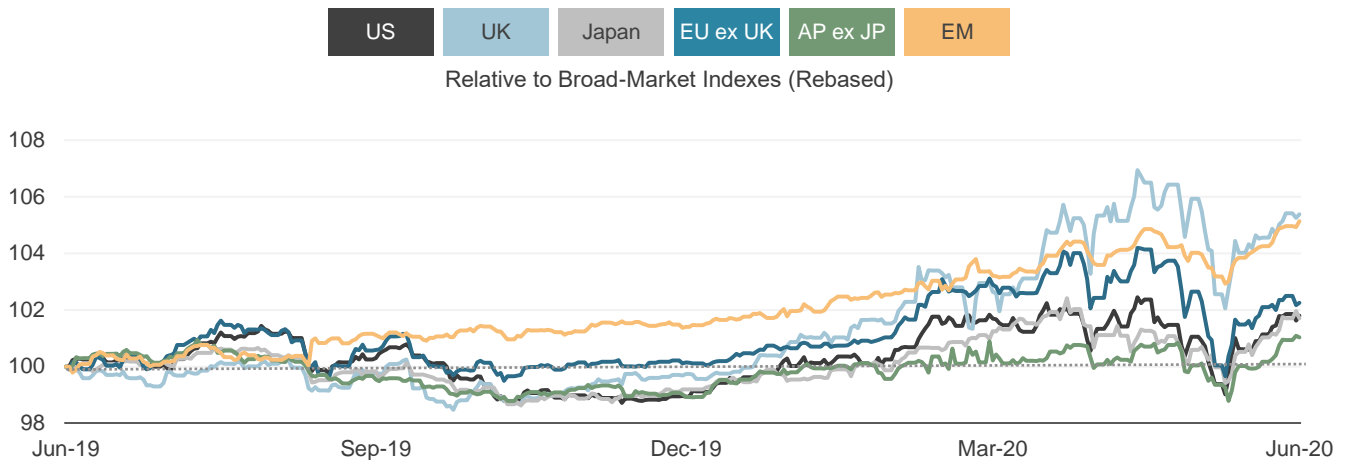
\* Official FTSE Global Factor Index components.

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# Global View – Factor Indicator Performance & Component Drivers

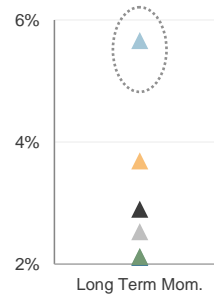
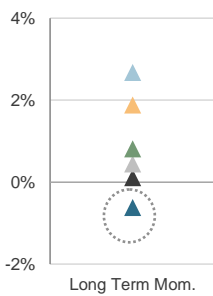
## Long-Term Momentum Indicator

Momentum performance has zigzagged this year, in step with the extreme shifts in risk appetite through the coronavirus market panic and subsequent recovery. The factor bounced back in June as long-time defensive winners regained favor.



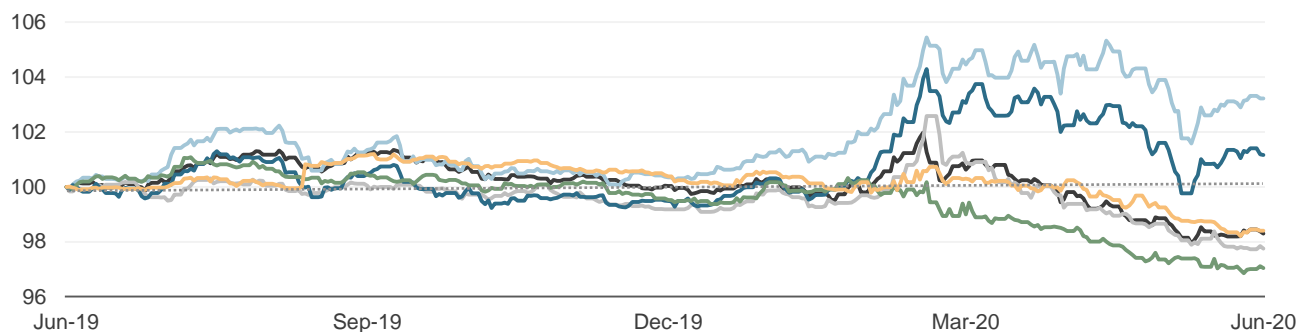
**Q2 2020 Relative Component Returns:** Momentum broadly outperformed, except in Europe, and was flat in the US.

**YTD Relative Component Returns:** Momentum outperformed most in the UK and more modestly in Asia Pacific and Japan.



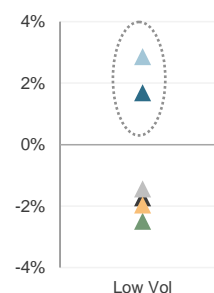
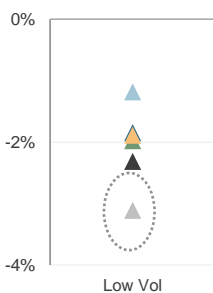
## Low Volatility Indicator

Low Volatility lost ground in the Q2 risk rally, though the factor remained an outperformer in the UK and Europe YTD, bolstered by June rebounds. Elsewhere, the factor is trailing for both the YTD and 12-month period.



**Q2 2020 Relative Component Returns:** Low Vol lagged most in Japan and least in the UK.

**YTD Relative Component Returns:** Low Vol outperformed in the UK and Europe but underperformed elsewhere.

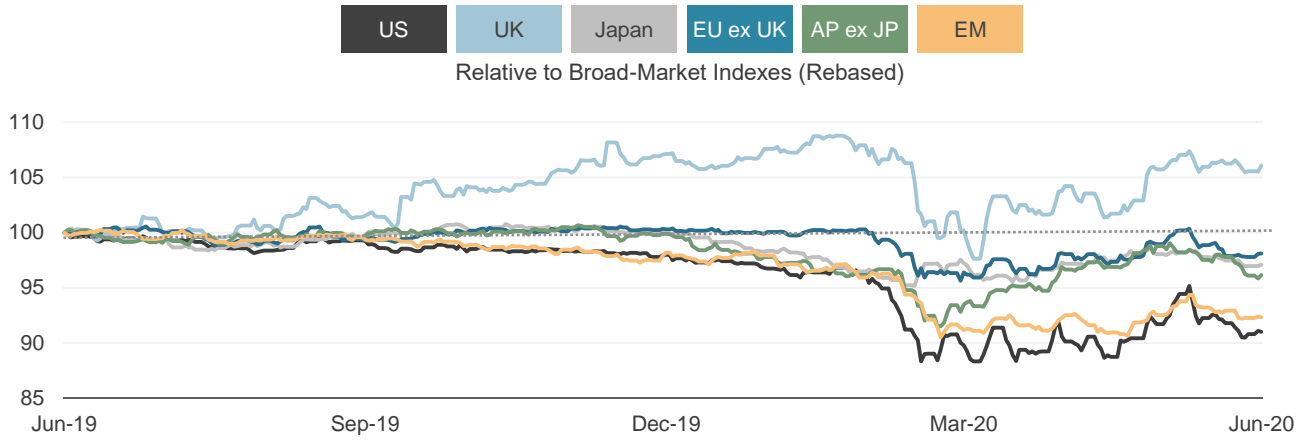


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# Global View – Factor Indicator Performance & Component Drivers

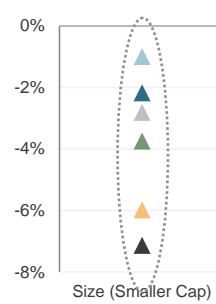
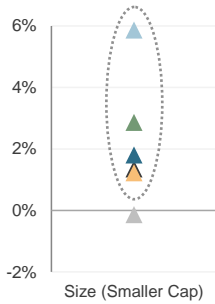
## Size (Smaller Cap) Indicator

Size was the chief beneficiary of the Q2 upsurge in post-lockdown economic optimism, particularly in Asia Pacific and the UK. But the factor faltered in June, remaining a laggard for the YTD and past 12 months in all markets except the UK.



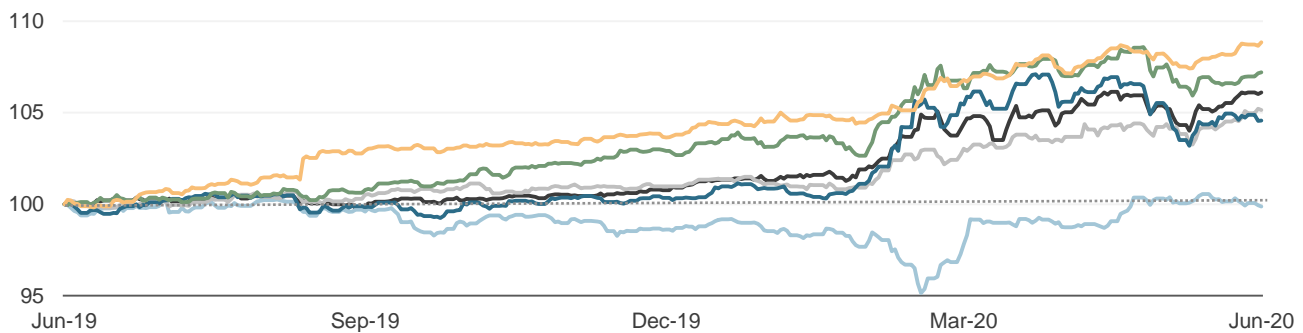
**Q2 2020 Relative Component Returns:** Size outperformed most in the UK, and lagged modestly in Japan.

**YTD Relative Component Returns:** Size lagged most in the US and outperformed only in the UK.



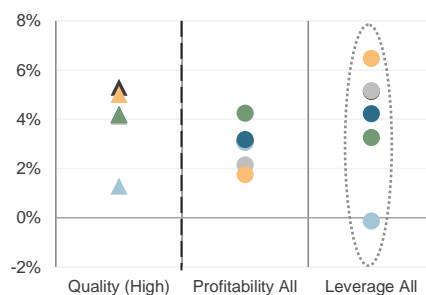
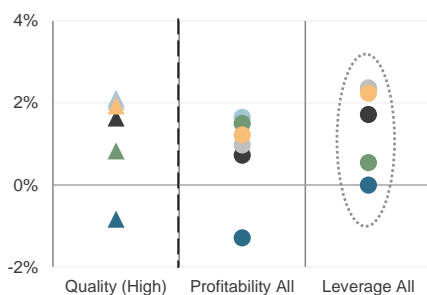
## Quality (High) Indicator

Despite Q2 risk-rally headwinds, Quality continued to build on its long-standing outperformance in most markets. The factor has even won favor in the UK, where it has languished until recently.



**Q2 2020 Relative Component Returns:** Leverage inputs broadly outpaced profitability inputs, except in Asia Pacific.

**YTD Relative Component Returns:** Leverage was a bigger Quality driver than profitability, except in the UK & Asia Pacific.

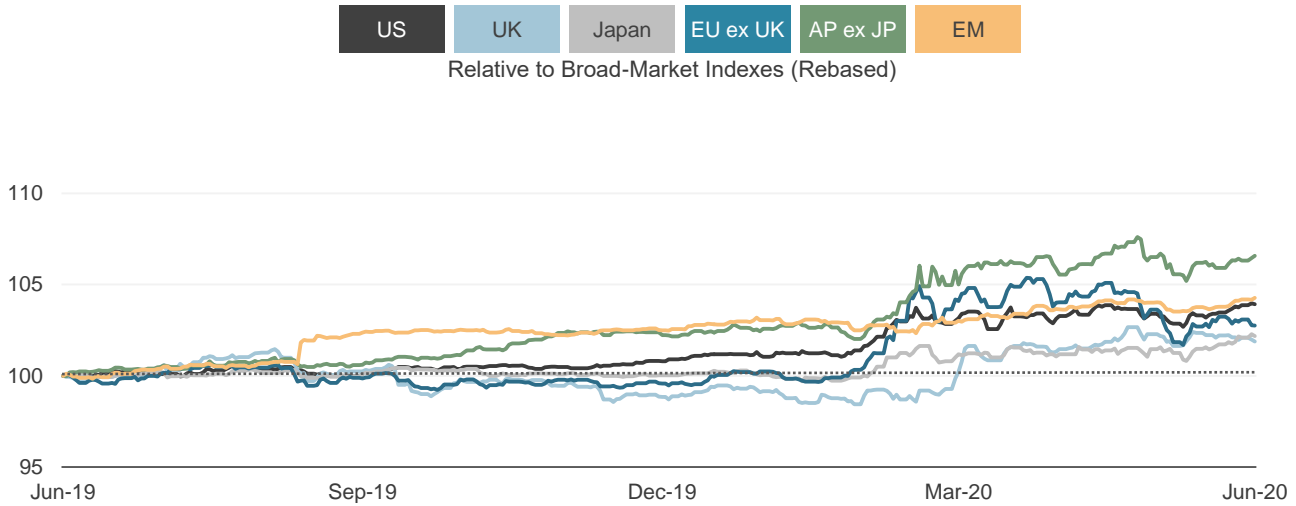


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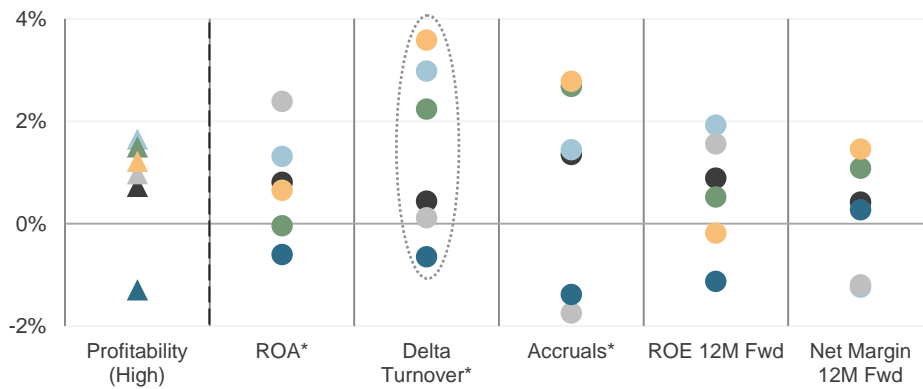
# Global View – Factor Indicator Performance & Component Drivers

## (High) Profitability Indicator

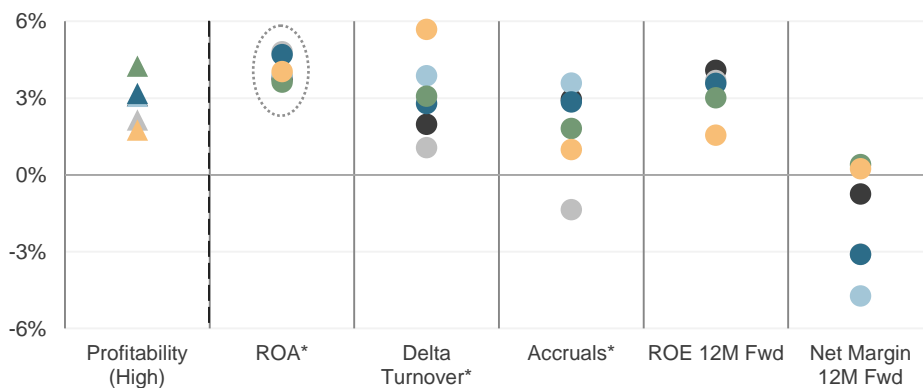
Broad Q2 gains (except in Europe) propelled Profitability outperformance across markets for the YTD, particularly in Asia Pacific. UK Profitability moved into positive territory for the year and past 12 months, after lagging since last September.



**Q2 2020 Relative Component Returns:** Measures of healthy corporate balance sheets (e.g., asset turnover) generally outperformed other Profitability components such as forward net margins (except in Europe).



**YTD 2020 Relative Components Returns:** ROA and asset turnover broadly outpaced the other Profitability components. Forward net margin was the biggest laggard across markets, particularly in the UK.

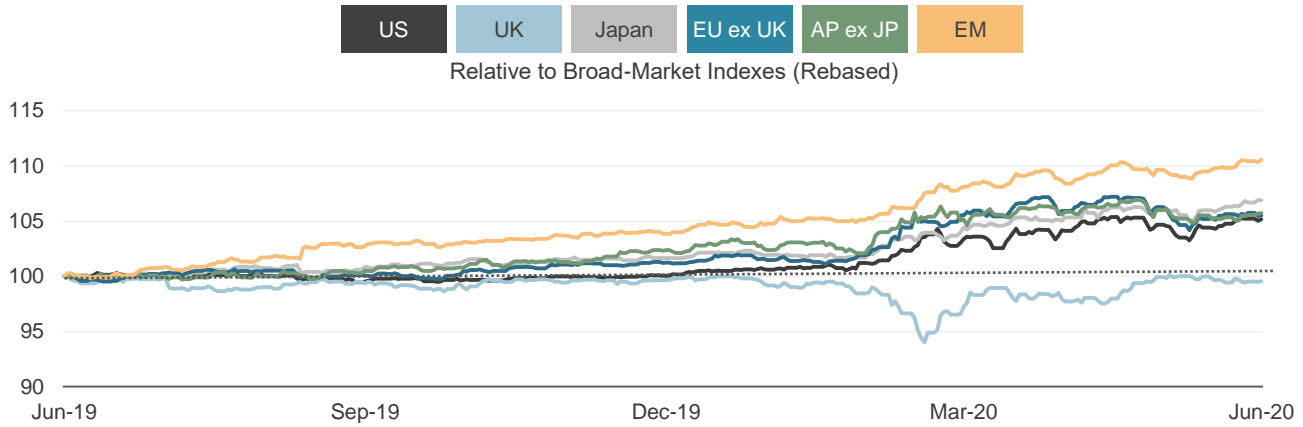


\* Official FTSE Global Factor Index Series components. Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors

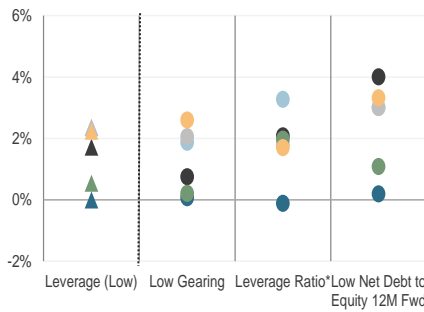
# Global View – Factor Indicator Performance & Component Drivers

## Leverage (Low) Indicator

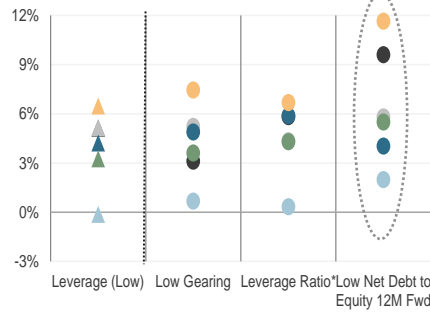
Low Leverage gained traction in Q2, extending its YTD outperformance, particularly in Emerging Markets. Notably, UK Leverage lagged its global peers for the YTD and past 12 months, despite a healthy rebound since March.



**Q2 2020 Relative Component Returns:** Low net debt/equity led, particularly in the US and Emerging Markets.

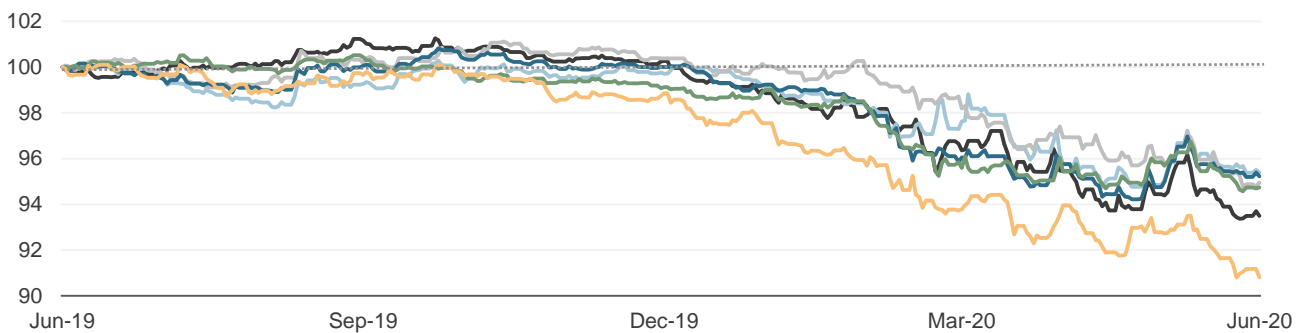


**YTD Component Returns:** Low net debt/equity outpaced other Leverage inputs, except in Europe.

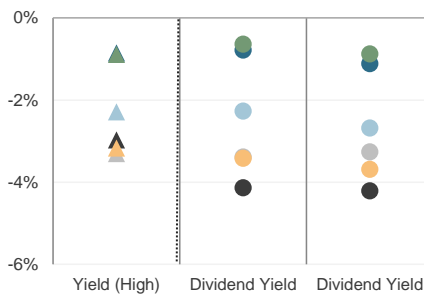


## Yield (High) Indicator

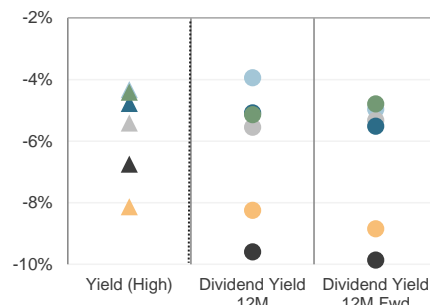
Yield fell more deeply into negative territory across markets in Q2, adding to its YTD and 12-month underperformance. The downturn was particularly steep in Emerging Markets and the US.



**Q2 2020 Relative Component Returns:** Yield lagged most in Japan and EM; held up best in Asia Pacific and Europe.



**YTD Relative Component Returns:** Forward yield broadly lagged trailing yield, particularly in the US and EM.



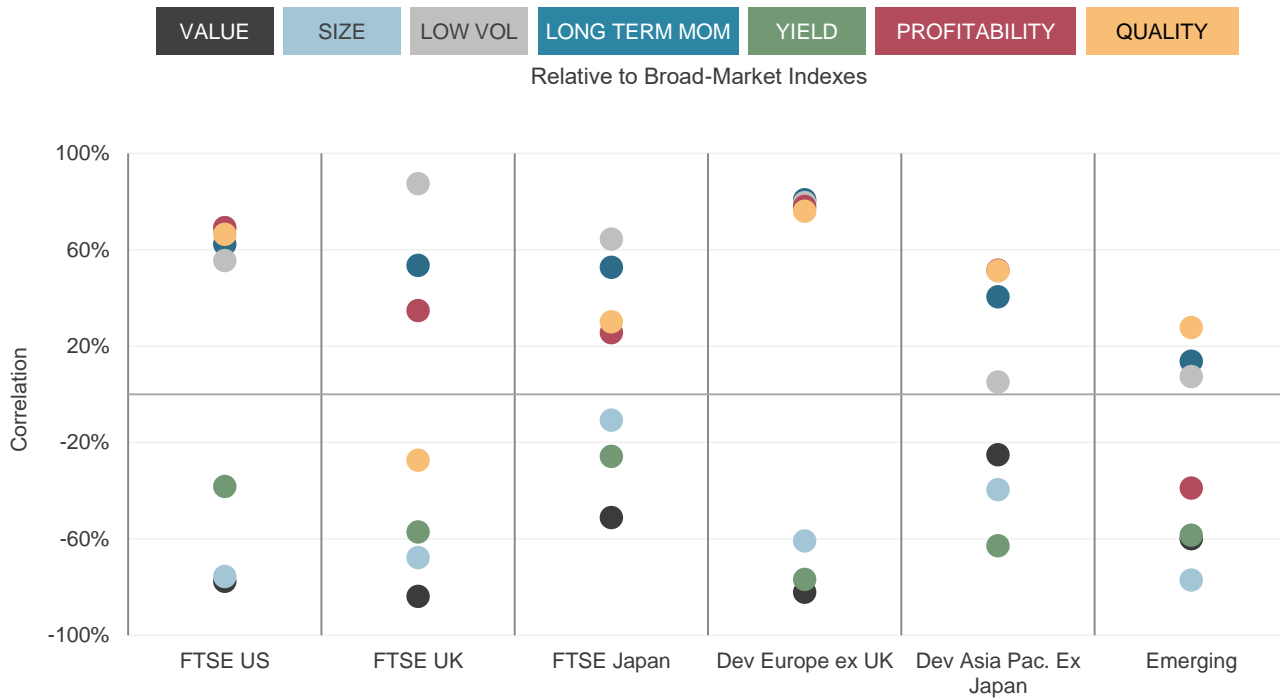
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# Global View – Factor Indicator Macro Sensitivity

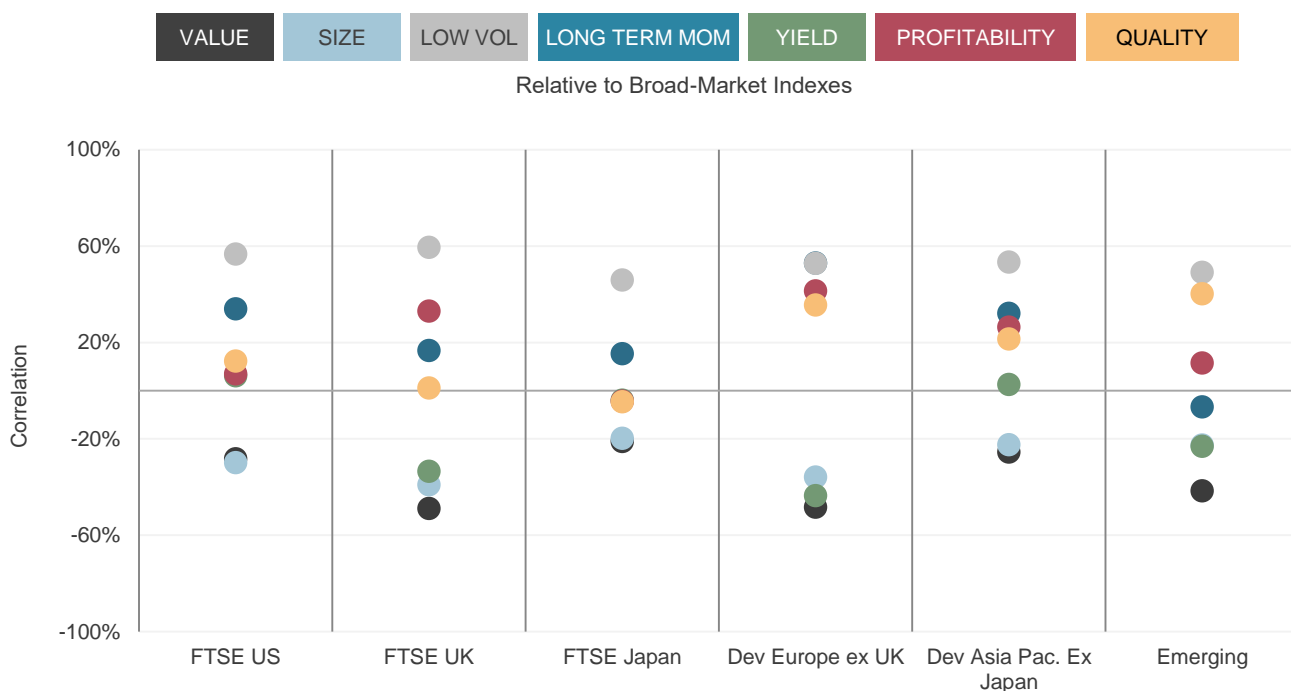
## Correlations to 3-Year US Treasury Bonds — Since June 2019

Quality, Profitability and Momentum have held strong positive correlations to short-dated US Treasury prices this past year, particularly in the US and Europe, but less so in the UK, Japan and Emerging Markets. Value and Size are negatively correlated, particularly in the US, UK and Emerging Markets.



