US EQUITIES FACTOR ASSESMENT FRAMEWORK -MONTHLY UPDATE

April 2024



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// DWS

FACTOR SPOTLIGHT

Monthly Performances (through April 2024)

Europe	World	USA
Value +0.9%	High Div.Yld -2.9%	Min Vol -3.7%
High Div.Yld +0.1%	Min Vol -3.6%	High Div.Yld -3.9%
Min Vol -0.5%	MSCI World -3.7%	MSCI USA -4.2%
Small Caps -0.8%	Quality -3.9%	Quality -4.4%
MSCI Europe -0.9%	Value -3.9%	Momentum -4.9%
Momentum -1.2%	Momentum -4.1%	Small Caps -6.6%
Quality -1.8%	Small Caps -5.2%	Value -6.9%

In April, in World and US markets, High Dividend Yield and Minimum Volatility factor declined the least. In European region, Value and High Dividend Yield were the only factors which gave positive performance.

Valuations

Minimum Vol. The relative valuations of minimum volatility factor increased for World and US markets and was flat for European markets.

Momentum The relative valuations for the momentum factor declined across all regions.

Value For a long time, valuation of the Value factor has been trading at a deep discount with respect to the market.

Quality The relative valuations for the Quality factor decreased across all regions.

Small Caps The relative valuations of Small Cap factor declined for US and World markets and increased for European markets.

High Div. Yield Similar to Value factor, valuations have been trading at a deep discount to the benchmark for a long time.

Source Bloomberg LP, MSCI, DWS Calculations. As of 30th April 2024. Performances (in USD for World and US, and EUR for Europe) and flows are over the previous 1 calendar month. Flows refer to UCITS ETFs only and are in € millions and as per internal DWS classifications. Valuations are 12 month estimated forward PE. Relative valuation ranges are vs. the relevant MSCI regional index (World, USA, Europe, respectively), and use data from June 2003 (from July 2005 for Small Cap). **Past performance, actual or simulated, is not a reliable indicator of future results.** Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect. DWS Research House (House of Data) - Factor Assessment Framework - Monthly Update

