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Asia Quantitative Strategy | Asia Pacific

Biweekly Perspectives: Strategic Rebalancing To Quality Growth

Inflation trade has faded, and recession trade is starting to dominate. The market is rotating from Value to Growth, and pending for risk-on trade. Investor positions are net bearish, but show early signs of re-risking. We suggest turning overweight on Quality Growth in Asia/EM.

Latest market dynamics: While investors have started to price in a less hawkish Fed following the July FOMC meeting, the stronger-than-expected payroll numbers in the US might revive investor worries that the Fed has room to continue aggressive rate hikes in the near term. Last Friday, the bond futures market immediately lifted expectations of a 75bps hike in the Sep FOMC. Dollar index (DXY) and US treasury yields were both trending higher. Such a backdrop might allow Value to reverse and outperform tactically near term.

Macro uncertainties are indeed known by a majority of investors, and their risk allocations have already been very defensive. Recession trade dominates market performance - Quality and Defensive stocks in Asia/EM have outperformed the most in 2H thus far, [which aligns with our strategy views in 2H](#). Meanwhile, there were also early signs of re-risking on flows & positioning. EM and credits started to record net inflows recently, while hedge fund de-leveraging is taking a pause. Global macro and trend-following quant funds were trimming beta shorts.

Quant takeaways: First of all, on payroll data, it is known to be one of the most lagging macro data series from an empirical standpoint, and its statistical variance also implies the current headline changes are very likely just noise, in our view, so we think it cannot provide a forward looking signal in our quant model.

However, given investor sentiment is now extremely bearish, market price actions are responding to these "data surprises" significantly, regardless of whether they make fundamental sense or not. We believe market expectations of a "hawkish Fed" might rise near term, and Value could outperform Growth tactically. Still, we also believe it is going to be a short lived and probably the final leg of Value outperformance in this cycle. The commodity market is rolling over. Recession expectations are increasing; the US treasury yield curve is now the most inverted since 2000. The more Value stocks outperform in the next few weeks, the more significant the Growth rotation will be thereafter.

Our suggestions: We would turn overweight on Quality Growth stocks in Asia/EM from now on; any price weakness would be an opportunity to add them. **Inflation trade is over and should be taken profits. Positioning for recession via Quality & Defensiveness are essential in 2H.** For other risk-on factors, we suggest to stay patient at this stage. We also stay cautious on "unprofitable Growth". [Lists of Quality Growth stocks are provided in report.](#)

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Exhibit 1: Relative performance EM equity styles.

Source: MSCI, Bloomberg, Morgan Stanley Research; data as of Aug 5, 2022.

Notes: relative performance of MSCI style indices are measured against MSCI EM standard index.

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Market Dynamics on Which to Focus, and Our Thoughts

Key Highlights – Overweight Quality Growth in Asia/EM

Our latest discussions with investors found the current macro environment has been confusing to a majority of them. [The US is in a "technical recession"](#), but economic data and corporate profits are both better than market expected. There is no consensus on the market outlook at this stage. Investors remain very conservative in taking risk. They are neutralizing style exposures on Value vs. Growth, covering shorts in Asia/EM and US equities markets, and overweighting bonds and cash.

From a quant perspective, we reiterate that markets could be highly volatile in the near term given investor sentiment is fragile, and so market price actions might overreact to any news or rumors. Based on our Asia risk sentiment indicator ([Exhibit 6](#)), this is the third week where we have seen such extreme bearish sentiment. History suggests that it could remain "extremely bearish" for 4-6 weeks before market troughs are seen.

To trade risk-on factors, we continue to suggest being patient at this stage, and believe [later part of August could be a better window for that](#). Meanwhile, we also believe any rising market expectations of a hawkish Fed again would be good opportunity to turn overweight on Growth. We suggest looking for opportunities in Quality Growth, and keep staying away from unprofitable Growth.

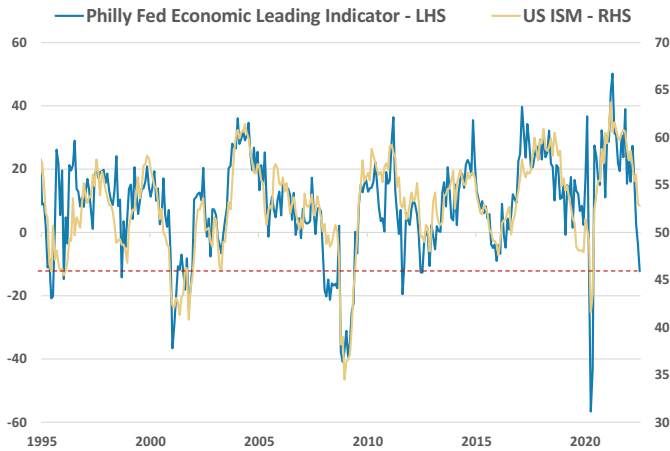
We elaborate on the macro and market dynamics further below.

Macro Dynamics – "Fed Pivot" expectation might cool down near term

Our quant model continues to classify the market regime as being in an economic slowdown phase with high recession risk. We have been in this classification since March 2022, and we believe these macro risks are well understood by a majority of investors. It justifies the current bearish market sentiment, and we suggest looking for Quality exposure (i.e. strong cash flows, low leverage, high profit margin) for outperformance.

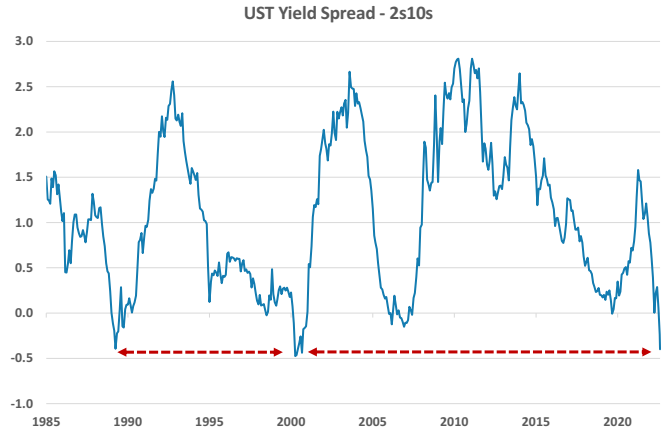
Yet, bad news has been taken as good news by investors this quarter; market expectations on Fed rate hikes have been declining amid rising recession risk. The Fed spoke publicly last week signalling to the market that it might keep hiking aggressively, but market price actions responded by covering shorts in equities, implying investors don't believe the Fed will hike aggressively.

Exhibit 2: The Philly Fed Economic Leading Indicator continues to point to a further slowdown of economic growth.



Source: Bloomberg, Morgan Stanley Research; data as of Aug 5, 2022.

Exhibit 3: UST 2s10s yield curve inversion is as significant as the 2000 and 1989 scenarios.



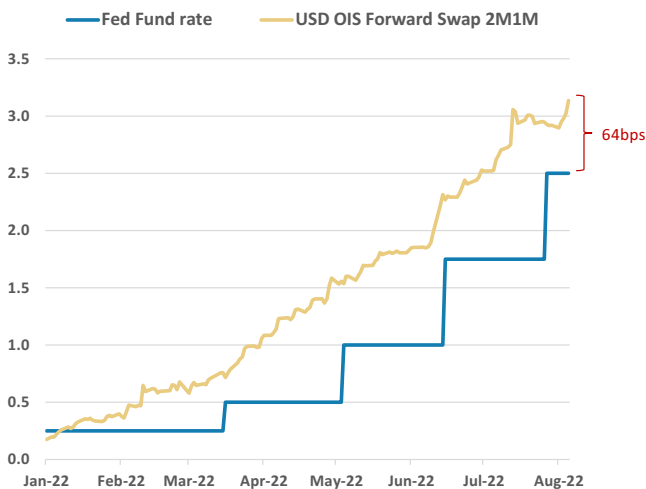
Source: Bloomberg, Morgan Stanley Research; data as of Aug 5, 2022.

From a quant perspective, the strong US jobs number reported last Friday is a good reminder that a 75bps rate hike at the September FOMC might be back on the table.

Given short term equity return is a function of how many rate hikes are priced in, we believe global macro hedge funds might turn to adding net shorts again on equities, which might lift market volatility in the near term, and Asia/EM equities might face a spillover effect via FX.

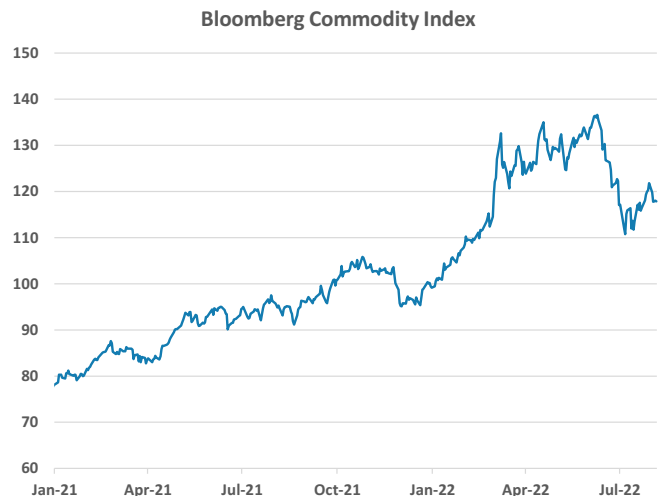
The next step will be the US CPI number reporting this Wednesday. [MS houseview forecasts headline inflation dropping on lower energy price increases \(8.6% YoY\), while core CPI continues to run hot \(6.1% YoY\)](#). If the Fed signals that headline CPI is receding and doesn't focus as much on core, then 50bp should still be seen as the baseline in the next FOMC, in our view, and we would expect market pricing for 75bp to recede.

Exhibit 4: USD swap market is expecting a 64bps hike in Sep FOMC, i.e. 56% of 75bps hike.



Source: Bloomberg, Morgan Stanley Research; data as of Aug 5, 2022.

Exhibit 5: Global commodity prices have started to roll over since June, and we expect July headline inflation to come down from its peak level.



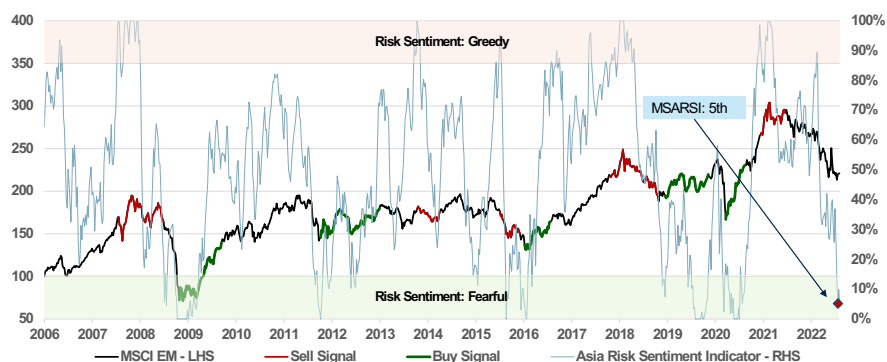
Source: Bloomberg, Morgan Stanley Research; data as of Aug 5, 2022.

Market Dynamics – Sentiment may have "front-run" the economic slowdown

Overview: As at Aug 5, MS Asia Risk Sentiment Indicator (MSARSI) has declined further to the 5th percentile ([Exhibit 6](#)) vs. its long-term history. Global asset owner risk sentiment remains at an extremely bearish level and their portfolios are sitting with a very defensive allocation.

In the last two weeks, the commodity market has been leading the risk-off trade, while inflows were toward US treasury bonds and credits. Within equity, outflows were mostly from developed markets – DM equities recorded net outflows of US\$3.4bn in the week of Aug 3.

Exhibit 6: Morgan Stanley Asia Risk Sentiment Indicator vs. MSCI EM – as of August 5, 2022



Source: FactSet, Bloomberg, EPFR, MSCI, Morgan Stanley Research. Note: Buy/Sell signals are generated if average weekly readings of the risk sentiment indicator in the last month were below the 15th percentile or above the 85th percentile. The above red/green lines are tracking the forward 6M returns since the signal appeared. MSARSI methodology and its other details can be referred to in [insight #1 in the QuantASIA launch report](#)

However, there are also signs that asset owner sentiment has reached the bottom. Both IG and HY bonds recorded fund inflows again in the last week after strong outflows YTD; we believe the fund flows improvement was helped by the better-than-expected 2Q corporate earnings.

For EM assets, fund flows on both equities and bonds have recorded some degree of improvement too – thanks to the rising market expectations of a peaked Dollar index (DXY) ([Exhibit 7](#)).

Exhibit 7: YTD weekly fund flows by major asset classes

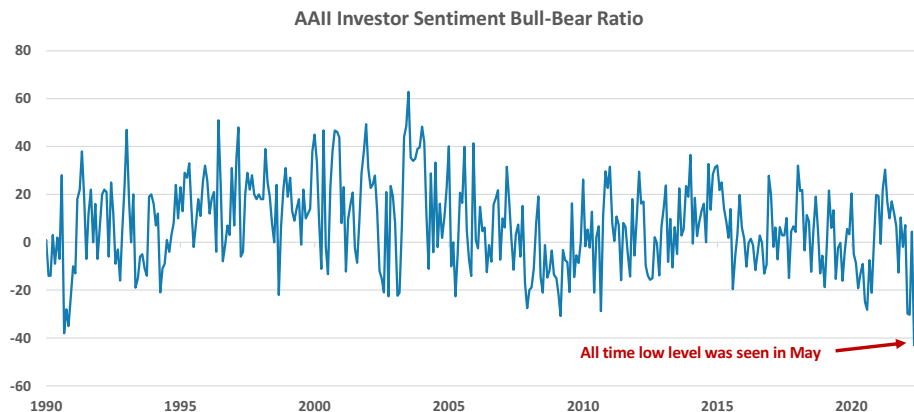
| Date | EM Equities | DM Equities | HY Bonds | EM Bonds | Balanced Funds | IG Bonds | Sovereign Bonds | Money Market | Weekly Total Fund Flows (\$m) |
|------------------|---------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-------------------------------|
| 1/5/2022 | 3,780 | 21,845 | 1,849 | 634 | 4,194 | 3,549 | (1,870) | 20,182 | 54,162 |
| 1/12/2022 | 6,652 | 23,800 | (1,068) | (435) | 2,413 | (2,116) | 679 | (43,508) | (13,584) |
| 1/19/2022 | 5,229 | 5,756 | (1,385) | (2,200) | 705 | (368) | (362) | (83,735) | (76,360) |
| 1/26/2022 | 8,182 | 8,915 | (4,244) | (276) | 644 | (2,608) | 1,880 | 14,938 | 27,431 |
| 2/2/2022 | 2,174 | 19,628 | (4,950) | (474) | 850 | (6,818) | 3,280 | (24,395) | (10,705) |
| 2/9/2022 | 5,309 | 41,262 | (3,609) | (249) | 1,977 | (5,188) | 1,197 | (47,454) | (6,756) |
| 2/16/2022 | 3,296 | (1,104) | (4,469) | (1,564) | 3,050 | (3,212) | 6,823 | (79,416) | (76,597) |
| 2/23/2022 | 3,006 | 3,148 | (2,523) | (470) | 427 | 1,627 | 1,265 | 6,954 | 13,433 |
| 3/2/2022 | 1,284 | (6,272) | (3,470) | (3,059) | (2,915) | (2,121) | 4,287 | 46,320 | 34,054 |
| 3/9/2022 | 3,108 | (4,510) | (3,055) | (3,544) | (786) | (2,135) | 5,492 | (7,830) | (13,259) |
| 3/16/2022 | (752) | 26,169 | (5,404) | (2,679) | (946) | (3,316) | 1,255 | (35,961) | (21,634) |
| 3/23/2022 | (630) | (1,288) | (3,292) | (685) | 751 | 3,895 | 3,514 | 13,213 | 15,478 |
| 3/30/2022 | 5,085 | 13,847 | 3,334 | (142) | 1,380 | 3,405 | 3,487 | 12,151 | 42,546 |
| 4/6/2022 | 5,320 | 3,831 | 946 | 2,159 | 1,675 | (4,342) | (2,611) | (7,541) | (564) |
| 4/13/2022 | 1,251 | (14,107) | (3,570) | (645) | 408 | (5,218) | 2,008 | (45,162) | (65,035) |
| 4/20/2022 | 2,544 | (20,022) | (2,206) | (1,075) | (3,816) | (3,997) | 859 | (55,447) | (83,160) |
| 4/27/2022 | 3,834 | (5,052) | (1,768) | (3,965) | (7,007) | (157) | 2,568 | 59,954 | 48,407 |
| 5/4/2022 | 214 | (3,623) | (508) | (2,857) | 553 | (4,250) | 4,965 | (14,021) | (19,527) |
| 5/11/2022 | (4,354) | (1,887) | (3,441) | (5,085) | (1,972) | (1,153) | 10,087 | (19,728) | (27,534) |
| 5/18/2022 | (310) | (4,891) | (6,365) | (6,108) | (2,579) | (1,198) | 4,372 | (7,567) | (24,646) |
| 5/25/2022 | (310) | 20,858 | (2,644) | (2,642) | 164 | 979 | 3,754 | 28,163 | 48,322 |
| 6/1/2022 | (804) | 3,472 | 5,647 | (1,455) | 203 | (3,159) | 1,284 | (3,693) | 1,495 |
| 6/8/2022 | (1,301) | 13,338 | 14 | (1,554) | 115 | (2,384) | 907 | 54,243 | 63,377 |
| 6/15/2022 | 1,288 | 15,333 | (11,932) | (3,855) | (5,104) | (1,419) | 4,315 | (50,128) | (51,502) |
| 6/22/2022 | (301) | (16,548) | (6,525) | (2,775) | (4,153) | (9,581) | 3,445 | 10,810 | (25,629) |
| 6/29/2022 | 1,756 | (7,525) | (4,119) | (2,921) | (2,277) | (6,874) | 1,800 | (18,312) | (38,473) |
| 7/6/2022 | (1,976) | (2,572) | (1,659) | (2,307) | 586 | 6,723 | 6,874 | 62,561 | 68,230 |
| 7/13/2022 | 306 | (3,228) | (2,131) | (2,300) | (1,501) | 7,286 | 7,838 | 15,084 | 21,354 |
| 7/20/2022 | (906) | (3,618) | (2,285) | (2,445) | (2,163) | (2,543) | 1,096 | 3,478 | (9,386) |
| 7/27/2022 | 665 | 4,922 | 4,413 | (729) | (1,471) | (747) | 3,347 | 27,017 | 37,417 |
| 8/3/2022 | 800 | (3,446) | 4,269 | 150 | 864 | 5,411 | 2,052 | (4,053) | 6,045 |
| YTD Total | 53,436 | 126,430 | (66,153) | (55,554) | (15,731) | (42,029) | 89,888 | (172,883) | (82,596) |

Source: EPFR, Morgan Stanley Research, data as of Aug 5, 2022.