## Correlations to US Dollar – Since June 2019

Low Volatility has had a strong positive correlation to US dollar moves in most regions, most significantly in the UK. Size and Value have been negatively correlated with the USD, most significantly in the UK and Europe (less so in Japan and Asia Pacific). Quality correlations with the dollar differ widely across markets.



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## Notes

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# Market Maps

## Regional Factor Indicator Report



July 2020

### US Factor Indicator Key Observations

- Quality and Profitability continued to build on their leadership in the US this year.
- Low Vol suffered most from the Q2 rotation into riskier Size and (less so) Value, but all three are trailing YTD.
- Quality benefited most from its underweight in lagging Financials and overweight in outperforming Technology this year.
- The popularity of less-indebted stocks has also been a key driver of Quality outperformance this year.
- Quality and Profitability have grown more positively correlated to swings in US Treasury prices; Value and Size are more negatively correlated.

### TABLE OF CONTENTS

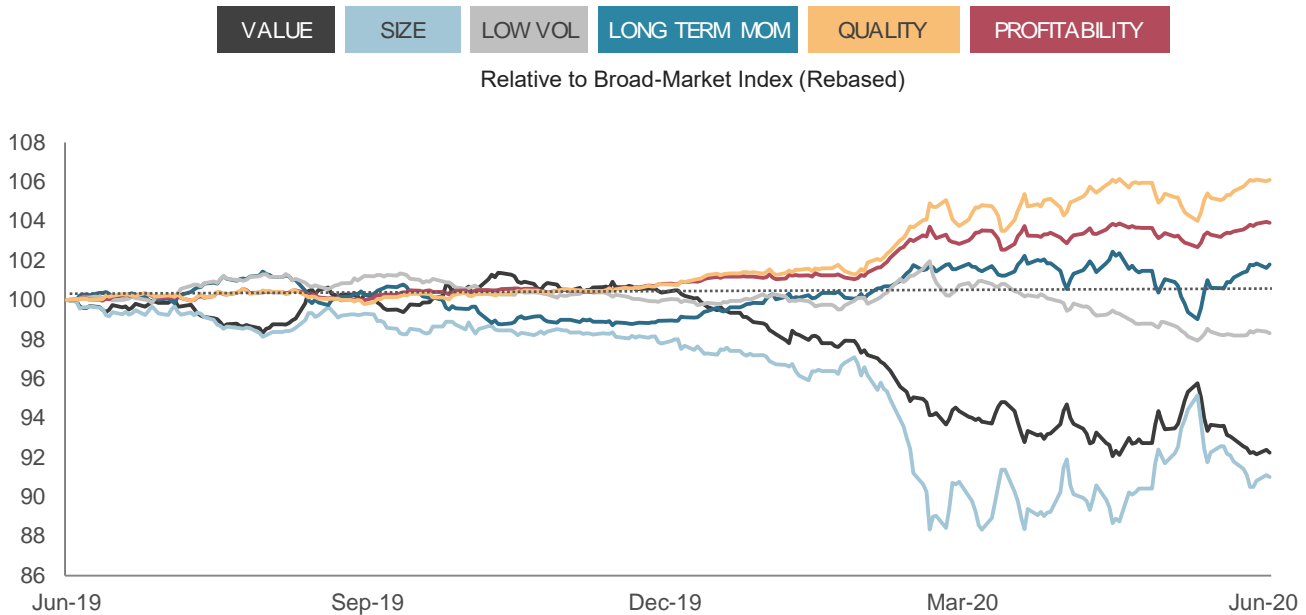
US Factor Indicator Performance .....	12
US Sector Exposure .....	12
Factor Component Performance .....	13
Value.....	13
Profitability .....	13
Leverage.....	14
Yield.....	14
Quality.....	14
Size (Small) .....	15
Long-term Momentum....	15
Volatility .....	15
US Macro Sensitivity .....	16
Top/Bottom Stock Exposure.....	17

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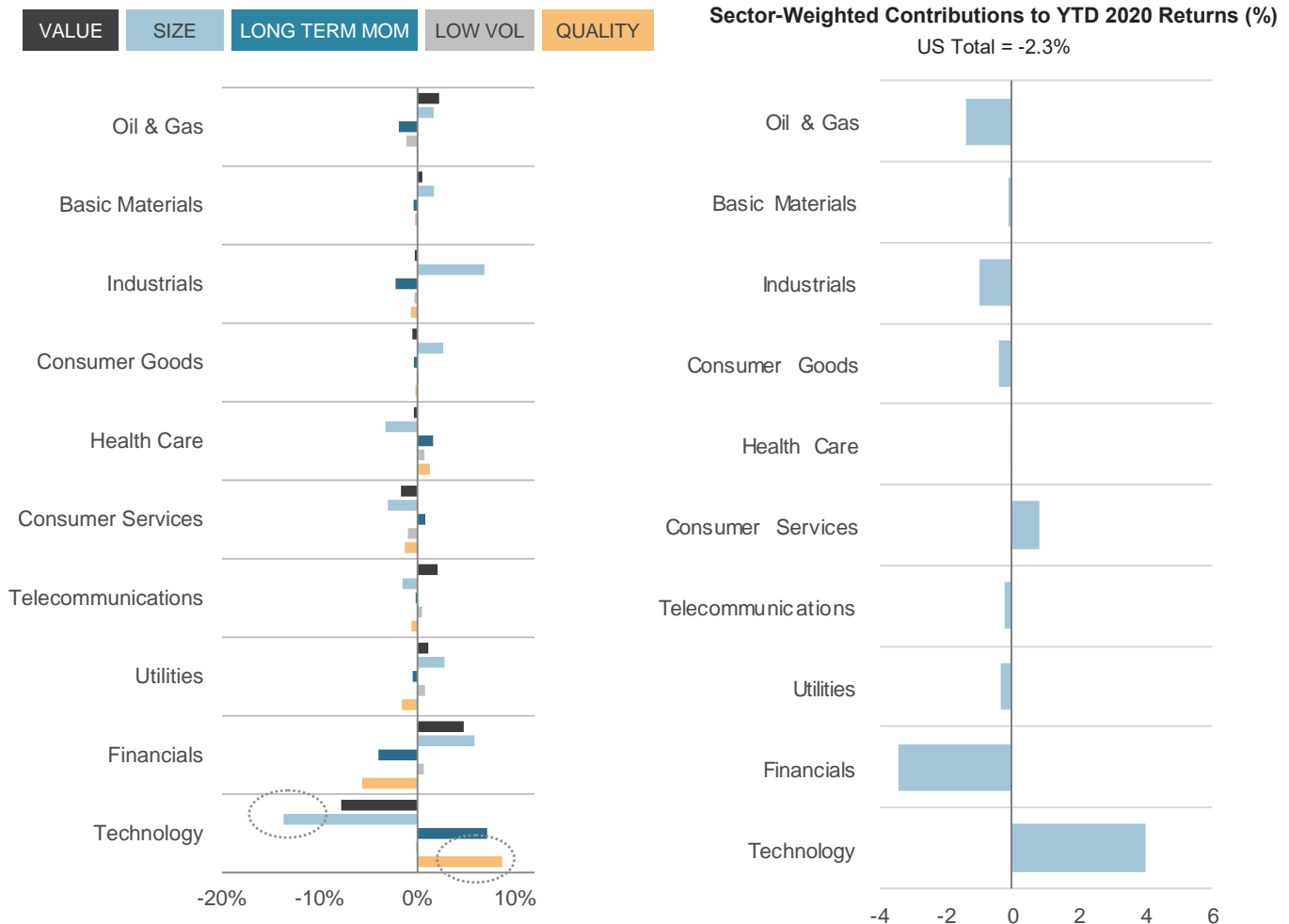
# US Factor Indicator Performance & Sector Weights

## Quality and Profitability Bias Perseveres Despite Q2 Risk Rally

Quality and Profitability leadership held strong through the Q2 risk rally, as Low Volatility took the brunt of the rotation into Size and (less so) Value. With the rally fading in June, the gulf between US defensives and riskier factors remained wide.



**US Relative Factor Weights by Sector vs Return Contributions (Q2 2020):** Quality returns reflect underweights in Financials and overweights in Technology. Size is overweight Industrials and Financials and deeply underweight Technology.



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

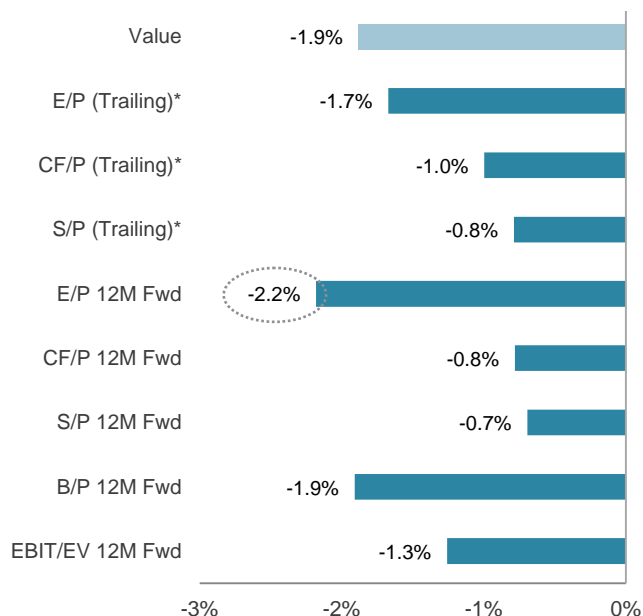
# US Factor Indicator Component Performance

## Value Indicator

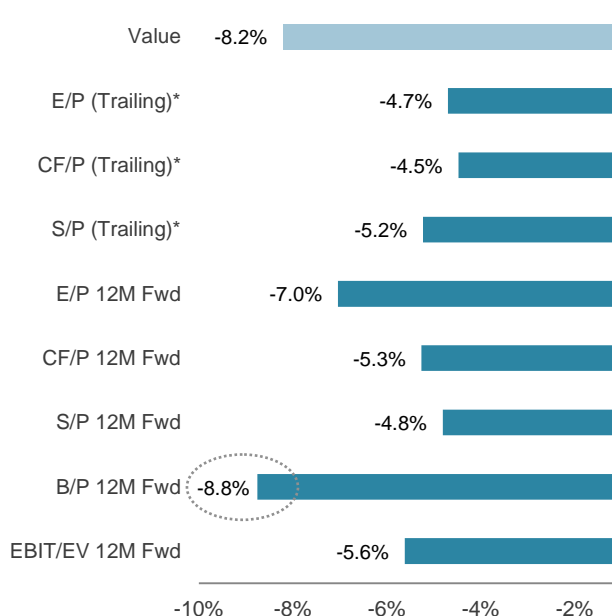
All components contributed to US Value's significant underperformance in Q2 and YTD, with forward-looking metrics generally lagging trailing metrics, led by 12-month forward price/book value and earnings.

US

Q2 2020 Relative Component Returns



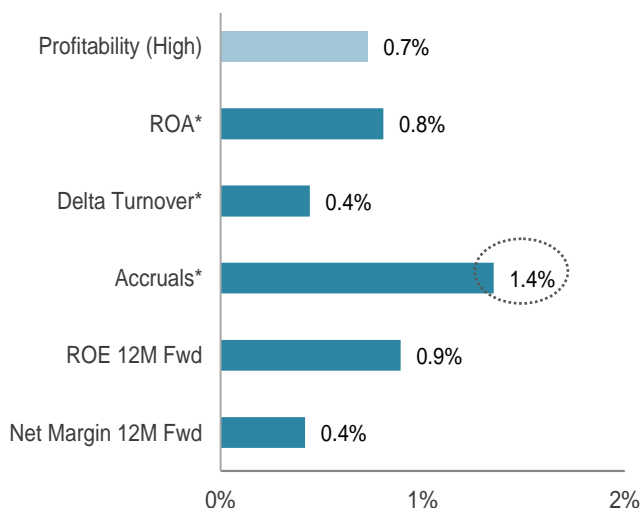
YTD 2020 Relative Component Returns



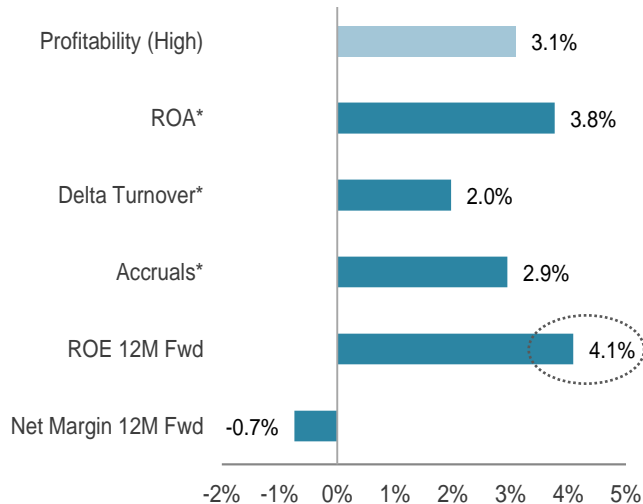
## Profitability (High) Indicator

Profitability strengthened its relative gains in Q2, led by balance-sheet accruals, enhancing its YTD outperformance. ROA and forward ROE led the factor's YTD progress, offset by losses in the forward net margin component.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



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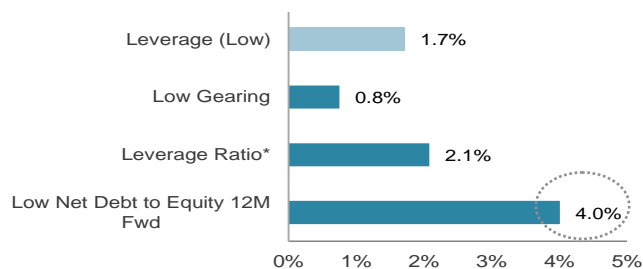
# US Factor Indicator Component Performance

## Leverage (Low) Indicator

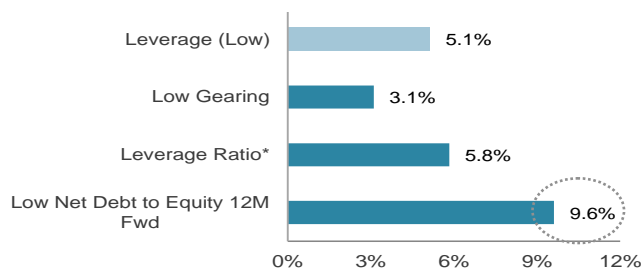
Low Leverage strongly outperformed in the Q2, bolstered by the 12-month forward net debt/equity component. This showing placed the factor significantly ahead for the YTD and among the strongest US factor performers for both periods.

US

Q2 2020 Relative Component Returns



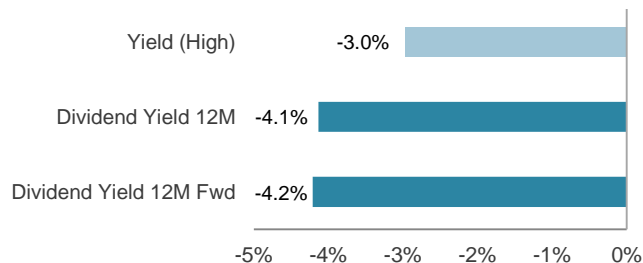
YTD 2020 Relative Component Returns



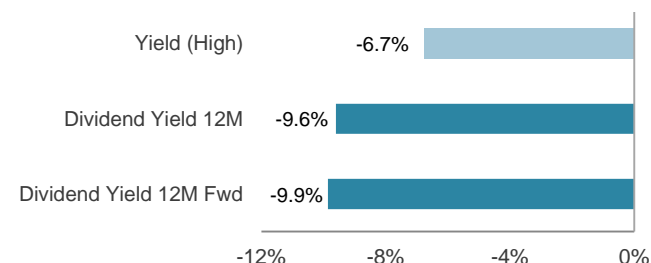
## Yield (High) Indicator

Yield badly lagged in Q2 and YTD. Relative returns in both periods reflect roughly comparable gains in trailing and forward dividend yield components.

Q2 2020 Relative Component Returns



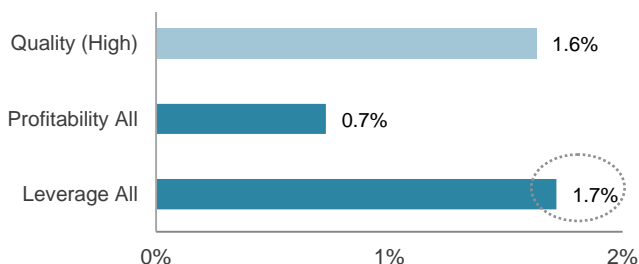
YTD 2020 Relative Component Returns



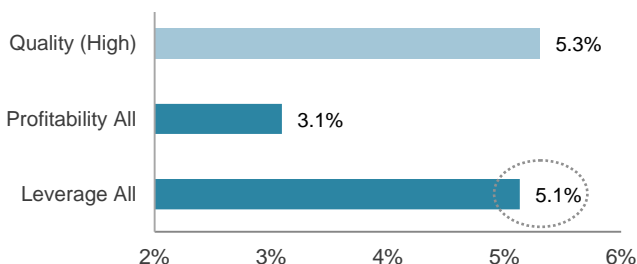
## Quality (High) Indicator

Quality continued to expand on its long-standing leadership in Q2 and YTD. The leverage component strongly outperformed the profitability component in both periods.

Q2 2020 Relative Component Returns



YTD 2020 Component Returns



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# US Factor Indicator Component Performance

## Size (Smaller Cap) Indicator

US Size rebounded in Q2 as optimism about the post-lockdown economy favored the badly beaten-down stocks of smaller, more domestically oriented businesses. The comeback only modestly pared the factor's YTD underperformance.

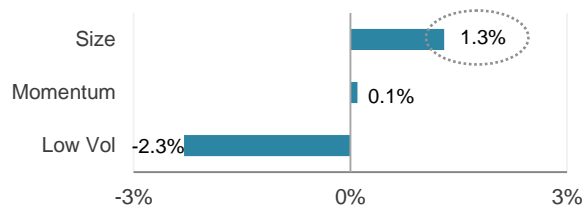
## Long-Term Momentum Indicator

US Momentum performed roughly in line with the broad market in Q2, maintaining its outperformance for the year.

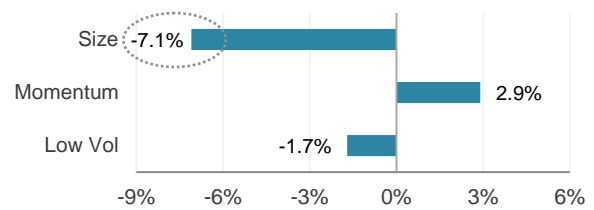
## Low Volatility Indicator

US Low Volatility significantly lagged in Q2, pushing it into negative territory for the year so far.

**Size, Momentum and Volatility**  
Q2 2020 Relative Component Returns



**Size, Momentum and Volatility**  
YTD 2020 Relative Component Returns



3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

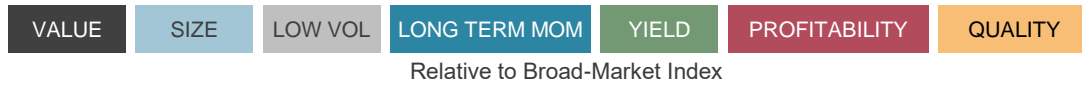
Appendix

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

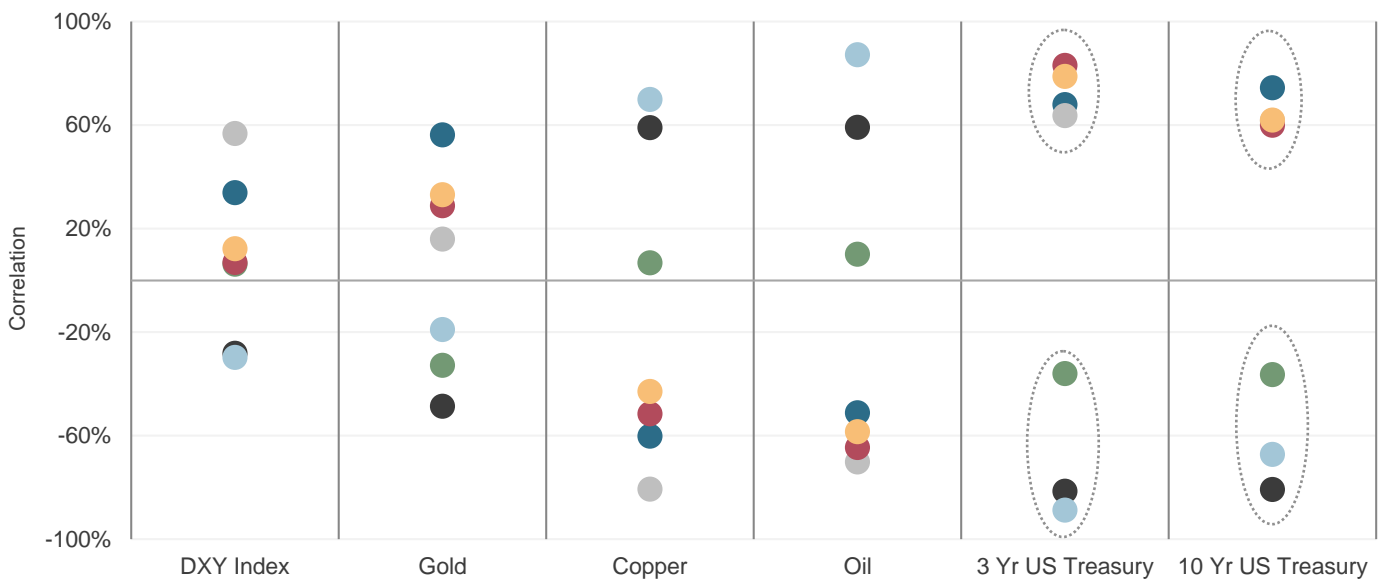
# US Factor Indicator Macro Sensitivity

## US Macro Sensitivity

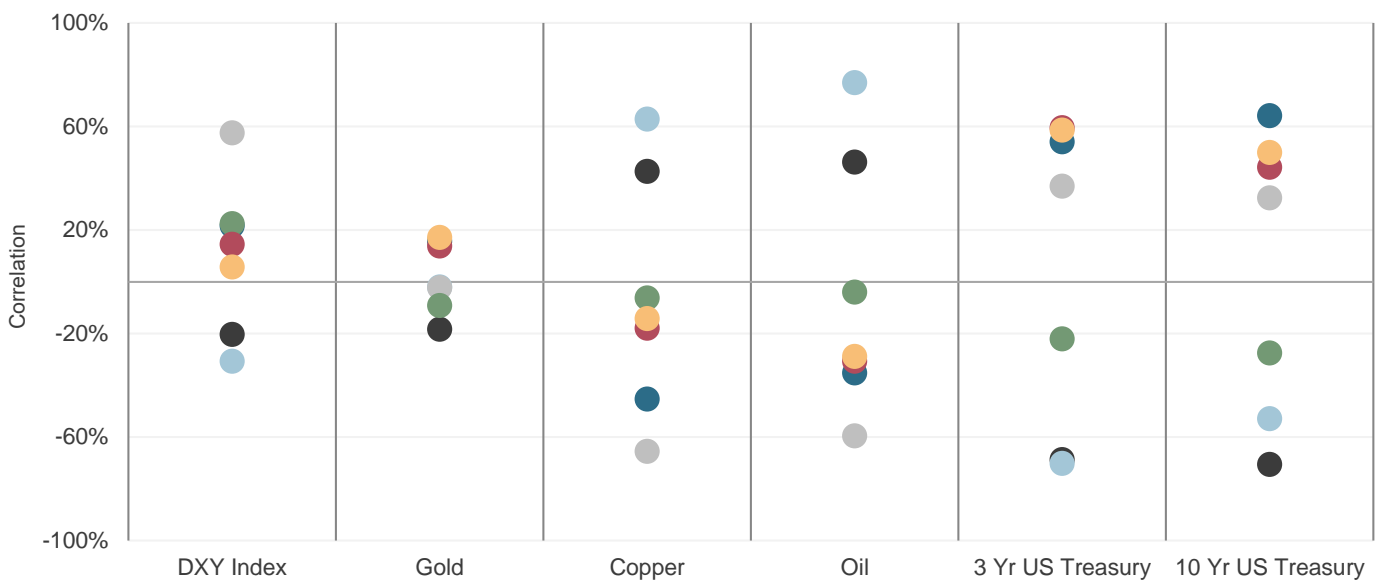
The positive correlations between moves in short- and long-dated US Treasury prices and Quality and Profitability returns have strengthened over the past two years, as have the negative correlations with Size and Value. The latter two factors are also more positively correlated with swings in oil and copper prices.



Since June 30, 2019



Since June 30, 2018



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020, 2019. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.



