

Style Analysis

Half-Year Note

Methodology

The 27four quantitative research team conducts style based analysis on the top 100 shares (by market capitalization) listed on the JSE. The styles typically considered include, momentum, value, growth, low volatility and quality. We have recently added size and liquidity as additional factors. Even though size and liquidity are considered weaker styles over the past decade, we do believe that both provide independent information related to the levels of risk-aversion present on the JSE. Back-testing is conducted on 27four's proprietary JSE dataset where shares are sorted into monthly style benchmark 'portfolios' based on several style proxies. Style benchmark returns are calculated on a buy-and-hold basis applying market capitalization and factor weighting. Market capitalization weighting implies assigning each share an initial in-portfolio weight based on their sorting date market capitalization while factor weighting implies applying the normalised style score (proxy) as the initial weighting. The results of both market capitalization and factor weighting are presented. Importantly, both market capitalization and factor weighted portfolios are identical in terms of share constituents, the only difference being the initial weight assigned at each portfolio sort date.

Style	Proxy	Style Factor Name/Detail	Inverse Style Factor	Style Factor Premium
Momentum	Historical cumulative return measured over the previous 252 trading days excluding the most recent 21 days of return	Winner = top 30 shares based on momentum rank	Loser = bottom 30 shares based on momentum rank	Winner minus Loser
Value	Linear combination of earnings yield (EY) and cashflow per share* ² (CFPS)	Value = top 30 shares based on z-score combination of EY and CFPS	Growth* ¹ = bottom 30 shares based on z-score combination of EY and CFPS	Value minus Growth
Low Volatility	Linear combination of idiosyncratic risk and market beta measured over the previous 252 trading days	Low Vol = bottom 30 shares based on z-score combination of standard deviation and market beta	High Vol = top 30 shares based on z-score combination of standard deviation and market beta	Low Vol minus High Vol
Quality	Linear combination of return on assets (ROA), return on equity (ROE) and debt to equity ratio (D/E)	Quality = top 30 shares based on z-score combination of ROA, ROE less DE	Junk = bottom 30 shares based on z-score combination of ROA, ROE less DE	Quality minus Junk
Size	Natural logarithm of market capitalization on portfolio sort date	Small = bottom 30 shares based on natural log of market capitalization	Big = top 30 shares based on natural log of market capitalization	Small minus Big
Liquidity* ³	Average value traded measured over the previous 252 trading days relative to market capitalization	Illiquid = bottom 30 shares based on value traded scaled by market capitalization	Liquid = top 30 shares based on value traded scaled by market capitalization	Illiquid minus liquid

*¹ Academic literature treats growth as the inverse of value however, within the South African framework, growth is considered a popular style and has commanded a premium over value over the recent 5 year cycle

*² In-house research has found that book-to-market's performance as a value proxy has reduced dramatically while cashflow per share has remained consistent

*³ Rooted in liquidity preference theory, liquidity premium refers to illiquid shares providing a premium over liquid shares. See Amihud and Mendelson (1988) and more recently Ibbotson, Chen, Kim and Hu (2013).