Fund manager sentiment is also picking up from the trough level. According to AAI investor sentiment survey as of Aug 5, the net ratio of bulls minus bears bottomed in May, and has been improving gradually in June and July (Exhibit 8). Our fund positioning analysis also identifies that hedge fund managers have been covering shorts in both Asia and the US recently (Exhibit 13); CTA funds (referring to "Commodity trading advisor" with trend following strategy) have started to trim short equity Beta exposure in US (Exhibit 9); risk parity funds were adding risk on global equities because VIX has been remaining low.

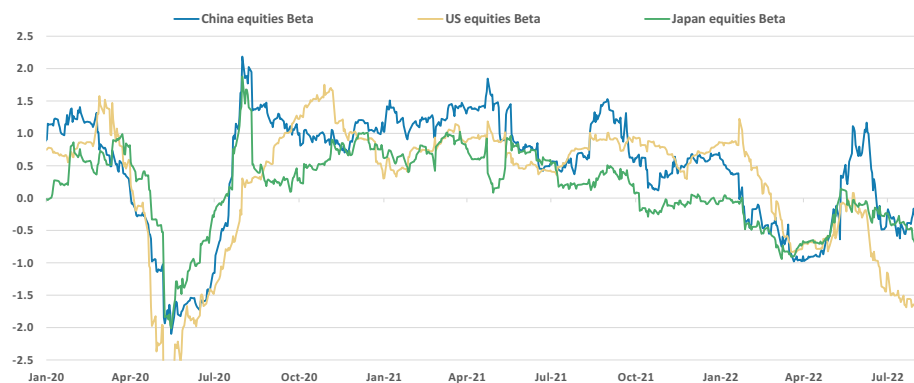
Although fund manager risk positioning remained net bearish, the deleveraging process is taking a pause amid moderation of US treasury bond volatility (referring to "MOVE Index" on Bloomberg). From a quant perspective, if these trends extend, global fund flows could incrementally support the market to re-risk, and speed up the rotation into Growth and other risk-on factors.

Exhibit 8: Investors are now less bearish compared to two months ago



Source: Bloomberg, Morgan Stanley Research; data as of Aug 5, 2022.

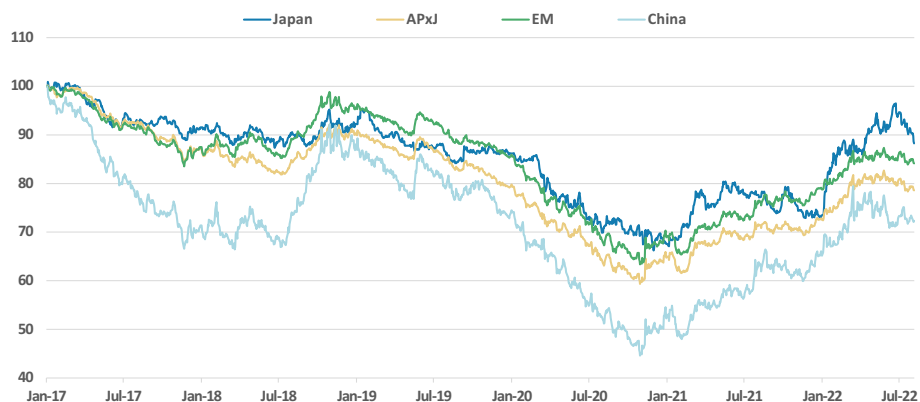
Exhibit 9: Beta exposures of global major CTA quant funds by markets



Source: FactSet, Bloomberg, Morgan Stanley Research; data as of Aug 5, 2022.

Regarding style performance, relative returns between Value and Growth have been highly volatile from July onward (Exhibit 10). The outperformance of Growth over Value since June has been very marginal in APxJ, EM, and China. Japan is the only major market in the region that has significant rotation toward Growth, which was due to the FX issue; we discussed that in our Japan Quant monthly report.

Although the Growth rotation in the US has been more significant in the last two months, we remind investors that the opportunity set in Asia/EM could result in different strategy implementations. FX, geopolitical tensions, and asset owner sentiment are the three important macro dynamics that we also have to look at besides the market expectations on central bank monetary policy. The recent market developments are good examples of that.

Exhibit 10: Relative performance of MSCI Value vs. Growth indices by regions/markets

Source: Bloomberg, Morgan Stanley Research; data as of Aug 5, 2022.

Our Latest Thoughts

We believe it's time to turn strategically overweight on Quality Growth in Asia/EM, because the macro backdrop is well established for Growth style to outperform.

From a timing perspective, there might be tactical risk in the near term that Value could outperform Growth amid rising expectations of a hawkish Fed. We note that the macro debates on the US economy could imply that bond yields will remain volatile; the recent short covering-driven market rally in the US might fade and become a drag on sentiment in Asia/EM equities. US/China geopolitical tensions have escalated over the past few days, which might also slow down the fund flows returning to EM assets despite DXY might have peaked. However, we believe it will be the final leg of Value stocks to outperform Growth in the current cycle, because market expectations of a "Fed pivot" will only tend to rise as we move toward 2023.

For risk-on trade, **we suggest to remain a bit more patient, and reiterate our view that there will be a better window for that in the later part of August.** Under our quant driven investment framework, it is not necessary for fundamentals to make sense in every market situation. Investor behavior and market price actions are the primary sources for our model signals. Given history suggests investor bearishness usually lasts 4 to 6 weeks before potentially picking up substantially, our quant model is taking this horizon as the baseline to change risk exposure. Meanwhile, there are many other qualitative factors around that deserve to be monitored closely in the near term, e.g. US/China tensions, and China property sector development. Please stay with us for further updates.

Quality Growth Stock Lists in Asia/EM

Exhibit 11: APxJ/EM Quality Growth Stock Universe - Top 50 names by market cap

| Ticker | Name | Market Cap (USD\$m) | MSCI Market | Exchange | GICS Industry Group | Last Price (loc) | MS Rating |
|-----------|--|---------------------|--------------|--------------|---|------------------|--------------|
| 2330.TW | Taiwan Semicon Mfg | 440,819 | Taiwan | Taiwan | Semiconductors & Semiconductor Equipment | 516.00 | Overweight |
| 0700.HK | Tencent Holdings | 375,366 | China | Hong Kong | Media & Entertainment | 307.60 | Overweight |
| 600519.SS | Kweichow Moutai A | 353,977 | China | Shanghai | Food Beverage & Tobacco | 1923.96 | Overweight |
| TCS.NS | Tata Consultancy Services | 154,097 | India | BSE India | Software & Services | 3365.25 | Equal-Weight |
| 1299.HK | AIA Group | 121,745 | Hong Kong | Hong Kong | Insurance | 76.80 | Overweight |
| 000858.SZ | Wuliangye Yibin A | 102,784 | China | Shenzhen | Food Beverage & Tobacco | 179.18 | Overweight |
| 1120.SE | Al Rajhi | 95,421 | Saudi Arabia | Saudi Arabia | Banks | 86.20 | Overweight |
| 9633.HK | Nongfu Spring H | 67,336 | China | Hong Kong | Food Beverage & Tobacco | 46.65 | Equal-Weight |
| 9999.HK | NetEase | 63,689 | China | Hong Kong | Media & Entertainment | 137.90 | Overweight |
| AMXL.MX | America Movil L | 61,363 | Mexico | Mexico | Telecommunication Services | 18.49 | Overweight |
| BJFN.NS | Bajaj Finance | 54,845 | India | BSE India | Diversified Financials | 7303.20 | Overweight |
| 300760.SZ | Shenzhen Mindray Bio-Medical Electronics A | 52,239 | China | Shenzhen | Health Care Equipment & Services | 299.17 | Overweight |
| 600809.SS | Shanxi Xinghuacun Fen A | 49,652 | China | Shanghai | Food Beverage & Tobacco | 275.53 | Overweight |
| 000568.SZ | Luzhou Laojiao A | 48,535 | China | Shenzhen | Food Beverage & Tobacco | 225.48 | Equal-Weight |
| ADAG.NS | Adani Total Gas | 43,392 | India | BSE India | Utilities | 3340.30 | NA |
| 300015.SZ | Aier Eye Hospital Group A | 31,681 | China | Shenzhen | Health Care Equipment & Services | 31.14 | Equal-Weight |
| 2020.HK | ANTA Sports Products | 29,737 | China | Hong Kong | Consumer Durables & Apparel | 87.70 | Overweight |
| WIPR.NS | Wipro | 29,209 | India | BSE India | Software & Services | 439.90 | Underweight |
| SUN.NS | Sun Pharmaceutical Inds | 28,551 | India | BSE India | Pharmaceuticals Biotechnology & Life Sciences | 915.20 | Overweight |
| IQCD.QA | Industries of Qatar | 28,242 | Qatar | Qatar | Capital Goods | 17.04 | NA |
| GMG.AX | Goodman Group | 26,985 | Australia | ASX | Real Estate | 20.83 | Overweight |
| 600436.SS | Zhangzhou Pientzehuang A | 26,482 | China | Shanghai | Pharmaceuticals Biotechnology & Life Sciences | 298.67 | Underweight |
| BMRI.JK | Bank Mandiri | 26,035 | Indonesia | Indonesia | Banks | 8250.00 | Overweight |
| 0291.HK | China Resources Beer (Holdings) | 22,400 | China | Hong Kong | Food Beverage & Tobacco | 54.65 | Overweight |
| 2331.HK | Li Ning Co | 21,199 | China | Hong Kong | Consumer Durables & Apparel | 65.35 | Overweight |
| ZTO.N | ZTO Express ADR A | 20,688 | China | NYSE | Transportation | 26.47 | Overweight |
| 0669.HK | Techtronic Industries | 20,343 | Hong Kong | Hong Kong | Capital Goods | 94.00 | Overweight |
| 002049.SZ | Unigroup GX Mi-A Rg | 19,003 | China | Shenzhen | Semiconductors & Semiconductor Equipment | 220.18 | Overweight |
| 300896.SZ | IMEIK Technology Development A | 18,819 | China | Shenzhen | Pharmaceuticals Biotechnology & Life Sciences | 585.94 | NA |
| 2688.HK | ENN Energy Holdings | 18,414 | China | Hong Kong | Utilities | 130.30 | Underweight |
| 2319.HK | China Mengniu Dairy | 18,331 | China | Hong Kong | Food Beverage & Tobacco | 34.85 | Overweight |
| 603392.SS | Bj Wantai Rg-A | 17,682 | China | Shanghai | Pharmaceuticals Biotechnology & Life Sciences | 137.26 | NA |
| 2020.SE | SABIC Agri-Nutrients | 16,856 | Saudi Arabia | Saudi Arabia | Materials | 150.80 | NA |
| QISB.QA | Qatar Islamic Bank | 16,682 | Qatar | Qatar | Banks | 26.01 | NA |
| DELTA.BK | Delta Electronics Thai | 16,062 | Thailand | Thailand | Technology Hardware & Equipment | 540.00 | NA |
| BIMBOA.MX | Grupo Bimbo A | 15,834 | Mexico | Mexico | Food Beverage & Tobacco | 70.16 | Overweight |
| 603260.SS | Hoshine Silicon Ind A | 15,652 | China | Shanghai | Materials | 112.00 | NA |
| 002709.SZ | Guangzhou Tinci Materials Technology A | 14,967 | China | Shenzhen | Materials | 52.66 | Underweight |
| 000596.SZ | Anhui Gujing Distillery A | 14,773 | China | Shenzhen | Food Beverage & Tobacco | 253.10 | Overweight |
| 6969.HK | Smooore International Holdings | 13,935 | China | Hong Kong | Food Beverage & Tobacco | 18.00 | NA |
| CPIJ | Capitec Bank Holdings | 13,883 | South Africa | JSE | Banks | 2067.31 | Underweight |
| 0881.HK | Zhongsheng Group Holding | 13,798 | China | Hong Kong | Retailing | 41.60 | Overweight |
| DIVI.NS | Divi's Laboratories | 12,833 | India | BSE India | Pharmaceuticals Biotechnology & Life Sciences | 3911.05 | NA |
| 002027.SZ | Focus Media Info Tech A | 12,669 | China | Shenzhen | Media & Entertainment | 5.89 | Overweight |
| 300957.SZ | Yunnan Botanee A | 12,203 | China | Shenzhen | Household & Personal Products | 192.01 | NA |
| 605117.SS | Ningbo Deye Technology A | 11,849 | China | Shanghai | Capital Goods | 344.90 | NA |
| 603986.SS | Giga Device A | 11,717 | China | Shanghai | Semiconductors & Semiconductor Equipment | 130.08 | Equal-Weight |
| 000661.SZ | Changchun High & New Tech A | 11,644 | China | Shenzhen | Pharmaceuticals Biotechnology & Life Sciences | 232.50 | NA |
| REA.AX | REA Group | 11,529 | Australia | ASX | Media & Entertainment | 124.54 | Equal-Weight |
| WTC.AX | WiseTech Glob | 11,408 | Australia | ASX | Software & Services | 53.46 | Overweight |

Source: Morgan Stanley Research; data as of Aug 5, 2022. For important disclosures regarding companies that are the subject of this screen, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures.

Exhibit 12: Japan Quality Growth Stock Universe - Top 20 names by market cap

| Ticker | Name | Market Cap (USD\$m) | MSCI Market | Exchange | GICS Industry Group | Last Price (loc) | MS Rating |
|--------|-----------------------|---------------------|-------------|----------|---|------------------|--------------|
| 8035.T | Tokyo Electron | 54,121 | Japan | Tokyo | Semiconductors & Semiconductor Equipment | 48,860 | Equal-Weight |
| 4063.T | Shin-Etsu Chemical | 52,874 | Japan | Tokyo | Materials | 17,260 | Overweight |
| 4519.T | Chugai Pharmaceutical | 46,911 | Japan | Tokyo | Pharmaceuticals Biotechnology & Life Sciences | 3,770 | Equal-Weight |
| 7741.T | HOYA | 36,707 | Japan | Tokyo | Health Care Equipment & Services | 14,685 | Overweight |
| 6273.T | SMC | 32,971 | Japan | Tokyo | Capital Goods | 67,490 | Equal-Weight |
| 2413.T | M3 | 23,440 | Japan | Tokyo | Health Care Equipment & Services | 4,729 | Equal-Weight |
| 8113.T | Unicharm | 22,427 | Japan | Tokyo | Household & Personal Products | 4,721 | Overweight |
| 3659.T | NEXON | 20,278 | Japan | Tokyo | Media & Entertainment | 3,135 | Overweight |
| 7832.T | Bandai Namco Holdings | 17,209 | Japan | Tokyo | Consumer Durables & Apparel | 9,629 | NA |
| 8630.T | Sompo Holdings | 15,401 | Japan | Tokyo | Insurance | 5,748 | Equal-Weight |
| 4528.T | Ono Pharmaceutical | 14,777 | Japan | Tokyo | Pharmaceuticals Biotechnology & Life Sciences | 3,340 | Overweight |
| 6920.T | Lasertec | 13,640 | Japan | Tokyo | Semiconductors & Semiconductor Equipment | 19,685 | NA |
| 2801.T | Kikkoman | 11,417 | Japan | Tokyo | Food Beverage & Tobacco | 8,620 | Underweight |
| 2267.T | Yakult Honsha | 10,366 | Japan | Tokyo | Food Beverage & Tobacco | 8,130 | Equal-Weight |
| 4716.T | Oracle Japan | 7,936 | Japan | Tokyo | Software & Services | 8,580 | Equal-Weight |
| 3038.T | Kobe Bussan | 7,748 | Japan | Tokyo | Food & Staples Retailing | 3,915 | Equal-Weight |
| 6965.T | Hamamatsu Photonics | 7,422 | Japan | Tokyo | Technology Hardware & Equipment | 6,290 | NA |
| 4021.T | Nissan Chemical | 7,233 | Japan | Tokyo | Materials | 6,680 | Equal-Weight |
| 9962.T | MISUMI Group | 7,012 | Japan | Tokyo | Capital Goods | 3,715 | Equal-Weight |
| 3092.T | ZOZO | 6,676 | Japan | Tokyo | Retailing | 3,255 | Equal-Weight |

Source: Morgan Stanley Research; data as of Aug 5, 2022. For important disclosures regarding companies that are the subject of this screen, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures.

Notes: The above screening is purely quant driven based on stock characteristics. Please contact asiaquantstrategy@morganstanley.com if you want the longer list to explore mid-cap names.

Short Interest Update – August 5, 2022

1. Investors have been covering shorts in China and Japan MTD.
2. In terms of stock lending utilization, China Staples and Industrials were being covered the most in August. In AxJ, Staples led the short covering, while new shorts were added in China Real Estate, and AxJ Utilities.
3. In Japan, the most shorts were added in Financials, Staples Industrials, while Info Tech stocks led the short covering.

Exhibit 13: Changes in Utilization Ratio of Market/Sector (as of last Friday vs. prior month average); Positive Changes Mean Adding Shorts, Negative Values Mean Covering Shorts

| MSCI Classification | AxJ | | China | | Japan | |
|------------------------|-------------|-----------------------|------------|-----------------------|------------|-----------------------|
| | Latest | Change vs. Last Month | Latest | Change vs. Last Month | Latest | Change vs. Last Month |
| Energy | 6.0 | -1.0 | 4.5 | -1.1 | 5.6 | -2.6 |
| Materials | 21.2 | -0.5 | 14.4 | -1.3 | 6.0 | 0.8 |
| Industrials | 22.3 | -0.8 | 9.2 | -5.2 | 6.1 | 2.6 |
| Consumer Discretionary | 10.7 | 1.0 | 6.6 | 0.1 | 5.7 | -3.0 |
| Consumer Staples | 17.9 | -2.5 | 15.9 | -5.3 | 8.3 | 2.8 |
| Health Care | 21.8 | -1.1 | 11.9 | -1.4 | 4.3 | -0.3 |
| Financials | 6.5 | -0.2 | 5.6 | 0.2 | 4.9 | 2.7 |
| Information Technology | 18.0 | -0.2 | 17.6 | 1.5 | 5.3 | -7.3 |
| Communication Services | 4.8 | 0.2 | 1.5 | -0.5 | 5.0 | 0.0 |
| Utilities | 9.7 | 2.4 | 6.7 | -0.1 | 5.4 | 1.6 |
| Real Estate | 9.4 | 0.6 | 14.5 | 3.4 | 5.9 | 0.6 |
| In Aggregate | 12.9 | 0.2 | 7.1 | -0.4 | 5.7 | -1.1 |

Source: IHS Markit, FactSet, Morgan Stanley Research

Note: The Utilization Ratio highlights the balance between demand and supply of stock loans. A stock might appear to have low levels of short interest only due to its lack of availability for shorting purposes. The Utilization Ratio measures the percentage of supply being covered by demand, and is calculated as short interest/actively available amount of stock loan supply. The active element refers to IHS Markit adjustments for small or inactive inventory.