# US Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Prudential Financial	Financials	0.09%	0.27%
DXC Technology Company	Technology	0.02%	0.04%
Kohl's Corp	Consumer Services	0.01%	0.04%
Unum Group	Financials	0.01%	0.04%
Xerox Holdings	Technology	0.01%	0.03%

## Top 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Arconic Corporation	Basic Materials	0.01%	0.03%
Under Armour Class A	Consumer Goods	0.01%	0.04%
Under Armour Class C	Consumer Goods	0.01%	0.04%
Macys	Consumer Services	0.01%	0.04%
Ovintiv Inc	Oil & Gas	0.01%	0.06%

## Top 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Nvidia	Technology	0.84%	1.21%
Tesla	Consumer Goods	0.60%	0.82%
Regeneron Phar	Health Care	0.25%	0.38%
Advanced Micro Dev	Technology	0.23%	0.35%
Newmont Corporation	Basic Materials	0.18%	0.25%

## Top 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
Pepsico	Consumer Goods	0.68%	0.94%
Republic Services	Industrials	0.06%	0.09%
Waste Mgmt Inc	Industrials	0.17%	0.22%
Coca-Cola	Consumer Goods	0.64%	0.90%
XCEL Energy	Utilities	0.12%	0.17%

## Top 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Occidental Petroleum	Oil & Gas	0.06%	0.12%
Annaly Capital Management	Financials	0.03%	0.07%
Simon Property Group	Financials	0.08%	0.16%
Macys	Consumer Services	0.01%	0.02%
Park Hotels & Resorts	Financials	0.01%	0.02%

## Top 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
MarketAxess Holdings	Financials	0.07%	0.12%
Price (T. Rowe) Group	Financials	0.10%	0.17%
Biogen	Health Care	0.16%	0.26%
Nvidia	Technology	0.84%	1.31%
Copart Inc	Consumer Services	0.06%	0.10%

## Bottom 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Uber Technologies	Consumer Services	0.16%	0.00%
Lyft	Consumer Services	0.03%	0.00%
Amgen Pharmaceuticals	Health Care	0.06%	0.00%
Slack Technologies	Technology	0.04%	0.01%
Zillow Group CLC	Financials	0.03%	0.00%

## Bottom 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Microsoft Corp	Technology	5.68%	0.04%
Apple Inc.	Technology	5.56%	0.04%
Amazon.Com	Consumer Services	4.36%	0.03%
Facebook Class A	Technology	2.03%	0.02%
Alphabet Class C	Technology	1.56%	0.02%

## Bottom 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Norwegian Cruise Line	Consumer Services	0.02%	0.00%
United Airlines Holdings Inc	Consumer Services	0.01%	0.00%
Coty	Consumer Goods	0.00%	0.00%
Macys	Consumer Services	0.01%	0.00%
Ovintiv Inc	Oil & Gas	0.01%	0.00%

## Bottom 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
Uber Technologies	Consumer Services	0.16%	0.00%
Twilio	Technology	0.10%	0.00%
Exact Sciences	Health Care	0.05%	0.00%
Royal Caribbean Cruises	Consumer Services	0.03%	0.00%
Lyft	Consumer Services	0.03%	0.00%

## Bottom 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Amazon.Com	Consumer Services	4.36%	0.55%
Facebook Class A	Technology	2.03%	0.28%
Alphabet Class A	Technology	1.59%	0.21%
Alphabet Class C	Technology	1.56%	0.21%
Berkshire Hathaway B	Financials	0.89%	0.12%

## Bottom 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Wynn Resorts	Consumer Services	0.03%	0.00%
Live Nation Entertainment	Consumer Services	0.02%	0.00%
Uber Technologies	Consumer Services	0.16%	0.00%
SBA Communications	Financials	0.12%	0.00%
Targa Resources Corp.	Oil & Gas	0.02%	0.00%

Source: FTSE Russell and Refinitiv. All data as of June 30, 2019. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# US Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Mastercard CL A	Financials	0.97%	1.64%
Sysco Corp	Consumer Services	0.10%	0.16%
Waters Corp	Industrials	0.04%	0.07%
Cardinal Health	Health Care	0.06%	0.10%
S&P Global	Financials	0.30%	0.49%

## Top 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
MarketAxess Holdings	Financials	0.07%	0.13%
Rollins Inc	Consumer Services	0.02%	0.04%
Vertex Pharm	Health Care	0.28%	0.50%
Regeneron Phar	Health Care	0.25%	0.45%
Copart Inc	Consumer Services	0.06%	0.11%

## Bottom 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Uber Technologies	Consumer Services	0.16%	0.00%
Slack Technologies	Technology	0.04%	0.00%
Zillow Group CL C	Financials	0.03%	0.00%
Lyft	Consumer Services	0.03%	0.00%
Zillow Group	Financials	0.01%	0.00%

## Bottom 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
SBA Communications	Financials	0.12%	0.00%
Dell Technologies	Technology	0.03%	0.00%
VeriSign Inc	Technology	0.08%	0.00%
CDK Global	Technology	0.02%	0.00%
MSCI	Financials	0.10%	0.00%

3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

Appendix

Source: FTSE Russell and Refinitiv. All data as of June 30, 2019. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Market Maps

## Regional Factor Indicator Report



July 2020

### UK Factor Indicator Key Observations

- UK Size staged a V-shaped recovery in Q2, retaking the lead from faltering Low Vol for the year.
- Both Quality and Profitability gained ground in Q2, but Profitability remained well ahead of Quality for the year.
- Size benefited most from its large underweight in badly lagging Oil & Gas and an overweight in resilient Industrials.
- UK Low Vol and Profitability are more positively correlated with US Treasury prices today; and Value and Size are more negatively correlated. Unlike its developed peers, UK Quality is negatively correlated to US bonds.
- Correlations between oil and copper prices and Size and Value are more positive today, and more negative for Low Vol.

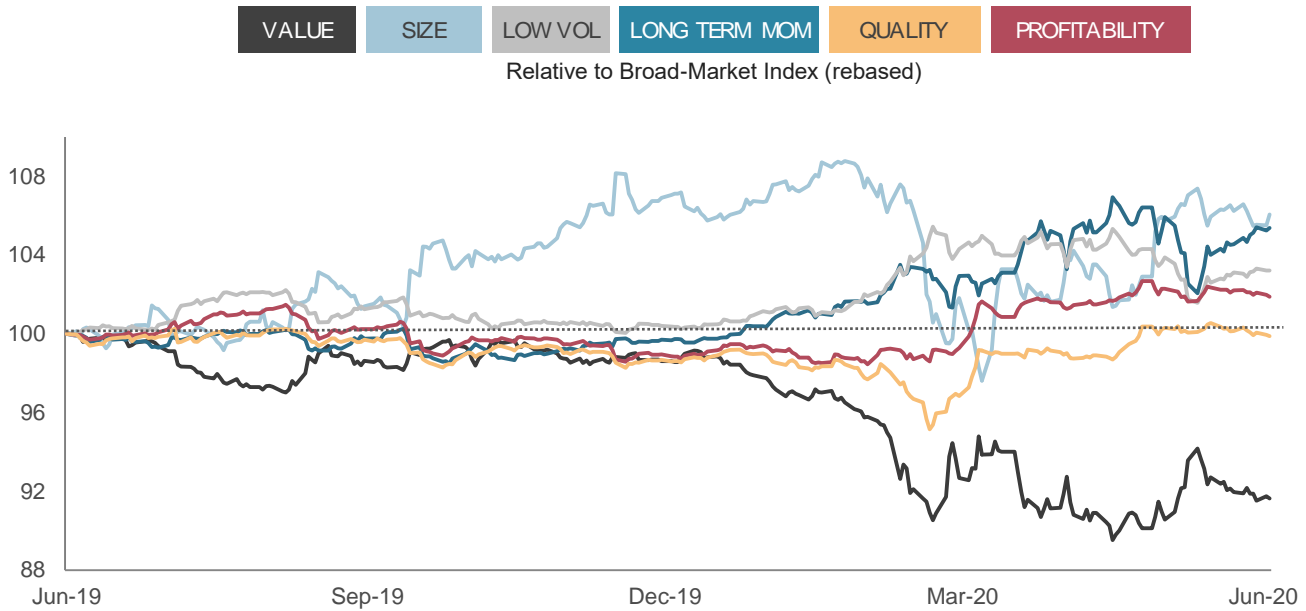
### TABLE OF CONTENTS

UK Factor Indicator Performance .....	20
UK Sector Exposure .....	20
Factor Component Performance .....	21
Value.....	21
Profitability .....	21
Leverage.....	22
Yield.....	22
Quality.....	22
Size.....	23
Long-term Momentum.....	23
Low Volatility.....	23
UK Macro Sensitivity .....	24
Top/Bottom Stock Exposure .....	25

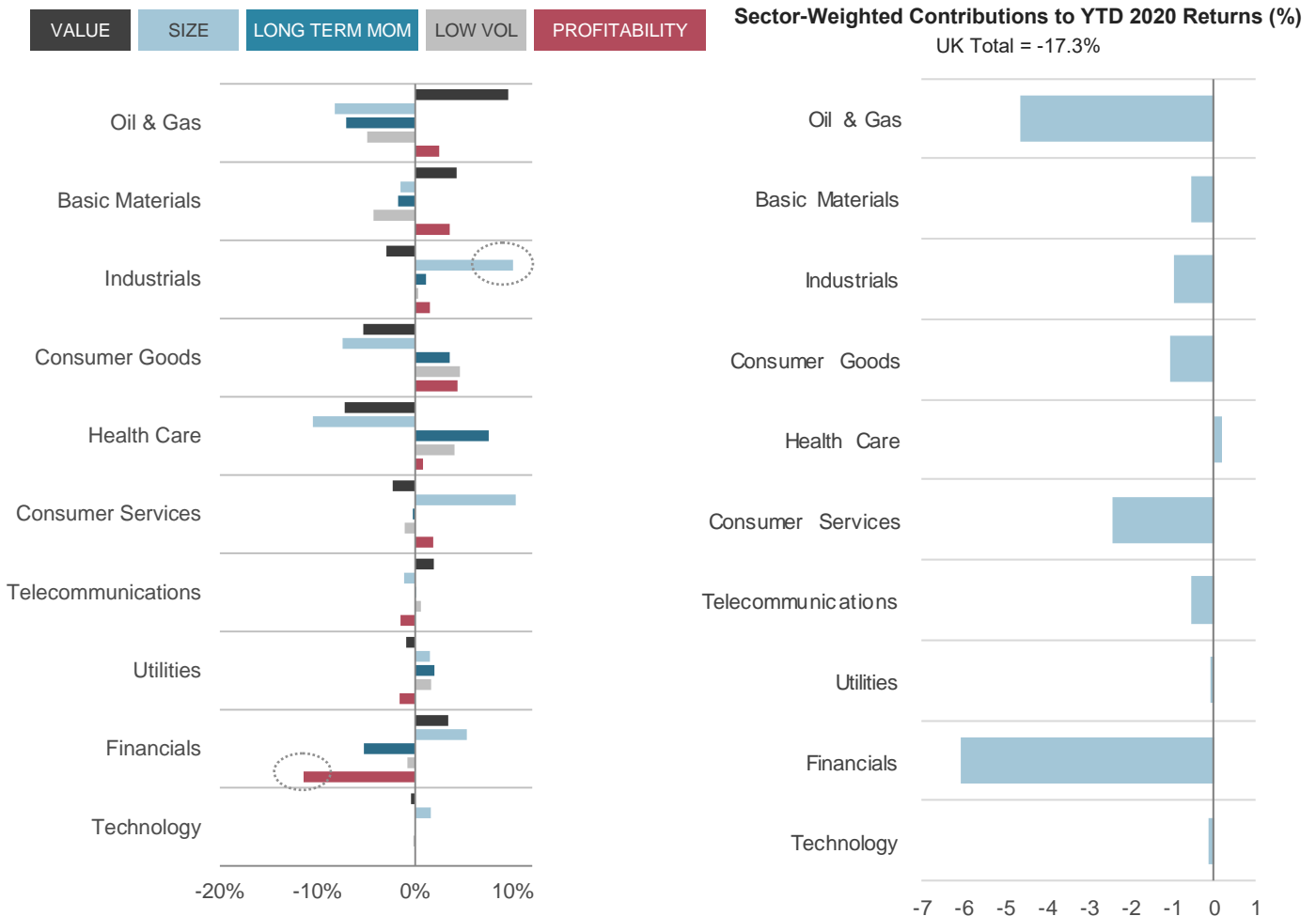
# UK Factor Indicator Performance & Sector Weights

## UK Size Reclaims Lead From Low Vol in Q2 Risk Rally

The UK remains an outlier in global factor behavior. Size retook the lead from Low Volatility in Q2 after collapsing into negative territory in March. And despite the newfound strength in defensive factors, Quality lags Profitability and Low Vol.



**UK Relative Factor Weight by Sector vs Return Contributions (Q2 2020):** Size reflects overweights in Industrials and Financials and an underweight in Oil. Profitability is overweight Consumer Goods and Materials and underweight in Financials.



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

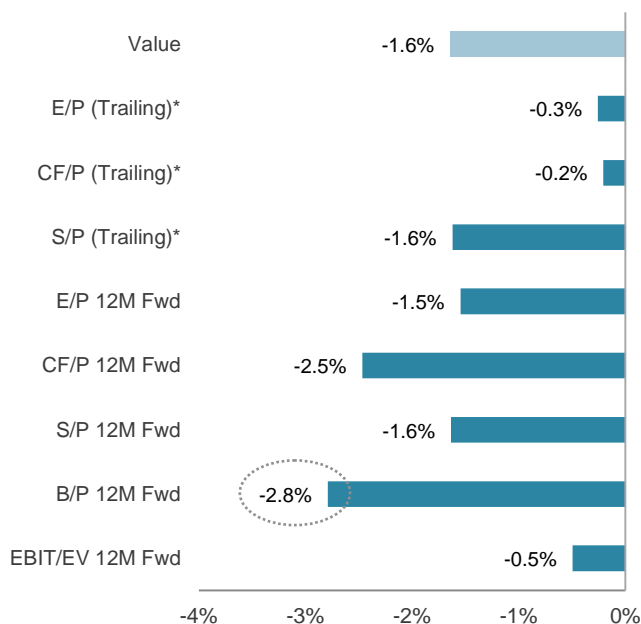
# UK Factor Component Performance

## Value Indicator

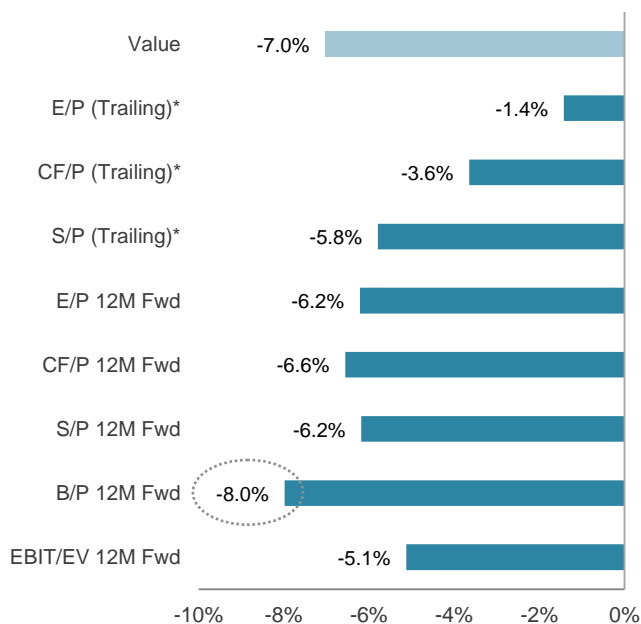
Value lagged in Q2, extending its long-standing underperformance. All valuation metrics contributed to the pullback, with forward multiples, led by price/book value and cash flow, underperforming trailing metrics in Q2 and YTD.

UK

Q2 2020 Relative Component Returns



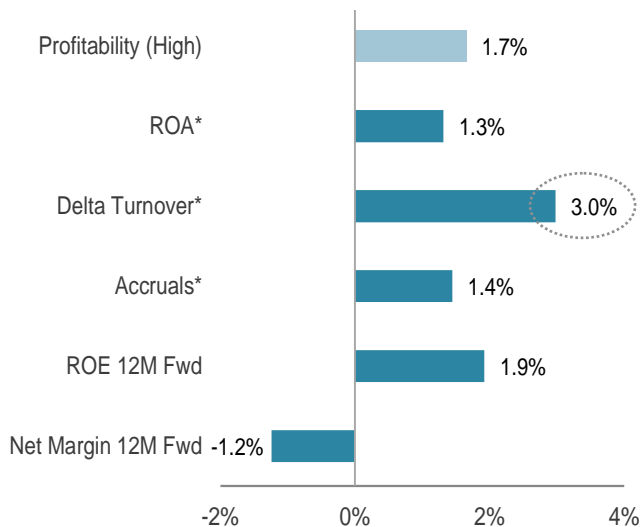
YTD 2020 Relative Component Returns



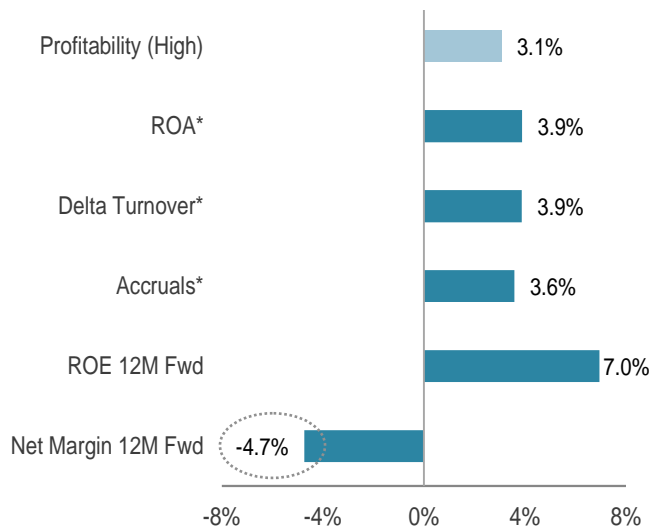
## Profitability (High) Indicator

Profitability edged higher in Q2 and YTD, as strong relative gains in forward ROE and asset turnover outpaced other components, particularly forward net margins, in both periods.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

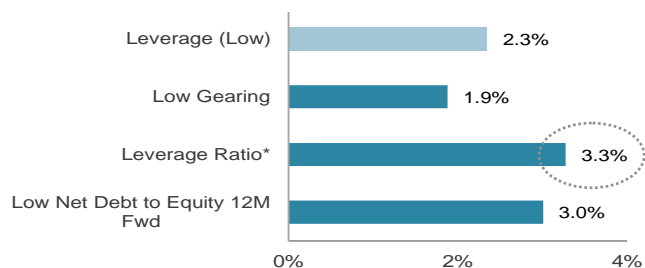
# UK Factor Component Performance

## Leverage (Low) Indicator

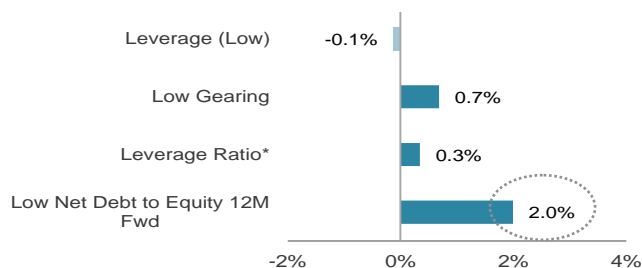
Leverage strongly outperformed in Q2, led by the leverage ratio component, erasing most of its losses for the YTD. The leverage ratio component led the factor's Q2 gains, while low net debt/equity is far ahead for the year so far.

UK

Q2 2020 Relative Component Returns



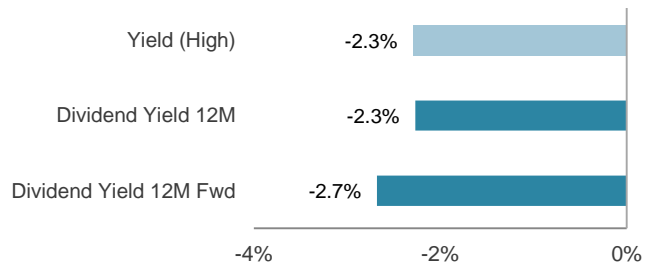
YTD 2020 Relative Component Returns



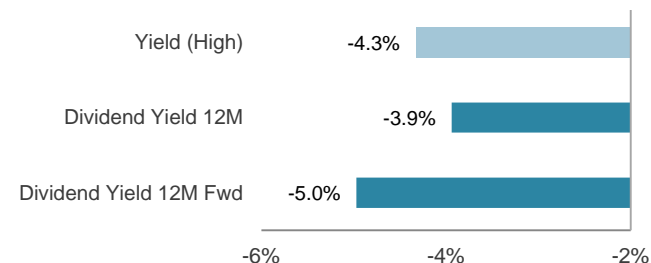
## Yield (High) Indicator

Yield lost ground in Q2, extending its YTD underperformance. The forward dividend yield component lagged its trailing counterpart in both periods.

Q2 2020 Relative Component Returns



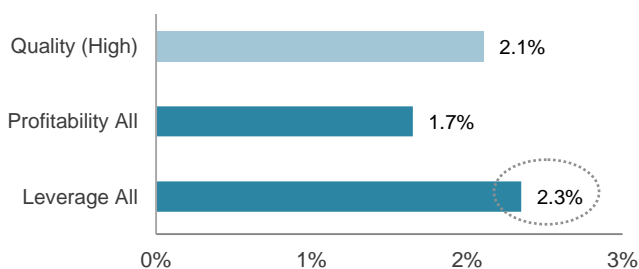
YTD 2020 Relative Component Returns



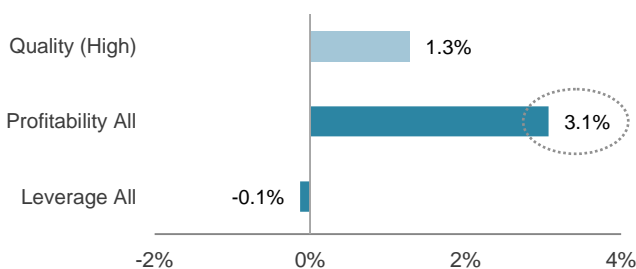
## Quality (High) Indicator

UK Quality rallied strongly in Q2, boosted by a strong rebound in the leverage component from earlier losses. This showing pushed Quality ahead for the YTD, with the profitability component outperforming the leverage component.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# UK Factor Component Performance

## Size (Smaller Cap) Indicator

UK (smaller-cap) Size staged a dramatic comeback in Q2, recouping much of the ground lost in the February/March pandemic panic and placing it back in the lead among UK factors for the 12-month period.

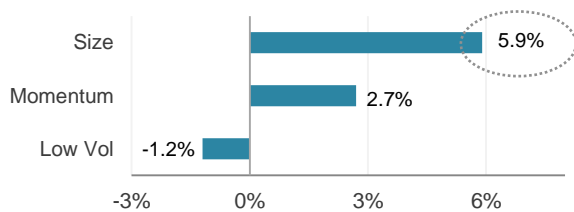
## Long-Term Momentum Indicator

Momentum rebounded from its sell-off in May, outperforming for the Q2 and YTD.

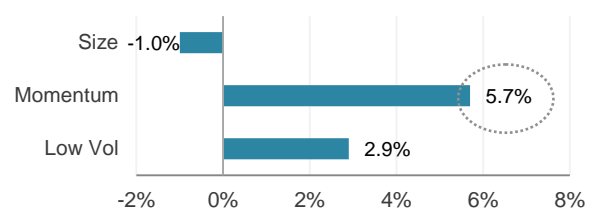
## Low Volatility Indicator

The robust outperformance of Low Volatility in Q1 faded in Q2, trimming its lead for the year so far.

**Size, Momentum and Volatility  
Q2 2020 Relative Component Returns**



**UK Size, Momentum and Volatility  
YTD 2020 Relative Component Returns**

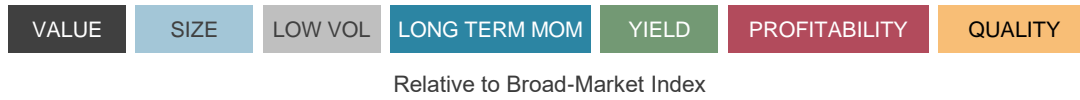


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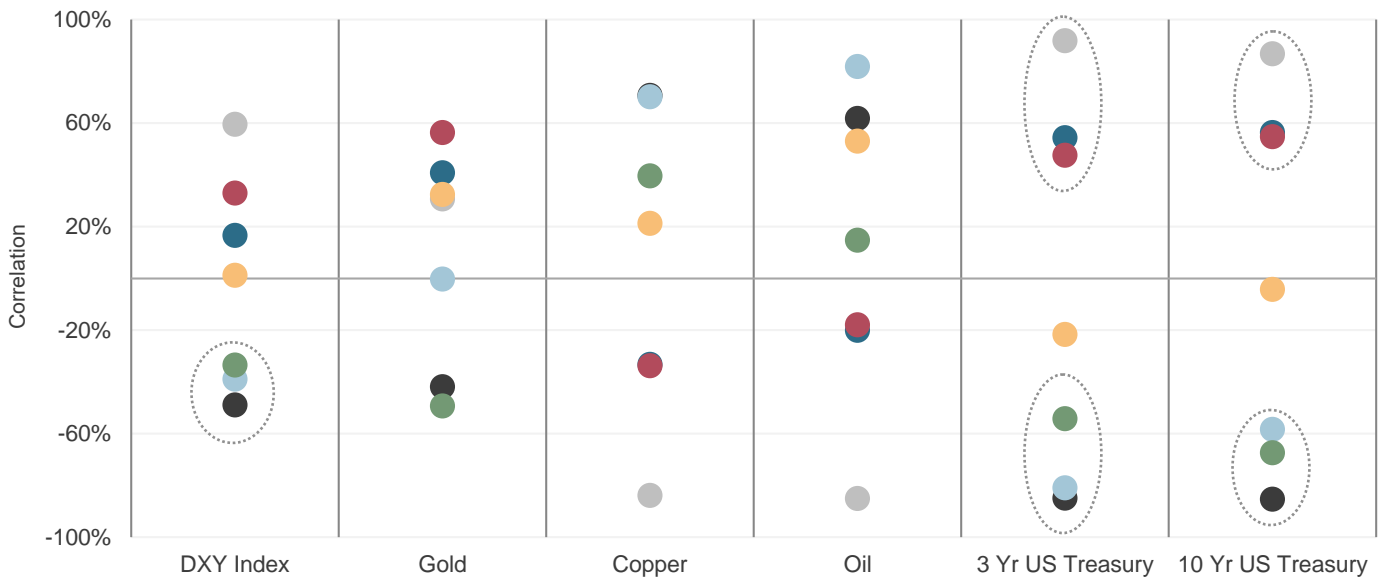
# UK Factor Indicator Macro Sensitivity

## Macro Sensitivity

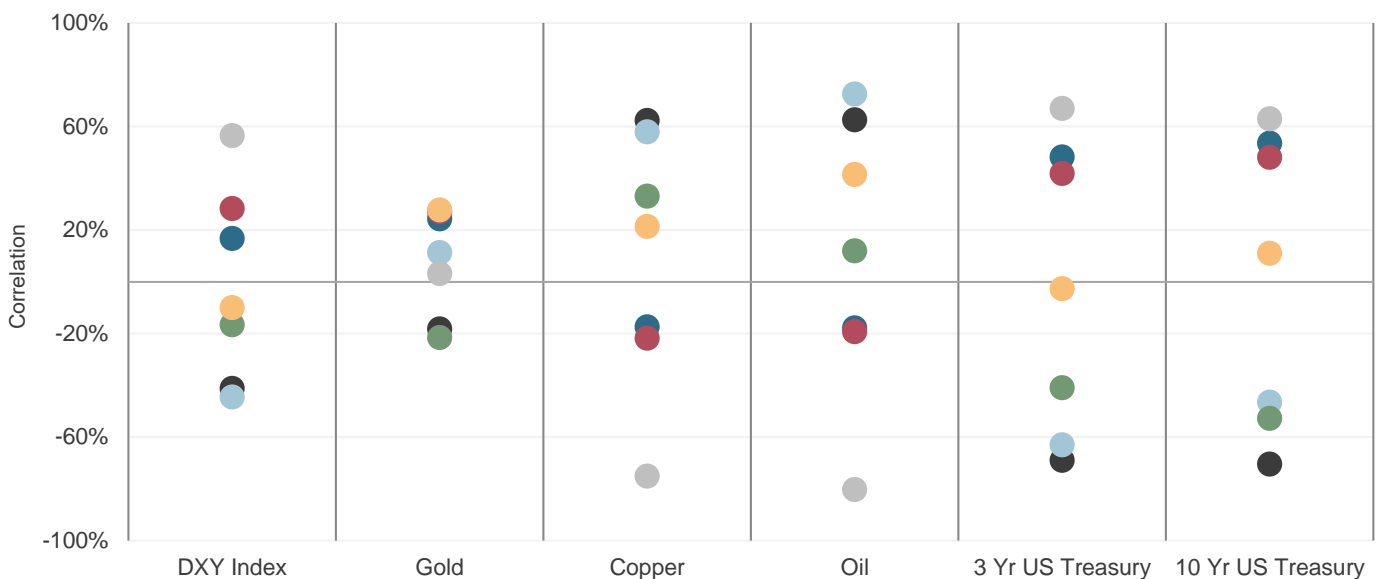
The positive correlations between US Treasury prices and Low Volatility and Profitability performance have intensified over the past two years, as have negative correlations with Value and Size. Notably, correlations with Quality has grown more negative. Size and Value are also more positively correlated with oil prices, while both are negatively correlated to the USD.