Style Performance as at 30 June 2020 – Market Capitalization Weighting

Time Period	Winner	Loser	Value	Growth	Low Vol	High Vol	Quality	Junk	Small	Big	Low Liq	High Liq
1 Month	6,81%	5,84%	9,05%	6,80%	3,99%	9,74%	9,29%	7,73%	17,89%	6,78%	5,87%	9,57%
1 Month Vol.	24,72%	48,86%	33,97%	25,91%	23,46%	38,87%	24,98%	36,93%	34,53%	24,65%	24,04%	35,37%
3 Month	28,17%	18,75%	39,25%	20,73%	18,23%	46,13%	30,76%	23,00%	30,87%	25,70%	24,85%	33,33%
3 Month Vol.	25,58%	46,46%	41,29%	26,63%	22,65%	51,11%	26,77%	40,77%	36,47%	27,06%	26,77%	42,86%
6 Month	2,36%	-27,01%	-17,13%	-2,20%	-4,21%	-9,34%	20,40%	-23,63%	-21,95%	2,24%	4,42%	-11,66%
6 Month Vol.	35,56%	48,48%	47,43%	41,12%	35,04%	58,55%	39,39%	47,33%	42,23%	37,68%	36,39%	49,74%
1 Year Return	-5,87%	-11,54%	-14,42%	5,36%	-8,87%	-2,65%	19,71%	-26,09%	-20,39%	1,64%	5,39%	-6,77%
1 Year Vol.	27,38%	36,46%	35,46%	30,89%	27,03%	43,13%	29,76%	35,09%	30,80%	28,25%	27,74%	36,66%
3 Year Return	4,66%	-5,78%	-2,28%	7,64%	-3,72%	5,78%	12,72%	-12,33%	-8,43%	5,04%	4,47%	-2,46%
3 Year Vol.	21,52%	25,79%	24,07%	24,88%	19,91%	30,04%	21,66%	23,78%	20,24%	19,81%	20,11%	25,08%
5 Year Return	3,58%	-5,21%	-2,33%	10,79%	1,45%	5,80%	6,89%	-6,91%	-2,38%	3,64%	4,07%	0,15%
5 Year Vol.	20,73%	27,38%	22,94%	22,36%	18,08%	29,78%	19,88%	22,36%	18,49%	18,98%	19,54%	23,26%
10 Year Return	13,90%	0,24%	5,26%	12,86%	13,14%	8,44%	12,02%	3,45%	5,61%	10,56%	11,27%	7,91%
10 Year Vol.	18,40%	23,09%	20,24%	18,48%	15,49%	25,27%	18,85%	18,73%	14,64%	17,46%	18,06%	20,18%

Style Performance as at 30 June 2020 – Market Capitalization Weighting

Time Period	Winner	Loser	Value	Growth	Low Vol	High Vol	Quality	Junk	Small	Big	Low Liq	High Liq
1 Month	13,94%	27,08%	17,26%	9,24%	5,61%	17,28%	13,55%	9,46%	7,75%	6,54%	15,98%	14,32%
1 Month Vol.	35,82%	74,93%	45,91%	22,88%	19,53%	54,70%	24,92%	51,38%	27,70%	24,29%	36,22%	45,25%
3 Month	51,24%	52,93%	49,78%	17,72%	12,21%	60,19%	38,71%	17,84%	20,35%	27,36%	28,05%	41,80%
3 Month Vol.	51,60%	66,72%	49,85%	24,65%	19,82%	61,59%	27,58%	48,88%	28,47%	29,56%	35,63%	50,53%
6 Month	14,46%	-20,89%	-14,49%	-17,39%	-34,40%	12,78%	7,97%	-35,54%	-25,34%	-2,25%	-5,70%	-8,04%
6 Month Vol.	60,64%	59,82%	50,22%	37,75%	41,51%	58,69%	35,93%	52,06%	37,80%	39,13%	38,24%	52,18%
1 Year Return	42,83%	-21,27%	-11,91%	-11,96%	-33,72%	28,81%	6,27%	-37,06%	-25,88%	-2,04%	-9,05%	6,57%
1 Year Vol.	45,20%	44,40%	37,51%	28,69%	29,96%	43,37%	27,54%	38,36%	28,35%	29,19%	28,10%	38,45%
3 Year Return	23,20%	-9,21%	9,56%	-8,70%	-11,42%	14,95%	12,10%	-19,14%	-15,05%	5,43%	-0,42%	11,89%
3 Year Vol.	29,90%	28,74%	25,65%	20,17%	19,41%	29,62%	20,68%	25,51%	18,84%	20,39%	18,62%	26,54%
5 Year Return	10,79%	-4,14%	8,02%	-7,16%	-6,45%	14,09%	10,54%	-10,85%	-6,41%	4,01%	0,94%	9,04%
5 Year Vol.	26,51%	29,60%	24,64%	19,72%	16,73%	30,98%	19,38%	23,23%	17,19%	19,99%	17,36%	24,98%
10 Year Return	21,11%	-5,25%	13,59%	-1,57%	7,74%	4,90%	15,65%	-1,59%	1,88%	11,01%	10,25%	9,35%
10 Year Vol.	21,21%	24,44%	20,22%	16,16%	13,28%	26,19%	16,92%	18,91%	14,47%	17,87%	15,19%	20,69%