Exhibit 14: Top 10 Increases and Decreases in Short Interest Value among AxJ Companies

| AxJ | Company Name | GICS Sector | Short Interest Value (US\$m) | Changes vs. Last Month | Utilization Ratio (%) | Days to Cover |
|-----------|--|------------------------|------------------------------|------------------------|-----------------------|---------------|
| 2330-TW | Taiwan Semiconductor Manufacturing Co., Ltd. | Information Technology | 1,668 | 854 | 1.3 | 0.13 |
| 669-HK | Technonic Industries Co., Ltd. | Industrials | 366 | 158 | 5.4 | 0.32 |
| 2318-HK | Ping An Insurance (Group) Company of China, Ltd. Class H | Financials | 1,783 | 144 | 12.2 | 0.64 |
| 1398-HK | Industrial and Commercial Bank of China Limited Class H | Financials | 250 | 102 | 2.1 | 0.16 |
| 1211-HK | BYD Company Limited Class H | Consumer Discretionary | 402 | 95 | 4.5 | 0.06 |
| 247540-KR | Ecopro BM Co., Ltd. | Industrials | 527 | 92 | 61.4 | 0.30 |
| 2359-HK | WuXi AppTec Co., Ltd. Class H | Health Care | 266 | 85 | 17.0 | 0.40 |
| 9988-HK | Alibaba Group Holding Ltd. | Consumer Discretionary | 391 | 84 | 0.7 | 0.03 |
| 2303-TW | United Microelectronics Corp. | Information Technology | 1,231 | 83 | 91.2 | 0.39 |
| BEKE-US | KE Holdings, Inc. Sponsored ADR Class A | Real Estate | 153 | 76 | 6.2 | 0.05 |
| 373220-KR | LG Energy Solution Ltd. | Industrials | 609 | (415) | 84.8 | 0.18 |
| 700-HK | Tencent Holdings Ltd. | Communication Services | 46 | (248) | 0.1 | 0.00 |
| 5871-TW | Chalease Holding Co. Ltd. | Financials | 132 | (224) | 8.5 | 0.17 |
| 6618-HK | JD Health International, Inc. | Consumer Discretionary | 568 | (175) | 22.9 | 0.71 |
| LI-US | Li Auto, Inc. Sponsored ADR Class A | Consumer Discretionary | 593 | (169) | 11.4 | 0.08 |
| 9992-HK | Pop Mart International Group Limited | Consumer Discretionary | 192 | (167) | 78.8 | 0.26 |
| FUTU-US | Futu Holdings Ltd. Sponsored ADR Class A | Financials | 215 | (118) | 36.2 | 0.11 |
| 6969-HK | Smooere International Holdings Limited | Consumer Staples | 344 | (113) | 55.1 | 0.67 |
| YUMC-US | Yum China Holdings, Inc. | Consumer Discretionary | 241 | (108) | 3.5 | 0.12 |
| BABA-US | Alibaba Group Holding Ltd. Sponsored ADR | Consumer Discretionary | 822 | (106) | 7.1 | 0.02 |

Source: FactSet, IHS Markit, Morgan Stanley Research. For important disclosures regarding companies that are the subject of this screen, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures.

Exhibit 15: Top 10 Increases and Decreases in Short Interest Value among Chinese Companies

| China | Company Name | GICS Sector | Short Interest Value (US\$m) | Changes vs. Last Month | Utilization Ratio (%) | Days to Cover |
|---------|--|------------------------|------------------------------|------------------------|-----------------------|---------------|
| 2318-HK | Ping An Insurance (Group) Company of China, Ltd. Class H | Financials | 1,783 | 144 | 12.2 | 0.64 |
| 1398-HK | Industrial and Commercial Bank of China Limited Class H | Financials | 250 | 102 | 2.1 | 0.16 |
| 1211-HK | BYD Company Limited Class H | Consumer Discretionary | 402 | 95 | 4.5 | 0.06 |
| 2359-HK | WuXi AppTec Co., Ltd. Class H | Health Care | 266 | 85 | 17.0 | 0.40 |
| 9988-HK | Alibaba Group Holding Ltd. | Consumer Discretionary | 391 | 84 | 0.7 | 0.03 |
| BEKE-US | KE Holdings, Inc. Sponsored ADR Class A | Real Estate | 153 | 76 | 6.2 | 0.05 |
| 2007-HK | Country Garden Holdings Co. Ltd. | Real Estate | 590 | 74 | 92.0 | 0.63 |
| 884-HK | CIFI Holdings (Group) Co. Ltd. | Real Estate | 186 | 73 | 83.9 | 0.36 |
| IQ-US | iQIYI, Inc. Sponsored ADR Class A | Communication Services | 238 | 56 | 65.0 | 0.30 |
| 1810-HK | Xiaomi Corp. Class B | Information Technology | 934 | 54 | 19.4 | 0.38 |
| 700-HK | Tencent Holdings Ltd. | Communication Services | 46 | (248) | 0.1 | 0.00 |
| 6618-HK | JD Health International, Inc. | Consumer Discretionary | 568 | (175) | 22.9 | 0.71 |
| LI-US | Li Auto, Inc. Sponsored ADR Class A | Consumer Discretionary | 593 | (169) | 11.4 | 0.08 |
| 9992-HK | Pop Mart International Group Limited | Consumer Discretionary | 192 | (167) | 78.8 | 0.26 |
| 6969-HK | Smooere International Holdings Limited | Consumer Staples | 344 | (113) | 55.1 | 0.67 |
| YUMC-US | Yum China Holdings, Inc. | Consumer Discretionary | 241 | (108) | 3.5 | 0.12 |
| BABA-US | Alibaba Group Holding Ltd. Sponsored ADR | Consumer Discretionary | 822 | (106) | 7.1 | 0.02 |
| 1024-HK | Kuaishou Technology Class B | Communication Services | 213 | (103) | 4.3 | 0.07 |
| PDD-US | Pinduoduo, Inc. Sponsored ADR Class A | Consumer Discretionary | 118 | (103) | 1.9 | 0.01 |
| 9618-HK | JD.com, Inc. Class A | Consumer Discretionary | 136 | (102) | 0.7 | 0.03 |

Source: FactSet, IHS Markit, Morgan Stanley Research. For important disclosures regarding companies that are the subject of this screen, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures.

Exhibit 16: Top 10 Increases and Decreases in Short Interest Value among Japanese Companies

| JP | Company Name | GICS Sector | Short Interest Value (JP¥m) | Changes vs. Last Month | Utilization Ratio (%) | Days to Cover |
|---------|--|------------------------|-----------------------------|------------------------|-----------------------|---------------|
| 6367-JP | DAIKIN INDUSTRIES, LTD. | Industrials | 108,635 | 32,874 | 4.1 | 0.30 |
| 3382-JP | Seven & I Holdings Co., Ltd. | Consumer Staples | 134,709 | 31,339 | 9.6 | 0.53 |
| 4704-JP | Trend Micro Incorporated | Information Technology | 79,257 | 28,246 | 7.7 | 0.78 |
| 9433-JP | KDDI Corporation | Communication Services | 136,649 | 27,446 | 4.4 | 0.32 |
| 8031-JP | Mitsui & Co., Ltd. | Industrials | 85,079 | 22,157 | 3.9 | 0.32 |
| 4503-JP | Astellas Pharma Inc. | Health Care | 43,596 | 21,359 | 2.6 | 0.26 |
| 6098-JP | Recruit Holdings Co., Ltd. | Industrials | 75,679 | 18,765 | 1.7 | 0.15 |
| 7267-JP | Honda Motor Co., Ltd. | Consumer Discretionary | 79,346 | 17,911 | 4.2 | 0.27 |
| 2503-JP | Kirin Holdings Company, Limited | Consumer Staples | 104,142 | 16,111 | 9.1 | 0.75 |
| 3659-JP | NEXON Co., Ltd. | Communication Services | 74,318 | 15,803 | 9.7 | 0.86 |
| 7203-JP | Toyota Motor Corp. | Consumer Discretionary | 160,899 | (93,780) | 1.7 | 0.16 |
| 8001-JP | Itochu Corporation | Industrials | 205,875 | (37,609) | 17.3 | 1.04 |
| 9432-JP | Nippon Telegraph and Telephone Corporation | Communication Services | 37,163 | (30,404) | 1.9 | 0.11 |
| 9104-JP | Mitsui O.S.K.Lines, Ltd. | Industrials | 48,192 | (20,344) | 21.6 | 0.06 |
| 2587-JP | Suntory Beverage & Food Ltd. | Consumer Staples | 42,285 | (15,866) | 15.8 | 0.62 |
| 1605-JP | INPEX CORPORATION | Energy | 64,167 | (14,965) | 6.1 | 0.18 |
| 8951-JP | Nippon Building Fund, Inc. | Real Estate | 15,914 | (14,033) | 2.9 | 0.33 |
| 7751-JP | Canon Inc. | Information Technology | 166,804 | (13,446) | 11.5 | 0.63 |
| 5201-JP | AGC Inc. | Industrials | 45,027 | (10,978) | 4.6 | 0.43 |
| 9983-JP | FAST RETAILING CO., LTD. | Consumer Discretionary | 143,520 | (10,168) | 9.4 | 0.12 |

Source: FactSet, IHS Markit, Morgan Stanley Research. For important disclosures regarding companies that are the subject of this screen, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures.

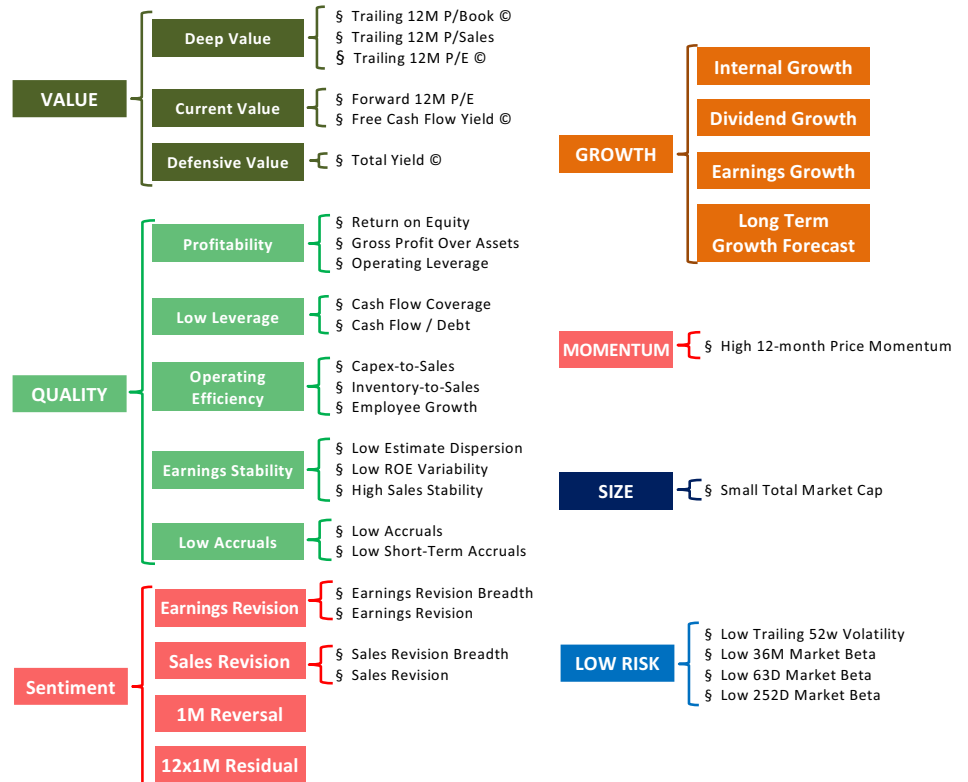
Factor Monitor – Biweekly Update August 5, 2022

Methodology

Factor return calculation: To evaluate historical factor performance, we rank stocks as of every month-end within defined universes, and form quintile portfolios based on the underlying factor values. We go long the top quintile and short the bottom quintile (i.e., long the top 20th percentile of stocks within the defined universe and short those in the bottom 20th percentile), rebalanced monthly. We then calculate the performance of the time series of this L/S market-neutral portfolio over various horizons.

Composite formation: To calculate the composite factors, we first z-score the individual factor values at each monthly observation within the defined universe. Individual factor z-scores are then averaged into composite scores for each stock on an equal-weighted basis.

Exhibit 17: Morgan Stanley Factor Structure (Definitions can be found in [Appendix – Factor Definitions](#))



Source: Morgan Stanley Research

Asia Pacific ex Japan – Factor Monitor

Exhibit 18: Asia Pacific ex Japan – Factor Performance Summary

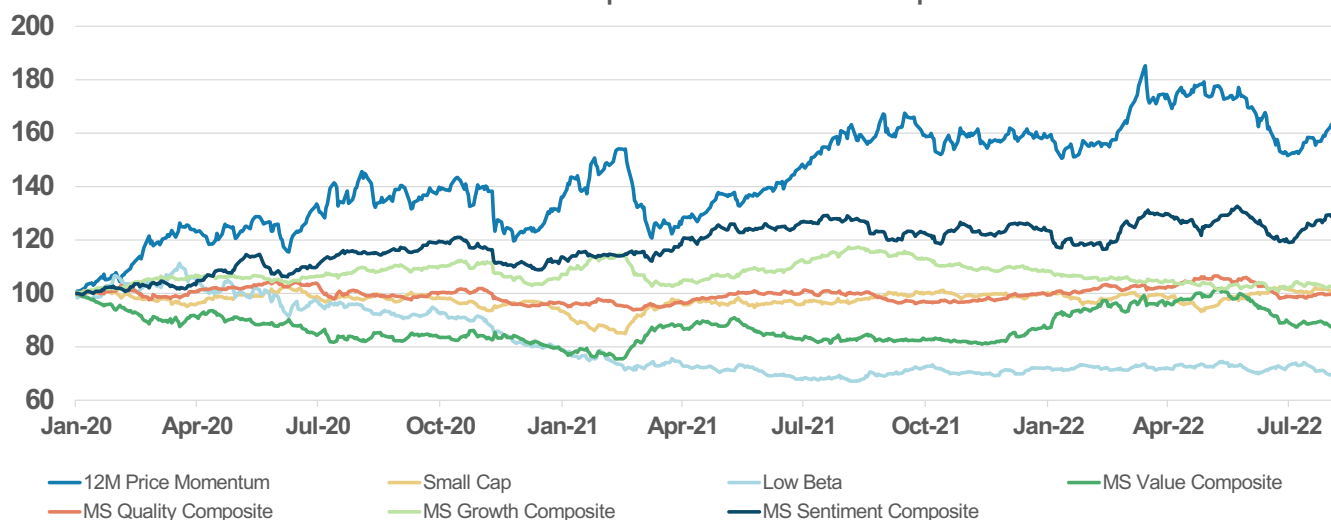
As of: 8/5/2022

| | | Asia Pacific ex Japan | | |
|-----------------|----------------------------|-----------------------|--------------|--------------|
| Category | Factor Description | Aug MTD | Jul | 2022 YTD |
| Deep Value | Cheap P/B | -2.5% | -1.6% | 10.5% |
| | Cheap P/S | -3.8% | 0.8% | 7.4% |
| | Cheap P/E | -3.0% | -2.2% | 0.2% |
| Defensive Value | High Total Yield | -2.6% | 0.2% | 5.5% |
| Current Value | Cheap Fwd P/E | -3.8% | -2.4% | 6.1% |
| Quality Value | High FCF Yield | -1.8% | -0.6% | 0.6% |
| | Value Composite | -2.8% | -0.6% | -0.6% |
| Quality | Low Accruals | -1.1% | -0.3% | 1.9% |
| | High Earnings Stability | -0.8% | 0.4% | 0.0% |
| | High Profitability | 0.4% | 0.8% | -5.2% |
| | Low Leverage | 0.0% | -0.5% | -4.6% |
| | High Operating Efficiency | 0.3% | 0.7% | -2.2% |
| | Quality Composite | 0.3% | 0.8% | -0.1% |
| Growth | High Internal Growth | 0.3% | -3.0% | -12.7% |
| | High Dividend Growth | 0.2% | 2.1% | -8.0% |
| | High Earnings Growth | 0.8% | 1.3% | -2.4% |
| | High Long Term Growth f/c | 1.4% | 1.8% | -4.9% |
| | Growth Composite | 0.7% | 0.0% | -5.2% |
| Sentiment | 1M Loser | 0.3% | 13.3% | 10.7% |
| | 12M-1M Residual Return | -3.6% | 6.4% | 4.7% |
| | Earnings Revision | 0.6% | 1.4% | 1.5% |
| | Sales Revision | 0.7% | 2.6% | 0.8% |
| | Sentiment Composite | -0.9% | 8.3% | 3.7% |
| Others | 12M Price Momentum | -2.7% | 5.9% | -1.3% |
| | Small Cap | 0.4% | 0.2% | 2.0% |
| | Low Volatility | 0.2% | 7.3% | 12.8% |
| | Low Beta | -1.4% | -3.5% | -4.4% |

Source: FactSet, Morgan Stanley Research

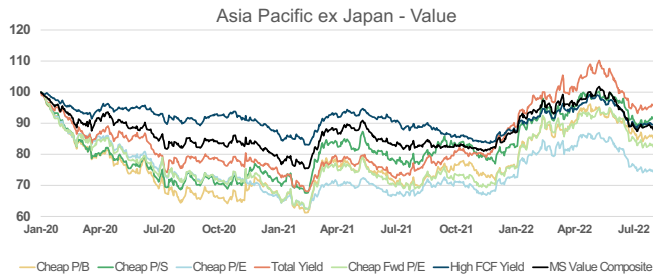
Exhibit 19: Cumulative L/S Alpha since 2020 – Asia Pacific ex Japan

Asia Pacific ex Japan - Overall Composites



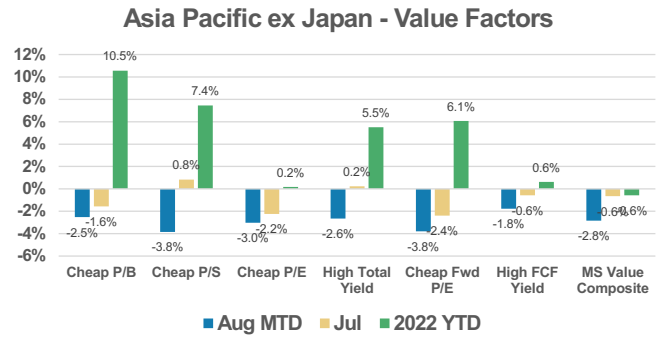
Source: FactSet, Morgan Stanley Research

Exhibit 20: Value Factors – Cumulative L/S Alpha since 2020 - Asia Pacific ex Japan



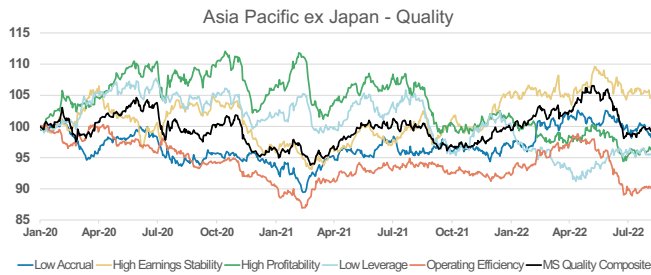
Source: FactSet, Morgan Stanley Research