Since June 30, 2019



Since June 30, 2018



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.



# UK Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Aviva	Financials	0.66%	1.46%
Cineworld Group	Consumer Services	0.04%	0.10%
Investec	Financials	0.07%	0.15%
Centrica	Utilities	0.14%	0.33%
Sainsbury (J)	Consumer Services	0.21%	0.43%

## Top 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Investec	Financials	0.07%	0.33%
Cineworld Group	Consumer Services	0.04%	0.23%
Ninety One Plc	Financials	0.04%	0.21%
Virgin Money UK	Financials	0.07%	0.36%
Wood Group (John)	Oil & Gas	0.08%	0.43%

## Top 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Polymetal International	Basic Materials	0.34%	0.57%
Flutter Entertainment	Consumer Services	0.79%	1.50%
Ocado Group	Consumer Services	0.58%	0.99%
Avast	Technology	0.18%	0.30%
Penon Group	Utilities	0.29%	0.54%

## Top 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
National Grid	Utilities	2.14%	3.03%
GlaxoSmithKline	Health Care	4.99%	7.18%
Croda International	Basic Materials	0.40%	0.57%
Segro	Financials	0.66%	0.91%
Admiral Group	Financials	0.30%	0.42%

## Top 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Micro Focus International	Technology	0.09%	0.17%
Cineworld Group	Consumer Services	0.04%	0.08%
Evraz	Basic Materials	0.10%	0.18%
Investec	Financials	0.07%	0.12%
Centrica	Utilities	0.14%	0.27%

## Top 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Hargreaves Lansdown	Financials	0.36%	0.74%
Howden Joinery Group	Consumer Services	0.19%	0.41%
Ashmore Group	Financials	0.12%	0.25%
Persimmon	Consumer Goods	0.45%	0.87%
Rightmove	Consumer Services	0.29%	0.59%

## Bottom 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Ocado Group	Consumer Services	0.58%	0.07%
Just Eat Takeaway.com	Consumer Services	0.62%	0.11%
Hargreaves Lansdown	Financials	0.36%	0.09%
Halma	Industrials	0.54%	0.13%
Aveva Group	Technology	0.16%	0.04%

## Bottom 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
AstraZeneca	Health Care	6.83%	0.13%
GlaxoSmithKline	Health Care	4.99%	0.21%
HSBC Hldgs	Financials	4.77%	0.27%
British American Tobacco	Consumer Goods	4.38%	0.26%
Diageo	Consumer Goods	3.80%	0.32%

## Bottom 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Micro Focus International	Technology	0.09%	0.00%
Cineworld Group	Consumer Services	0.04%	0.00%
Carnival	Consumer Services	0.09%	0.01%
Rolls-Royce Holdings	Industrials	0.30%	0.02%
Virgin Money UK	Financials	0.07%	0.01%

## Bottom 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
Carnival	Consumer Services	0.09%	0.00%
Kaz Minerals	Basic Materials	0.07%	0.00%
Ocado Group	Consumer Services	0.58%	0.01%
TUI AG	Consumer Services	0.10%	0.00%
JD Sports Fashion	Consumer Services	0.17%	0.00%

## Bottom 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Just Eat Takeaway.com	Consumer Services	0.62%	0.00%
Ocado Group	Consumer Services	0.58%	0.00%
JD Sports Fashion	Consumer Services	0.17%	0.00%
Halma	Industrials	0.54%	0.02%
London Stock Exchange Group	Financials	1.63%	0.10%

## Bottom 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Ocado Group	Consumer Services	0.58%	0.02%
International Consolidated Airlines Group	Consumer Services	0.06%	0.00%
Quilter	Financials	0.16%	0.01%
Virgin Money UK	Financials	0.07%	0.01%
Lloyds Banking Group	Financials	1.36%	0.11%

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Equity market data based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1. Past performance is no guarantee of future results. Please see the Appendix and end for important disclosures and information. For professional investors only.

# UK Factor Indicator Top/Bottom Stocks (Ranked Z-Scores)

## Top 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Hargreaves Lansdown	Financials	0.36%	0.65%
RELX	Consumer Services	2.15%	3.72%
Centrica	Utilities	0.14%	0.26%
Glencore	Basic Materials	1.14%	1.90%
Rolls-Royce Holdings	Industrials	0.30%	0.59%

## Top 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
Ninety One Plc	Financials	0.04%	0.11%
Rightmove	Consumer Services	0.29%	0.76%
3i Group	Financials	0.49%	1.21%
Ashmore Group	Financials	0.12%	0.30%
Howden Joinery Group	Consumer Services	0.19%	0.50%

## Bottom 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Just Eat Takeaway.com	Consumer Services	0.62%	0.00%
Ocado Group	Consumer Services	0.58%	0.00%
British Land Co	Financials	0.22%	0.00%
International Consolidated Airlines Group	Consumer Services	0.06%	0.00%
Land Securities Group	Financials	0.24%	0.01%

## Bottom 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
G4S	Industrials	0.11%	0.01%
InterContinental Hotels Group	Consumer Services	0.40%	0.06%
Imperial Brands	Consumer Goods	0.90%	0.12%
Severn Trent	Utilities	0.37%	0.06%
London Stock Exchange Group	Financials	1.63%	0.26%

3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

Appendix

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Equity market data based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1. Past performance is no guarantee of future results. Please see the Appendix and end for important disclosures and information. For professional investors only.

# Market Maps

## Regional Factor Indicator Report



July 2020

### Europe ex UK Factor Indicator Key Observations

- Despite Q2 sell-offs, Quality, Profitability and Low Vol retained leadership for the YTD as rebounds in Size and Value lost steam in June.
- Underweights in lagging Financials and overweights in outperforming Health Care were key drivers of Quality and Low Vol outperformance this year.
- The strong investor preference for the stocks of financially healthy companies also helped buoy Quality returns YTD.
- Quality and Profitability have grown far more positively correlated to moves in US Treasury prices, and Value and Size more negatively correlated.
- Sensitivities have also increased between swings in oil prices and returns of defensives (negative) and riskier factors (positive).

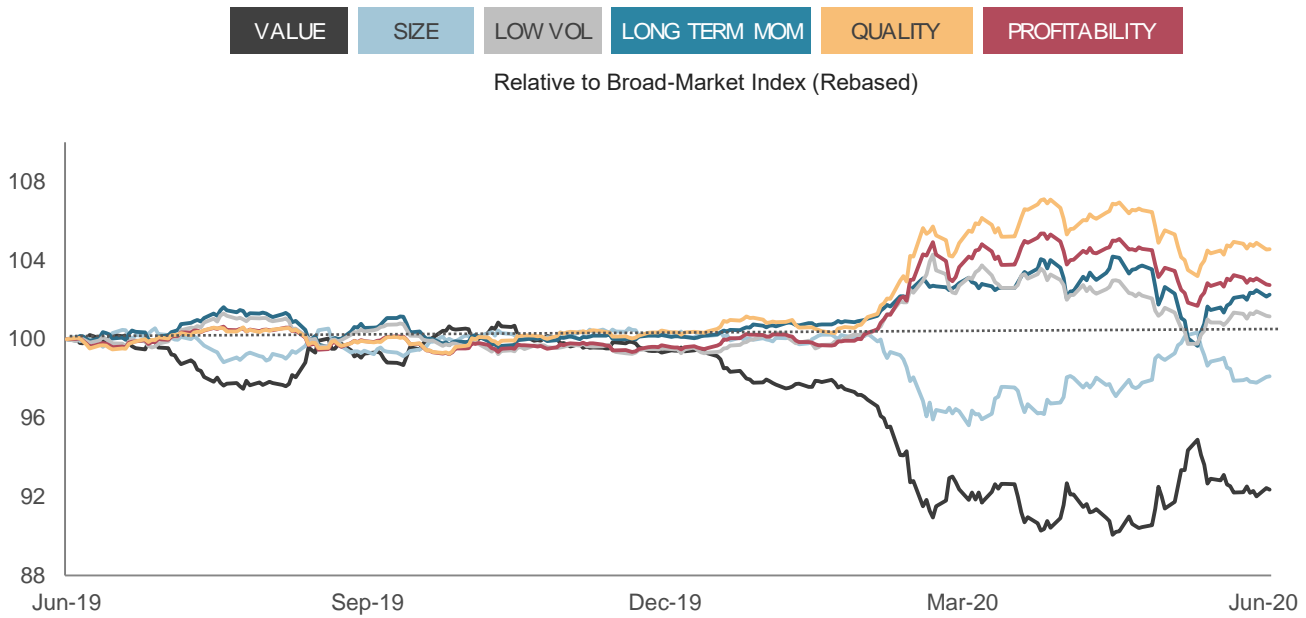
### TABLE OF CONTENTS

Europe ex UK Factor Indicator Performance	28
Europe ex UK Sector Exposure	28
Factor Component Performance	29
Value	29
Profitability	29
Leverage	30
Yield	30
Quality	30
Size	31
Long-Term Momentum	31
Low Volatility	31
Europe ex UK Macro Sensitivity	32
Top/Bottom Stock Exposure	33

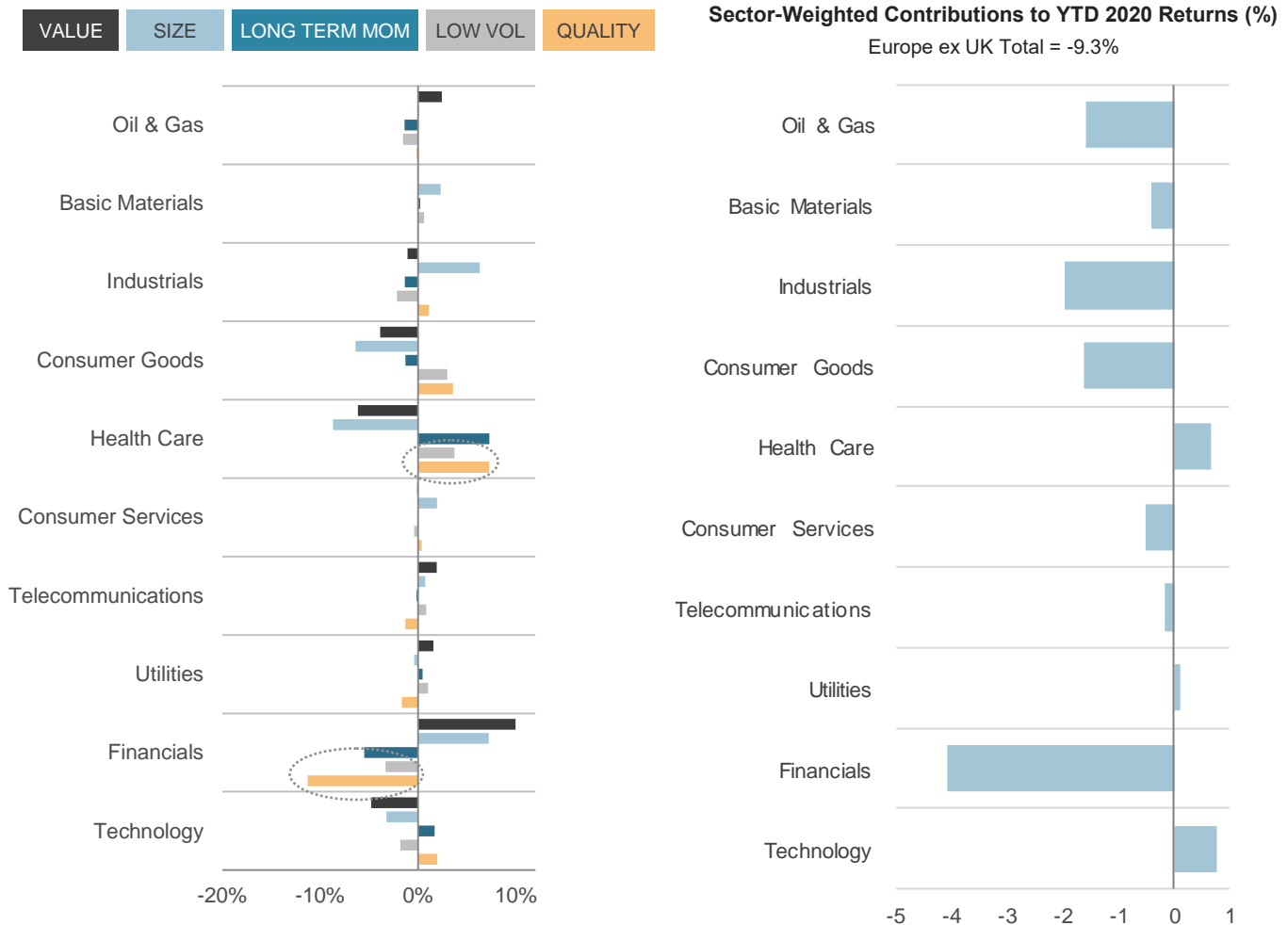
# Europe ex UK Factor Indicator Performance & Sector Weights

## Defensives Still Rule Despite Risk-Rally Challenges

Quality, Profitability and Low Volatility sold off in April/May amid a strong rotation into riskier Size and Value. But these defensive factors regained favor as the risk rally cooled in June, and all remained outperformers for the YTD.



**Europe ex UK Relative Factor Weight by Sector vs Return Contributions (Q2 2020):** Quality and Low Vol returns capture overweights in Health Care and underweights in Financials. Size and Value have opposite exposures to those sectors.



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

3M Regional Returns  
YTD Regional Returns  
Factor Rotation History  
Macro Drivers  
US  
UK  
EU ex UK  
Japan  
AP ex Japan  
EM  
Appendix

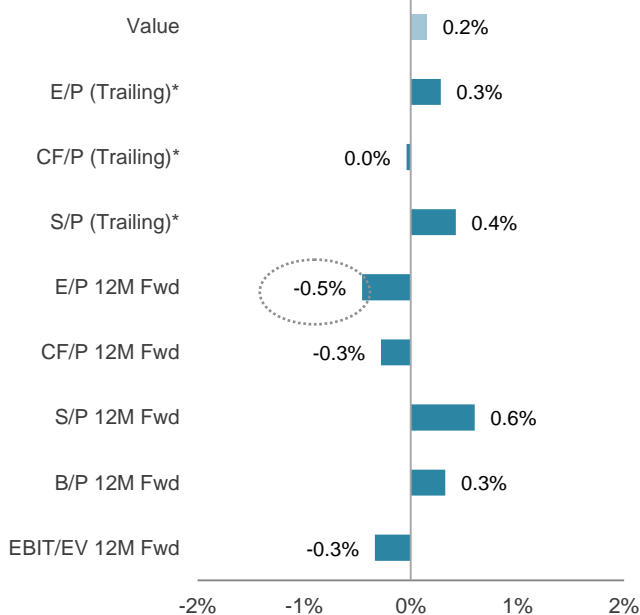
# Europe ex UK Factor Indicator Component Performance

## Value Indicator

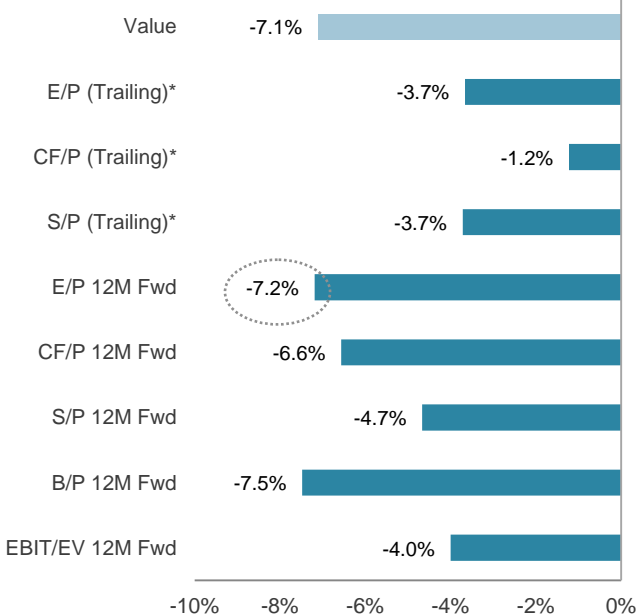
Despite a short-lived rebound in April/May, Value remained Europe's worst-performing factor for the YTD. Forward valuation metrics underperformed trailing ratios, with price/earnings and book value among the biggest laggards.

EU ex UK

Q2 2020 Relative Component Returns



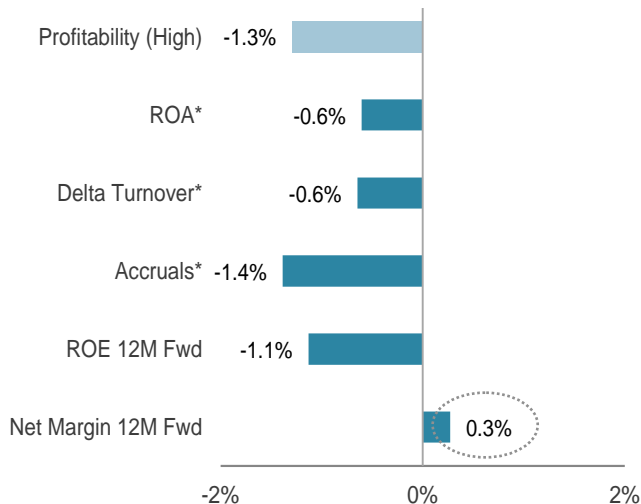
YTD 2020 Relative Component Returns



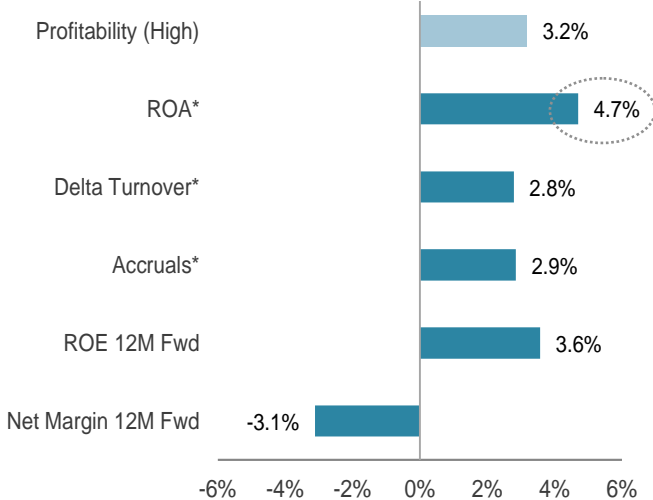
## Profitability (High) Indicator

Despite a Q2 sell-off, with all but the net margin component posting losses, Profitability remained strongly ahead for the YTD, led by strong relative gains in ROA and forward ROE.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

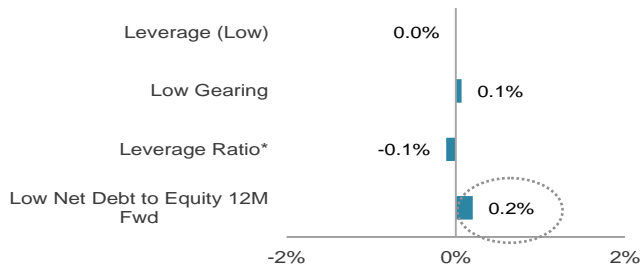
# Europe ex UK Factor Indicator Component Performance

## Leverage (Low) Indicator

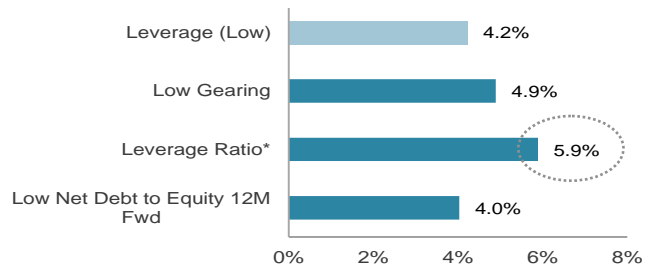
Leverage performed in line with the broad market in Q2, buttressing the factor's healthy relative gains for the YTD. Despite its modest Q2 setback, the leverage ratio remained by far the best-performing component this year.

EU ex UK

Q2 Relative Component Returns



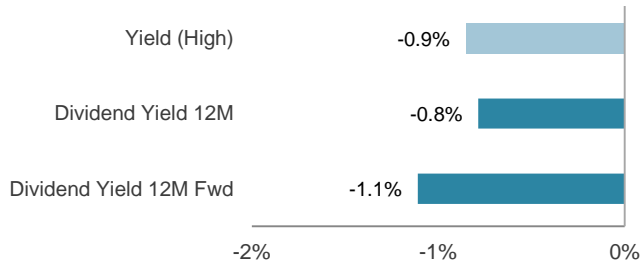
YTD 2020 Relative Component Returns



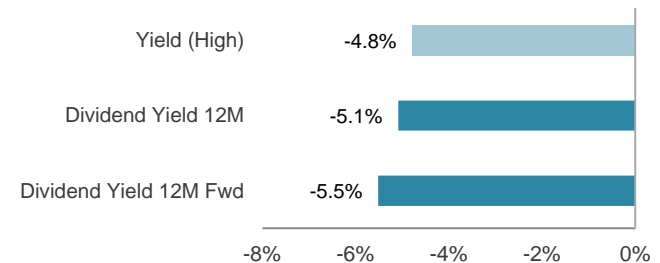
## Yield (High) Indicator

Yield continued to lose ground in Q2, adding to its YTD underperformance. The forward dividend yield component lagged the trailing component in both periods.

Q2 2020 Relative Component Returns



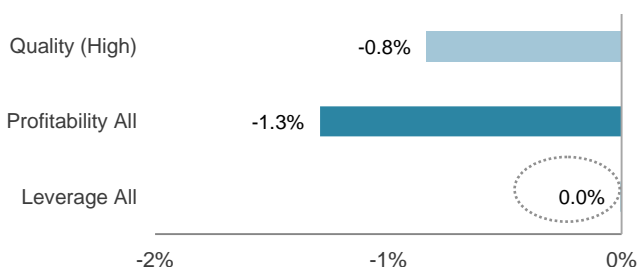
YTD 2020 Relative Component Returns



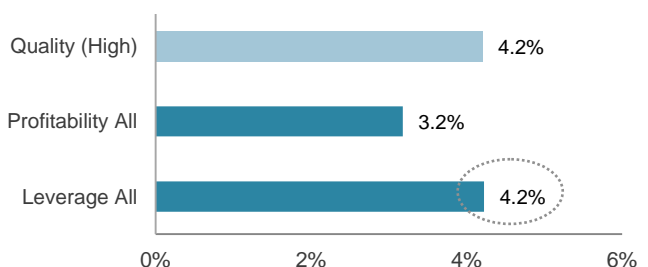
## Quality (High) Indicator

Despite retreating in Q2, Quality remained Europe's top-performing factor for the YTD. The leverage component outperformed the profitability component in both periods.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.  
Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Europe ex UK Factor Indicator Component Performance

## Size (Smaller Cap) Indicator

Europe ex UK (smaller cap) Size rebounded strongly in Q2, trimming its underperformance for the YTD.

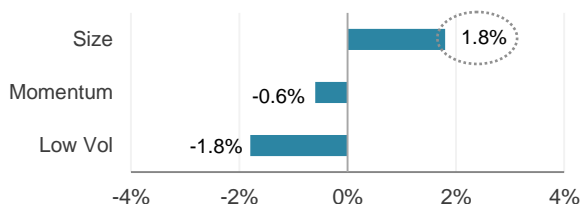
## Long-Term Momentum Indicator

Momentum reversed course in Q2, as previously defensive winners lost ground, trimming its YTD outperformance.

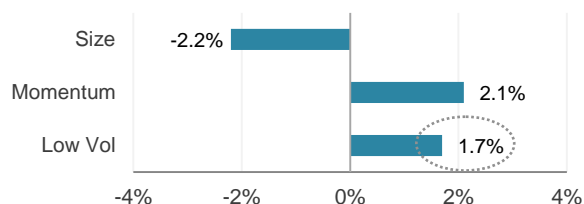
## Low Volatility Indicator

Low Volatility sold off in Q2, clipping its YTD outperformance.