Factor Assesment Framework - United States factor indices ______

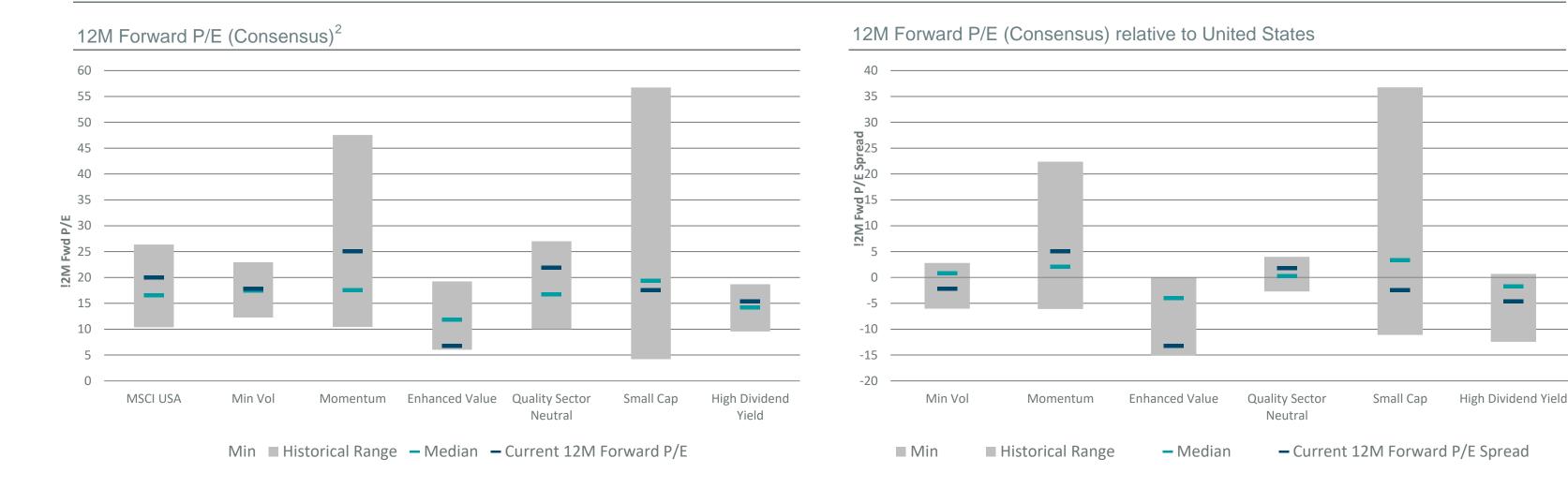
Introduction

The MSCI USA factor indices are based on the MSCI USA their parent index, which includes large and mid cap stocks across US Equities. This "Factor Assessment Framework" aims to provide detailed information on a wide range of inputs which are deemed to impact equity factors' performance. The information is split into multiple categories: macro-economic indicators, flows, valuations and momentum indicators.

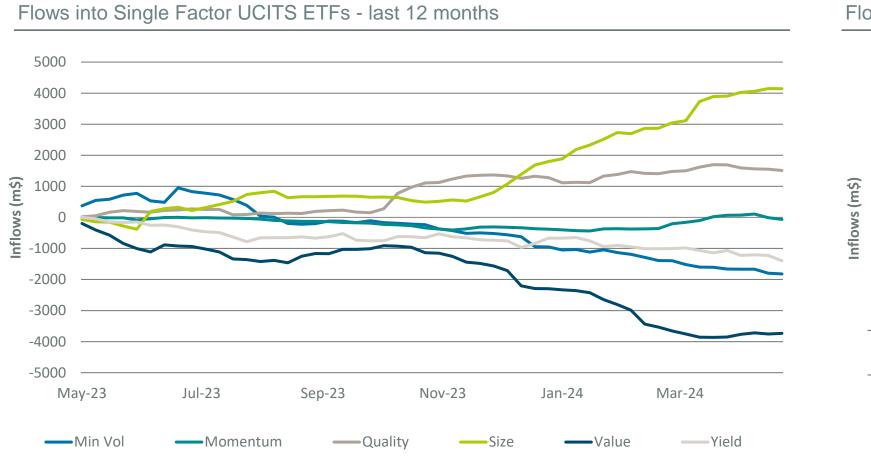
Summary ------

Factor Per	formance - las	t 12 months			Returns (in USD))				Risk ¹			
140						1M	6M	1Y	5Y	5Y 6N Volatility	M Sharpe Ratio	ax. DD	Beta
30			~~~~	www.	Min Vol	-3.7%	12.4%	10.1%	7.4%	18.0%	3.1 -3	33.2%	77%
20			A AN		Momentum	-4.9%	31.0%	27.3%	10.5%	23.7%	4.5 -3	33.8%	99%
10	mathin	and from the			Enhanced Value	-6.9%	16.5%	12.4%	6.3%	23.5%	2.7 -3	39.5%	99%
²					Quality Sector Neutral	-4.4%	21.4%	25.6%	12.6%	22.0%	4.1 -3	34.0%	100%
00 Apr-23	Jul-23	Oct-23	Jan-24	Apr-24	Small Cap	-6.6%	19.6%	13.6%	7.4%	26.3%	2.3 -4	12.5%	110%
MSCI USA	Min Vol	Momentum	Ei	nhanced Value	High Dividend Yield	-3.9%	16.0%	10.4%	6.6%	18.8%	3.5 -3	33.3%	80%
-Quality Sector No	eutral ——Small Cap	High Divider	nd Yield		MSCI USA	-4.2%	21.0%	22.8%	12.6%	21.6%	4.2 -3	34.2%	-