Exhibit 21: Value Factors – L/S Alpha Asia Pacific ex Japan



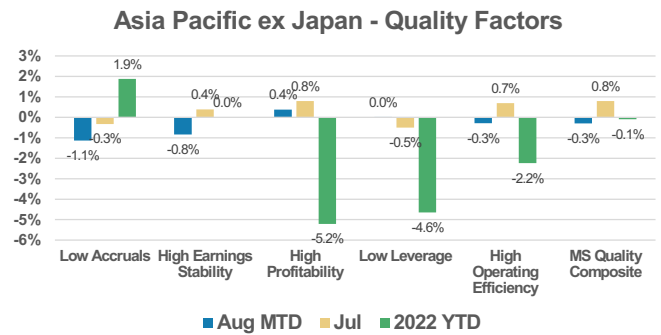
Source: FactSet, Morgan Stanley Research

Exhibit 22: Quality Factors – Cumulative L/S Alpha since 2020 - Alpha Asia Pacific ex Japan



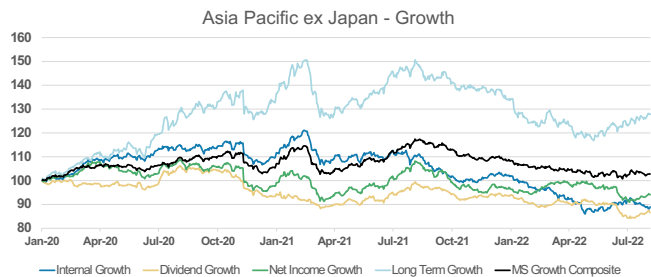
Source: FactSet, Morgan Stanley Research

Exhibit 23: Quality Factors – L/S Alpha Asia Pacific ex Japan



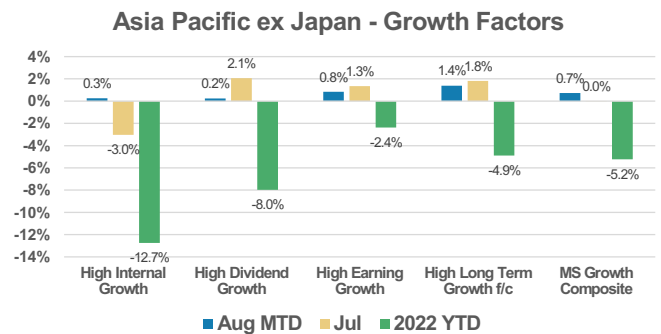
Source: FactSet, Morgan Stanley Research

Exhibit 24: Growth Factors – Cumulative L/S Alpha since 2020 - Asia Pacific ex Japan



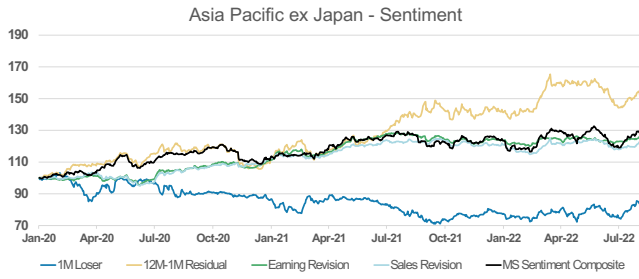
Source: FactSet, Morgan Stanley Research

Exhibit 25: Growth Factors – L/S Alpha Asia Pacific ex Japan



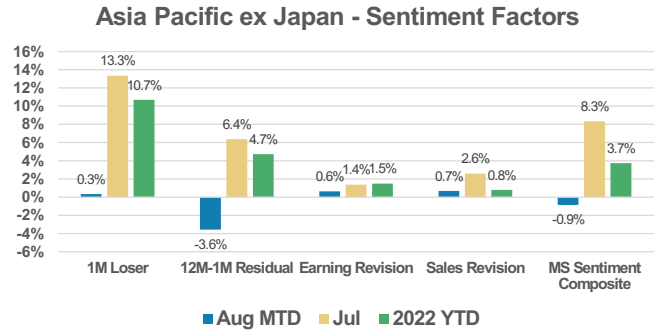
Source: FactSet, Morgan Stanley Research

Exhibit 26: Sentiment Factors – Cumulative L/S Alpha since 2020 - Asia Pacific ex Japan



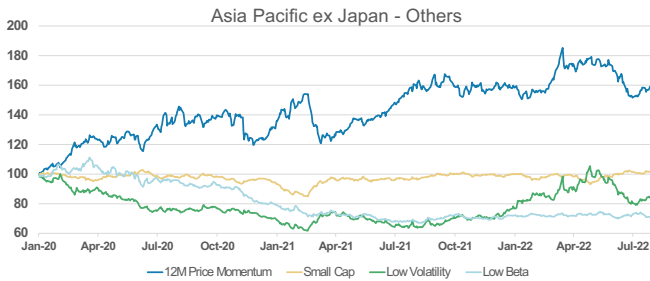
Source: FactSet, Morgan Stanley Research

Exhibit 27: Sentiment Factors – L/S Alpha Asia Pacific ex Japan



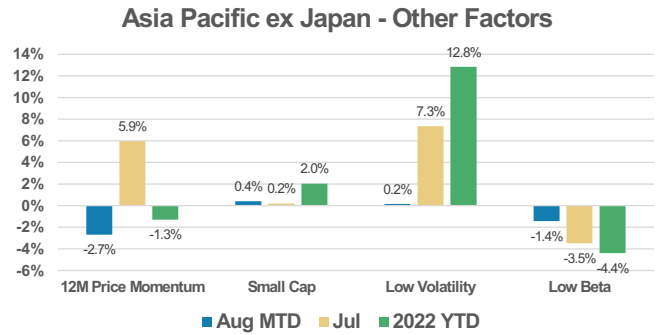
Source: FactSet, Morgan Stanley Research

Exhibit 28: Other Factors – Cumulative L/S Alpha since 2020 - Asia Pacific ex Japan



Source: FactSet, Morgan Stanley Research

Exhibit 29: Other Factors – L/S Alpha Asia Pacific ex Japan



Source: FactSet, Morgan Stanley Research

Asia ex Japan – Factor Monitor

Exhibit 30: Asia ex Japan – Factor Performance Summary

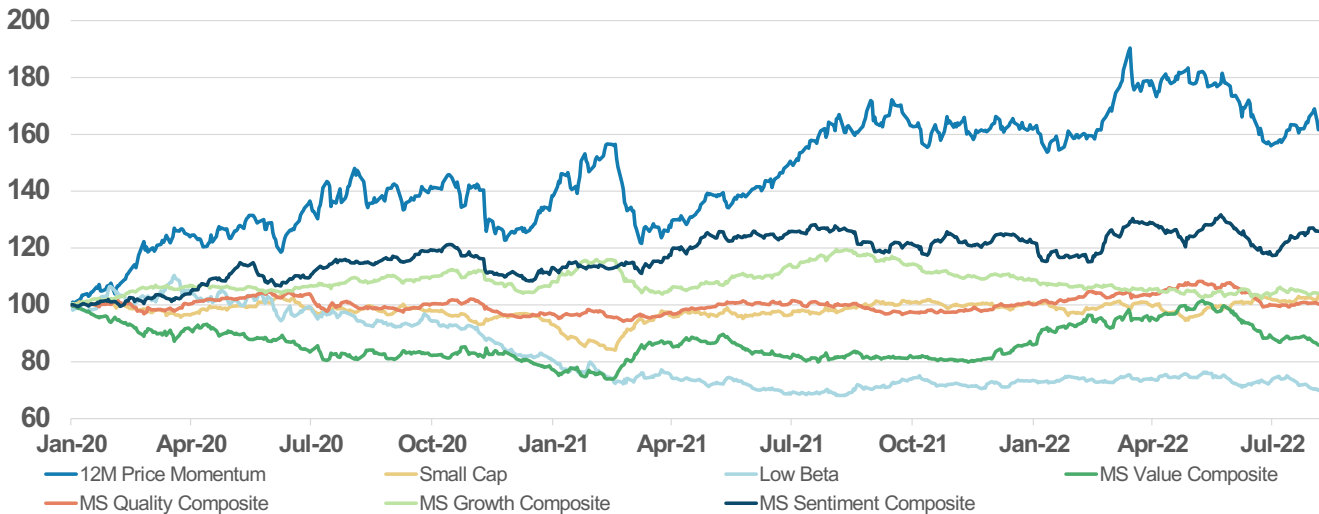
As of: 8/5/2022

| | | Asia ex Japan | | |
|-----------------|----------------------------|---------------|--------------|--------------|
| Category | Factor Description | Aug MTD | Jul | 2022 YTD |
| Deep Value | Cheap P/B | -2.5% | -1.4% | 10.4% |
| | Cheap P/S | -4.0% | 1.3% | 7.8% |
| | Cheap P/E | -3.2% | -2.1% | 0.2% |
| Defensive Value | High Total Yield | -2.7% | -0.1% | 4.7% |
| Current Value | Cheap Fwd P/E | -4.0% | -2.0% | 5.6% |
| Quality Value | High FCF Yield | -1.9% | -0.5% | 0.9% |
| | Value Composite | -2.8% | -0.7% | -0.1% |
| Quality | Low Accruals | -1.2% | 0.1% | 0.7% |
| | High Earnings Stability | -0.8% | 0.4% | 0.6% |
| | High Profitability | 0.5% | 0.2% | -5.2% |
| | Low Leverage | -0.1% | -1.0% | -3.5% |
| | High Operating Efficiency | -0.4% | 0.7% | -3.0% |
| | Quality Composite | -0.3% | 0.7% | 0.2% |
| Growth | High Internal Growth | 0.2% | -2.5% | -12.1% |
| | High Dividend Growth | 0.2% | 1.8% | -9.8% |
| | High Earnings Growth | 0.8% | 1.4% | -2.2% |
| | High Long Term Growth f/c | 1.4% | 1.8% | -3.3% |
| | Growth Composite | 0.6% | -0.3% | -4.4% |
| Sentiment | 1M Loser | 0.3% | 13.2% | 11.9% |
| | 12M-1M Residual Return | -3.6% | 6.0% | 5.0% |
| | Earnings Revision | 0.7% | 1.0% | 1.9% |
| | Sales Revision | 0.7% | 2.2% | 1.1% |
| | Sentiment Composite | -0.9% | 7.9% | 3.2% |
| Others | 12M Price Momentum | -2.7% | 6.5% | -0.1% |
| | Small Cap | 0.4% | 0.7% | 2.5% |
| | Low Volatility | 0.2% | 7.3% | 13.0% |
| | Low Beta | -1.6% | -3.0% | -4.8% |

Source: FactSet, Morgan Stanley Research

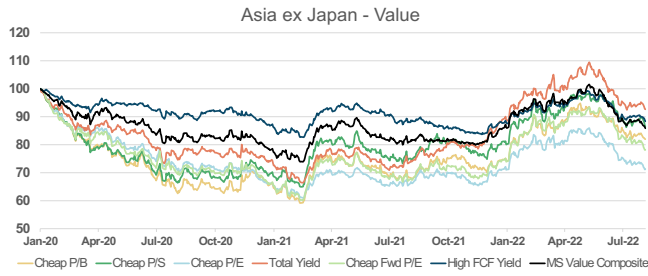
Exhibit 31: Cumulative L/S Alpha since 2020 - Asia ex Japan

Asia ex Japan - Overall Composites



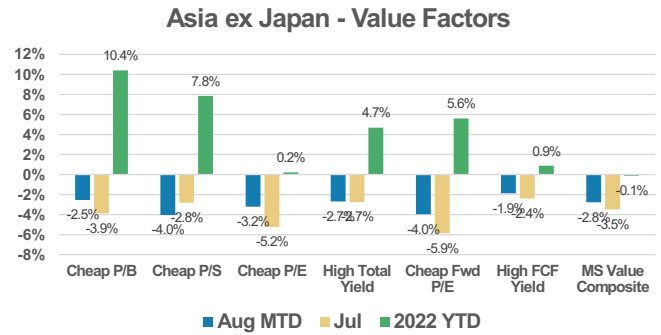
Source: FactSet, Morgan Stanley Research

Exhibit 32: Value Factors – Cumulative L/S Alpha since 2020 - Asia ex Japan



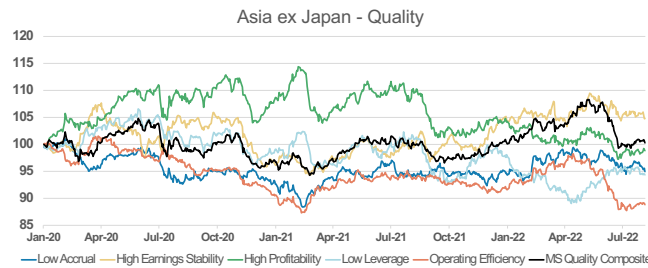
Source: FactSet, Morgan Stanley Research

Exhibit 33: Value Factors – L/S Alpha Asia ex Japan



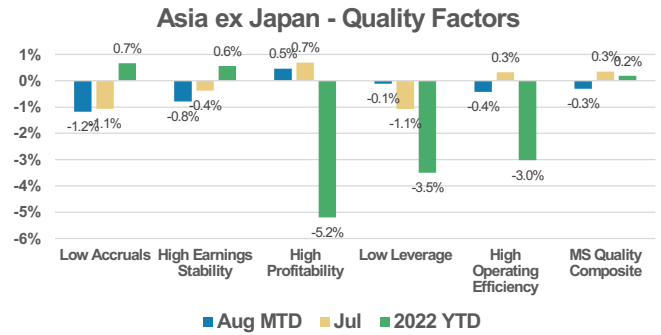
Source: FactSet, Morgan Stanley Research

Exhibit 34: Quality Factors – Cumulative L/S Alpha since 2020 - Asia ex Japan



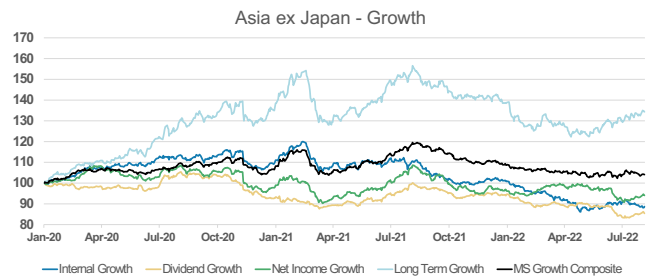
Source: FactSet, Morgan Stanley Research

Exhibit 35: Quality Factors – L/S Alpha Asia ex Japan



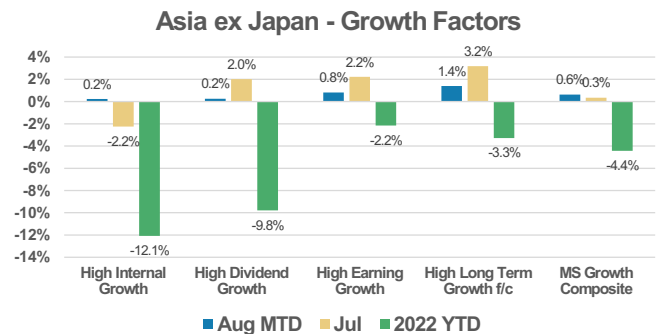
Source: FactSet, Morgan Stanley Research

Exhibit 36: Growth Factors – Cumulative L/S Alpha since 2020 - Asia ex Japan



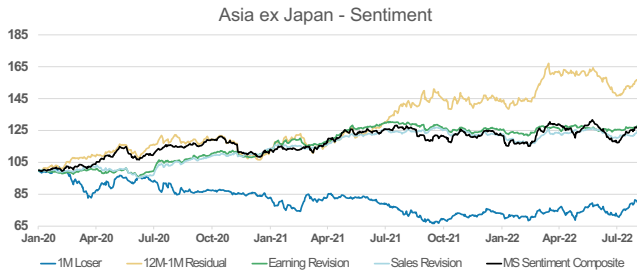
Source: FactSet, Morgan Stanley Research

Exhibit 37: Growth Factors – L/S Alpha Asia ex Japan



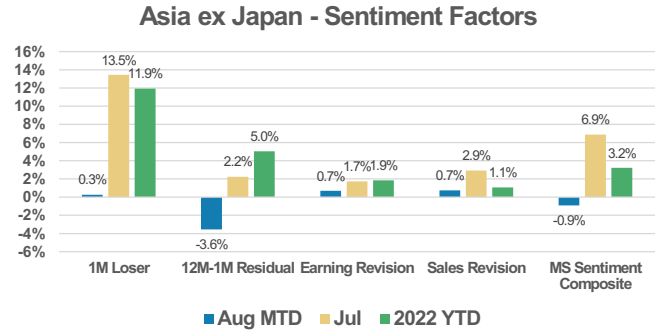
Source: FactSet, Morgan Stanley Research

Exhibit 38: Sentiment Factors – Cumulative L/S Alpha since 2020 - Asia ex Japan



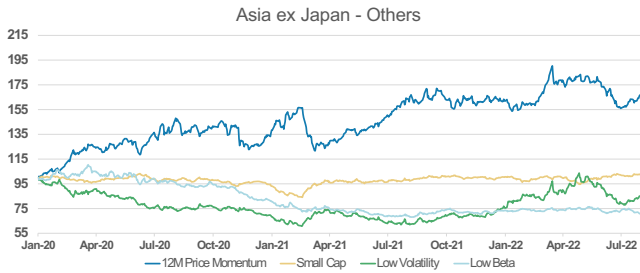
Source: FactSet, Morgan Stanley Research

Exhibit 39: Sentiment Factors – L/S Alpha Asia ex Japan



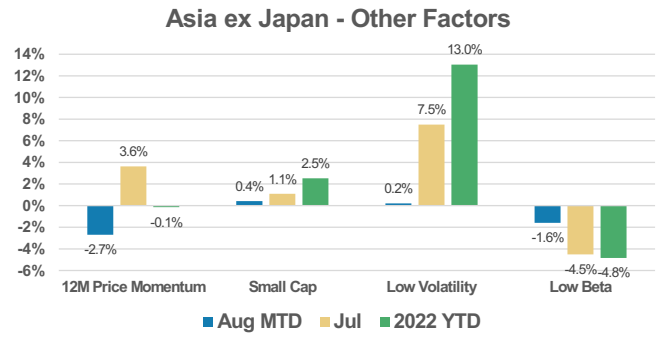
Source: FactSet, Morgan Stanley Research