Momentum

Momentum has once again proven to be a persistent style on the JSE, fully recovering losses attributable to the Covid-19 drawdowns experienced over February and March. Applying market capitalization weighting, winner shares have returned 2.36% for the 6 months ended June 2020 at a volatility level only marginally higher than the low volatility style. As noted in literature and previous style notes, factor weighting tends to have a dramatically positive impact on the momentum premium. The factor weighted winner portfolio delivered 14.46% year to date, the highest nominal return of the factor weighted styles considered but at the highest volatility of 60.64%.

Value and Growth

Value has experienced a notable reversal relative to growth over the most recent 1 and 3 month period but falls short of growth year to date when applying market capitalization weighting. Factor weighting results in value outperforming growth over all holding periods, reiterating the fact that value maintains a lumpy performance profile with the bulk of its recovery taking place in April and May 2020. Importantly, when analysing the realised volatility of value compared to growth, value has been on average 50% more volatile than growth when applying factor weighting (20% more when applying market capitalization weighting).

Low Volatility

Low volatility has continued to underperform relative to high volatility barring the 6 month period (year to date) when applying market capitalization weighting. True to form, the low volatility portfolio falls within the bottom three realised volatilities of all style portfolios analysed, yet poor relative nominal returns have resulted in inferior risk-adjusted performance. The result is disappointing, given that low volatility is expected to outperform in periods of excess volatility, having done so in the global financial and credit crises of 2008/9.

Quality

Quality has continued to be the best performing style of 2020, dominating the year to date numbers on a nominal and risk-adjusted basis. As noted in the Q1 style note, market capitalization weighting trumps factor weighting when considering quality. As at June 2020, market capitalization weighted quality has returned 20.4% compared to 8% achieved by its factor weighted counterpart. On a relative basis, market capitalization weighted quality has beaten the next best styles by 16% (market capitalization weighted low liquidity) and 6% (factor weighted momentum) over 2020. Given that market capitalization favours larger shares, the combination of quality and size seems to have provide a safe-haven against the impact of Covid-19.