Valuations



Cumulative Flows³

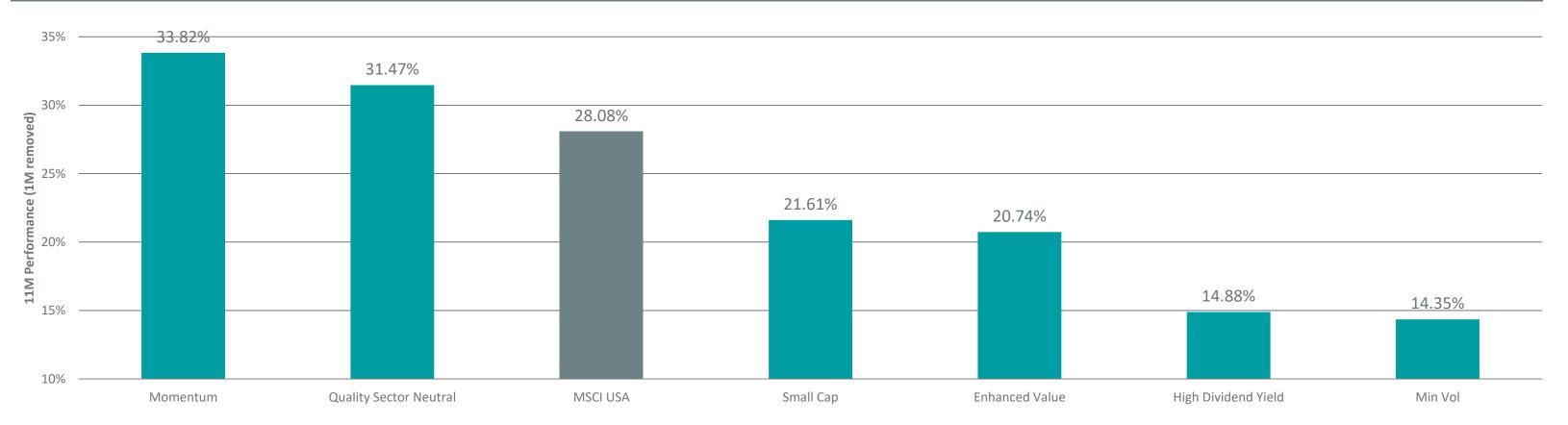


Flows into Single Factor UCITS ETFs - last 3 months



---Min Vol ---Momentum ----Quality ---Size ----Value ----Yield

11 Month Momentum⁴



Source Bloomberg LP, MSCI, DWS Calculations. As of 30 Apr 2024. Past performance, actual or simulated, is not a reliable indicator of future results. Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect.

Risk measures (Volatility, Drawdown, Beta) are calculated over the last five years period using daily frequency observations.
12 month estimated forward PE. Source MSCI, Bloomberg LLC. Data from December 1998 (from July 2005 for Small Cap).
Source: Morningstar, DWS Calculations. Weekly data for the last 12 months.

4. 11M Momentum is defined as the 11M performance of the index calculated as of 1 month ago (often referred in the literature as "1M removed").

MSCI USA Min Vol

Introduction

The MSCI US Minimum Volatility Index aims to reflect the performance characteristics of a minimum variance strategy applied to the large and mid cap equity universe in the US. The index is calculated by optimizing the MSCI USA Index, its parent index, USD for the lowest absolute risk (within a given set of constraints).

Summary

Historical Performance



Risk and Return				
Return	Min Vol	USA		
Last 1M	-3.7%	-4.2%		
Last 6M	12.4%	21.0%		
Last 1Y	10.1%	22.8%		
Last 5Y	7.4%	12.6%		
Risk ¹ 5Y Vol.	Min Vol 18.0%	USA 21.6%		
6M Sharpe Ratio	3.1	4.2		
Max DD	-33.2%	-34.2%		
Beta	77%	-		
The elsis of Ermon	0 40/			