Exhibit 40: Other Factors – Cumulative L/S Alpha since 2020 - Asia ex Japan



Source: FactSet, Morgan Stanley Research

Exhibit 41: Other Factors – L/S Alpha Asia ex Japan



Source: FactSet, Morgan Stanley Research

Emerging Markets – Factor Monitor

Exhibit 42: Global EM – Factor Performance Summary

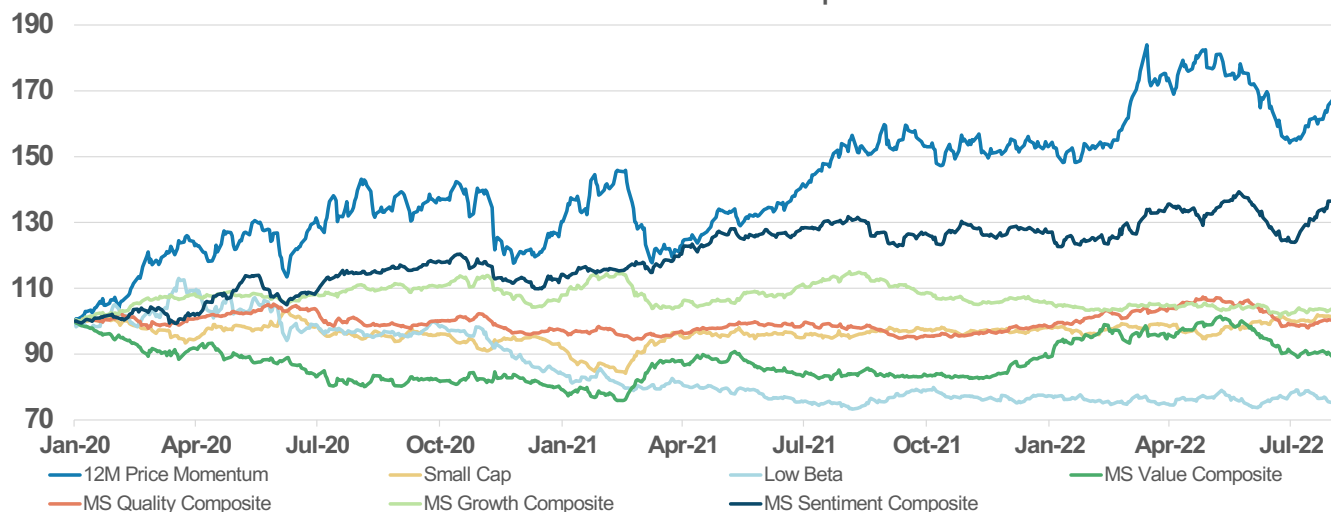
As of: 8/5/2022

| | | Global Emerging Markets | | |
|-----------------|----------------------------|-------------------------|--------------|--------------|
| Category | Factor Description | Aug MTD | Jul | 2022 YTD |
| Deep Value | Cheap P/B | -2.1% | -0.1% | 11.4% |
| | Cheap P/S | -3.6% | 2.6% | 10.9% |
| | Cheap P/E | -2.5% | -1.2% | 1.9% |
| Defensive Value | High Total Yield | -2.5% | 0.0% | 2.9% |
| Current Value | Cheap Fwd P/E | -3.0% | -0.9% | 7.6% |
| Quality Value | High FCF Yield | -1.4% | 0.3% | 1.5% |
| | Value Composite | -2.5% | -0.4% | -0.8% |
| Quality | Low Accruals | -1.1% | 0.5% | 1.4% |
| | High Earnings Stability | -1.1% | -0.1% | 1.2% |
| | High Profitability | 0.4% | 1.8% | -2.0% |
| | Low Leverage | 0.1% | -2.4% | -5.7% |
| | High Operating Efficiency | -0.1% | 1.5% | -1.2% |
| | Quality Composite | -0.5% | 1.5% | 1.8% |
| Growth | High Internal Growth | 0.0% | -2.0% | -8.1% |
| | High Dividend Growth | 0.1% | 2.2% | -9.5% |
| | High Earnings Growth | 0.5% | 1.7% | -1.3% |
| | High Long Term Growth f/c | 1.8% | 2.4% | -2.0% |
| | Growth Composite | 0.8% | 1.0% | -1.7% |
| Sentiment | 1M Loser | 0.0% | 12.5% | 8.2% |
| | 12M-1M Residual Return | -3.0% | 6.9% | 7.9% |
| | Earnings Revision | 0.5% | 1.5% | 3.9% |
| | Sales Revision | 0.6% | 2.7% | 0.6% |
| | Sentiment Composite | -1.0% | 9.8% | 6.4% |
| Others | 12M Price Momentum | -2.3% | 7.4% | 5.7% |
| | Small Cap | 0.7% | 1.4% | 4.2% |
| | Low Volatility | 0.5% | 7.5% | 16.2% |
| | Low Beta | -1.4% | -2.8% | -3.8% |

Source: FactSet, Morgan Stanley Research

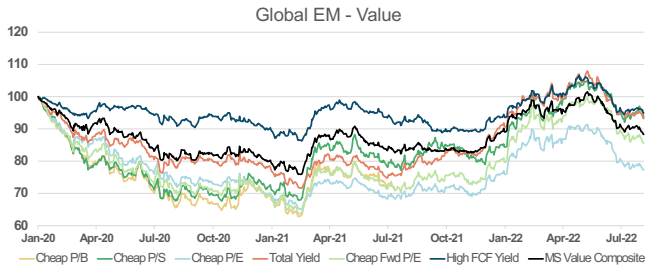
Exhibit 43: Cumulative L/S Alpha since 2020 – Global EM

Global EM - Overall Composites



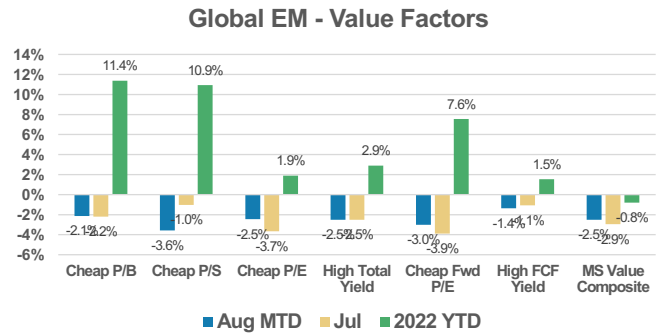
Source: FactSet, Morgan Stanley Research

Exhibit 44: Value Factors – Cumulative L/S Alpha since 2020 - Global EM



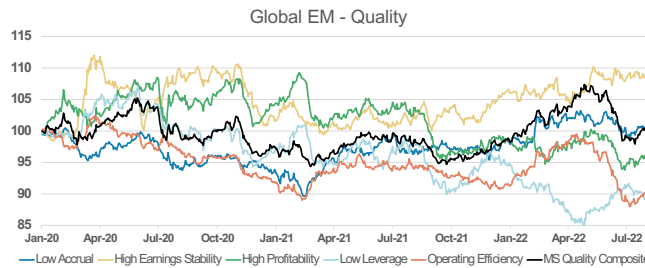
Source: FactSet, Morgan Stanley Research

Exhibit 45: Value Factors – L/S Alpha Global EM



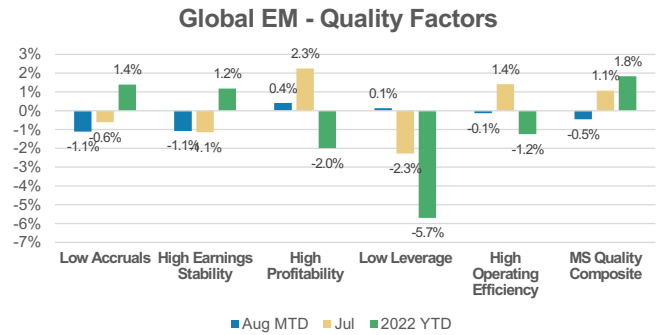
Source: FactSet, Morgan Stanley Research

Exhibit 46: Quality Factors – Cumulative L/S Alpha since 2020 - Global EM



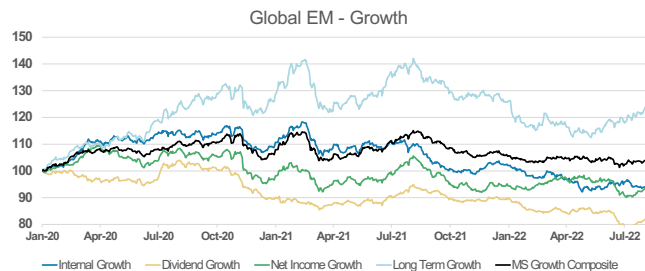
Source: FactSet, Morgan Stanley Research

Exhibit 47: Quality Factors – L/S Alpha Global EM



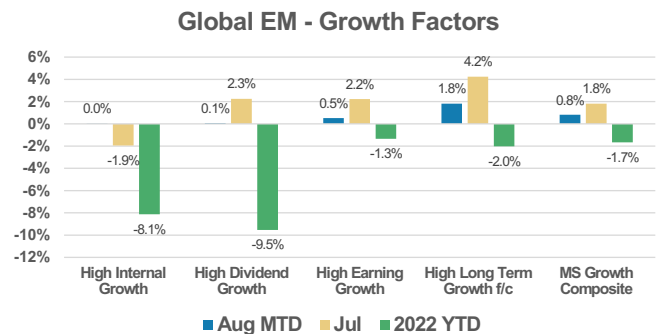
Source: FactSet, Morgan Stanley Research

Exhibit 48: Growth Factors – Cumulative L/S Alpha since 2020 - Global EM



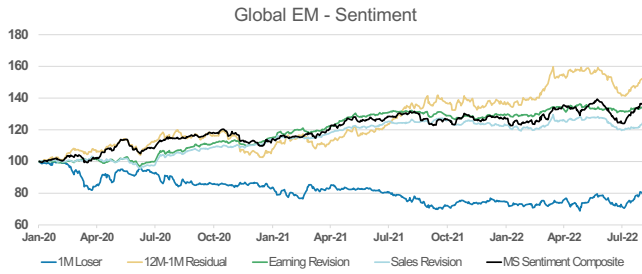
Source: FactSet, Morgan Stanley Research

Exhibit 49: Growth Factors – L/S Alpha Global EM



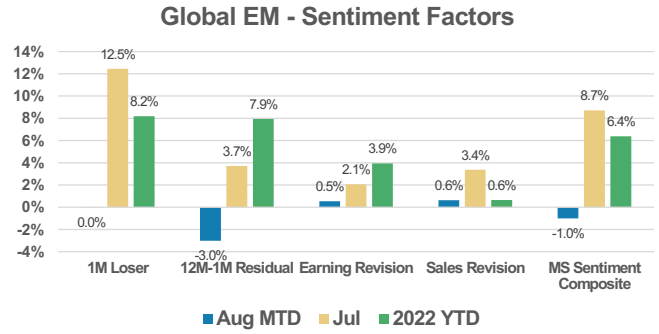
Source: FactSet, Morgan Stanley Research

Exhibit 50: Sentiment Factors – Cumulative L/S Alpha since 2020 - Global EM



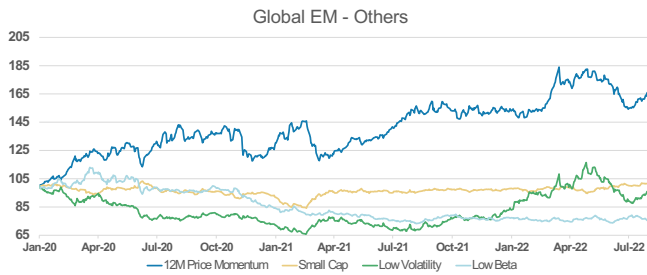
Source: FactSet, Morgan Stanley Research

Exhibit 51: Sentiment Factors – L/S Alpha Global EM



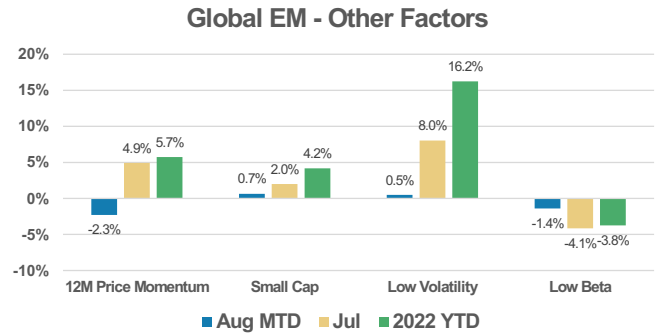
Source: FactSet, Morgan Stanley Research

Exhibit 52: Other Factors – Cumulative L/S Alpha since 2020 - Global EM



Source: FactSet, Morgan Stanley Research

Exhibit 53: Other Factors – L/S Alpha Global EM



Source: FactSet, Morgan Stanley Research

China A – Factor Monitor

Exhibit 54: China A – Factor Performance Summary

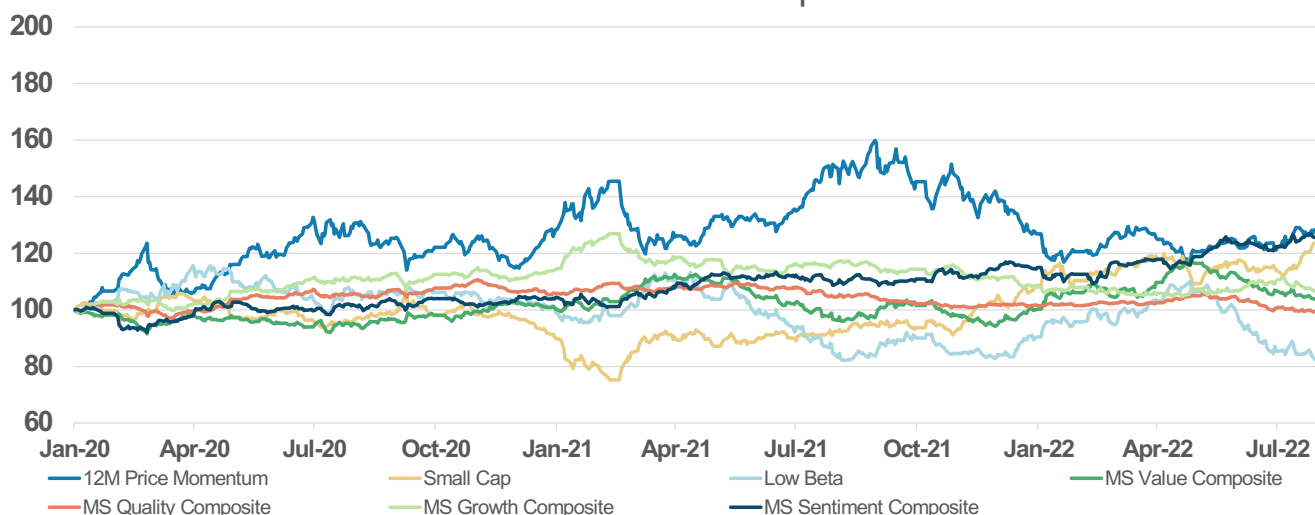
As of: 8/5/2022

| | | China A | | |
|-----------------|----------------------------|--------------|--------------|--------------|
| Category | Factor Description | Aug MTD | Jul | 2022 YTD |
| Deep Value | Cheap P/B | -3.8% | -0.8% | 9.1% |
| | Cheap P/S | -4.8% | 1.9% | 14.5% |
| | Cheap P/E | -0.4% | -4.1% | 5.8% |
| Defensive Value | High Total Yield | -0.7% | -3.2% | 3.0% |
| Current Value | Cheap Fwd P/E | -3.6% | -1.5% | 9.7% |
| Quality Value | High FCF Yield | -0.5% | -2.7% | -1.1% |
| | Value Composite | -1.1% | -2.5% | 2.6% |
| Quality | Low Accruals | -1.4% | 0.4% | 0.7% |
| | High Earnings Stability | 0.8% | -0.1% | 1.5% |
| | High Profitability | 1.5% | -1.8% | -3.8% |
| | Low Leverage | 1.1% | 1.1% | 6.6% |
| | High Operating Efficiency | -2.0% | -0.1% | -2.3% |
| | Quality Composite | 0.0% | -1.3% | -2.1% |
| Growth | High Internal Growth | 1.8% | -4.1% | 0.3% |
| | High Dividend Growth | -0.2% | -2.2% | -7.0% |
| | High Earnings Growth | 1.4% | -2.0% | 2.8% |
| | High Long Term Growth f/c | 1.9% | 3.3% | 3.0% |
| | Growth Composite | 1.5% | -3.1% | 0.1% |
| Sentiment | 1M Loser | 3.7% | -2.2% | 5.9% |
| | 12M-1M Residual Return | -5.7% | 7.8% | 6.9% |
| | Earnings Revision | -0.4% | -0.7% | -0.4% |
| | Sales Revision | -0.9% | 1.1% | 1.0% |
| | Sentiment Composite | 1.0% | 3.0% | 10.4% |
| Others | 12M Price Momentum | -6.7% | 6.0% | -5.6% |
| | Small Cap | -0.9% | 8.6% | 12.7% |
| | Low Volatility | 1.1% | -3.9% | 4.8% |
| | Low Beta | -1.0% | -3.3% | -9.4% |

Source: FactSet, Morgan Stanley Research

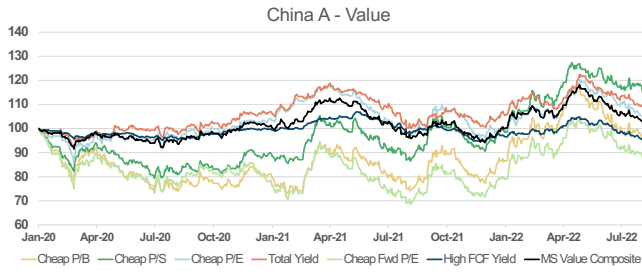
Exhibit 55: Cumulative L/S Alpha since 2020 – China A

China A - Overall Composites



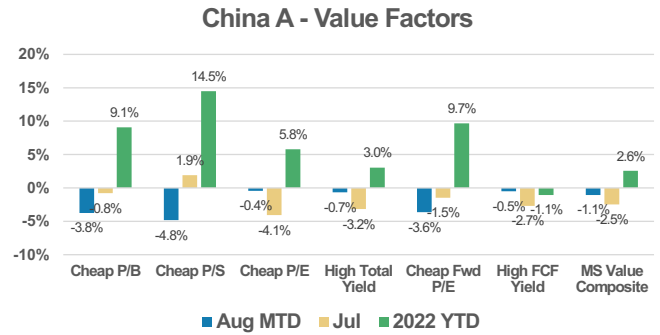
Source: FactSet, Morgan Stanley Research

Exhibit 56: Value Factors – Cumulative L/S Alpha since 2020 - China A



Source: FactSet, Morgan Stanley Research

Exhibit 57: Value Factors – L/S Alpha China A



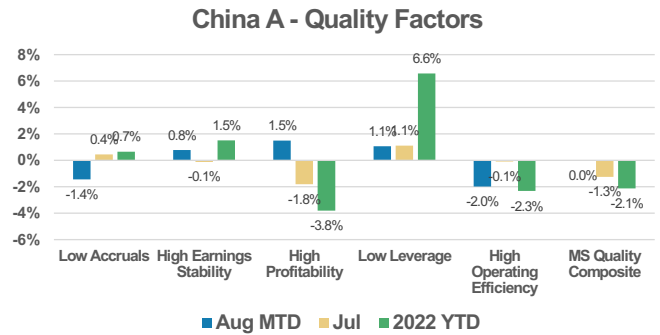
Source: FactSet, Morgan Stanley Research

Exhibit 58: Quality Factors – Cumulative L/S Alpha since 2020 - China A



Source: FactSet, Morgan Stanley Research

Exhibit 59: Quality Factors – L/S Alpha China A



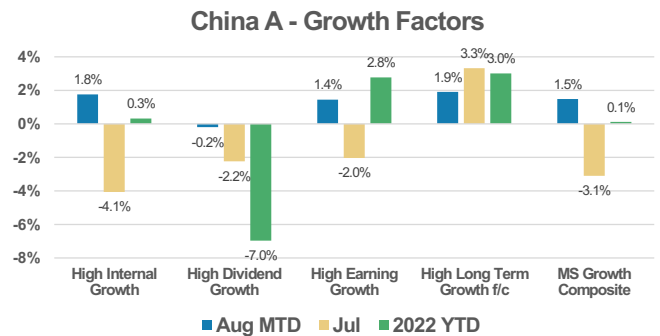
Source: FactSet, Morgan Stanley Research