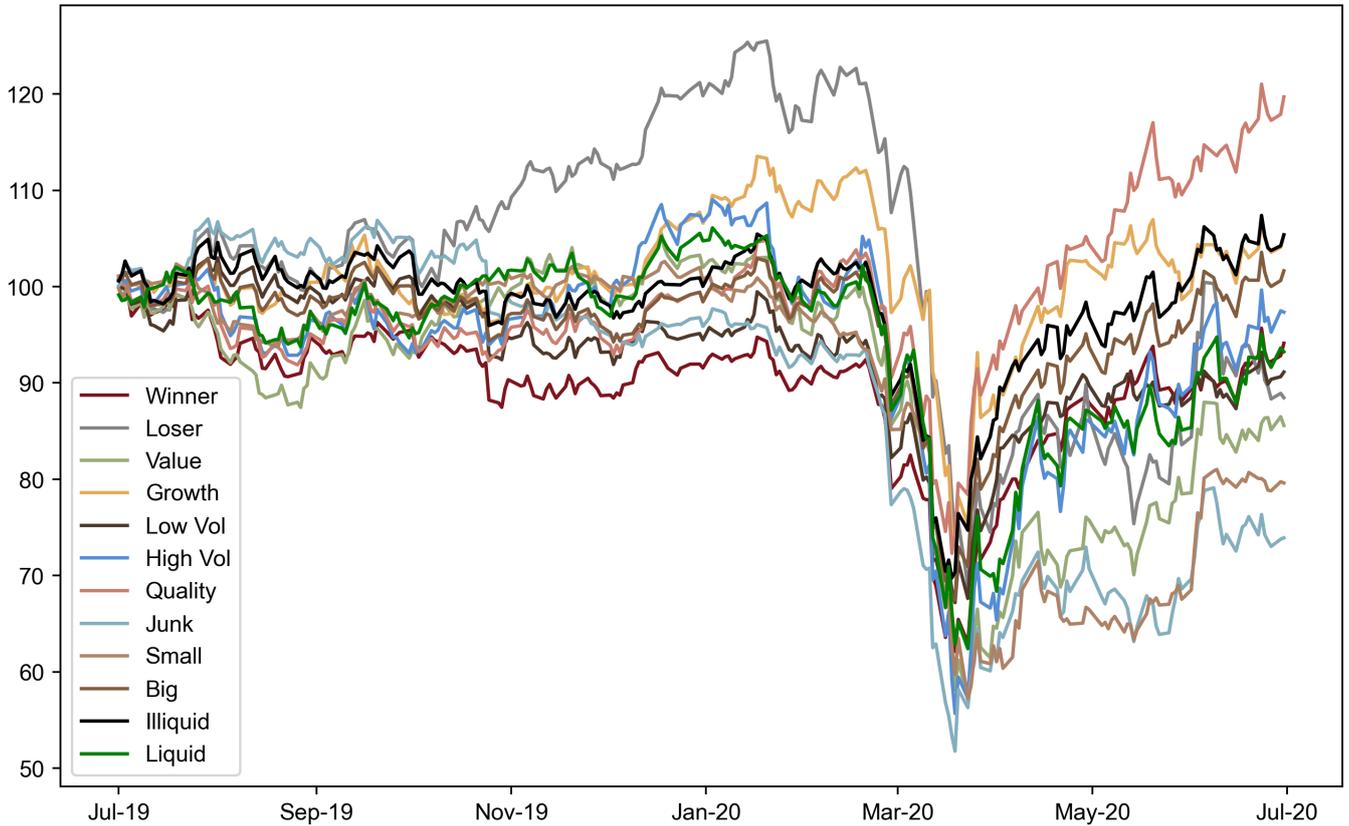
Size

Size as an investment style was popularised in the 1980's and 90's and is formally credited to Banz (1981). Fama and French (1992) considered the small size premium to be so pervasive that they included it as an independent variable in their three-factor model. Recent literature has indicated that the global size phenomenon has largely disappeared. The results presented per the tables above confirm this, with small capitalization shares underperforming their large counterparts over all discrete holding periods barring the most recent month. Even though the small cap. premium has reversed over the decade, size itself remains an important tool for analysis of the overall style and risk-sentiment framework that governs the JSE. The year to date results of both the big market capitalization and factor weighted performance point to a distinctive negative perception towards SA Inc. shares in favour of rand hedge, further confirming that larger counters weathered the Covid-19 storm and reversed strongly post the February and March drawdowns. The same cannot be said for small counters that have consistently underperformed over 2020 and the recent decade.