**EU ex UK Size, Momentum and Volatility  
Q2 2020 Relative Component Returns**



**EU ex UK Size, Momentum and Volatility  
YTD 2020 Relative Component Returns**



3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

**EU ex UK**

Japan

AP ex Japan

EM

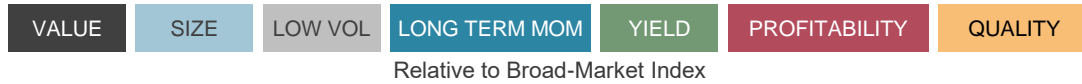
Appendix

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

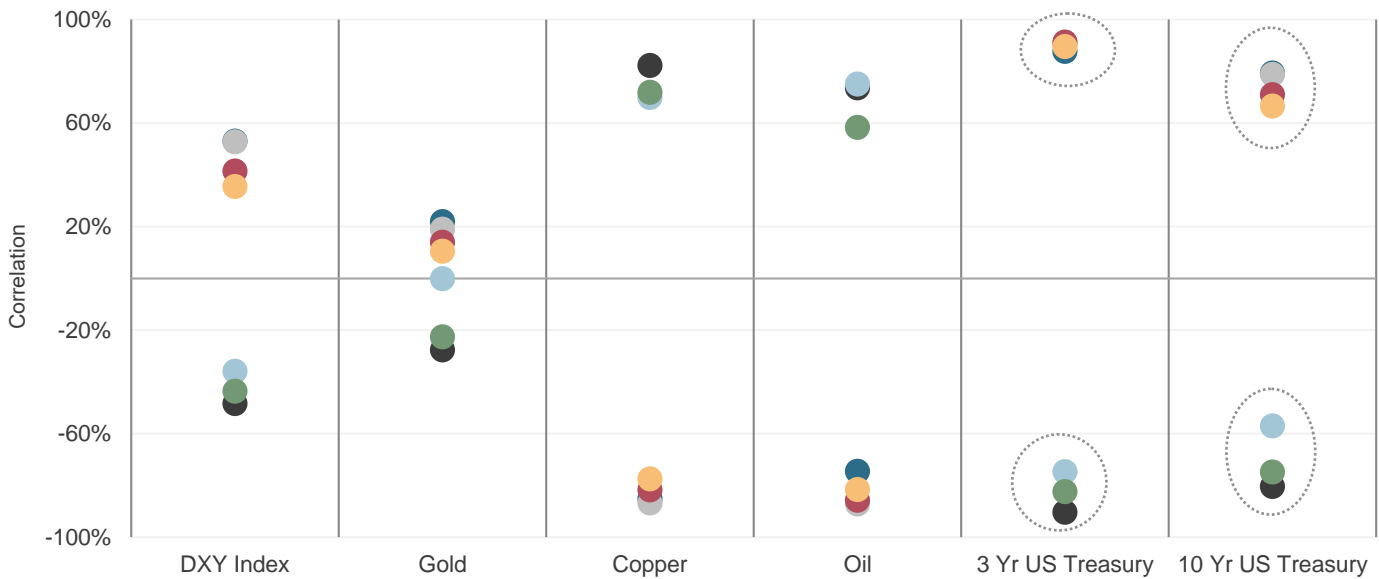
# Europe ex UK Factor Indicator Macro Sensitivity

## Macro Sensitivity

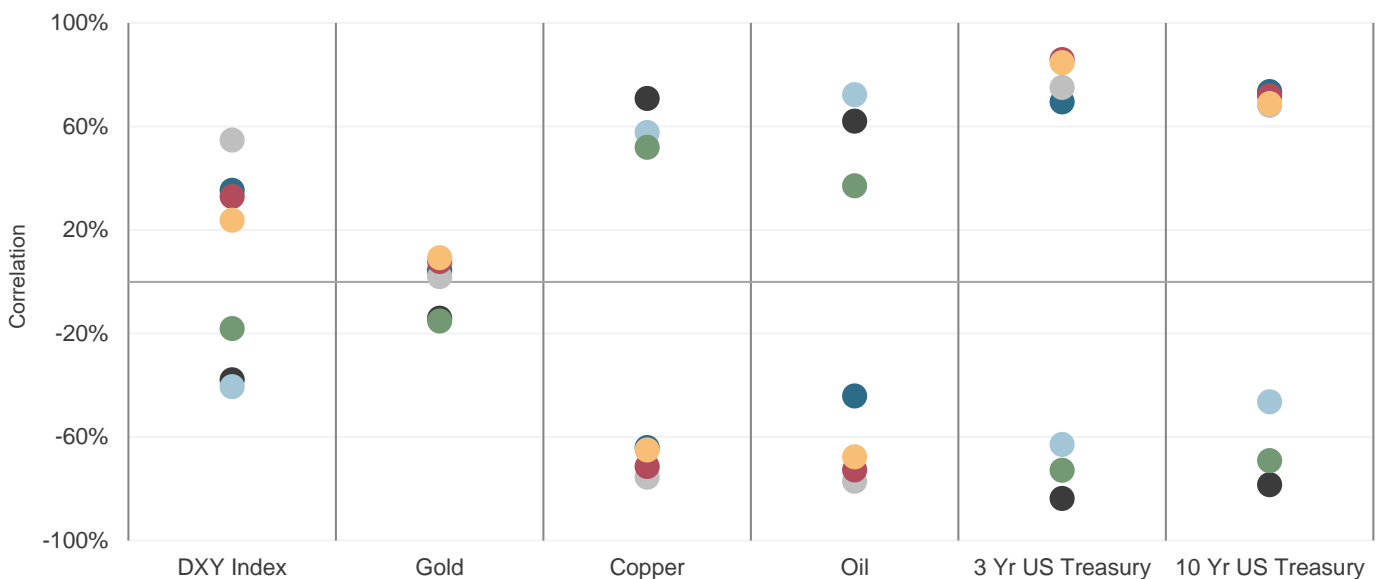
As in the US and UK, positive correlations between moves in US Treasury prices and European Quality, Profitability and Low Volatility have strengthened over the past two years, as have their negative correlations with Value and Size. Sensitivities have also increased between commodity price swings and returns of Size and Value (positive) and Low Vol (negative).



Since June 30, 2019



Since June 30, 2018



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.



# Europe ex UK Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Fiat Chrysler Automobiles NV	Consumer Goods	0.17%	0.41%
Peugeot	Consumer Goods	0.14%	0.32%
Exor NV	Financials	0.09%	0.24%
Polska Grupa Energetyczna S	Utilities	0.02%	0.06%
Banco De Sabadell	Financials	0.03%	0.08%

## Top 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Buzzi Unicem Rsp	Industrials	0.01%	0.04%
Svenska Handelsbk B	Financials	0.01%	0.03%
SEB C	Financials	0.00%	0.01%
Altice Europe NV B	Telecommunications	0.00%	0.01%
SCA A	Basic Materials	0.00%	0.02%

## Top 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Delivery Hero AG	Consumer Services	0.22%	0.39%
Galapagos Genomics NV	Health Care	0.14%	0.27%
Asm Intl	Technology	0.12%	0.19%
CD Projekt SA	Consumer Goods	0.10%	0.17%
Ambu A/S	Health Care	0.08%	0.16%

## Top 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
Swiss Prime Site	Financials	0.11%	0.17%
Banque Cantonale Vaudoise	Financials	0.04%	0.06%
Nestle	Consumer Goods	5.06%	7.84%
Swisscom	Telecommunications	0.20%	0.31%
Givaudan N	Basic Materials	0.53%	0.78%

## Top 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Unibail Rodamco Westfield	Financials	0.12%	0.24%
Aegon NV	Financials	0.08%	0.14%
AIB Group	Financials	0.02%	0.03%
Eutelsat Communications	Consumer Services	0.03%	0.05%
Klepierre	Financials	0.06%	0.11%

## Top 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Adyen	Industrials	0.60%	1.04%
EQT Partners AB	Financials	0.06%	0.09%
Zardoya Otis	Industrials	0.02%	0.03%
Partners Group AG	Financials	0.23%	0.39%
Investor A	Financials	0.11%	0.19%

## Bottom 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Argenx S.E	Health Care	0.16%	0.01%
Delivery Hero AG	Consumer Services	0.22%	0.02%
Rocket Internet SE	Financials	0.02%	0.00%
Adyen	Industrials	0.60%	0.11%
Ambu A/S	Health Care	0.08%	0.02%

## Bottom 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Nestle	Consumer Goods	5.06%	0.03%
Roche Hlds (GENUS)	Health Care	3.74%	0.03%
LVM H	Consumer Goods	1.68%	0.01%
Novartis (REGD)	Health Care	3.10%	0.03%
L'Oreal	Consumer Goods	1.18%	0.02%

## Bottom 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
AIB Group	Financials	0.02%	0.00%
Dufry	Consumer Services	0.01%	0.00%
TechnipFMC	Oil & Gas	0.05%	0.00%
Renault	Consumer Goods	0.07%	0.00%
Bank Of Ireland Group	Financials	0.03%	0.00%

## Bottom 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
Arcelor Mittal	Basic Materials	0.10%	0.00%
Altice Europe NV A	Telecommunications	0.03%	0.00%
VARTA AG	Consumer Goods	0.02%	0.00%
AIB Group	Financials	0.02%	0.00%
Altice Europe NV B	Telecommunications	0.00%	0.00%

## Bottom 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Prosus	Technology	0.62%	0.01%
Adyen	Industrials	0.60%	0.01%
Genmab	Health Care	0.30%	0.00%
Cellnex Telecom SAU	Telecommunications	0.25%	0.00%
Delivery Hero AG	Consumer Services	0.22%	0.00%

## Bottom 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Dufry	Consumer Services	0.01%	0.00%
Deutsche Bank	Financials	0.30%	0.00%
Oci NV	Basic Materials	0.02%	0.00%
Cellnex Telecom SAU	Telecommunications	0.25%	0.01%
Deutsche Lufthansa AG	Consumer Services	0.04%	0.00%

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Europe ex UK Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Partners Group AG	Financials	0.23%	0.39%
Sofina	Financials	0.06%	0.11%
Latour Investment B	Financials	0.03%	0.06%
Swedish Match	Consumer Goods	0.18%	0.29%
Zardoya Otis	Industrials	0.02%	0.03%

## Bottom 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Deutsche Bank	Financials	0.30%	0.00%
Argenx S.E	Health Care	0.16%	0.00%
Dufry	Consumer Services	0.01%	0.00%
Galapagos Genomics NV	Health Care	0.14%	0.00%
DSV Panalpina	Industrials	0.38%	0.00%

## Top 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
Investor A	Financials	0.11%	0.21%
SEB C	Financials	0.00%	0.01%
Kinnevik AB	Financials	0.10%	0.18%
Industrivarden AB C Free	Financials	0.06%	0.11%
CD Projekt SA	Consumer Goods	0.10%	0.18%

## Bottom 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
Oci NV	Basic Materials	0.02%	0.00%
Ald SA	Industrials	0.01%	0.00%
Lundin Energy	Oil & Gas	0.07%	0.00%
Swedish Match	Consumer Goods	0.18%	0.01%
Atlantia	Industrials	0.12%	0.01%

3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

Appendix

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.



July 2020

## Japan Factor Indicator Key Observations

- Quality and Profitability were largely unscathed by the rebounds in Size and Value in May, and significantly extended their outperformance for the year.
- Low Vol suffered most in the Q2 risk rally, joining Value and Size as laggards for the YTD.
- Quality benefited most from its large underweight in lagging Financials and overweight in outperforming Health Care, as well as the preference for less-indebted stocks.
- Defensive factors have grown far more positively correlated with US Treasury bond shifts, and Value and Yield more negatively correlated.
- Interestingly, unlike elsewhere, Size has not shown much sensitivity to shifts in US Treasuries or to oil and copper prices.

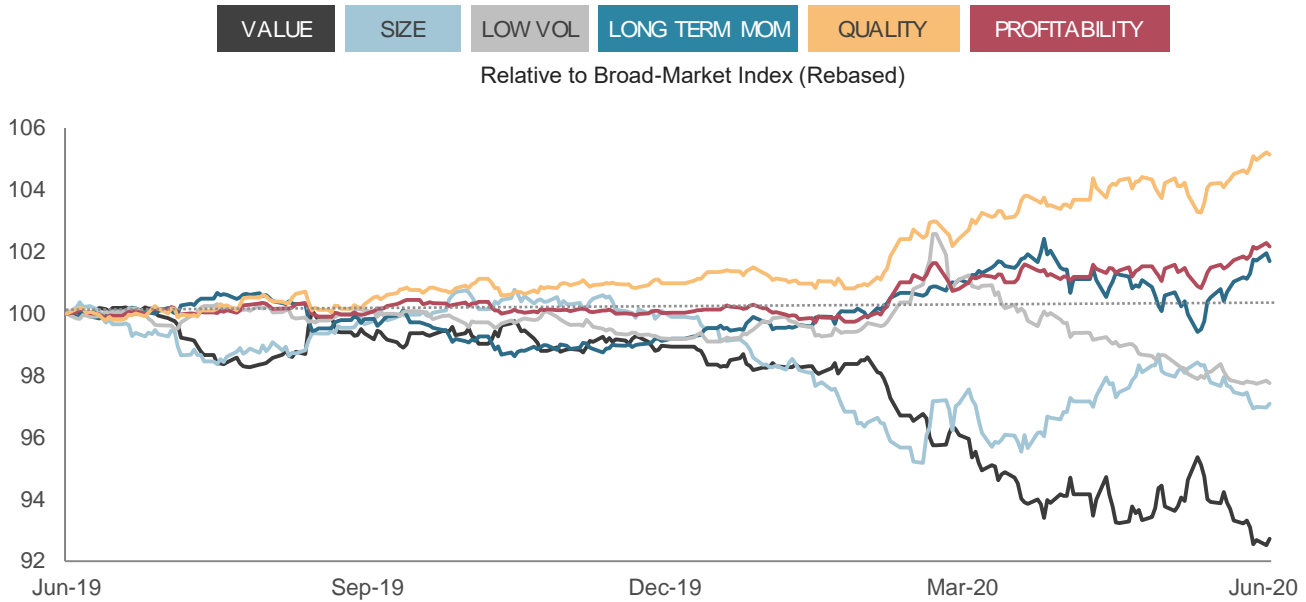
## TABLE OF CONTENTS

Japan Factor Indicator Performance .....	36
Japan Sector Exposure .....	36
Factor Component Performance .....	37
Value .....	37
Profitability .....	37
Leverage .....	38
Yield .....	38
Quality .....	38
Size .....	39
Long-Term Momentum ..	39
Low Volatility.....	39
Japan Macro Sensitivity .....	40
Top/Bottom Stock Exposure.....	41

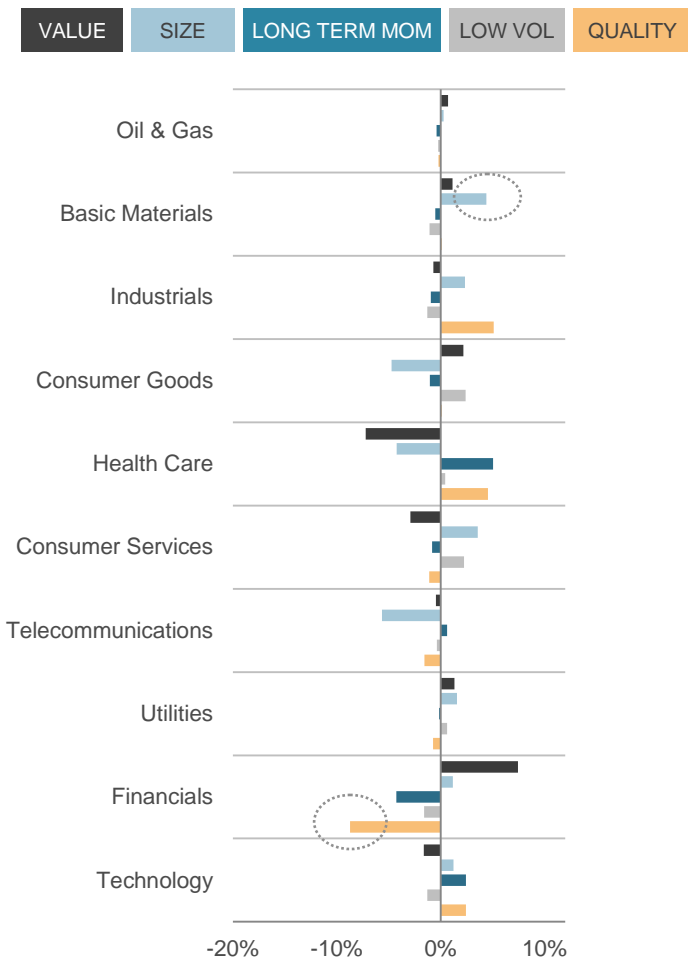
# Japan Factor Indicator Performance & Sector Weights

## Quality Bias Defies Risk-On Rotation, but Low Vol Retreats

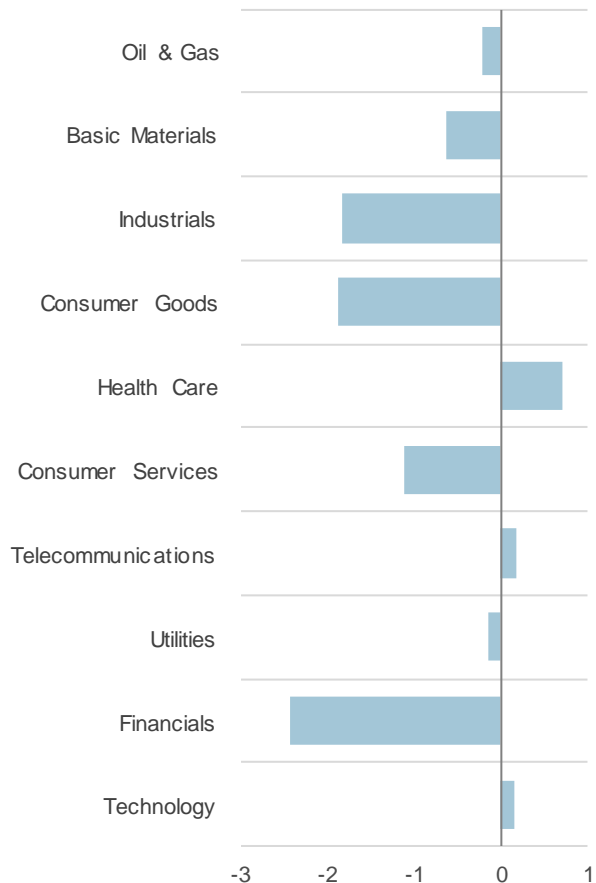
Quality and Profitability extended their YTD dominance despite the spirited rotation into riskier Size and (less so) Value in May. Low Volatility suffered most from the Q2 risk rally, reversing its Q1 performance and lagging badly for the YTD.



**Japan Relative Factor Weight by Sector vs Return Contributions (Q2 2020):** Quality captures a large underweight in Financials and an overweight in Health Care. Size is overweight in Materials and Consumer Services and underweight Health Care.



**Sector-Weighted Contributions to YTD 2020 Returns (%)**  
Japan Total = -7.5%



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

3M Regional Returns  
YTD Regional Returns  
Factor Rotation History  
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US  
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EM  
Appendix

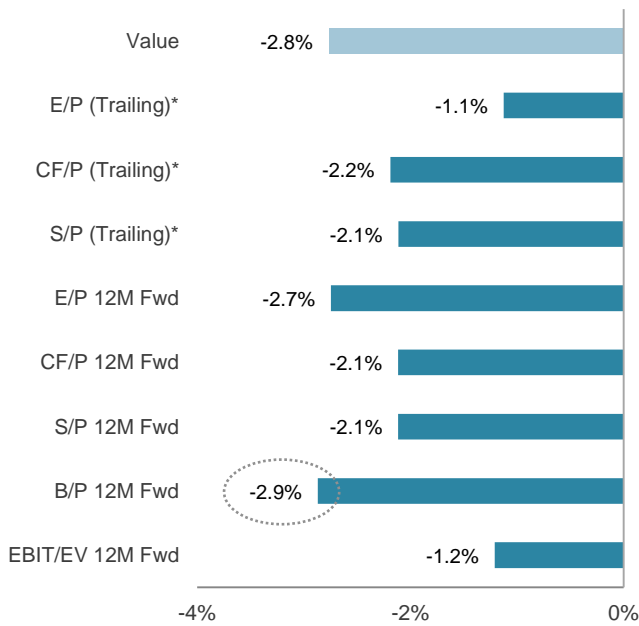
# Japan Factor Indicator Component Performance

## Value Indicator

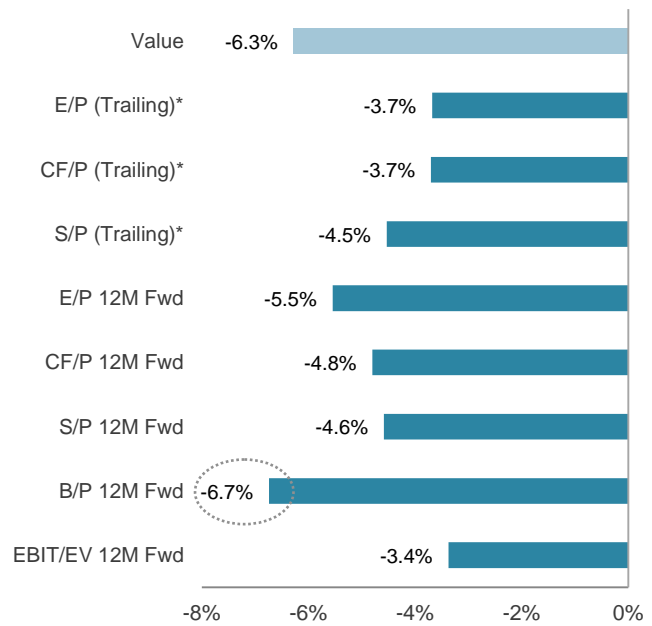
Value ranked as Japan's worst performer in the Q2 and YTD. For both periods, forward valuation multiples generally underperformed trailing metrics, led by price/book value and earnings.

Japan

Q2 2020 Relative Component Returns



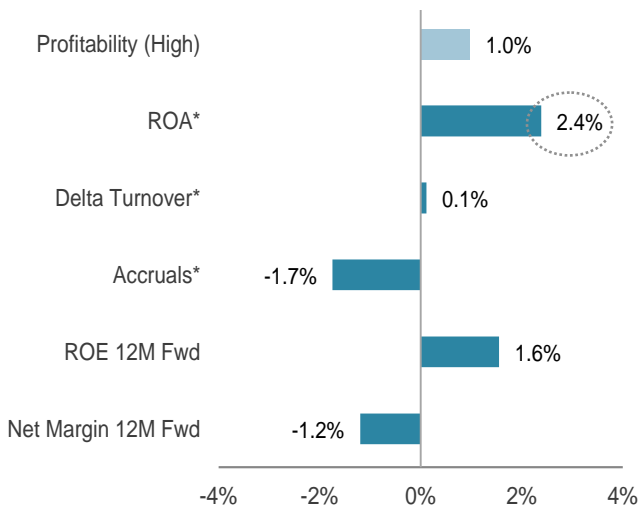
YTD 2020 Relative Component Returns



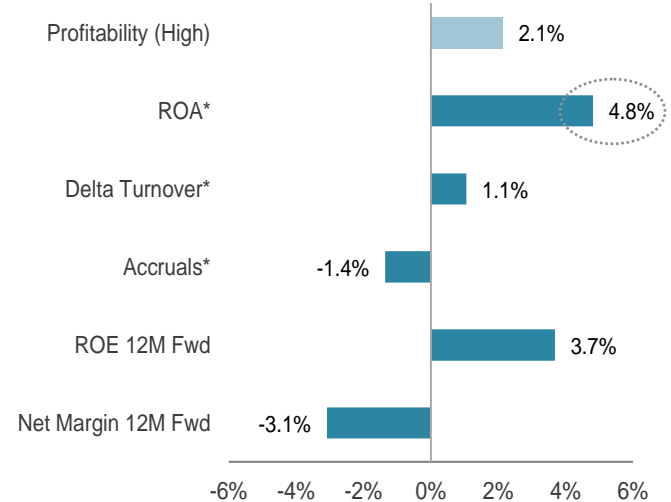
## Profitability (High) Indicator

Profitability continued its uptrend in Q2, bolstering its YTD outperformance. Strong relative gains in ROA and forward ROE led the factor's showing in both periods, offset by large losses in forward net margins.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

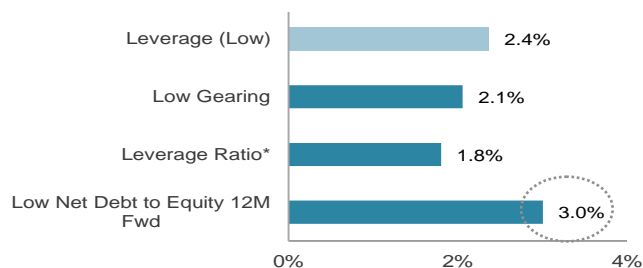
# Japan Factor Indicator Component Performance

## Leverage (Low) Indicator

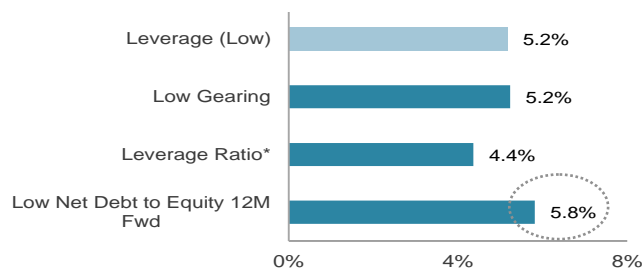
Low Leverage continued to deliver strong relative gains in Q2, ranking it as Japan's top-performing factor for the YTD. Low forward net debt/equity led the factor's outperformance in both periods.

Japan

Q2 2020 Relative Component Returns



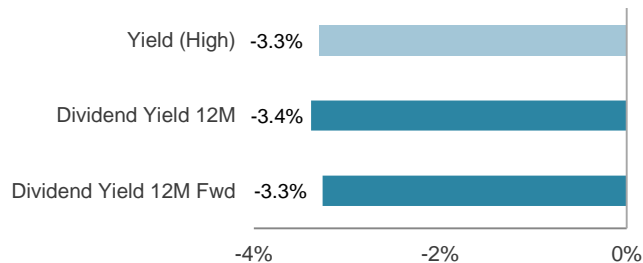
YTD 2020 Relative Component Returns



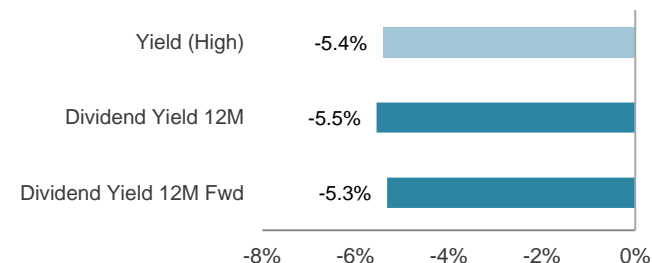
## Yield (High) Indicator

Yield continued its downtrend in Q2, adding to its YTD underperformance. Forward and trailing dividend yields posted comparable relative gains in both periods.

Q2 2020 Relative Component Returns



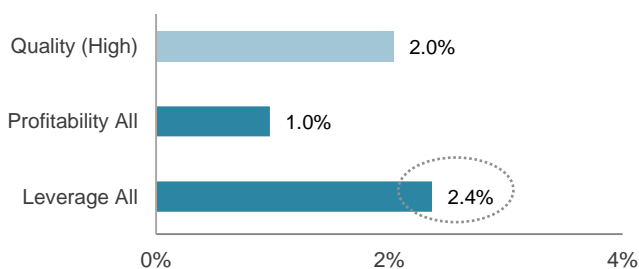
YTD 2020 Relative Component Returns



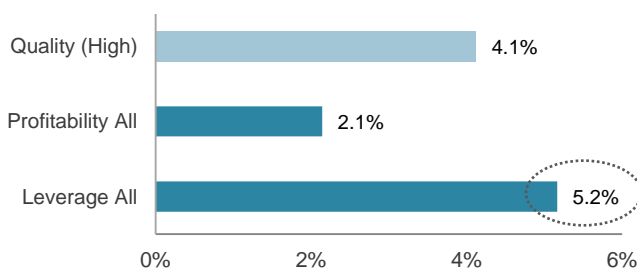
## Quality (High) Indicator

Quality outperformance made further headway in Q2, pushing it well ahead for the YTD (and solidifying its longer-term leadership). The leverage component significantly outperformed the profitability component for both periods.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Japan Factor Indicator Component Performance

## Size (Smaller Cap) Indicator

Despite a short-lived rebound, Size performed roughly in line with the broad market in Q2, extending its underperformance for the YTD.