Tracking Error 8.4% -

Valuations (relative to historical averages)²

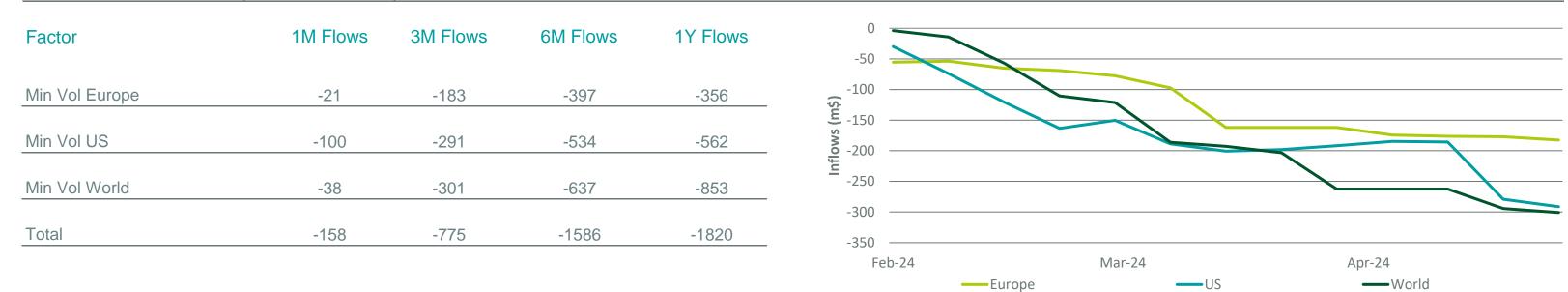


Valuations (relative to USA)²





Cumulative Flows (UCITS ETFs)³

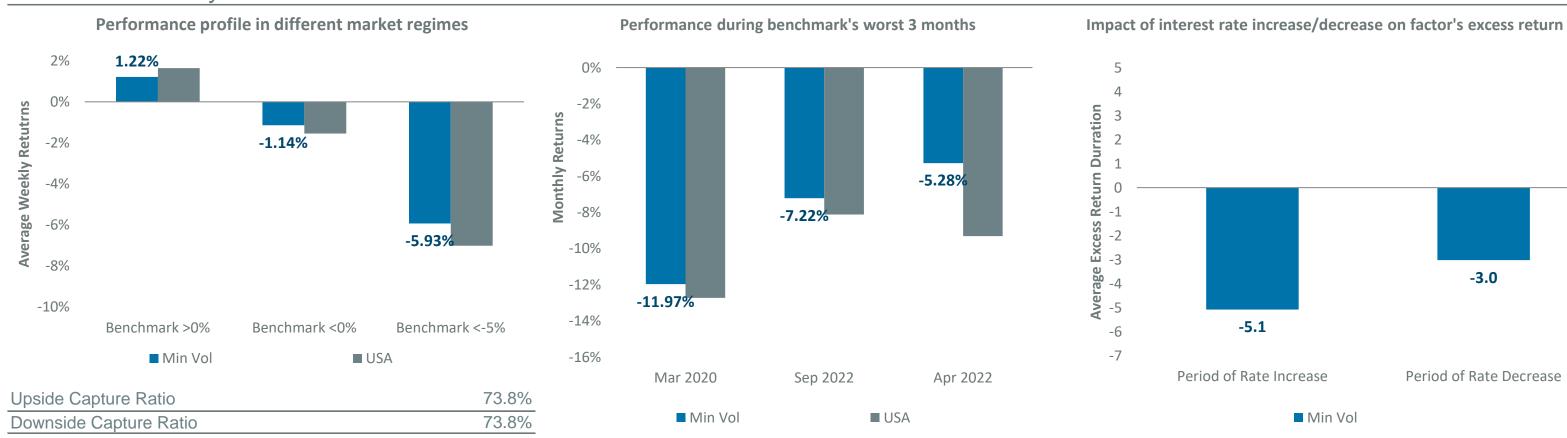


11 Month Momentum⁴

11 Month Performance (1M Removed)

Min Vol	14.4%
USA	28.1%

Risk Profile Analysis⁵



Source Bloomberg LP, MSCI, DWS Calculations. As of 30 Apr 2024. Past performance, actual or simulated, is not a reliable indicator of future results. Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect.