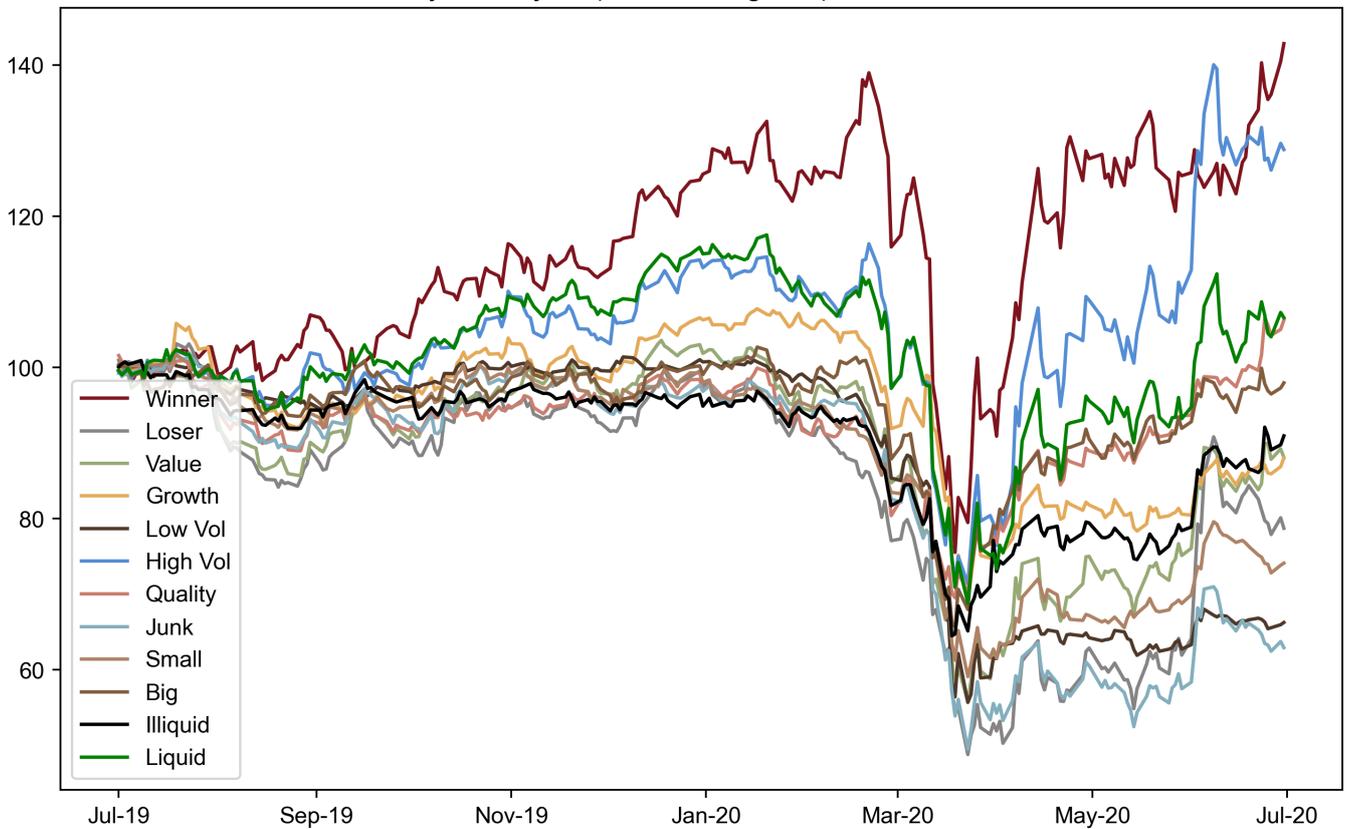
Liquidity

Liquidity as an investment style is largely based on liquidity preference theory, where market participants attach a discount to any asset that cannot be easily liquidated. There is very little literature on the liquidity premium globally and locally, especially when compared to other popular styles such as value and momentum. Liquidity has been found to be independent of size even though illiquid shares are more often likely to be small capitalization shares. As with the inclusion of size, we believe that the analysis of the performance of portfolios sorted on liquidity provides insight to the level of relative risk aversion on the JSE as well as the dramatic variation across liquidity stratum. Interestingly, there is no clear (il)liquidity premium on the JSE, however, illiquid shares outperformed liquid shares year to date on both a market capitalization and factor weighted basis. The result extends to the full year performance for the market capitalization weighted sorts but reverses under factor weighting. It is possible that larger relatively less liquid shares were spared over the Covid-19 drawdown months given that they were less impacted by the extreme selling fuelled by the risk-off sentiment.

27four Style Analysis (Market Cap Weighted) - YTD



27four Style Analysis (Factor Weighted) - YTD Performance



Style correlation

	Winner	Loser	Value	Growth	Low Vol	High Vol	Quality	Junk	Small	Big	Low Liq	High Liq
Winner	100%											
Loser	42,0%	100%										
Value	38,9%	43,3%	100%									
Growth	61,6%	74,7%	43,1%	100%								
Low Vol	54,1%	49,9%	36,1%	62,3%	100%							
High Vol	71,4%	77,3%	41,7%	71,1%	41,4%	100%						
Quality	70,6%	62,7%	49,4%	68,4%	58,9%	69,1%	100%					
Junk	58,4%	79,0%	46,8%	81,6%	63,8%	68,9%	67,6%	100%				
Small	56,1%	63,2%	36,4%	67,3%	66,1%	58,7%	63,1%	66,0%	100%			
Big	67,9%	68,1%	47,0%	70,8%	54,9%	72,7%	77,8%	74,7%	52,1%	100%		
Low Liq	26,4%	25,8%	91,4%	27,9%	25,3%	28,2%	29,3%	29,5%	26,2%	29,2%	100%	
High Liq	71,3%	75,1%	44,4%	76,1%	54,3%	80,1%	72,9%	74,6%	60,0%	73,5%	24,5%	100%