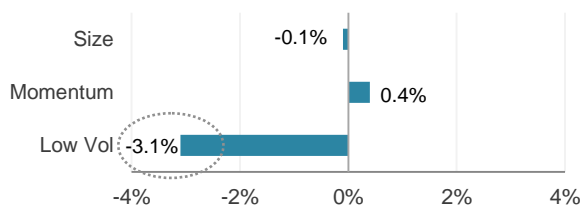
## Long-Term Momentum Indicator

Momentum edged modestly higher in Q2, and outperformed for the YTD.

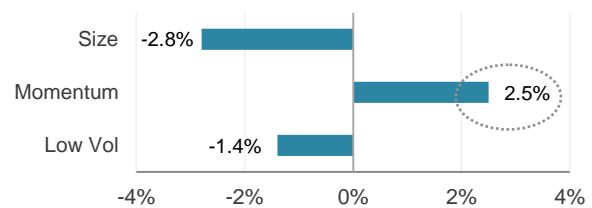
## Low Volatility Indicator

Low Volatility suffered significant relative losses in Q2, erasing its Q1 advance and lagging for the YTD.

**Japan Size, Momentum and Volatility  
Q2 2020 Relative Component Returns**



**Japan Size, Momentum and Volatility  
YTD 2020 Relative Component Returns**

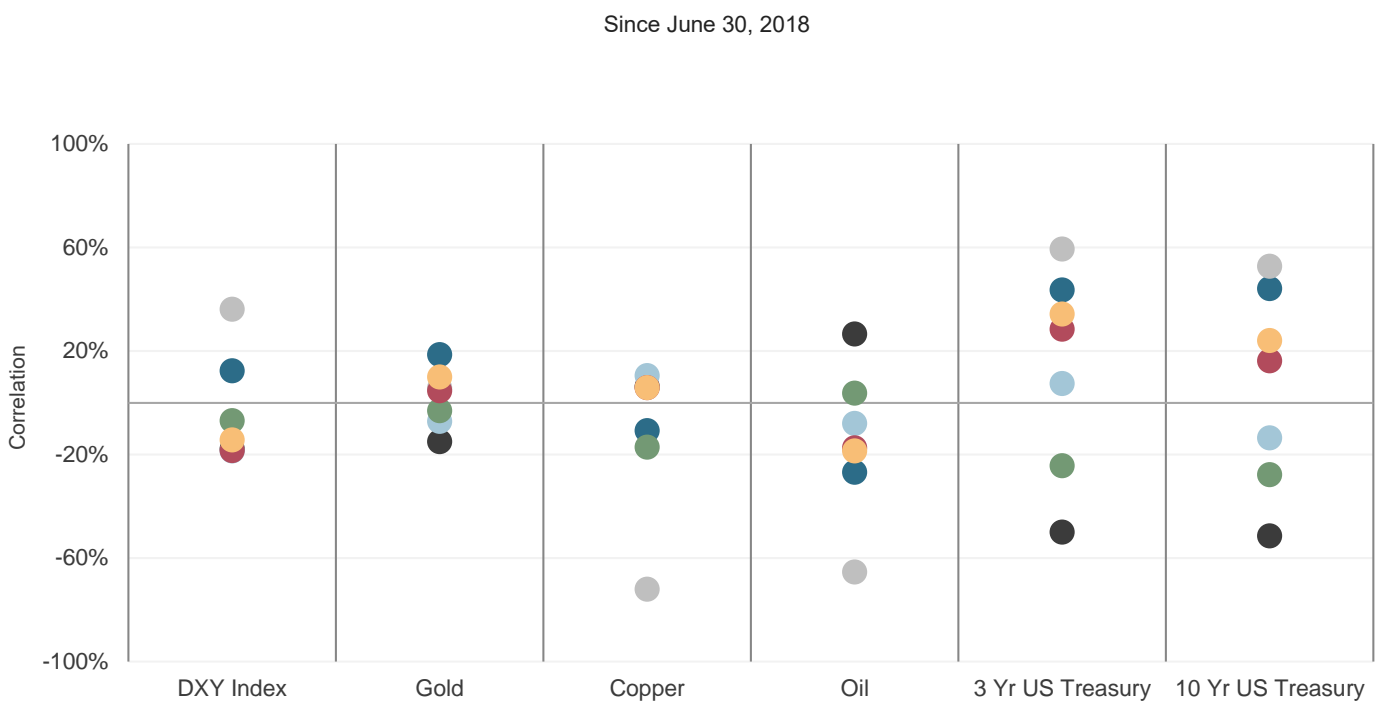
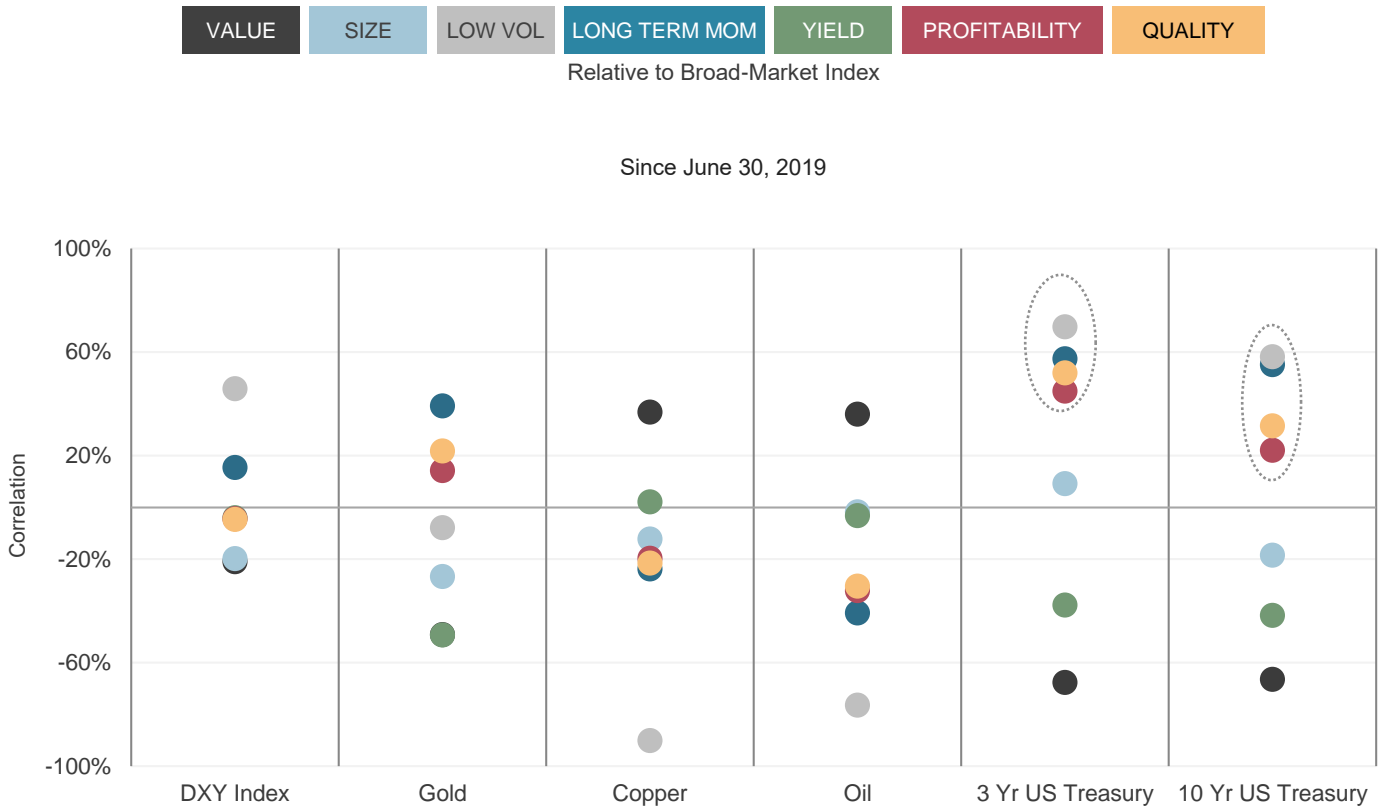


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# Japan Factor Indicator Macro Sensitivity

## Macro Sensitivity

The positive correlations between moves in US Treasury prices and Quality, Profitability and Low Vol have grown far stronger over the past two years, as have negative correlations with Value and Yield. Value and Low Vol have also grown more sensitive to swings in oil and copper. Unlike elsewhere, the correlation between Size and US bonds is low.



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.



# Japan Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Tokyo Electric Power Co Ho	Utilities	0.13%	0.31%
Hokuhoku Financial	Financials	0.03%	0.07%
Japan Petroleum Exploration	Oil & Gas	0.01%	0.03%
Japan Post Insurance	Financials	0.06%	0.15%
Nishi-Nippon Financial Holdin	Financials	0.03%	0.07%

## Top 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Fujikura	Industrials	0.02%	0.11%
Topcon Corp	Industrials	0.02%	0.11%
Daishi Hokuetsu Financial Gr	Financials	0.02%	0.11%
Kawasaki Kisen Kaisha Ltd	Industrials	0.02%	0.11%
H2O Retailing	Consumer Services	0.02%	0.08%

## Top 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Chugai Seiyaku	Health Care	0.94%	1.62%
M 3	Health Care	0.48%	0.82%
Advantest Corp	Technology	0.30%	0.53%
Lasertec	Technology	0.20%	0.36%
Welcia Holdings	Consumer Services	0.11%	0.20%

## Top 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
SoftBank	Telecommunications	0.63%	1.05%
Nagoya Railroad	Consumer Services	0.15%	0.24%
Kyushu Railway	Consumer Services	0.11%	0.19%
Chugoku Electric Power	Utilities	0.12%	0.19%
Tobu Railway	Consumer Services	0.18%	0.31%

## Top 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Aozora Bank	Financials	0.05%	0.11%
Japan Tobacco	Consumer Goods	0.66%	1.39%
Canon	Technology	0.67%	1.36%
Idemitsu Kosan	Oil & Gas	0.13%	0.26%
Konica Minolta	Technology	0.04%	0.09%

## Top 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Nihon M & A Center	Financials	0.16%	0.31%
Benefit One	Industrials	0.03%	0.06%
Kotobuki Spirits	Consumer Goods	0.02%	0.04%
Nippon Kayaku	Basic Materials	0.05%	0.09%
Nomura Research Institute	Technology	0.20%	0.38%

## Bottom 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
LINE	Technology	0.07%	0.00%
GMO Payment Gateway	Industrials	0.11%	0.01%
M 3	Health Care	0.48%	0.04%
JCR Pharmaceuticals	Health Care	0.04%	0.00%
MonotaRO	Consumer Services	0.13%	0.01%

## Bottom 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Toyota Motor	Consumer Goods	4.80%	0.03%
Keyence Corp	Industrials	2.01%	0.02%
SoftBank Group	Telecommunications	2.20%	0.02%
NTT Docomo	Telecommunications	0.80%	0.01%
NTT	Telecommunications	0.81%	0.01%

## Bottom 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Konica Minolta	Technology	0.04%	0.00%
JFE Holdings	Basic Materials	0.10%	0.00%
Toyo Seikan Group Holdings	Industrials	0.05%	0.00%
Nippon Steel	Basic Materials	0.21%	0.01%
Nissan Motor	Consumer Goods	0.21%	0.01%

## Bottom 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
Sumco	Technology	0.09%	0.00%
Sharp	Industrials	0.04%	0.00%
Tokuyama Corp	Basic Materials	0.04%	0.00%
Kobe Bussan	Consumer Services	0.04%	0.00%
Ulvac	Industrials	0.04%	0.00%

## Bottom 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
M 3	Health Care	0.48%	0.00%
Nexon	Consumer Goods	0.25%	0.00%
Tokyo Electric Power Co Ho	Utilities	0.13%	0.00%
Peptidream	Health Care	0.11%	0.00%
Renesas Electronics	Technology	0.10%	0.00%

## Bottom 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Hokuhoku Financial	Financials	0.03%	0.00%
Hachijuni Bank	Financials	0.05%	0.00%
77 Bank	Financials	0.03%	0.00%
Japan Post Bank	Financials	0.10%	0.00%
Bank of Kyoto	Financials	0.07%	0.00%

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# Japan Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Nomura Research Institute	Technology	0.20%	0.38%
Daito Trust Constuction	Financials	0.16%	0.34%
Nihon M & A Center	Financials	0.16%	0.31%
Justsystems	Technology	0.06%	0.12%
Benefit One	Industrials	0.03%	0.06%

## Bottom 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
LINE	Technology	0.07%	0.00%
Mitsubishi Motors	Consumer Goods	0.04%	0.00%
Kobe Steel	Basic Materials	0.03%	0.00%
Peptidream	Health Care	0.1%	0.00%
Nissan Shatai	Consumer Goods	0.02%	0.00%

## Top 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
Nippon Kayaku	Basic Materials	0.05%	0.09%
Autobacs	Consumer Services	0.02%	0.04%
Keyence Corp	Industrials	2.01%	3.75%
Sankyo	Consumer Services	0.03%	0.06%
Shionogi	Health Care	0.47%	0.90%

## Bottom 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
Nipro	Health Care	0.04%	0.00%
Japan Exchange Group	Financials	0.33%	0.01%
Japan Post Insurance	Financials	0.06%	0.00%
Resona Holdings	Financials	0.20%	0.01%
Fukuoka Financial Group	Financials	0.07%	0.00%

3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

Appendix

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.



July 2020

## Asia Pacific ex Japan Factor Indicator Key Observations

- Despite sell-offs in May, Quality and Profitability both advanced in Q2, and remained the solid outperformers YTD.
- Despite a robust Q2 rebound, Size remained a major laggard for the year, second only to Yield in relative losses.
- Quality benefited most from its underweight in lagging Financials and overweight in outperforming Health Care, as well as the continued popularity of stocks of financially resilient companies.
- Quality and Profitability returns are slightly more positively correlated with moves in US bonds, and Size and Yield are more negatively correlated.
- Correlations between commodity-price swings and Yield and Size returns are also more positive today.

## TABLE OF CONTENTS

Asia Pacific Factor Indicator Performance .....	44
Asia Pacific Sector Exposure .....	44
Factor Component Performance .....	45
Value .....	45
Profitability .....	45
Leverage .....	46
Yield .....	46
Quality .....	46
Size .....	47
Long-Term Momentum ..	47
Low Volatility .....	47
Asia Pacific Macro Sensitivity .....	48
Top/Bottom Stock Exposure .....	49

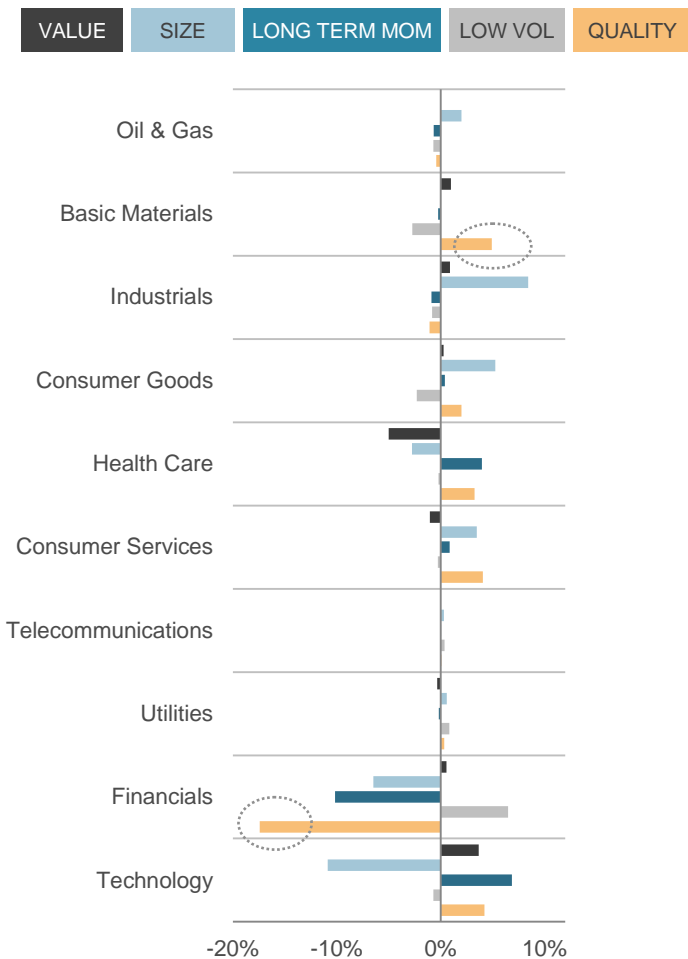
# Asia Pacific ex Japan Factor Indicator Performance

## Defensive Bias Prevails as Q2 Risk Rally Subsides

Defensive Quality and Profitability held their ground in Q2, enduring a robust rebound in Size amid growing optimism about the post-lockdown economic outlook. Low Vol suffered most from the Q2 risk rotation, which cooled in June.

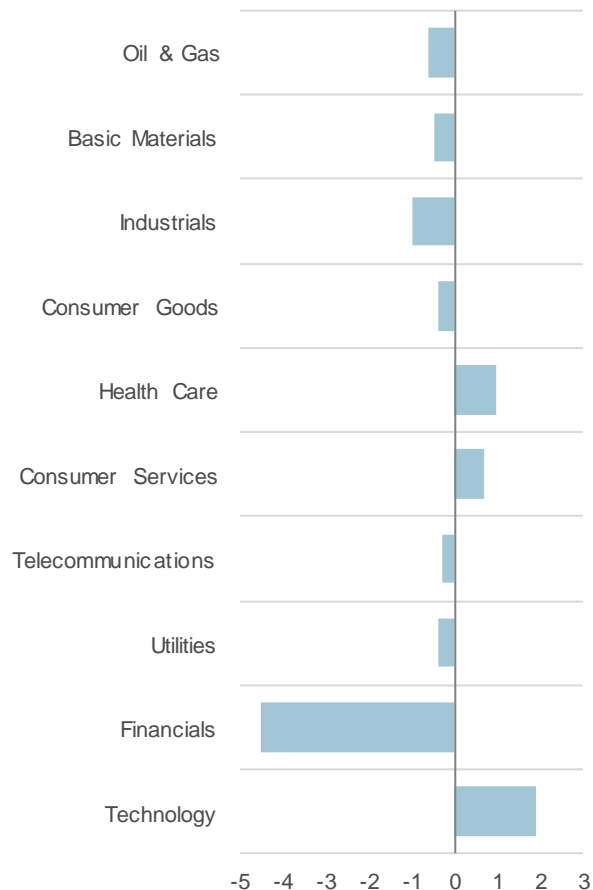


**Asia Pacific Relative Factor Weight by Sector vs Return Contributions (Q2 2020):** Quality captures overweights in Materials and Technology and a large underweight in Financials. Size is overweight Industrials and underweight Tech and Health Care.



### Sector-Weighted Contributions to YTD 2020 Returns (%)

Asia Pacific ex Japan Total = -4.7%



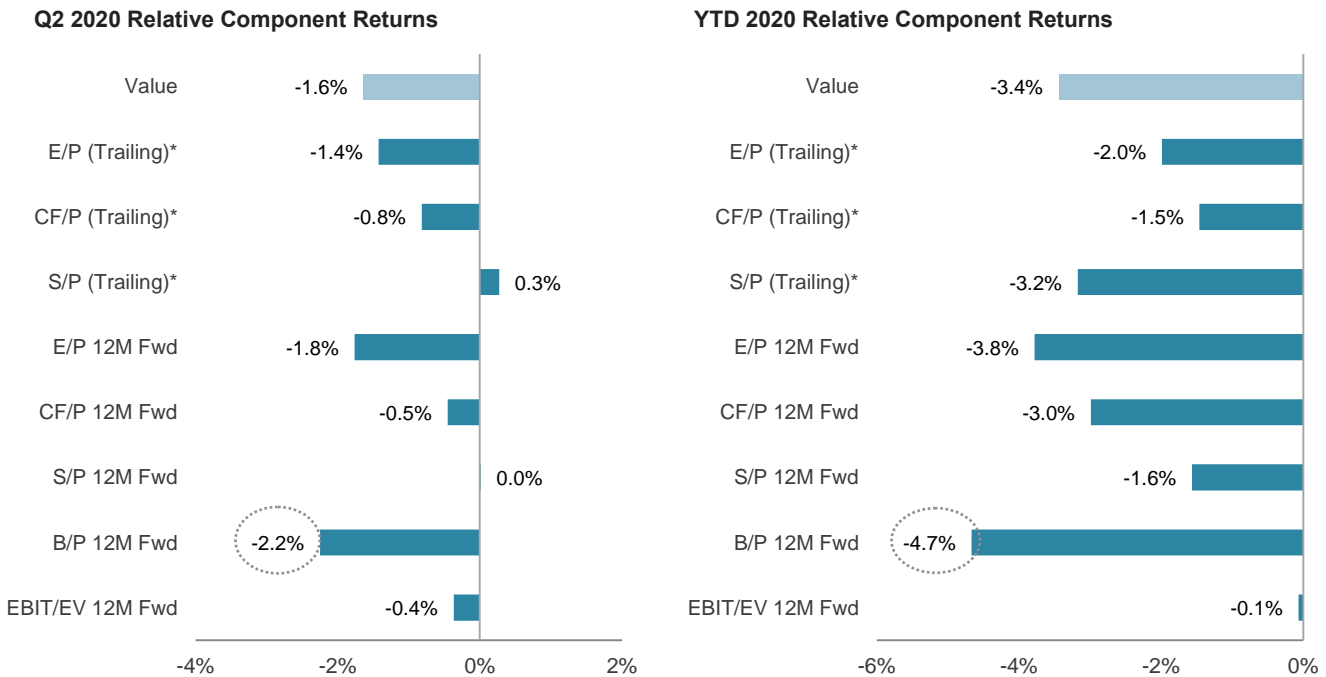
Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Asia Pacific ex Japan Factor Indicator Component Performance

## Value Indicator

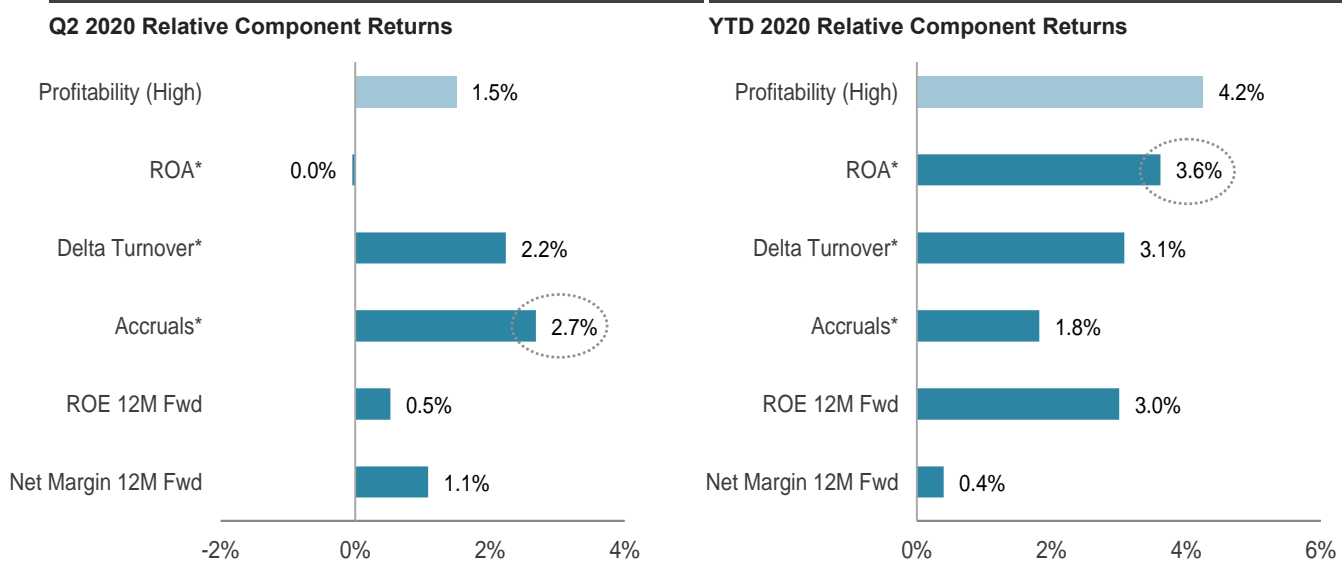
Despite a modest rebound in May, Value continued to lag in Q2, deepening its YTD underperformance. All valuation metrics contributed to this year's downtrend. Price/book led the relative losses for both periods.

AP ex JP



## Profitability (High) Indicator

Profitability continued to advance in Q2, extending its YTD lead. Balance-sheet accruals and asset turnover led the Q2 gains, while high ROA outpaced the other components for the year so far.



\* Official FTSE Global Factor Index Series components.

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II at end for important disclosures and information on factor calculations. For professional investors only.

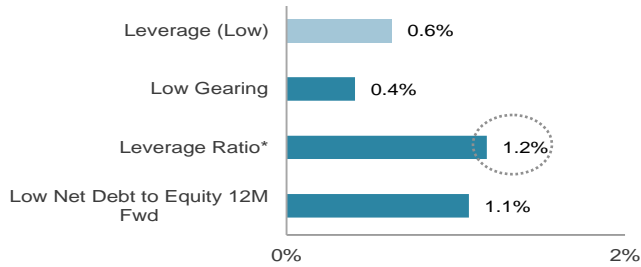
# Asia Pacific ex Japan Factor Indicator Component Performance

## Leverage (Low) Indicator

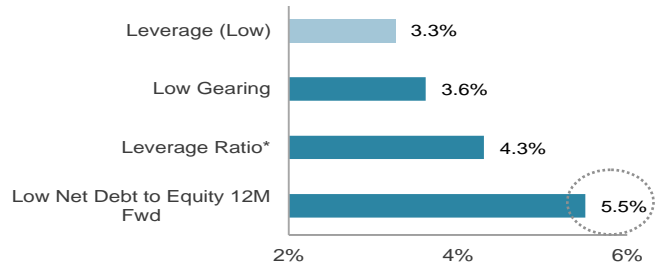
Leverage edged higher in Q2 and YTD. All components contributed to the factor's relative gains in both periods, particularly the leverage ratio and low net debt/equity component.