Exhibit 60: Growth Factors – Cumulative L/S Alpha since 2020 - China A



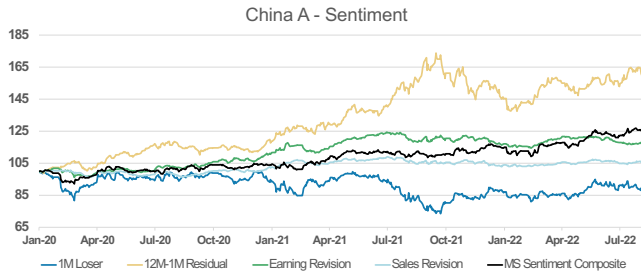
Source: FactSet, Morgan Stanley Research

Exhibit 61: Growth Factors – L/S Alpha China A



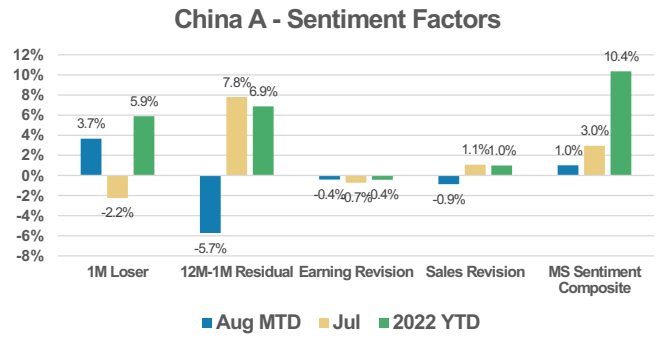
Source: FactSet, Morgan Stanley Research

Exhibit 62: Sentiment Factors – Cumulative L/S Alpha since 2020 - China A



Source: FactSet, Morgan Stanley Research

Exhibit 63: Sentiment Factors – L/S Alpha China A



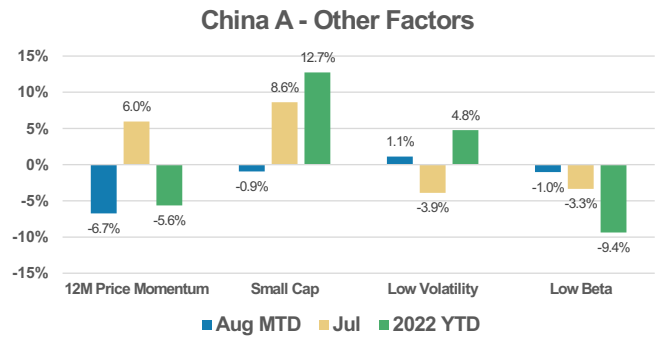
Source: FactSet, Morgan Stanley Research

Exhibit 64: Other Factors – Cumulative L/S Alpha since 2020 - China A



Source: FactSet, Morgan Stanley Research

Exhibit 65: Other Factors – L/S Alpha China A



Source: FactSet, Morgan Stanley Research

Japan – Factor Monitor

Exhibit 66: Japan – Factor Performance Summary

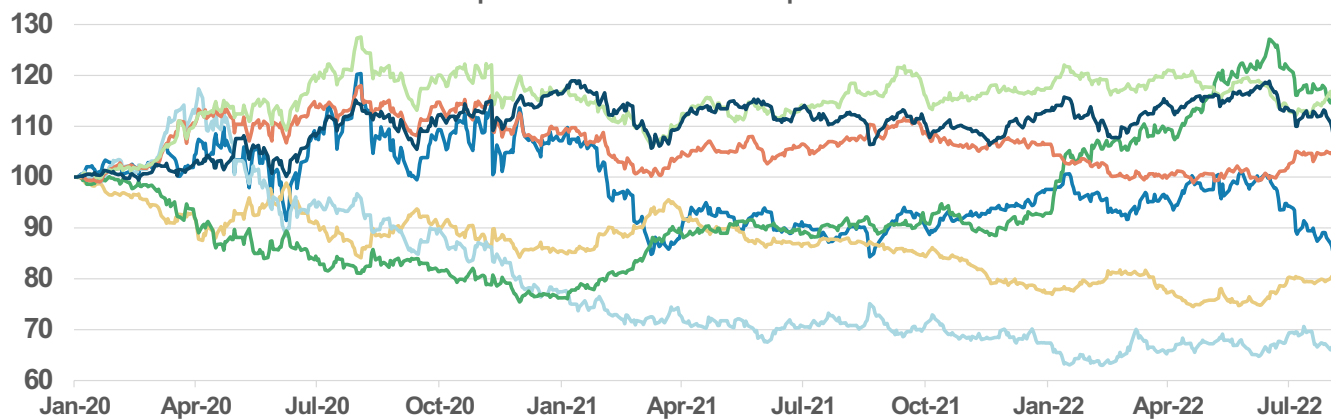
As of: 8/5/2022

| | | Japan | | |
|-----------------|----------------------------|--------------|--------------|--------------|
| Category | Factor Description | Aug MTD | Jul | 2022 YTD |
| Deep Value | Cheap P/B | -3.8% | -8.9% | 21.3% |
| | Cheap P/S | -1.7% | -7.1% | 12.7% |
| | Cheap P/E | -2.2% | -4.3% | 17.7% |
| Defensive Value | High Total Yield | -3.2% | -3.7% | 22.1% |
| Current Value | Cheap Fwd P/E | -1.9% | -6.1% | 21.6% |
| Quality Value | High FCF Yield | 0.9% | -0.6% | 2.1% |
| | Value Composite | -1.6% | -4.6% | 22.8% |
| Quality | Low Accruals | -0.3% | -0.3% | 5.0% |
| | High Earnings Stability | -1.3% | 1.7% | 0.1% |
| | High Profitability | 1.1% | 6.5% | -5.9% |
| | Low Leverage | 2.5% | 2.4% | -7.2% |
| | High Operating Efficiency | -1.9% | -1.5% | 1.6% |
| | Quality Composite | 0.2% | 3.2% | -1.1% |
| Growth | High Internal Growth | 3.0% | 5.2% | -6.8% |
| | High Dividend Growth | 0.3% | 3.7% | -2.2% |
| | High Earnings Growth | 0.4% | 2.0% | -1.6% |
| | High Long Term Growth f/c | 0.3% | 0.5% | -3.0% |
| | Growth Composite | 0.6% | 2.0% | -1.0% |
| Sentiment | 1M Loser | -0.3% | 5.3% | 6.3% |
| | 12M-1M Residual Return | -4.6% | -3.6% | -8.6% |
| | Earnings Revision | -0.1% | -1.1% | -1.2% |
| | Sales Revision | -1.6% | -4.1% | -8.8% |
| | Sentiment Composite | -3.3% | -1.4% | -4.3% |
| Others | 12M Price Momentum | -4.7% | -6.6% | -14.0% |
| | Small Cap | 0.8% | -0.6% | 4.0% |
| | Low Volatility | -4.0% | -4.7% | 10.4% |
| | Low Beta | -2.7% | -2.8% | -3.4% |

Source: FactSet, Morgan Stanley Research

Exhibit 67: Cumulative L/S Alpha since 2020 – Japan

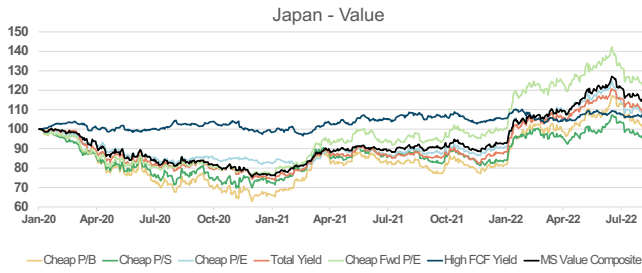
Japan - Overall Composites



— 12M Price Momentum
 — MS Quality Composite
 — Small Cap
 — MS Growth Composite
 — Low Beta
 — MS Sentiment Composite
 — MS Value Composite

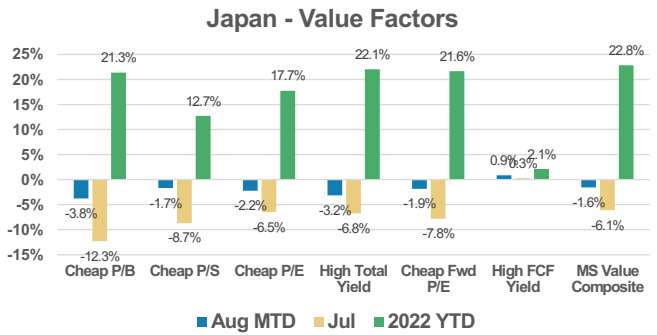
Source: FactSet, Morgan Stanley Research

Exhibit 68: Value Factors – Cumulative L/S Alpha since 2020 - Japan



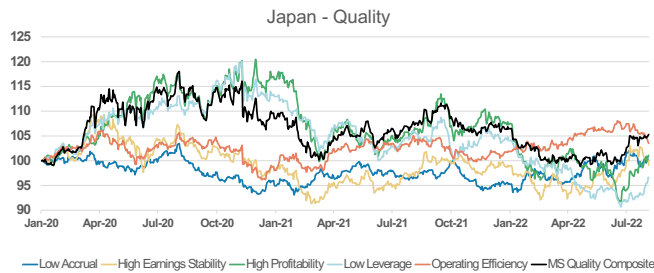
Source: FactSet, Morgan Stanley Research

Exhibit 69: Value Factors – L/S Alpha Japan



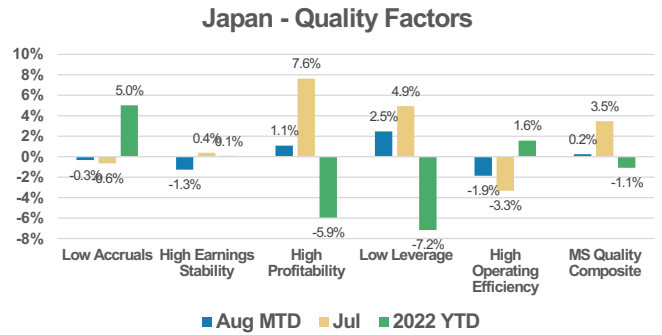
Source: FactSet, Morgan Stanley Research

Exhibit 70: Quality Factors – Cumulative L/S Alpha since 2020 - Japan



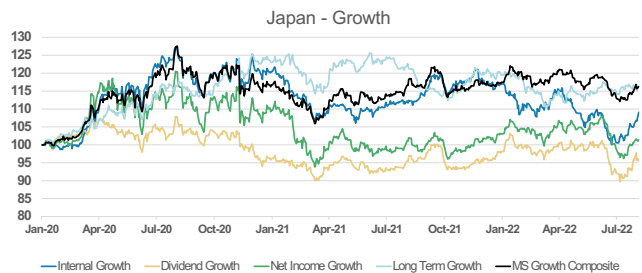
Source: FactSet, Morgan Stanley Research

Exhibit 71: Quality Factors – L/S Alpha Japan



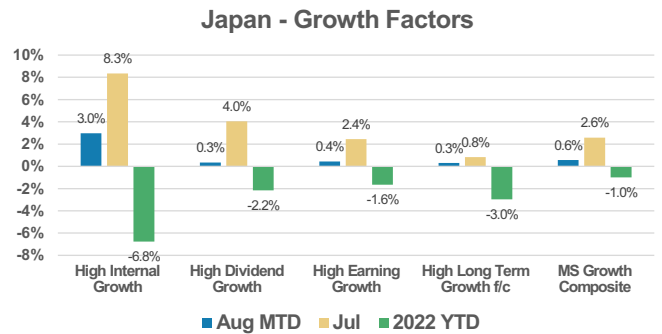
Source: FactSet, Morgan Stanley Research

Exhibit 72: Growth Factors – Cumulative L/S Alpha since 2020 - Japan



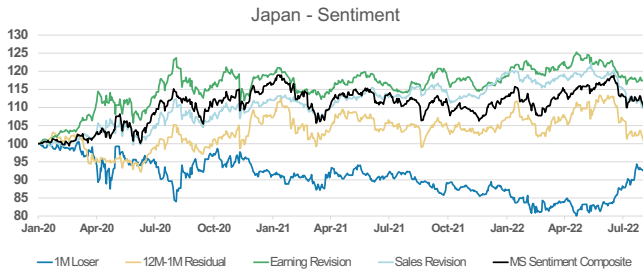
Source: FactSet, Morgan Stanley Research

Exhibit 73: Growth Factors – L/S Alpha Japan



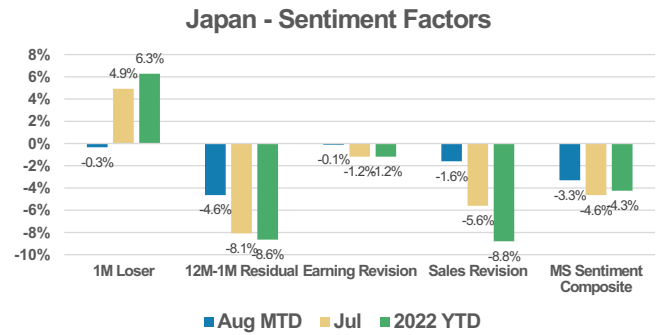
Source: FactSet, Morgan Stanley Research

Exhibit 74: Sentiment Factors – Cumulative L/S Alpha since 2020 - Japan



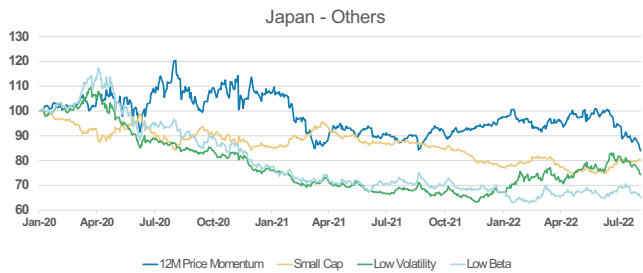
Source: FactSet, Morgan Stanley Research

Exhibit 75: Sentiment Factors – L/S Alpha Japan



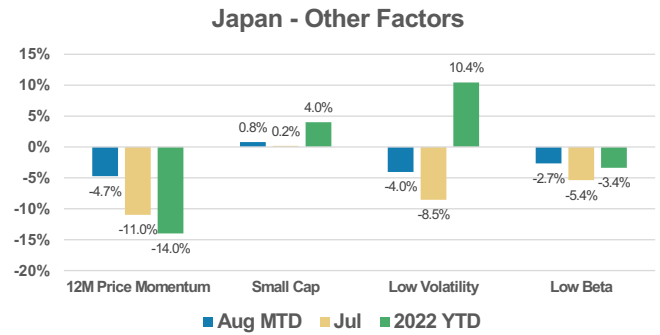
Source: FactSet, Morgan Stanley Research

Exhibit 76: Other Factors – Cumulative L/S Alpha since 2020 - Japan



Source: FactSet, Morgan Stanley Research

Exhibit 77: Other Factors – L/S Alpha Japan



Source: FactSet, Morgan Stanley Research

India - Factor Monitor

Exhibit 78: India – Factor Performance Summary

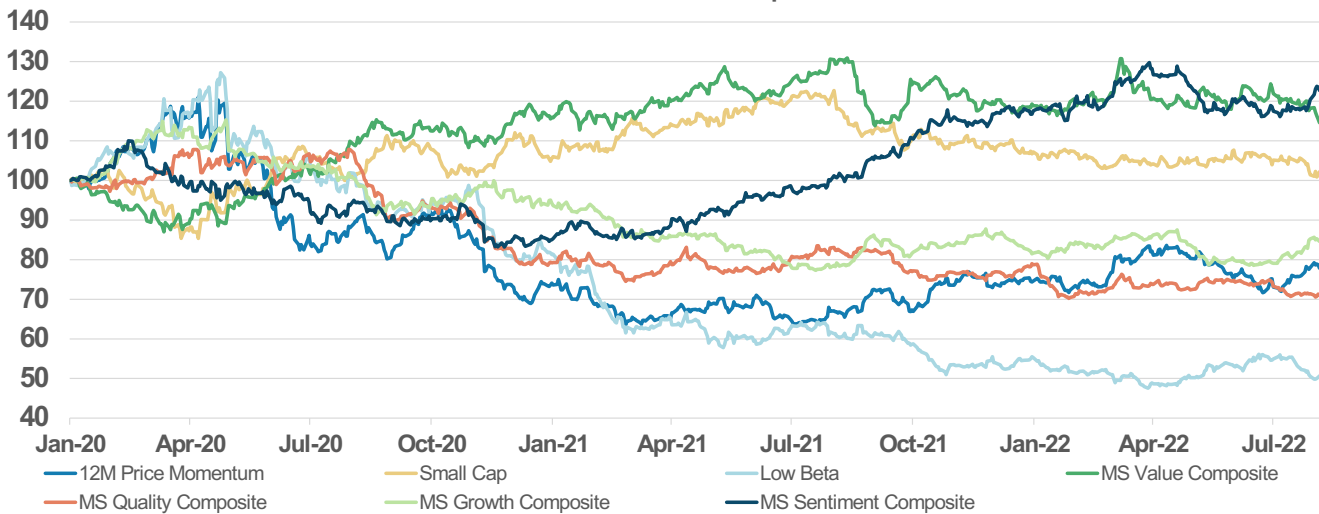
As of: 8/5/2022

| | | India | | | |
|------------------------|----------------------------|--------------|--------------|--------------|--|
| Category | Factor Description | Aug MTD | Jul | 2022 YTD | |
| Deep Value | Cheap P/B | -1.2% | -3.1% | 2.4% | |
| | Cheap P/S | -1.2% | -4.7% | -1.5% | |
| | Cheap P/E | -2.5% | -3.0% | -3.3% | |
| Defensive Value | High Total Yield | -2.9% | -6.5% | 0.3% | |
| Current Value | Cheap Fwd P/E | -1.7% | -4.0% | 3.9% | |
| Quality Value | High FCF Yield | -2.3% | -3.4% | -5.4% | |
| | Value Composite | -3.1% | -4.2% | -3.6% | |
| Quality | Low Accruals | 0.9% | -1.3% | -7.0% | |
| | High Earnings Stability | 1.9% | -3.1% | -8.0% | |
| | High Profitability | 1.6% | 0.7% | -6.5% | |
| | Low Leverage | -2.0% | -0.2% | -7.9% | |
| | High Operating Efficiency | -0.6% | -2.8% | -10.1% | |
| | Quality Composite | -0.4% | -4.0% | -9.6% | |
| Growth | High Internal Growth | 1.9% | 2.2% | -8.7% | |
| | High Dividend Growth | 0.5% | 5.8% | -12.5% | |
| | High Earnings Growth | -1.4% | 4.3% | -2.5% | |
| | High Long Term Growth f/c | -0.9% | 13.9% | 6.0% | |
| | Growth Composite | -0.7% | 7.6% | 3.6% | |
| Sentiment | 1M Loser | 1.3% | 5.7% | 16.4% | |
| | 12M-1M Residual Return | 0.6% | 5.8% | 4.5% | |
| | Earnings Revision | -0.4% | -1.8% | -9.6% | |
| | Sales Revision | 0.3% | -1.5% | -11.2% | |
| | Sentiment Composite | 1.9% | 1.5% | 4.4% | |
| Others | 12M Price Momentum | -0.2% | 3.7% | 4.3% | |
| | Small Cap | 0.7% | -2.4% | -4.7% | |
| | Low Volatility | -1.8% | -5.1% | -7.6% | |
| | Low Beta | 0.2% | -7.5% | -8.4% | |