Top 10 tickers

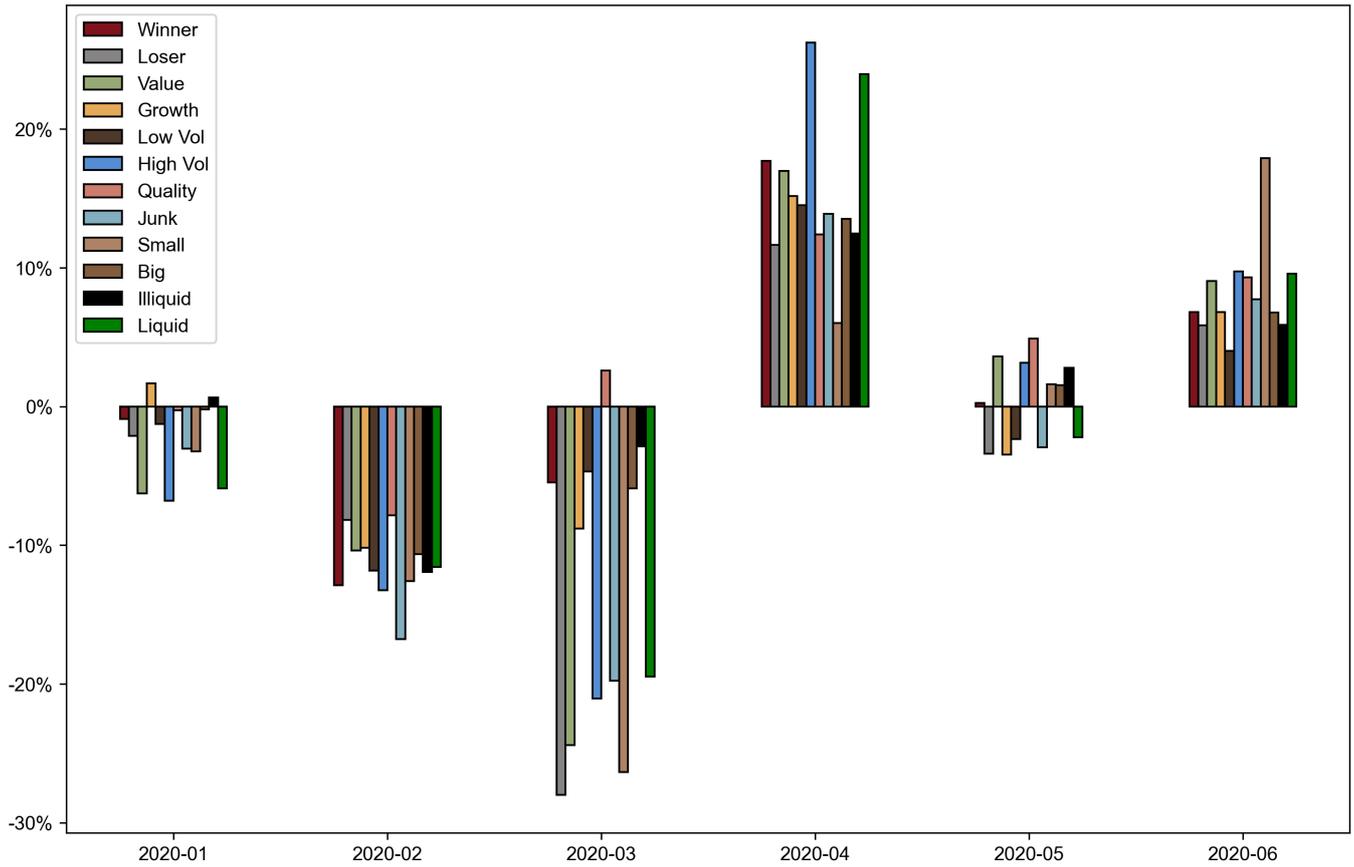
	Momentum	Value	Growth	Low Volatility	Quality	Small	Illiquid
1	DRD Gold	Liberty Holdings	Clicks	Italtile	Kumba Iron Ore	RDI REIT	Vivo Energy
2	Sibanye Stillwater	Anglo American Plat	DRD Gold	Adcock Ingram	AVI	Lighthouse Capital	RCL Foods
3	Harmony	Kumba Iron Ore	Dis-Chem Pharmacies	RCL Foods	Mr Price	Stenprop	Anheuser-Busch
4	Gold Fields	Capitec Bank	MultiChoice	Spar	Anglo American Plat	Vukile Property Fund	Glencore
5	Northam Platinum	Nedbank	Pick n Pay Stores	AVI	Coronation	Investec Property Fund	South32
6	Pan African Resource	Absa	Northam Platinum	AECI	Clicks	Textainer	PSG Konsult
7	Impala Platinum	Sasol	Anglogold Ashanti	Santam	Italtile	Imperial Logistics	Italtile
8	Anglogold Ashanti	AECI	Naspers	Oceana	Pan African Resource	Allied Electronics A	BHP
9	British American Tobacco	Barloworld	Anglo American Plat	British American Tobacco	Exxaro Resources	Allied Electronics N	British American Tobacco
10	Sirius Real Estate	Standard Bank	Spar	Vodacom	Resilient REIT	Pan African Resources	Stenprop