AP ex JP

Q2 2020 Relative Component Returns



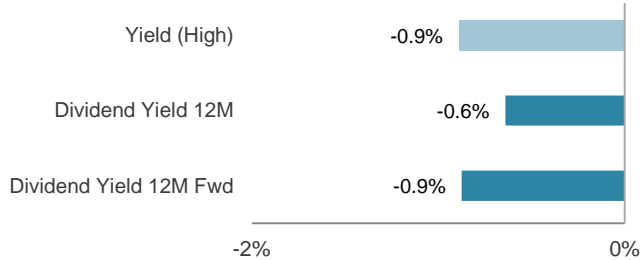
YTD 2020 Relative Component Returns



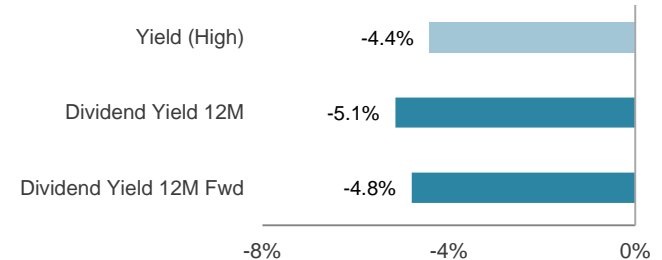
## Yield (High) Indicator

Yield continued to lag in Q2, ranking it as Asia Pacific's worst-performing factor for the YTD. Trailing and forward dividend yield components posted comparable relative losses for both periods.

Q2 2020 Relative Component Returns



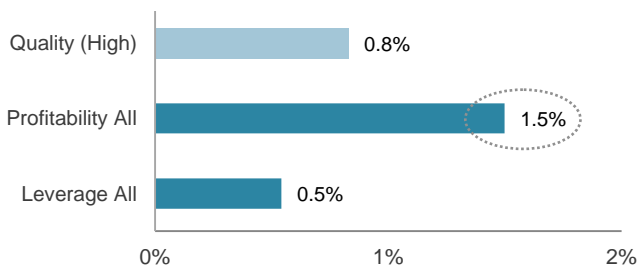
YTD 2020 Relative Component Returns



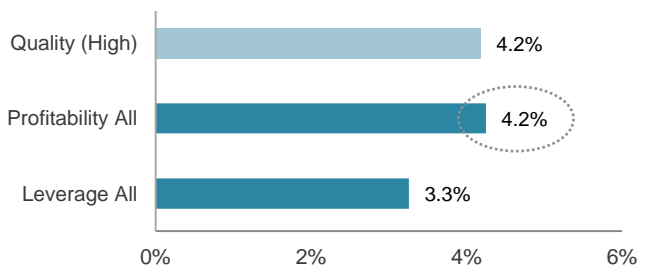
## Quality (High) Indicator

Quality outperformance gathered pace in Q2, placing it (along with Profitability) as Asia Pacific's top performer for the YTD. Gains in the profitability component strongly outstripped those of the leverage component in both periods.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.

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# Asia Pacific ex Japan Factor Indicator Component Performance

## Size (Small) Indicator

Size staged a dramatic rebound in Q2, trimming its YTD underperformance. However, the rally faded in June, and the factor remained among Asia Pacific's worst-performers this year and longer term.

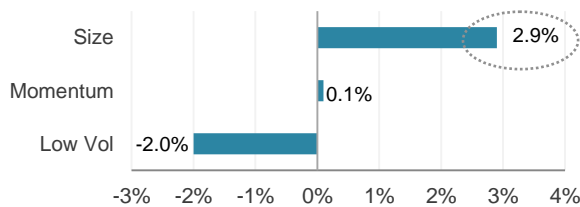
## Long-Term Momentum Indicator

Momentum performed roughly in line with the broad market in Q2, continuing its outperformance for the YTD.

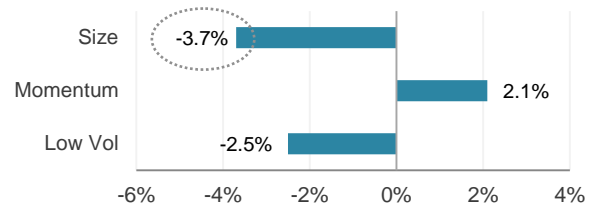
## Low Volatility Indicator

Low Volatility sold off in Q2, erasing its modest Q1 gains and pushing it into negative territory for the YTD.

**Asia Pacific Size, Momentum and Volatility  
Q2 2020 Relative Component Returns**



**Asia Pacific Size, Momentum and Volatility  
YTD 2020 Relative Component Returns**



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Asia Pacific ex Japan Factor Indicator Macro Sensitivity

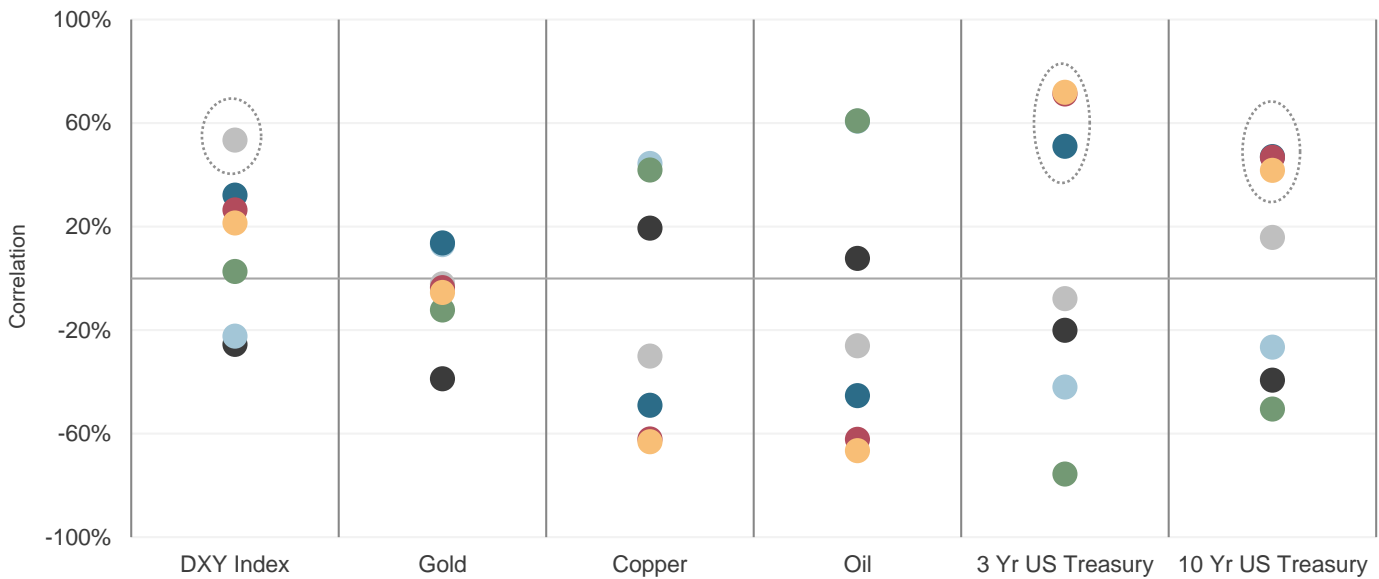
## Macro Sensitivity

Moves in short- and long-dated US Treasury prices and Quality and Profitability returns have grown slightly more positively correlated in recent years, while those with Size and Yield are more negatively correlated. Sensitivities have also increased between oil-price swings and Size and Yield returns and between Low Vol and the USD (all more positive).

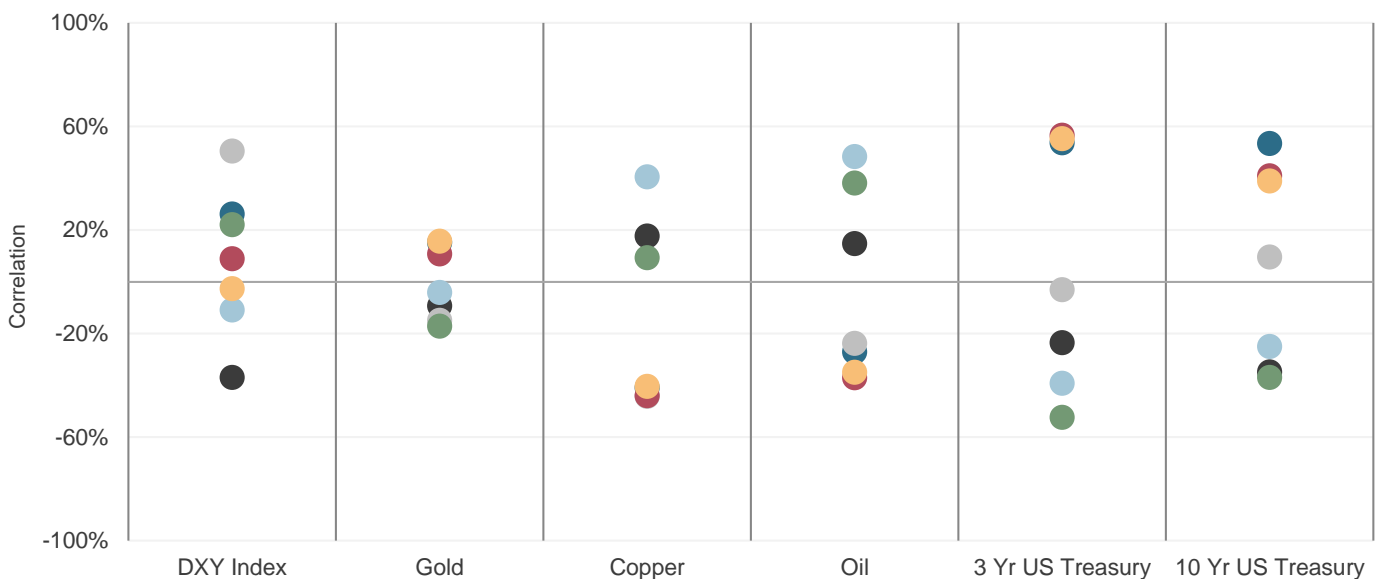


Relative to Broad-Market Index

Since June 30, 2019



Since June 30, 2018



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# Asia Pacific ex Japan Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Doosan Infracore	Industrials	0.03%	0.09%
LG Electronics Pfd.	Consumer Goods	0.02%	0.04%
Hanwha Pfd.	Industrials	0.01%	0.02%
CJ CheilJedang Pfd.	Consumer Goods	0.01%	0.02%
First Pacific	Consumer Goods	0.02%	0.05%

## Top 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
CJ CheilJedang Pfd.	Consumer Goods	0.01%	0.04%
Hanwha Pfd.	Industrials	0.01%	0.05%
Samsung Fire & Marine Insurance	Financials	0.01%	0.08%
LG Electronics Pfd.	Consumer Goods	0.02%	0.10%
Mirae Asset Daewoo Pfd.	Financials	0.02%	0.11%

## Top 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
NAVER	Technology	1.39%	2.17%
Fortescue Metals Group	Basic Materials	0.63%	1.06%
Kakao	Technology	0.51%	0.84%
Fisher & Paykel Healthcare	Health Care	0.54%	0.73%
Semiconductor Manufacturing	Technology	0.50%	0.69%

## Top 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
CLP Holdings	Utilities	0.67%	1.00%
Hong Kong & China Gas	Utilities	0.67%	0.98%
Singapore Telecommunications	Telecommunications	0.55%	0.81%
ASX	Financials	0.47%	0.68%
Ascendas Real Estate Investment	Financials	0.28%	0.39%

## Top 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Swire Pacific B	Industrials	0.04%	0.07%
Swire Pacific A	Industrials	0.11%	0.22%
Hutchison Port Holdings Trust	Industrials	0.02%	0.04%
VTech Holdings	Technology	0.04%	0.07%
Shougang Fushan Resources	Basic Materials	0.03%	0.05%

## Top 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Magellan Financial Group	Financials	0.23%	0.44%
Platinum Asset Management Ltd	Financials	0.03%	0.06%
a2 Milk	Consumer Goods	0.40%	0.78%
Sasa International Holdings	Consumer Services	0.01%	0.02%
Altium	Technology	0.10%	0.22%

## Bottom 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Helixmith	Health Care	0.05%	0.00%
HLB	Consumer Goods	0.15%	0.02%
Samsung Biologics	Health Care	0.36%	0.07%
Afterpay Touch Group	Financials	0.36%	0.07%
Celltrion Healthcare	Health Care	0.27%	0.05%

## Bottom 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Samsung Electronics	Technology	8.61%	0.07%
AIA Group Ltd.	Financials	4.71%	0.06%
CSL	Health Care	3.74%	0.08%
Commonwealth Bank of Australia	Financials	3.53%	0.10%
BHP Group	Basic Materials	3.03%	0.11%

## Bottom 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Flight Centre Travel Group	Consumer Services	0.05%	0.00%
Medy-Tox	Health Care	0.02%	0.00%
Samsonite International	Consumer Goods	0.05%	0.00%
Fila Korea	Consumer Services	0.06%	0.00%
Hanmi Science	Health Care	0.02%	0.00%

## Bottom 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
Afterpay Touch Group	Financials	0.36%	0.00%
HLB	Consumer Goods	0.15%	0.00%
Helixmith	Health Care	0.05%	0.00%
MMG	Basic Materials	0.02%	0.00%
United Energy Group	Oil & Gas	0.06%	0.00%

## Bottom 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
NAVER	Technology	1.39%	0.02%
Celltrion Inc	Health Care	1.11%	0.02%
Kakao	Technology	0.51%	0.01%
Semiconductor Manufacturing	Technology	0.50%	0.01%
Samsung Biologics	Health Care	0.36%	0.01%

## Bottom 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
HLB	Consumer Goods	0.15%	0.00%
Korean Air Lines	Consumer Services	0.05%	0.00%
Helixmith	Health Care	0.05%	0.00%
Sembcorp Marine	Industrials	0.01%	0.00%
Melco International Development	Consumer Services	0.06%	0.00%

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# Asia Pacific ex Japan Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Coles Group	Consumer Services	0.63%	1.20%
Magellan Financial Group	Financials	0.23%	0.45%
Singapore Exchange	Financials	0.21%	0.40%
Platinum Asset Management	Financials	0.03%	0.07%
Sasa International Holdings	Consumer Services	0.01%	0.02%

## Bottom 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Afterpay Touch Group	Financials	0.36%	0.00%
Helixmith	Health Care	0.05%	0.00%
Sembcorp Marine	Industrials	0.01%	0.00%
WorleyParsons Ltd.	Industrials	0.08%	0.00%
Korean Air Lines	Consumer Services	0.05%	0.00%

## Top 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
Magellan Financial Group	Financials	0.23%	0.45%
Samsung Fire & Marine Insurance	Financials	0.01%	0.03%
Afterpay Touch Group	Financials	0.36%	0.68%
Northern Star Resources	Basic Materials	0.27%	0.52%
a2 Milk	Consumer Goods	0.40%	0.78%

## Bottom 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
HLB	Consumer Goods	0.15%	0.00%
Hyundai Motor	Consumer Goods	0.50%	0.02%
CJ Corp	Consumer Goods	0.04%	0.00%
Wynn Macau Ltd.	Consumer Services	0.10%	0.01%
Hanwha	Industrials	0.04%	0.00%

3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

Appendix

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July 2020

## Emerging Markets Factor Indicator Key Observations

- Quality and (less so) Profitability continued their winning streak in Q2, furthering their strong YTD showings.
- Size enjoyed a strong (albeit short-lived) resurgence in Q2, mostly at the expense of Low Vol. Both were major laggards for the YTD.
- Opposing exposures to Financials and Technology underpinned Quality outperformance over riskier factors, as did the popularity of less financially levered stocks.
- Unlike elsewhere, correlations between US bonds and Profitability have gone from neutral to negative, while those with Quality and Low Vol are relatively low compared to global peers.
- Size has become more negatively correlated with US bonds and more positively correlated to swings in commodity prices.

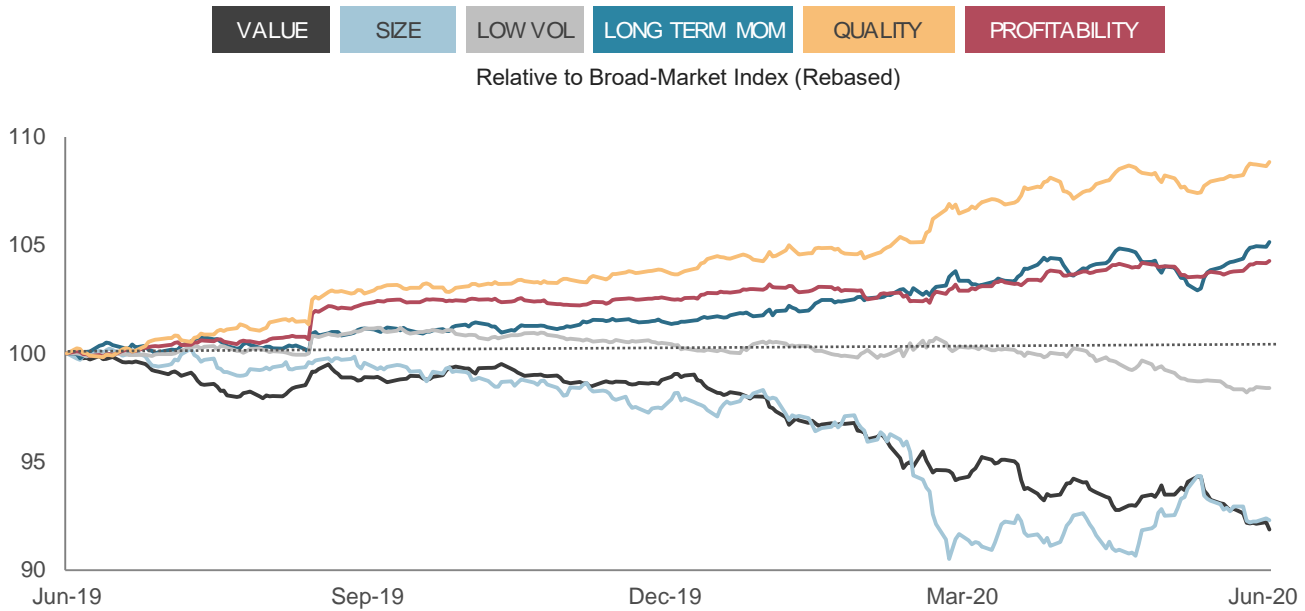
## TABLE OF CONTENTS

EM Factor Indicator Performance .....	52
EM Sector Exposure .....	52
Factor Component Performance .....	
Value .....	53
Profitability .....	53
Leverage.....	54
Yield.....	54
Quality .....	54
Size.....	56
Long-Term Momentum ..	56
Low Volatility.....	56
EM Macro Sensitivity.....	57
Top/Bottom Stock Exposure.....	58

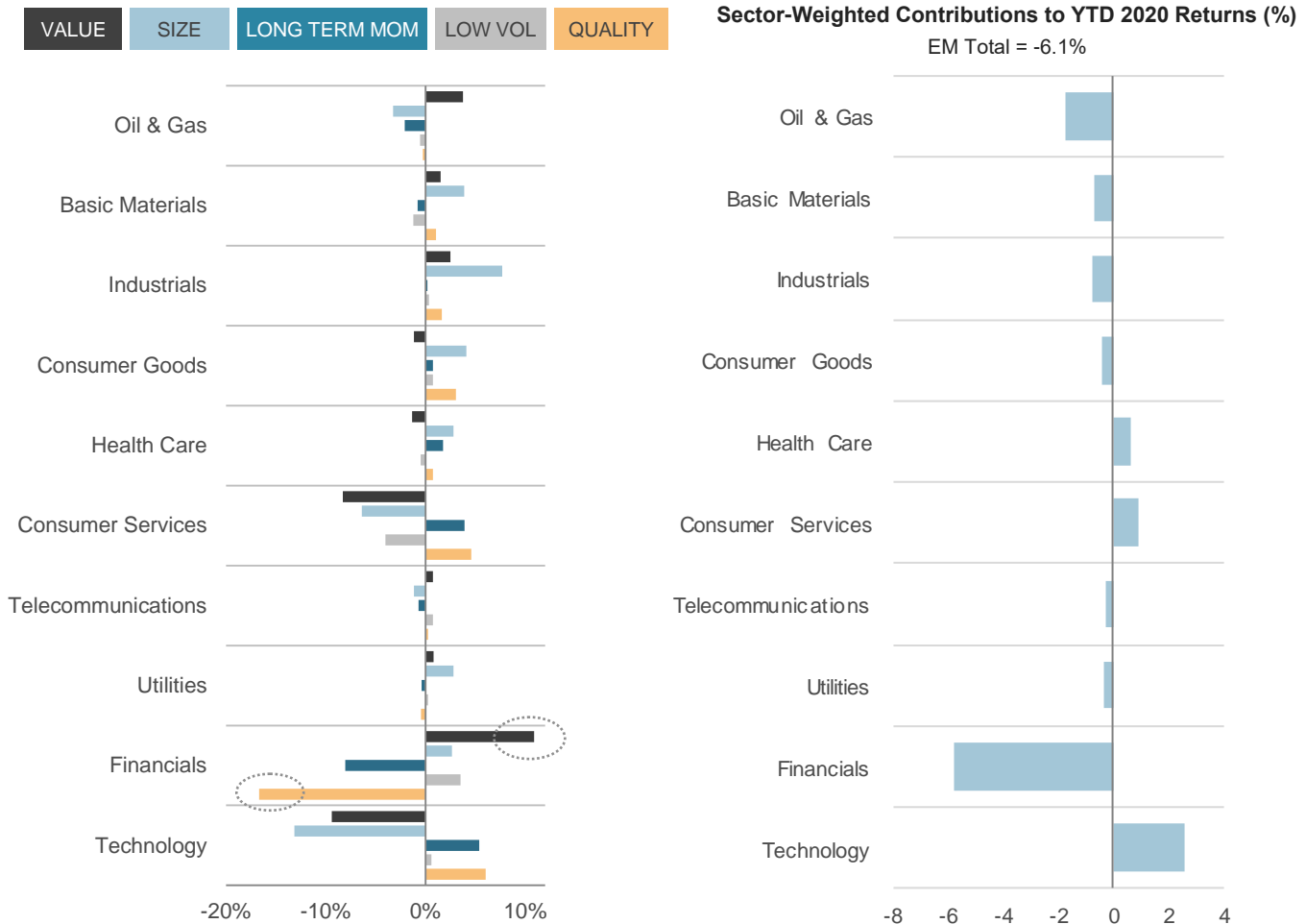
# Emerging Markets Factor Indicator Performance

## Quality Dominates as Q2 Risk Rally Loses Steam

Quality and Profitability extended their long-running outperformance in Q2, while Value and Size continued to languish despite modest rebound attempts. Low Vol lagged in both the Q2 and YTD, but the defensive/risk divide remains wide.



**Emerging Market Relative Factor Weight by Sector vs Return Contributions (Q2 2020):** Quality captures an overweight in Technology and a big underweight in Financials. Size and Value has opposite exposures to those sectors.



Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

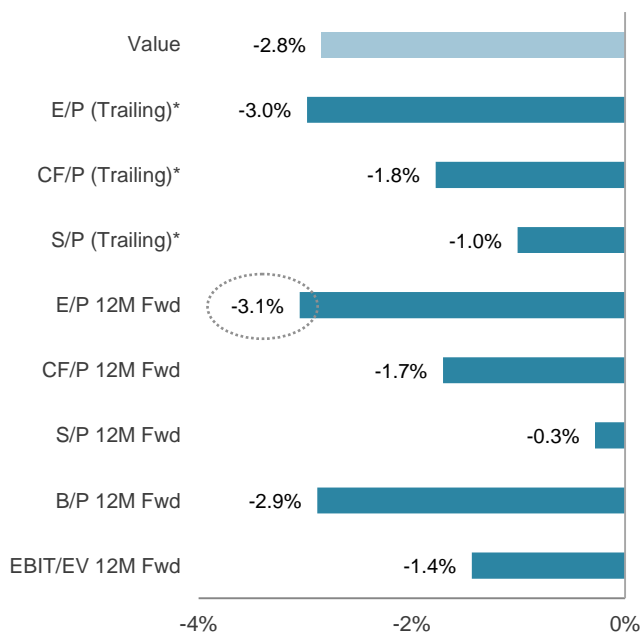
# Emerging Markets Factor Indicator Component Performance

## Value Indicator

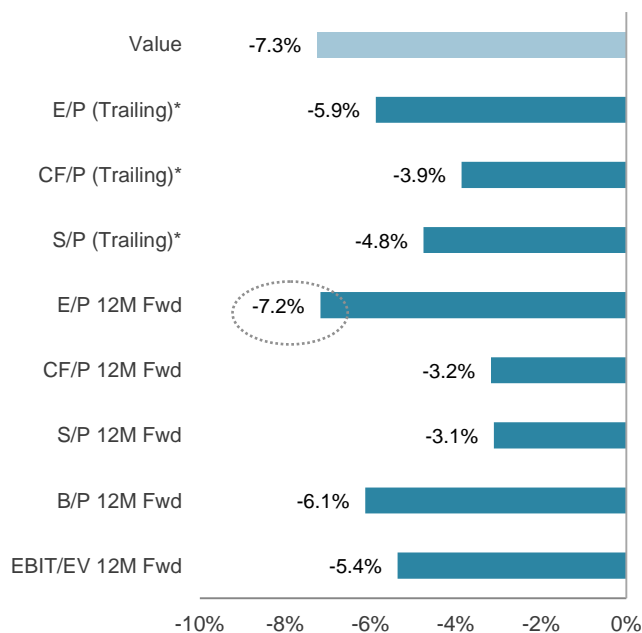
EM Value fell steeply in Q2, perpetuating its long-running laggard status. All valuation multiples contributed to the Q2 and YTD underperformance, led by forward price/earnings and book value.