Source: FactSet, Morgan Stanley Research

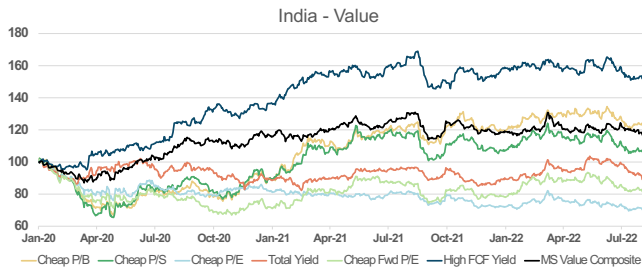
Exhibit 79: Cumulative L/S Alpha since 2020 – India

India - Overall Composites



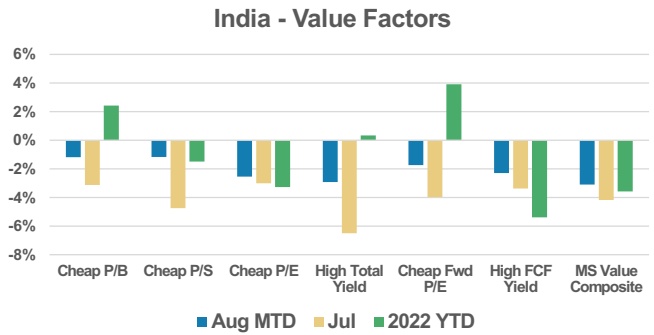
Source: FactSet, Morgan Stanley Research

Exhibit 80: Value Factors – Cumulative L/S Alpha since 2020 - India



Source: FactSet, Morgan Stanley Research

Exhibit 81: Value Factors – L/S Alpha India



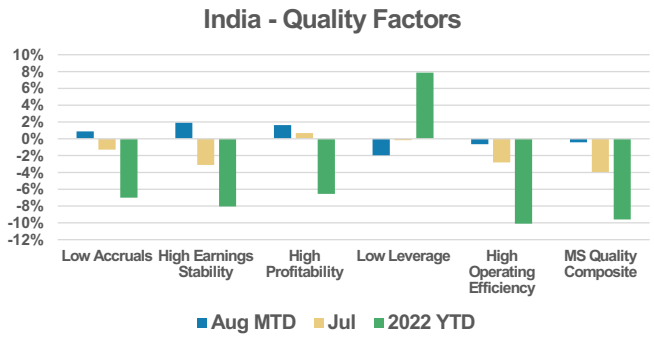
Source: FactSet, Morgan Stanley Research

Exhibit 82: Quality Factors – Cumulative L/S Alpha since 2020 - India



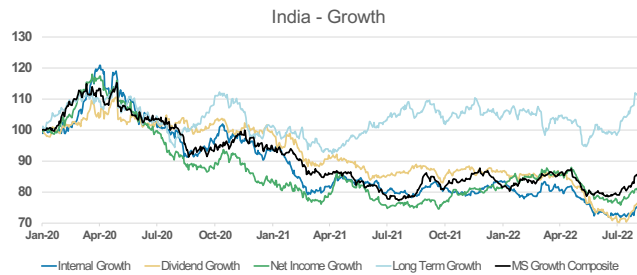
Source: FactSet, Morgan Stanley Research

Exhibit 83: Quality Factors – L/S Alpha India



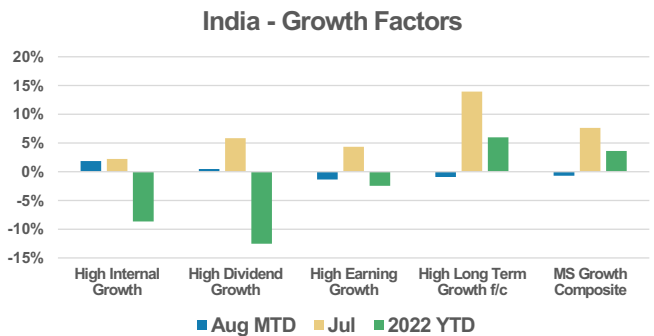
Source: FactSet, Morgan Stanley Research

Exhibit 84: Growth Factors – Cumulative L/S Alpha since 2020 - India



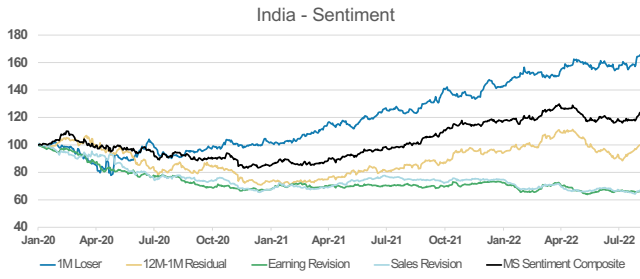
Source: FactSet, Morgan Stanley Research

Exhibit 85: Growth Factors – L/S Alpha India



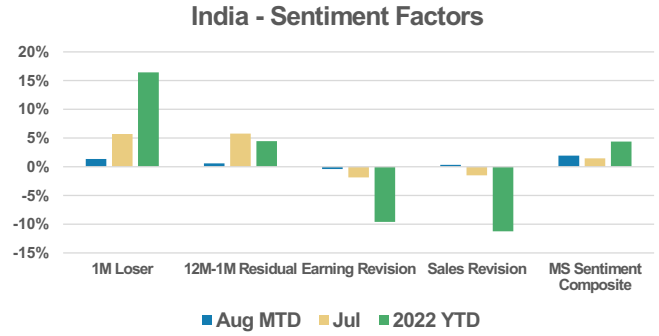
Source: FactSet, Morgan Stanley Research

Exhibit 86: Sentiment Factors – Cumulative L/S Alpha since 2020 - India



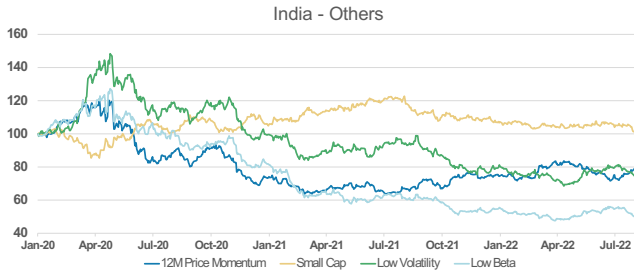
Source: FactSet, Morgan Stanley Research

Exhibit 87: Sentiment Factors – L/S Alpha India



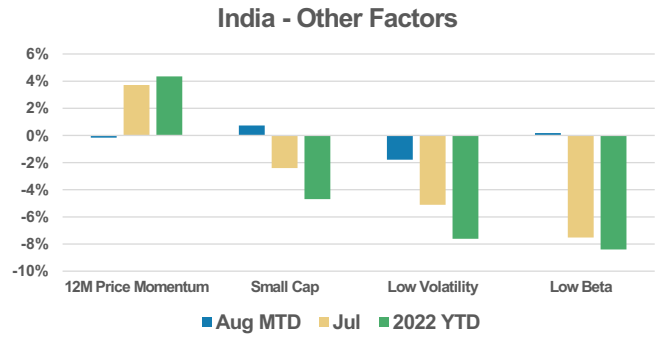
Source: FactSet, Morgan Stanley Research

Exhibit 88: Other Factors – Cumulative L/S Alpha since 2020 - India



Source: FactSet, Morgan Stanley Research

Exhibit 89: Other Factors – L/S Alpha India



Source: FactSet, Morgan Stanley Research

ASEAN – Factor Monitor

Exhibit 90: ASEAN – Factor Performance Summary

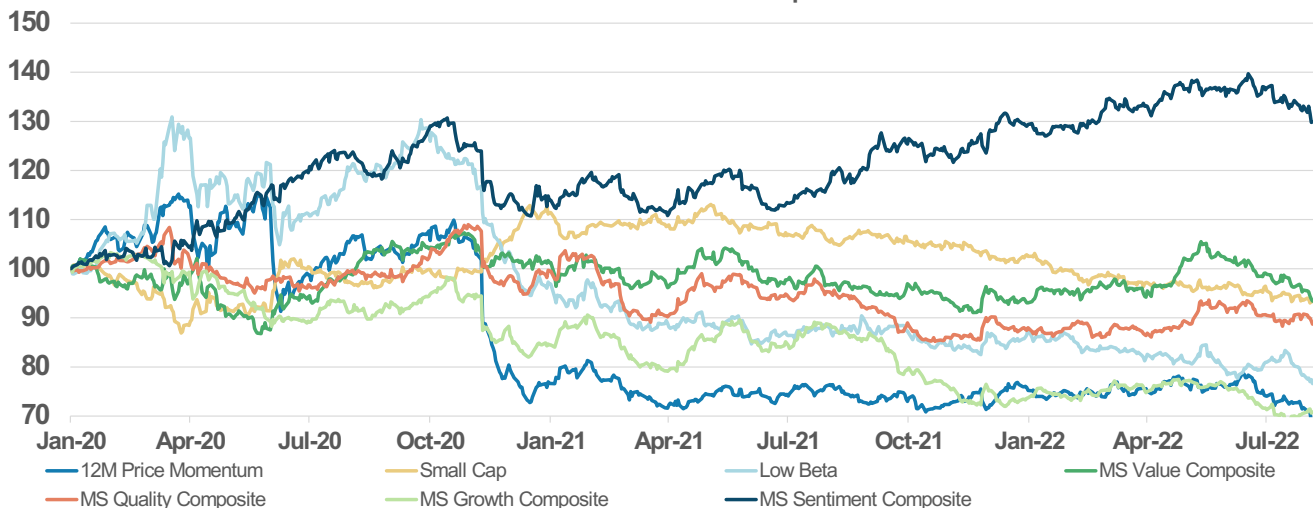
As of: 8/5/2022

| | | ASEAN | | |
|-----------------|----------------------------|--------------|--------------|--------------|
| Category | Factor Description | Aug MTD | Jul | 2022 YTD |
| Deep Value | Cheap P/B | -0.6% | -2.6% | 8.9% |
| | Cheap P/S | -1.0% | -4.7% | 5.1% |
| | Cheap P/E | -4.0% | -4.3% | -6.2% |
| Defensive Value | High Total Yield | -3.5% | -3.7% | -2.8% |
| Current Value | Cheap Fwd P/E | -3.8% | -2.3% | 2.9% |
| Quality Value | High FCF Yield | -2.3% | -0.8% | 0.1% |
| | Value Composite | -2.4% | -3.5% | 0.3% |
| Quality | Low Accruals | -0.1% | -2.1% | 13.3% |
| | High Earnings Stability | 0.0% | 1.8% | 3.5% |
| | High Profitability | -2.4% | -0.6% | -7.7% |
| | Low Leverage | -2.4% | 3.6% | 3.5% |
| | High Operating Efficiency | -1.2% | -1.4% | -6.0% |
| | Quality Composite | -2.3% | 0.1% | 0.8% |
| Growth | High Internal Growth | 0.1% | -0.6% | -2.6% |
| | High Dividend Growth | -1.4% | -2.3% | -18.1% |
| | High Earnings Growth | -1.6% | 1.2% | -8.2% |
| | High Long Term Growth f/c | 2.8% | 6.7% | 25.1% |
| | Growth Composite | 0.3% | -1.5% | -4.0% |
| Sentiment | 1M Loser | -2.1% | 1.5% | -11.0% |
| | 12M-1M Residual Return | -5.0% | -3.0% | -5.5% |
| | Earnings Revision | 0.0% | -0.4% | 8.5% |
| | Sales Revision | 0.0% | -1.0% | 5.7% |
| | Sentiment Composite | -2.4% | -2.4% | 0.4% |
| Others | 12M Price Momentum | -4.3% | -3.2% | -8.7% |
| | Small Cap | -0.3% | -2.9% | -9.0% |
| | Low Volatility | -4.2% | -2.1% | 9.9% |
| | Low Beta | -2.3% | -3.1% | -12.7% |

Source: FactSet, Morgan Stanley Research

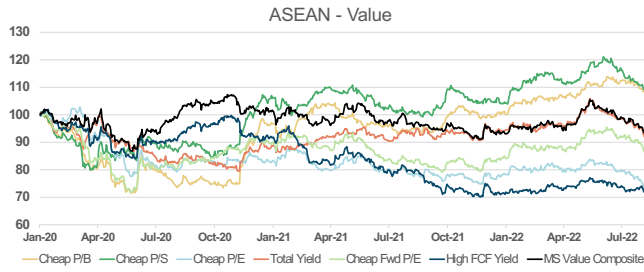
Exhibit 91: Cumulative L/S Alpha since 2020 – ASEAN

ASEAN - Overall Composites



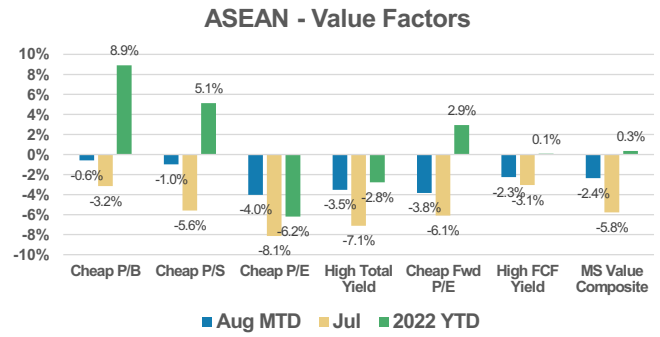
Source: FactSet, Morgan Stanley Research

Exhibit 92: Value Factors – Cumulative L/S Alpha since 2020 - ASEAN



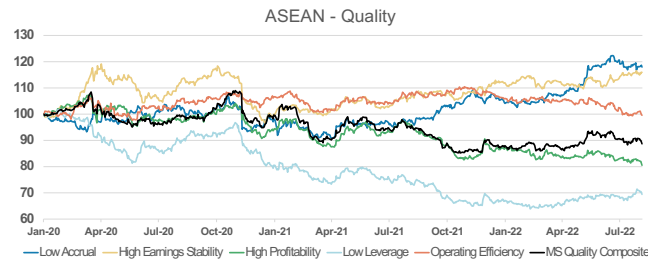
Source: FactSet, Morgan Stanley Research

Exhibit 93: Value Factors – L/S Alpha ASEAN



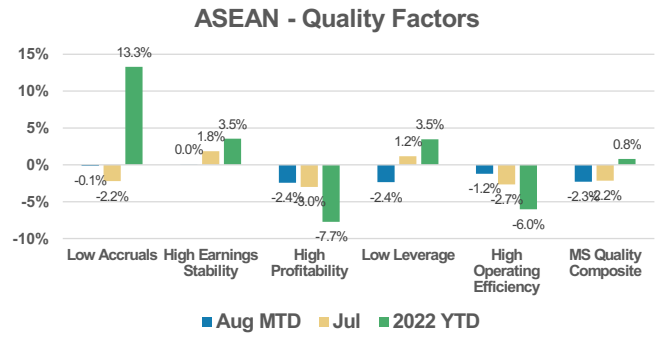
Source: FactSet, Morgan Stanley Research

Exhibit 94: Quality Factors – Cumulative L/S Alpha since 2020 - ASEAN



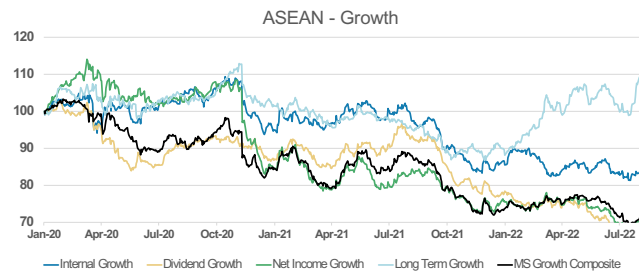
Source: FactSet, Morgan Stanley Research

Exhibit 95: Quality Factors – L/S Alpha ASEAN



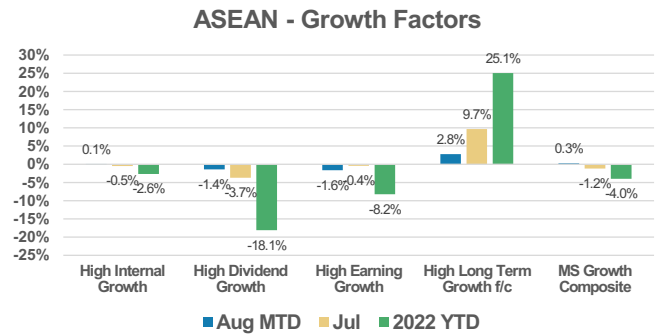
Source: FactSet, Morgan Stanley Research

Exhibit 96: Growth Factors – Cumulative L/S Alpha since 2020 - ASEAN



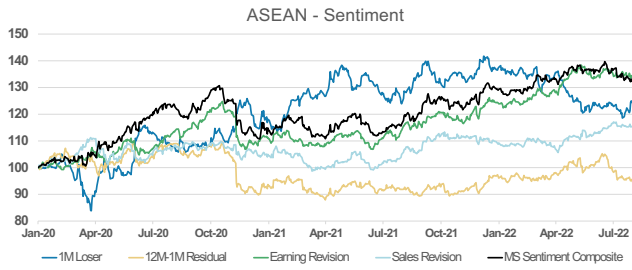
Source: FactSet, Morgan Stanley Research

Exhibit 97: Growth Factors – L/S Alpha ASEAN



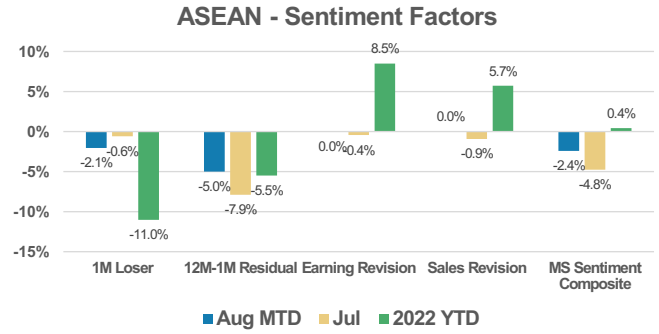
Source: FactSet, Morgan Stanley Research

Exhibit 98: Sentiment Factors – Cumulative L/S Alpha since 2020 - ASEAN



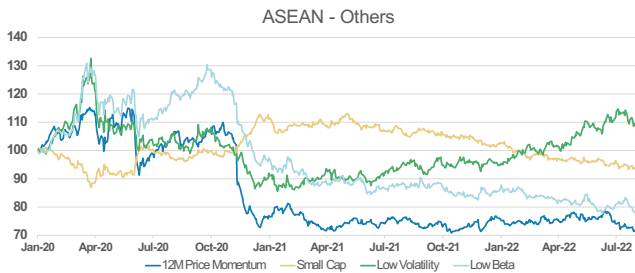
Source: FactSet, Morgan Stanley Research