The top 10 tickers per style category are described above with each tickers rank being determined by its respective styles z-score. Momentum in Q2 was again dominated by resources, with 8 out of 10 shares being platinum and gold mining counters. The top 10 value tickers include the likes of Sasol and four of five banking shares listed on the JSE. The top 10 growth tickers are highly diversified, with the top momentum share (DRD Gold) ranking second in terms of growth while Naspers has fallen to eighth place compared to third in Q1. The top 10 low volatility shares are diversified around consumer staples and in stark contrast to 2019, does not contain any property shares. Being the top performing style, quality has now picked up four resource counters as well as a property counter, dropping its overweight to consumer discretionary and staples. The top small shares are largely dominated by property tickers, making up 50% of the top ten. This partially explains the most recent months positive performance as property shares rallied in June. Lastly, relatively illiquid shares that trade less than their market capitalization on average are presented in the final column. Interestingly, the likes of Italtile (quality and low volatility) as well as BAT (momentum and low volatility) seem to be less liquid when compared to their other similarly sized peers. The result is that when investing in other styles, one should be cognisant of relative liquidity which can underperform when risk sentiment regime switches.

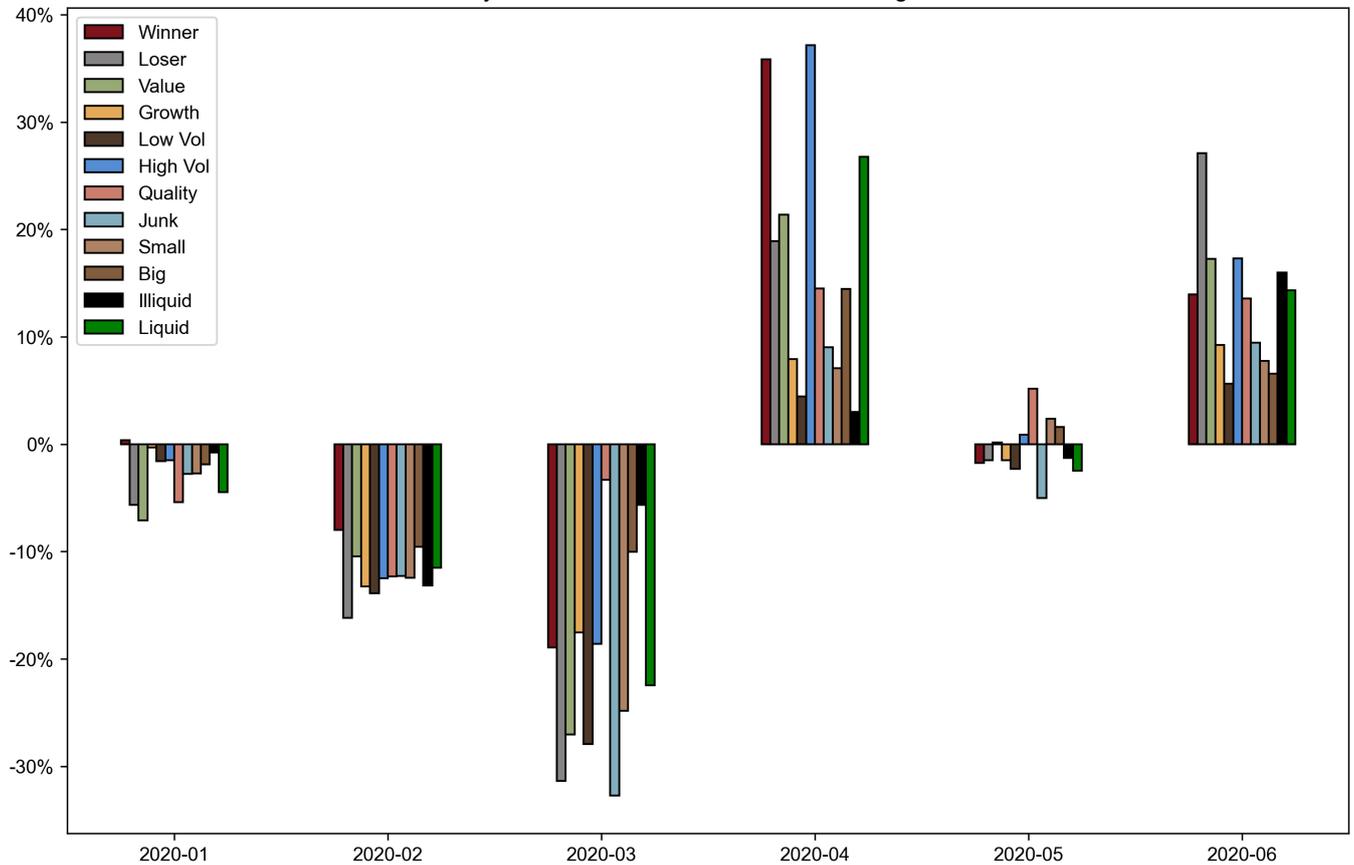


Styles YTD – Performance in bars

Style Performance in 2020 - Market Cap. Weighted



Style Performance in 2020 - Factor Weighted



Market Capitalization Weighting