EM

Q2 2020 Relative Component Returns



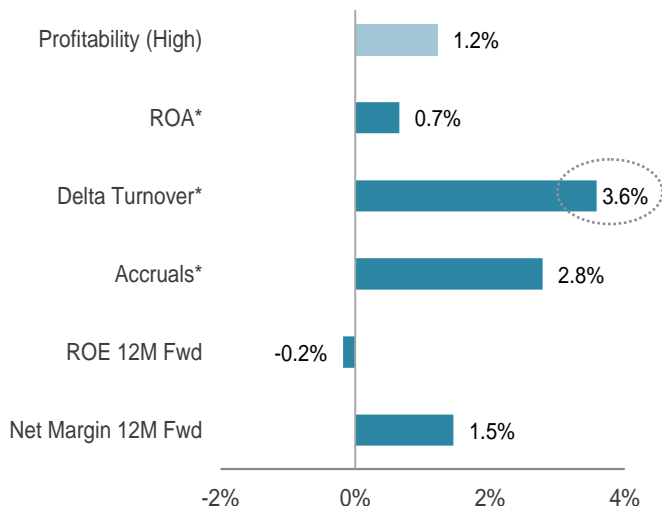
YTD 2020 Relative Component Returns



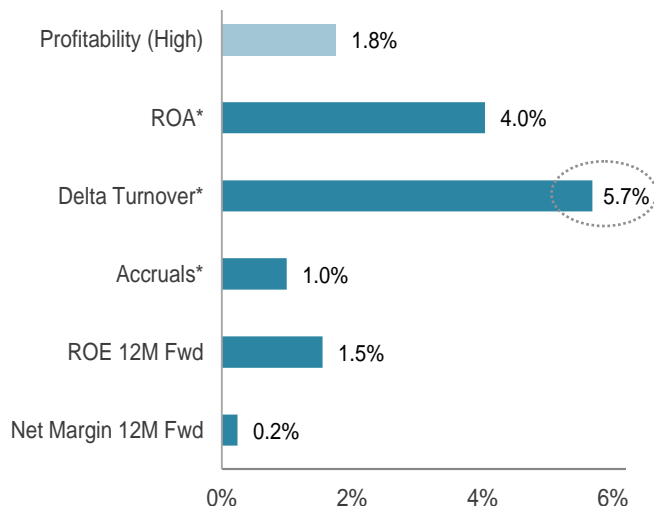
## Profitability (High) Indicator

Profitability edged higher in Q2, boosting its outperformance YTD. Preferences tilted to measures of healthy balance sheets in both periods, led by the asset turnover component. Forward ROE was the lone laggard in Q2.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

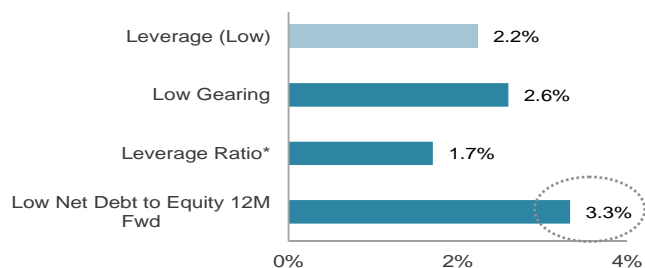
# Emerging Markets Factor Indicator Component Performance

## Leverage (Low) Indicator

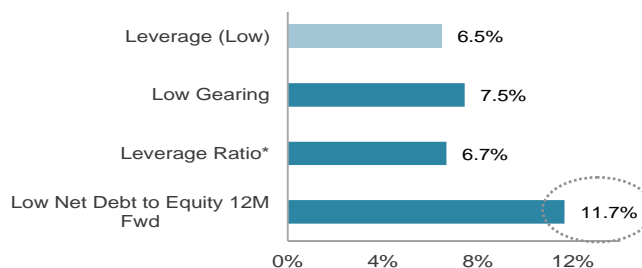
Leverage surged ahead in Q2, extending its YTD outperformance and ranking it as the top-performing Emerging Markets factor for both periods. Low net debt/equity significantly outperformed the other two components.

EM

Q2 2020 Relative Component Returns



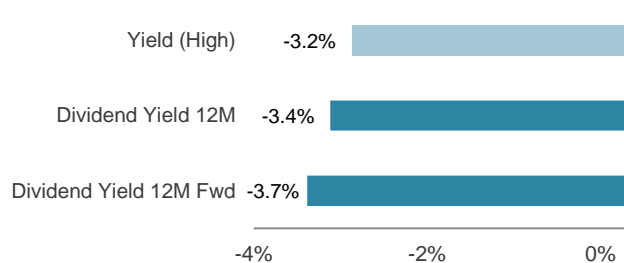
YTD 2020 Relative Component Returns



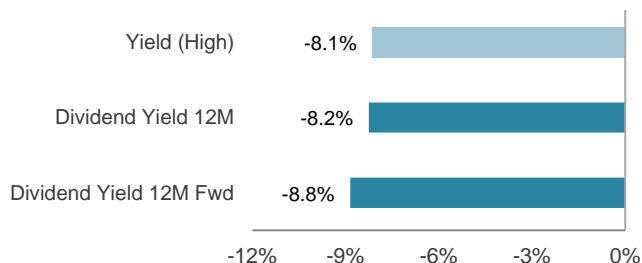
## Yield (High) Indicator

Yield continued to lose favor Q2, ranking it as the worst-performing factor in Emerging Markets and globally for the year so far. Forward and trailing dividend yields contributed similar relative losses for both periods.

Q2 2020 Relative Component Returns



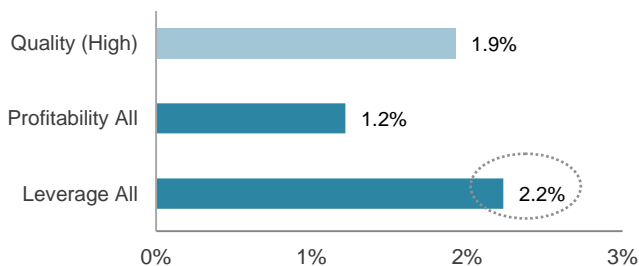
YTD 2020 Relative Component Returns



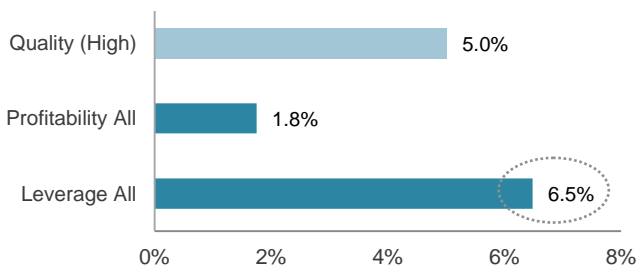
## Quality (High) Indicator

Quality continued its upward march in Q2, placing it among the top-performing EM factors for the YTD (second only to Leverage). The leverage component significantly outpaced the profitability component in both periods.

Q2 2020 Relative Component Returns



YTD 2020 Relative Component Returns



\* Official FTSE Global Factor Index Series components.

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Emerging Markets Factor Indicator Component Performance

## Size (Smaller Cap) Indicator

Size rebounded in May, but retraced most of those gains in June. The factor remained a major laggard for the YTD.

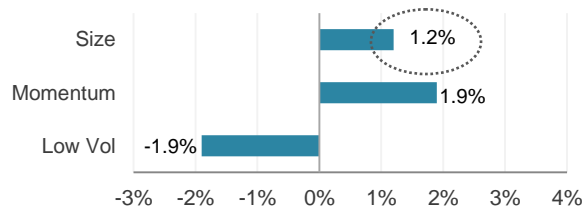
## Long-Term Momentum Indicator

Momentum continued to outperformed in both Q2 and YTD.

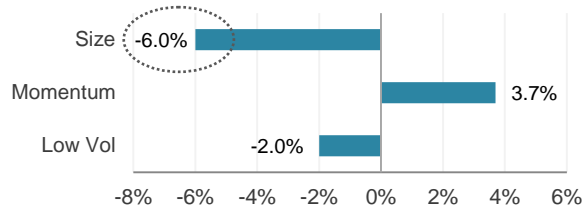
## Low Volatility Indicator

Low Volatility sold off in Q2, wiping out earlier gains and underperforming for the YTD.

**Emerging Market Size, Momentum and Volatility  
Q2 2020 Relative Component Returns**



**Emerging Market Size, Momentum and Volatility  
YTD 2020 Relative Component Returns**



3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

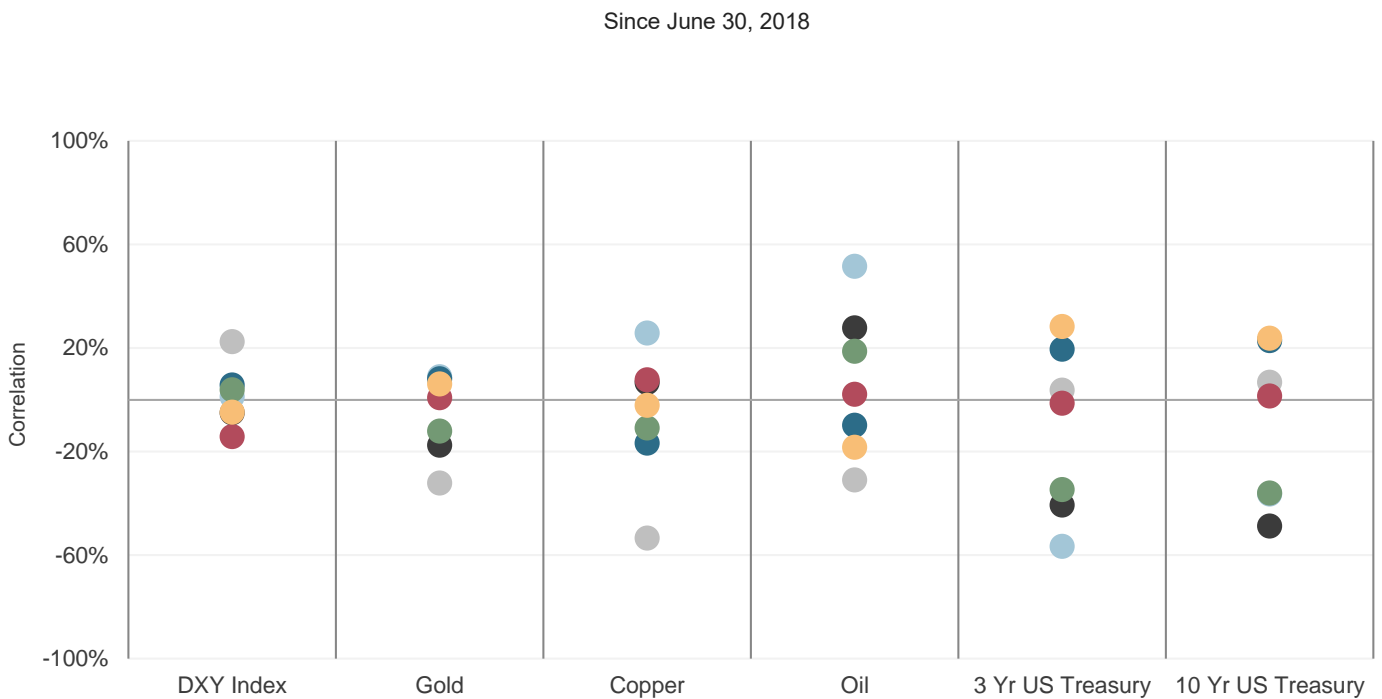
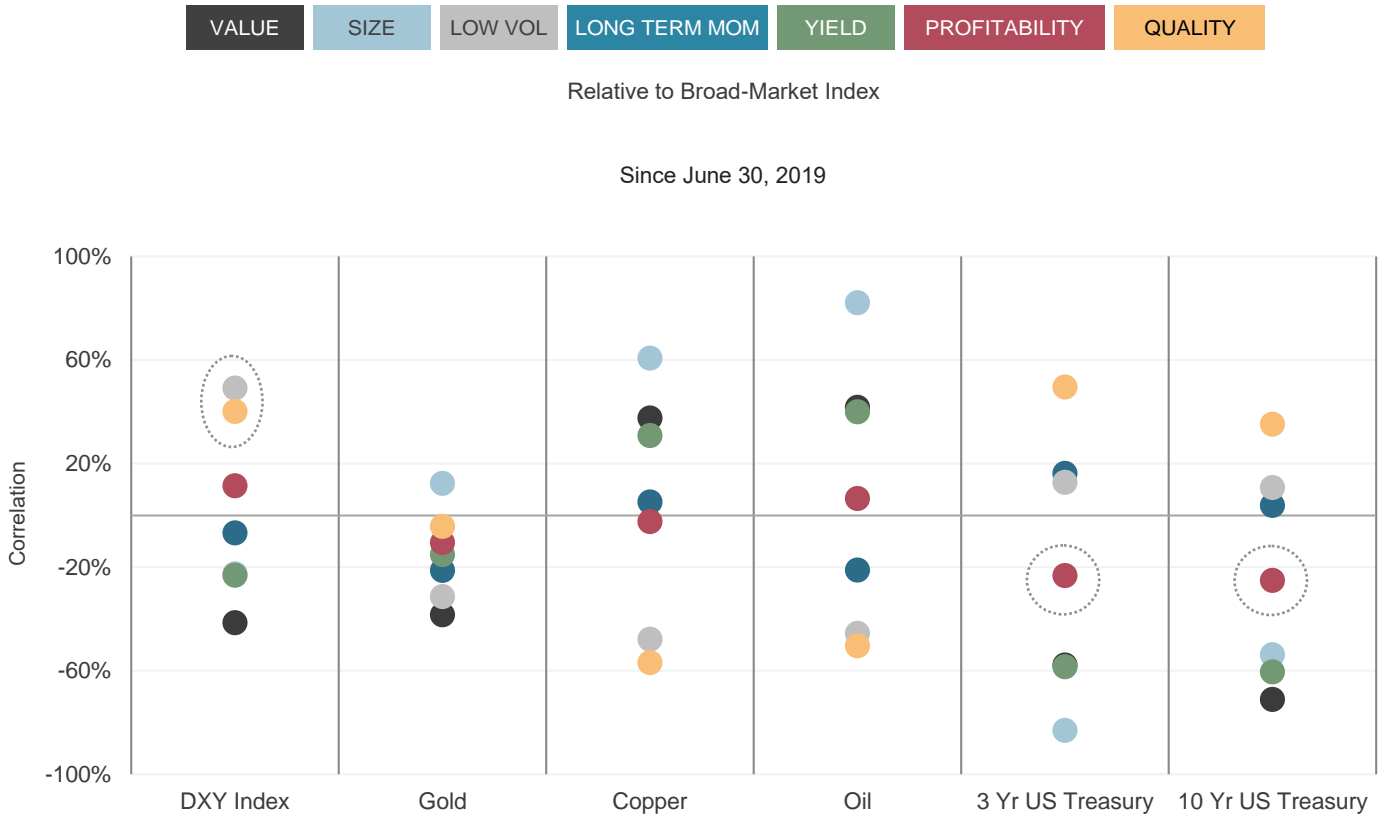
Appendix

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Emerging Markets Factor Indicator Macro Sensitivity

## Macro Sensitivity

Unlike developed peers, correlations between Profitability and US Treasury prices have gone from neutral to negative over the past two years, while those with Quality are more positive. Defensive factors are more positively correlated to the US dollar, and more negatively correlated to commodity prices. Size, Value and Yield are more positively correlated to oil price swings.



Source: FTSE Russell and Refinitiv. All data as of June 30, 2019. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.



# Emerging Markets Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
Petrochina (H)	Oil & Gas	0.18%	0.39%
Surgutneftegas (PREF A)	Oil & Gas	0.09%	0.21%
Oil & Natural Gas	Oil & Gas	0.06%	0.17%
Yanzhou Coal Mining (H)	Basic Materials	0.04%	0.08%
Turk Hava Yollari	Consumer Services	0.02%	0.04%

## Top 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Shanghai Shibe Hi-Tech (B)	Financials	0.00%	0.02%
Shanghai Baillan Group (B)	Consumer Services	0.00%	0.02%
Shanghai Huayi Group (B)	Consumer Goods	0.00%	0.02%
Tianjin Capital Environmental	Utilities	0.00%	0.01%
Bengang Steel Plates (B)	Basic Materials	0.00%	0.01%

## Top 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
WEG Ord	Industrials	0.11%	0.22%
Country Garden Services Hold	Financials	0.12%	0.21%
Magazine Luiza SA ON	Consumer Services	0.11%	0.18%
Impala Platinum Hlds	Basic Materials	0.07%	0.11%
Sibanye Stillwater	Basic Materials	0.07%	0.11%

## Top 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
Chunghwa Telecom	Telecommunications	0.32%	0.47%
Far Eastern International Ban	Financials	0.02%	0.02%
PPB Group	Consumer Goods	0.06%	0.09%
Public Bank BHD	Financials	0.27%	0.34%
Taiwan Mobile	Telecommunications	0.13%	0.19%

## Top 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Fortress REIT Ltd (B)	Financials	0.00%	0.01%
AES Gener S.A.	Utilities	0.01%	0.02%
Redefine Properties	Financials	0.02%	0.03%
Hyprop Investments Ltd	Financials	0.01%	0.02%
TATNEFT (PREF A)	Oil & Gas	0.02%	0.04%

## Top 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
Country Garden Services Hold	Financials	0.12%	0.22%
RMB Holdings	Financials	0.05%	0.09%
HDFC Asset Management	Financials	0.03%	0.06%
3M India	Industrials	0.01%	0.02%
Hansoh Pharmaceutical Gro	Health Care	0.08%	0.15%

## Bottom 5 Value Stock Scores

Value	Sector	Benchmark Weight	Tilt 1 Weight
NIO ADS (N Shares)	Consumer Goods	0.05%	0.00%
Anxin Trust (A) (SC SH)	Financials	0.00%	0.00%
Jiangxi Special Electric Motor	Industrials	0.00%	0.00%
OBI Pharma	Health Care	0.01%	0.00%
Smartfren Telecom	Telecommunications	0.00%	0.00%

## Bottom 5 Size Stock Scores

Size	Sector	Benchmark Weight	Tilt 1 Weight
Alibaba Group Holding ADS (	Consumer Services	8.11%	0.06%
Tencent Holdings (P Chip)	Technology	6.66%	0.05%
Taiwan Semiconductor Manu	Technology	5.16%	0.04%
China Construction Bank (H)	Financials	181%	0.01%
Reliance Industries	Oil & Gas	108%	0.01%

## Bottom 5 Momentum Stock Scores

Momentum	Sector	Benchmark Weight	Tilt 1 Weight
Vodafone Idea	Telecommunications	0.01%	0.00%
Smartfren Telecom	Telecommunications	0.00%	0.00%
Henan Senyuan Electric (A) (S	Industrials	0.00%	0.00%
HengTen Networks Group (P	Consumer Goods	0.00%	0.00%
Telkom SA SOC	Telecommunications	0.01%	0.00%

## Bottom 5 Volatility Stock Scores

Volatility	Sector	Benchmark Weight	Tilt 1 Weight
NIO ADS (N Shares)	Consumer Goods	0.05%	0.00%
Eurobank Ergasias Services &	Financials	0.03%	0.00%
Alpha Bank	Financials	0.03%	0.00%
Gigadevice Semiconductor B	Technology	0.01%	0.00%
National Bank of Greece S.A.	Financials	0.02%	0.00%

## Bottom 5 Yield Stock Scores

Yield	Sector	Benchmark Weight	Tilt 1 Weight
Alibaba Group Holding ADS (	Consumer Services	8.11%	0.10%
Meituan Dianping (P Chip)	Consumer Services	0.98%	0.01%
JD.com ADS (N Shares)	Consumer Services	0.65%	0.01%
Baidu ADS (N Shares)	Technology	0.66%	0.01%
TAL Education Group ADS (N	Consumer Services	0.44%	0.01%

## Bottom 5 Quality Stock Scores

Quality	Sector	Benchmark Weight	Tilt 1 Weight
NIO ADS (N Shares)	Consumer Goods	0.05%	0.00%
Vodafone Idea	Telecommunications	0.01%	0.00%
Adani Power	Utilities	0.01%	0.00%
OBI Pharma	Health Care	0.01%	0.00%
iQIYI ADS (N Shares)	Consumer Services	0.10%	0.00%

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# Emerging Markets Factor Indicator Top/Bottom Stocks (Ranked by Z-Scores)

## Top 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Anta Sports Products (P Chip)	Consumer Goods	0.21%	0.40%
Country Garden Services Hold	Financials	0.12%	0.23%
Nestle India	Consumer Goods	0.12%	0.21%
BB Seguridade Participacoes	Financials	0.08%	0.16%
HDFC Asset Management	Financials	0.03%	0.07%

## Top 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
ZhongAn Online P & C Insura	Financials	0.01%	0.02%
HDFC Asset Management	Financials	0.03%	0.06%
GSX Techedu ADS (N Shares)	Consumer Services	0.04%	0.08%
China Reinsurance (Group) (F	Financials	0.00%	0.01%
China East Education Holding	Consumer Services	0.02%	0.03%

## Bottom 5 Profitability Stock Scores

Profitability	Sector	Benchmark Weight	Tilt 1 Weight
Innovent Biologics (P Chip)	Health Care	0.12%	0.00%
iQIYI ADS (N Shares)	Consumer Services	0.10%	0.00%
B2W Cia Digital	Consumer Services	0.04%	0.00%
NIO ADS (N Shares)	Consumer Goods	0.05%	0.00%
Bilibili ADS (N Shares)	Consumer Services	0.03%	0.00%

## Bottom 5 Leverage Stock Scores

Leverage	Sector	Benchmark Weight	Tilt 1 Weight
NIO ADS (N Shares)	Consumer Goods	0.05%	0.00%
OBI Pharma	Health Care	0.01%	0.00%
Sistema JSFC	Financials	0.01%	0.00%
Qatar Gas Transport Co Naki	Industrials	0.04%	0.00%
Guizhou Bailing Group Pharm	Health Care	0.00%	0.00%

3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

Appendix

Source: FTSE Russell and Refinitiv. All data as of June 30, 2020. Results shown for regional Factor Indicators represent hypothetical, historical performance, at Tilt 1, based on FTSE Global Equity Index Series and the FTSE Global Factor Index Series. Past performance is no guarantee of future results. Please see the Appendices I and II and end for important disclosures and information on factor calculations. For professional investors only.

# Appendix I

## Note on Market Maps Factor Indicator Data

FTSE Russell employs a bottom-up (or "tilting") approach to create factor indexes. The method begins with a set of weights that are modified by multiplying them by stock- and factor-specific scores that range from 0 to 1: high factor scores are given for stocks with large factor values and close-to-zero scores for stocks with the smallest factor values.

This approach means that stocks are weighted in consideration of all their factor characteristics simultaneously. All data in the Market Maps Regional Factor Indicator Report have been set to Tilt 1.

See FTSE Global Factor Index Series Ground Rules v4.4, January 2019, below for further details on rules-based factor calculations and construction methodology.

## Links to FTSE Russell Factor Research Papers

[Implementation considerations for defensive strategies: A look at three approaches \(Feb 2019\)](#)

[Alternative approaches to multi-factor index construction: Like-for-like comparisons \(Nov 2018\)](#)

[Factor indexes and factor exposure matching: Like-for-like comparisons \(Oct 2018\)](#)

[Multi-factor indexes: The power of tilting \(August 2018\)](#)

[Implication considerations for factor investing \(Mar 2018\)](#)

[Top-down or bottom-up? Balancing exposure and diversification in multi-factor index construction \(Mar 2018\)](#)

[Factor exposure and portfolio concentration \(Apr 2017\)](#)

[Factor exposures of smart beta indexes \(Sep 2015\)](#)

## Information on Factor Index Ground Rules and Construction Methodology

[FTSE Global Factor Index Series Ground Rules v4.4, January 2019](#)

[Factor exposure indexes: Index Construction Methodology \(Aug 2014\)](#)

## Appendix II: Glossary of Terms

### VALUE

**Earnings Yield (E/P)** – Latest reported annual earnings per share divided by full market capitalization. Earnings are based on net income from continuing operations, before amortization of goodwill and extraordinary items and after tax, minority interests, preferred dividend, at fiscal year end.

**Cash-Flow Yield (CF/P)** – Latest reported annual cash-flow yield is cash earnings per share divided by full market capitalization. Cash earnings are earnings plus depreciation, amortization, deferred taxes, other non-cash items, extraordinary item and changes in working capital for the most recent fiscal year.

**Sales-to-Price (S/P)** – Latest annual sales from continuing operations per share for the full fiscal year divided by full market capitalization. Sales values are generally as reported but occasional adjustments may be made. They are also computed for banks, insurance and other financial companies based on appropriate definitions. Sales are attributed across different share classes, where common equity is comprised of more than one share type.

**Earnings Yield (E/P) 12M Forward** – Current consensus estimates of 12-month-forward earnings per share divided by full market capitalization. Earnings are based on net income from continuing operations, before amortization of goodwill and extraordinary items and after tax, minority interests, preferred dividend, at fiscal year end.

**Cash-Flow Yield (CF/P) 12M Forward** – Current consensus estimates of 12-month-forward cash earnings per share divided by full market capitalization. Cash earnings are earnings plus depreciation, amortization, deferred taxes, other non-cash items, extraordinary item and changes in working capital for the most recent fiscal year.

**Sales-to-Price (S/P) 12M Forward** – Current consensus estimates of 12-month-forward sales from continuing operations per share for the fiscal year divided by full market capitalization.

**Book-to-Price (B/P) 12M Forward** – Current consensus estimates of 12-month-forward book value per share divided by full market capitalization. Book value is based on common equity, excluding minority interest and preferred stock at the most recent fiscal year end. Goodwill written off may also be added back.

**EBIT/EV 12M Forward** – EBIT/EV is calculated as current consensus estimates of 12-month-forward earnings before interest and taxes divided by enterprise value.

### PROFITABILITY

**Return-on-Assets (ROA)** – Net income divided by average total assets, calculated relative to the regional median stock level.

**Delta Turnover** – Net sales revenue divided by average total assets, calculated relative to the regional median stock level.

**Accruals** – Net operating assets (NOA) for the most recent reporting period minus NOA from the previous reporting period, as calculated with following formula: Change in working capital + change in non-current net operating assets + change in net financial assets ([short-term investments + long-term investments] – [long-term debt + short-term debt + preferred stock]), divided by average total assets. Calculated relative to the regional median stock level.

**Return-on-Equity (ROE) 12M Forward** – Current consensus estimates of net income divided by average common equity. Net income is the fiscal-year earnings from continuing operations after tax, minority interests, preferred dividends and before extraordinary items and amortization of goodwill and may be adjusted for dilution. ROE is expressed as a percentage and is not calculated when average common equity is negative.

**Gearing** – Total debt divided by total shareholder's equity.

**Net Margin 12M Forward** – Consensus estimates for 12-month-forward aftertax income divided by estimated revenues.

### LEVERAGE

**Net Debt-to-Equity 12M Forward** – Consensus 12-month-forward estimates for total liabilities divided by shareholder's equity, net of cash.

**Leverage Ratio** – Operating cash flow divided by total debt. A company whose net operating cash flow is greater than total debt or has no debt is assigned a maximum Leverage Ratio of one.

### QUALITY

3M Regional Returns

YTD Regional Returns

Factor Rotation History

Macro Drivers

US

UK

EU ex UK

Japan

AP ex Japan

EM

Appendix

## Appendix II: Glossary of Terms

Combination of profitability (return on assets), efficiency (change in asset turnover), earnings quality (accruals) and leverage.

### SIZE

Size is calculated as the natural logarithm of each company's full market capitalization in local currency terms.

### LONG-TERM MOMENTUM

Measure of changes in total stock returns in local currency terms over those of the previous year.

### VOLATILITY (LOW)

Standard deviation of five years of weekly local total returns prior to the rebalance month. A minimum of 52 weekly return observations are required to calculate volatility.

### YIELD

**Dividend Yield 12M** – Calculated as the natural logarithm of each company's 12-month trailing dividend yield.

**Dividend Yield 12M Forward** – Stock-level dividend yield is current consensus estimates of 12-month-forward gross annual stock dividend divided by the stock price.



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Equity markets data is based on the following: FTSE USA, FTSE UK, FTSE Developed Europe ex UK, FTSE Japan and FTSE Asia Pacific ex Japan Indexes.

## Notes

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## Notes

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