1. Risk measures (Volatility, Drawdown, Beta) are calculated over the last five years period using daily frequency observations.

2. 12 month estimated forward PE. Source MSCI, Bloomberg LLC. Data from December 1998 (from July 2005 for Small Cap).

3. Source: Morningstar, DWS Calculations. Weekly data for the last 12 months.

4. 11M Momentum is defined as the 11M performance of the index calculated as of 1 month ago (often referred in the literature as "1M removed").

5. All calculations are done over the last 15 years.

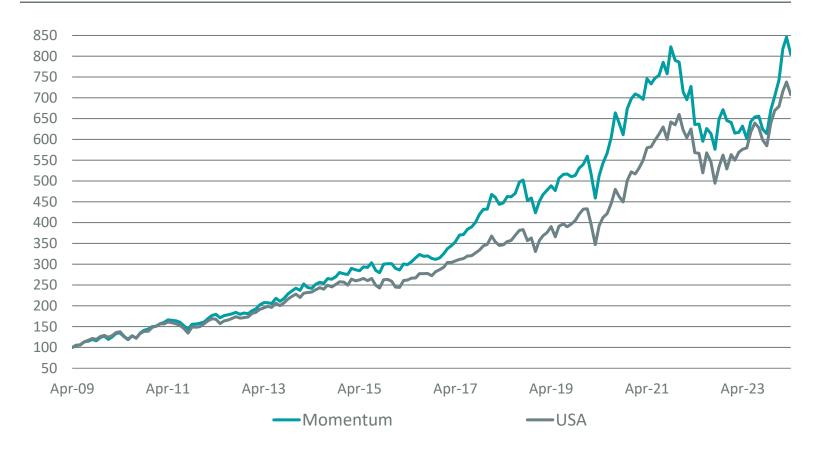
MSCI USA Momentum-

Introduction

The MSCI USA Momentum Index is based on MSCI USA its parent index, which includes large and mid cap stocks across US Equities. It is designed to reflect the performance of an equity momentum strategy by emphasizing stocks with high price momentum, while maintaining reasonably high trading liquidity, investment capacity and moderate index turnover.

Summary

Historical Performance



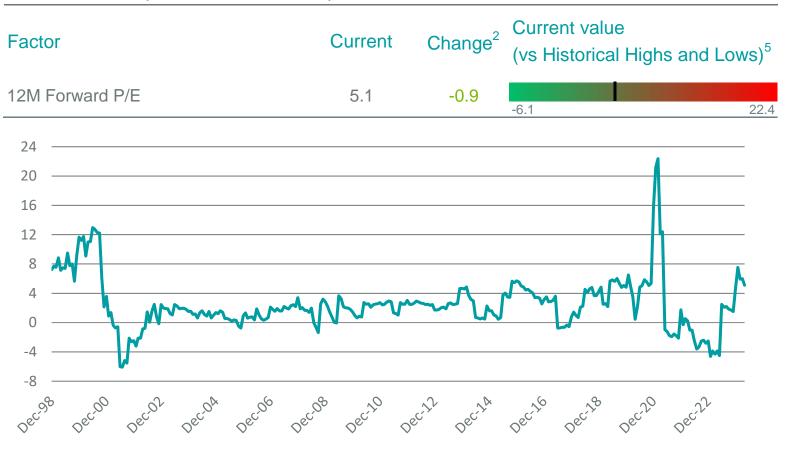
Risk and Return					
Return	Momentum	USA			
Last 1M	-4.9%	-4.2%			
Last 6M	31.0%	21.0%			
Last 1Y	27.3%	22.8%			
Last 5Y	10.5%	12.6%			
Risk ¹	Momentum	USA			
5V Vol	23.7%	21.6%			