2020 thus far can easily be described as uncharted territory in terms of Covid-19 and its impact on financial markets. By analysing the month on month changes in style portfolios on the JSE, we can estimate the impact of a possible 'second wave', significantly negative news flow that results in knee-jerk drawdowns and subsequent recoveries. Focusing on the pink, black and brown bars (quality, large cap and liquid), all tended to suffer less extreme drawdowns in March and similarly did not experience the drastic upswing in markets in comparison to other styles in April and June. The above promotes our house-view on style tilts given that large cap (liquid) quality counters offer downside protection and provide benefit as a buffer when idiosyncratic risk events drive excess selling.

Factor Weighting

Factor weighting is notably riskier when compared to market capitalization weighting as exposure is defined by the underlying style score which ultimately leads to greater active share and off-benchmark bets. The only style that truly benefits from factor weighting is momentum, showing greater resilience over the extreme drawdowns of February and March and reverses strongly in April and June. The connection between momentum and volatility is well documented in literature given that momentum is innately a high beta strategy with notably high levels of absolute volatility. This explains why momentum seems to maintain a high correlation with the high volatility portfolio.



Summary

The key take-aways of the analysis conducted is as follows:

- Quality, as opposed to low volatility, is the best performing style over the course of 2020 thus far
- Large, liquid shares are not necessarily more prone to reversal but rather experience relatively muted losses when extreme idiosyncratic events fuel excess selling
- Factor weighted momentum produces impressive nominal returns but bears high levels of market and idiosyncratic risk
- In summary, the 27four house view is that the upper size and liquidity stratum of the JSE offer safety while overweights to quality and momentum should provide upside with heightened downside protection.

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