Exhibit 99: Sentiment Factors – L/S Alpha ASEAN



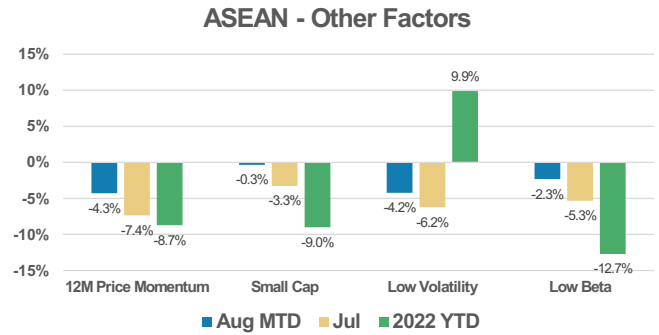
Source: FactSet, Morgan Stanley Research

Exhibit 100: Other Factors – Cumulative L/S Alpha since 2020 - ASEAN



Source: FactSet, Morgan Stanley Research

Exhibit 101: Other Factors – L/S Alpha ASEAN



Source: FactSet, Morgan Stanley Research

Factor Performance by Market

Exhibit 102: YTD Factor Performance Summary – by MSCI Market

| As of: 7/22/2022 | | Asia Pacific ex Japan | | | | | | | | | | | | |
|------------------|----------------------------|-----------------------|-----------------|---------------|-------------|--------------|--------------|--------------|---------------|---------------|---------------|--------------|---------------|---------------|
| Category | Factor Description | YTD | Country Neutral | Australia | China | Hong Kong | India | Indonesia | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand |
| Deep Value | Cheap P/B | 12.1% | 12.2% | 13.4% | 7.9% | 12.5% | 2.5% | 6.5% | 9.5% | 25.2% | 6.3% | 36.6% | 24.0% | -4.8% |
| | Cheap P/S | 9.4% | 7.3% | 24.8% | 8.4% | 8.0% | -1.5% | -7.2% | 17.7% | 4.6% | 12.4% | 35.8% | 26.4% | -9.0% |
| | Cheap P/E | 2.6% | 4.7% | -5.3% | 2.0% | 18.1% | -2.6% | 16.6% | -6.8% | -17.5% | 6.6% | 34.5% | 6.2% | -17.2% |
| Defensive Value | High Total Yield | 6.3% | 7.0% | 9.6% | 1.1% | 10.5% | 2.7% | 5.1% | 23.2% | -7.0% | -3.7% | 34.8% | 23.7% | -7.5% |
| Current Value | Cheap Fwd P/E | 8.7% | 8.1% | 10.1% | 8.3% | 21.4% | 4.9% | 27.2% | 11.2% | 13.2% | -2.0% | 31.7% | 1.3% | -12.7% |
| Quality Value | High FCF Yield | 2.5% | 4.2% | 1.8% | 1.6% | 25.8% | -4.3% | 12.8% | 10.0% | -18.1% | 23.8% | 14.9% | -11.1% | -5.9% |
| | Value Composite | 2.2% | 4.2% | -0.9% | 2.8% | 24.5% | -0.1% | 10.0% | 11.6% | -12.6% | -12.6% | 38.9% | 13.3% | -13.5% |
| Quality | Low Accruals | 3.6% | 4.5% | 25.6% | 7.2% | 5.3% | -8.9% | 12.4% | -1.8% | 7.5% | -4.0% | 11.2% | -18.9% | 16.0% |
| | High Earnings Stability | 0.5% | 0.7% | -6.3% | 4.9% | -20.1% | -9.3% | 8.3% | 1.3% | 3.3% | 13.1% | 16.8% | 6.8% | -2.1% |
| | High Profitability | -4.9% | -5.0% | -13.5% | 0.6% | -7.0% | -9.9% | 3.9% | -14.2% | -25.7% | -4.3% | 25.8% | -21.3% | -12.7% |
| | Low Leverage | -3.4% | -1.2% | -12.0% | 0.8% | 12.1% | 8.9% | 2.4% | -9.1% | -12.3% | 25.3% | 7.0% | -24.9% | -9.6% |
| | High Operating Efficiency | -2.7% | -2.8% | 6.7% | -2.8% | 7.2% | -7.6% | -5.2% | -7.8% | 0.8% | 4.5% | -23.2% | -7.5% | 4.2% |
| | Quality Composite | 0.2% | -0.9% | -0.9% | 1.7% | 2.1% | -9.9% | 26.1% | -11.0% | -15.5% | 14.5% | 20.5% | -16.6% | -4.8% |
| Growth | High Internal Growth | -11.6% | -7.2% | -29.2% | -3.1% | -7.2% | -13.7% | 3.5% | -12.4% | 4.6% | 9.3% | -8.1% | -26.3% | -19.1% |
| | High Dividend Growth | -8.1% | -7.4% | -5.9% | -2.2% | -4.7% | -15.6% | -32.6% | 5.5% | -13.0% | -21.5% | -1.0% | -16.1% | -9.5% |
| | High Earnings Growth | -2.9% | -2.9% | -11.6% | 1.6% | 2.1% | -2.6% | -15.2% | -0.9% | -1.6% | -24.9% | -1.3% | -14.4% | -12.9% |
| | High Long Term Growth f/c | -5.4% | 0.0% | -7.0% | -0.9% | -12.8% | 1.2% | 14.1% | -14.1% | 47.0% | -0.4% | 5.8% | -19.2% | 8.3% |
| | Growth Composite | -4.4% | -2.2% | -20.5% | 1.3% | -9.0% | -0.4% | -4.7% | -11.5% | 0.5% | -4.3% | 2.8% | -19.7% | -10.0% |
| Sentiment | 1M Loser | 7.7% | 7.7% | -8.1% | 7.8% | 23.3% | 10.9% | -28.7% | 10.6% | -8.3% | 4.7% | -21.4% | 25.1% | -3.7% |
| | 12M-1M Residual Return | 5.4% | 5.0% | -5.0% | 10.9% | 4.1% | -0.1% | -16.0% | 4.1% | 14.7% | -11.7% | 12.3% | -14.8% | -5.1% |
| | Earnings Revision | 0.5% | 4.1% | -8.5% | 7.0% | -10.5% | -8.1% | 24.1% | -0.4% | -0.4% | -5.9% | 18.1% | -12.5% | 5.3% |
| | Sales Revision | -1.2% | 1.2% | 5.7% | 4.0% | -6.9% | -12.7% | -1.9% | -6.4% | 4.7% | -10.3% | 24.4% | -1.0% | 3.0% |
| | Sentiment Composite | 3.3% | 6.5% | -2.5% | 9.9% | 10.1% | 0.0% | -8.9% | 3.7% | 15.6% | -2.0% | 5.1% | -0.5% | -3.8% |
| Others | 12M Price Momentum | -1.7% | 0.4% | -12.3% | 6.6% | -18.3% | 0.8% | -16.7% | -10.9% | 15.2% | -13.2% | 9.6% | -16.8% | -1.7% |
| | Small Cap | 1.8% | 2.5% | -0.2% | 0.2% | 1.8% | -1.0% | -6.2% | 14.7% | -10.3% | 13.2% | 27.0% | 4.7% | -10.4% |
| | Low Volatility | 9.0% | 11.2% | 18.9% | 7.4% | -10.4% | -2.8% | 11.1% | 6.4% | 34.9% | 20.7% | 27.7% | 38.8% | 16.4% |
| | Low Beta | -1.5% | -2.0% | -9.6% | -0.5% | -9.7% | -3.8% | 1.5% | -13.2% | -12.8% | 1.5% | -7.0% | 22.4% | -3.8% |

Source: FactSet, MSCI, Morgan Stanley Research

Factor Performance by Sector

Exhibit 103: YTD Factor Performance Summary – by GICS Sector

| As of: 7/22/2022 | | Asia Pacific ex Japan | | | | | | | | | | | | |
|------------------|----------------------------|-----------------------|----------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|----------------|---------------|--------------|
| Category | Factor Description | YTD | Sector Neutral | Energy | Materials | Industrials | Cons. Disc. | Cons. Staple | Health Care | Financials | Info Tech | Comm. Services | Utilities | Real Estate |
| Deep Value | Cheap P/B | 12.1% | 6.7% | 20.9% | -2.3% | 6.6% | 15.8% | 8.2% | -4.0% | 11.5% | 15.1% | 19.4% | -15.1% | -13.6% |
| | Cheap P/S | 9.4% | -1.6% | -7.2% | 1.0% | 5.6% | 7.0% | 18.0% | -3.0% | 0.0% | 14.0% | 29.0% | -16.0% | -37.2% |
| | Cheap P/E | 2.6% | 3.8% | -3.7% | 5.8% | -6.6% | -4.7% | 16.5% | 0.4% | 12.4% | 9.0% | 8.2% | -19.3% | -30.1% |
| Defensive Value | High Total Yield | 6.3% | 5.0% | 12.6% | -9.7% | 2.2% | 1.4% | 17.1% | 6.5% | 5.4% | 5.7% | 34.4% | -5.0% | -9.6% |
| Current Value | Cheap Fwd P/E | 8.7% | 3.1% | 17.2% | 2.6% | -5.8% | -2.1% | 12.5% | 4.5% | 14.3% | 15.3% | 31.2% | -17.6% | -37.5% |
| Quality Value | High FCF Yield | 2.5% | 3.3% | 26.7% | 7.5% | -1.8% | 7.5% | 5.5% | -12.2% | 0.0% | 1.2% | 23.6% | 7.4% | -2.9% |
| | Value Composite | 2.2% | 2.7% | 9.8% | 0.0% | -2.2% | -3.9% | 9.8% | -3.6% | 7.8% | 10.4% | 33.2% | -11.6% | -9.9% |
| Quality | Low Accruals | 3.6% | 4.3% | 21.1% | -1.5% | 7.2% | -1.6% | 12.3% | 6.9% | 0.0% | -6.0% | 4.4% | 1.0% | 19.3% |
| | High Earnings Stability | 0.5% | 1.0% | -20.2% | 9.1% | -4.5% | -13.6% | -8.1% | 20.4% | 1.8% | 5.9% | 18.7% | -4.5% | -12.6% |
| | High Profitability | -4.9% | -3.1% | 13.9% | 7.6% | -9.3% | -7.4% | -3.5% | -2.3% | 1.9% | -13.7% | -14.9% | 15.1% | -12.1% |
| | Low Leverage | -3.4% | -3.3% | 13.9% | 2.7% | -1.8% | 5.9% | -12.6% | -0.3% | 0.0% | -9.6% | -4.3% | -8.1% | 10.9% |
| | High Operating Efficiency | -2.7% | -2.8% | 8.4% | 6.9% | -11.6% | -12.6% | -5.9% | -2.4% | 8.2% | 7.8% | -24.6% | -2.3% | -5.2% |
| | Quality Composite | 0.2% | -0.2% | 12.1% | 4.5% | -4.9% | -13.2% | 0.1% | 13.0% | -2.3% | -6.4% | -5.0% | 6.4% | 4.4% |
| Growth | High Internal Growth | -11.6% | -7.3% | -0.1% | 17.9% | -11.8% | -18.6% | -13.3% | -15.1% | -2.7% | -14.9% | -24.7% | 21.2% | -34.7% |
| | High Dividend Growth | -8.1% | -7.5% | -22.5% | -12.9% | -9.0% | -9.3% | -1.1% | 3.5% | -10.0% | -7.4% | -14.4% | -19.9% | 10.3% |
| | High Earnings Growth | -2.9% | -2.6% | -16.6% | 2.1% | -16.0% | -7.1% | -2.6% | 2.1% | -1.0% | 3.8% | -9.8% | 6.2% | 26.4% |
| | High Long Term Growth f/c | -5.4% | -2.1% | -2.9% | -10.8% | 2.7% | -1.3% | -13.5% | 14.9% | 2.5% | -5.8% | -11.1% | -23.1% | -5.1% |
| | Growth Composite | -4.4% | -5.6% | -17.3% | 3.2% | -4.2% | -15.2% | -6.1% | -7.6% | -9.8% | -8.2% | -16.8% | 5.7% | -8.3% |
| Sentiment | 1M Loser | 7.7% | 7.9% | 0.0% | -0.4% | -8.3% | 3.0% | 19.8% | 21.5% | -2.5% | 2.6% | 32.1% | 41.2% | 41.9% |
| | 12M-1M Residual Return | 5.4% | 3.7% | 34.8% | -5.8% | 2.4% | 7.5% | -2.3% | 5.8% | -4.6% | 11.7% | 2.9% | -6.1% | 17.0% |
| | Earnings Revision | 0.5% | 1.8% | 3.9% | -2.8% | -9.5% | 0.6% | -4.1% | 8.3% | 3.5% | 12.5% | -20.4% | -8.4% | 24.1% |
| | Sales Revision | -1.2% | -0.9% | -10.6% | 12.8% | -7.9% | -15.8% | 6.0% | -0.5% | -11.2% | 6.3% | -7.7% | 13.5% | 22.1% |
| | Sentiment Composite | 3.3% | 5.8% | 33.3% | -3.8% | -8.5% | -6.6% | 7.2% | 17.2% | -4.5% | 9.3% | 5.2% | 27.1% | 44.2% |
| Others | 12M Price Momentum | -1.7% | -1.6% | 25.3% | -7.3% | 3.3% | -7.1% | -8.6% | -13.1% | -7.4% | 9.7% | -13.6% | -13.0% | 32.1% |
| | Small Cap | 1.8% | 3.5% | -4.9% | 18.4% | 9.4% | 8.0% | 1.8% | -2.3% | -6.9% | 3.8% | -5.5% | -4.4% | -23.7% |
| | Low Volatility | 9.0% | 8.6% | -26.7% | -7.5% | 4.2% | 6.7% | 20.1% | 15.7% | 18.0% | 1.4% | 26.4% | 3.6% | 33.3% |
| | Low Beta | -1.5% | -2.1% | 15.3% | -8.3% | 0.5% | -21.8% | -8.2% | -17.1% | 9.1% | 2.4% | 9.7% | -16.9% | 3.2% |

Source: FactSet, MSCI, Morgan Stanley Research

Appendix – Factor Definitions

Exhibit 104: Morgan Stanley Factor Definitions in Detail

| Style Group & Factor Name | Definition | |
|---|---|--|
| Value | Cheap P/B | Last reported book value of common equity / current market cap |
| | Cheap P/S | Trailing 12m total revenue / current market cap |
| | Cheap P/E | Trailing 12m earnings / current market cap |
| | Cheap Fwd P/E | IBES median time-weighted NTM EPS Estimate divided by Price |
| | High Total Yield | Dividend Yield plus Buyback Yield |
| | High FCF Composite | Average of Z-score of FCF-to-EV and FCF Yield |
| Free Cash Flow Yield | Trailing 12-month Free Cash Flow (operating cash flow - net capex) / current market cap | |
| Free Cash Flow / EV | Trailing 12-month Free Cash Flow (operating cash flow - net capex) / EV | |
| MS Value Composite | Average of Z-score of Free Cash Flow Sub Composite, 'Tangible Book/Price', Earnings Yield & Total Yield | |
| Growth | Dividend Growth | YY Change in DPS (percent change of the latest reported 12m DPS compared to what it was 1 year ago) |
| | Long Term Growth Forecast | IBES mean 5-Year EPS growth forecast |
| | YY Earnings Growth | Percentage change in the trailing 12-month Net Income over the last 1 year. Not used if Net Income 1-year ago were negative. |
| | Internal Growth | Retention rate times ROE |
| | MS Growth Composite | Average of Z-score of Internal Growth, 'YY Earnings Growth', 'YY Dividend Growth' & 'Long Term Growth Forecast' |
| Sentiment | 1M Reversal | Reciprocal of 1m trailing Total Return |
| | 12-1m Residual Momentum | 12m Residual Momentum lagged by 1m |
| | Earnings Revision Sub Composite | Average of Z-score of 'Earnings Revisions Breadth' & 'Earnings Estimate Revisions' |
| | Earnings Estimate Revisions | Time-Weighted 1m change in the IBES median EPS estimate scaled by price |
| | Earnings Revisions Breadth | Median Time-Weighted NTM EPS Revisions |
| | Sales Revision Sub Composite | Average of Z-score of 'Sales Revisions Breadth' & 'Sales Estimate Revisions' |
| | Sales Estimate Revisions | Time-Weighted 1m change in the IBES median Sales estimate scaled by market cap |
| | Sales Revisions Breadth | Median Time-Weighted NTM Sales Revisions |
| | MS Sentiment Composite | Average of Z-score of 'Earnings Revision Sub Composite', 'Sales Revision Sub Composite', '12m-1m Residual Momentum' & '1m Reversal' |
| | Quality | Accruals Sub Composite |
| Low Accruals | | YY change in Net Operating Assets / total assets a year ago, low values are favored |
| Low ST Accruals | | YY change in Current Net Operating Assets / Average Assets, low values are favored |
| Earnings Stability Sub Composite | | Average of Z-score of 'Estimate Dispersion', 'ROE Variability' & 'Sales Stability' |
| Low Estimate Dispersion | | Std deviation of IBES EPS estimates divided by absolute value of mean IBES estimate, low values are favored |
| Low ROE Variability | | 5-year std deviation of ROE divided by 5-year absolute mean of ROE, low values are favored |
| Sales Stability | | 5-year std deviation of YY Sales Growth |
| Profitability Sub Composite | | Average of Z-score of ROE, 'Gross Profit-to-Assets', 'Gross Margin' & 'Operating Leverage' |
| Gross Profit / Assets | | (Trailing 12m Revenue - COGS) / total assets from 12m ago |
| Gross Margin | | Trailing 12m revenue minus COGS / trailing 12m revenue |
| Operating Leverage | | 12m change in EBIT / 12m change in Sales |
| Leverage Sub Composite | | Average of Z-score of 'Cash Flow Coverage' & 'Cash Flow-to-Debt' |
| Cash Flow Coverage | | (Operating Cash Flows + Interest Expense) / Interest Expense |
| Cash Flow-to-Debt | | Operating Cash Flows / Total Debt |
| Operational Efficiency Sub Composite | | Average of Z-score of 'Capex-to-Sales', 'YY Change in Inventory/Sales' & 'YY Change in Num of Employees' |
| Low Capex/Sales | | Trailing 12m net capital expenditure / trailing 12m revenue, low values are favored |
| YY Change in Inventory/Sales | | Difference between the most recent Inventory/Sales and Inventory/Sales from 12m ago |
| Low YY Change in Num of Employees | YY percent change in number of employees | |
| MS Quality Composite | Average of Z-score of 'Accruals Sub Composite', 'Earnings Stability Sub Composite', 'Profitability Sub Composite', 'Leverage Sub Composite' & 'Operational Efficiency Sub Composite' | |
| Others | Low Beta | 36-month stock beta to the cap-weighted return of stocks, low values are favored |
| | Low Volatility | Standard deviation of the last 12m returns |
| | Size (Small-Large) - Total Mkt Cap | Total Market Cap |
| | 12M Price Momentum | 12m trailing Total Return |

Source: Morgan Stanley Research