5Y Vol.	23.7%	21.6%
6M Sharpe Ratio	4.5	4.2
Max DD	-33.8%	-34.2%
Beta	99%	-
Tracking Error	10.3%	-

Valuations (relative to historical averages)²

Factor	Current	Change ²	Current value (vs Historical Highs and Lows) ⁵
12M Forward P/E	25.1	-2.1	10.4 47.5
48 44 40 36			
32 28 24 20 16			mymuth

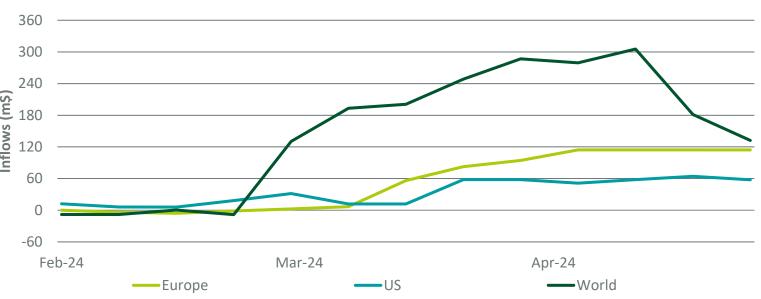
Valuations (relative to USA)²





Cumulative Flows (UCITS ETFs)³

Factor	1M Flows	3M Flows	6M Flows	1Y Flows	360
					300
Momentum Europe	20	114	13	-134	2 40
Momentum US	0	58	-8	33	(\$m) 180 120
Momentum World	-155	132	267	35	Ju 60
					0
Total	-135	304	271	-66	-60

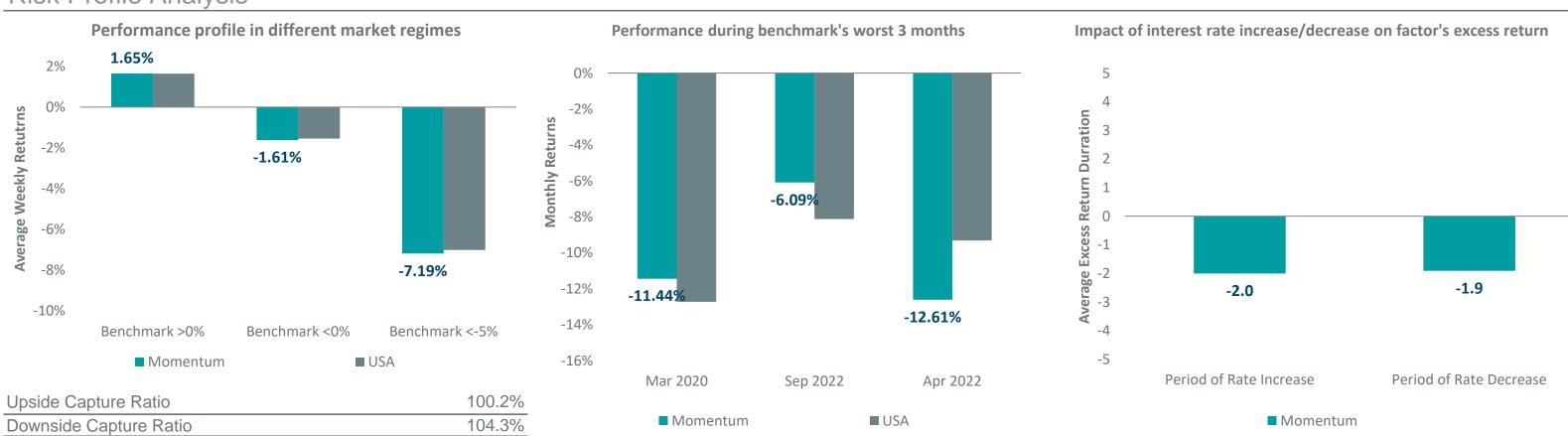


11 Month Momentum⁴

11 Month Performance (1M Removed)

Momentum	33.8%
USA	28.1%

Risk Profile Analysis⁵



Source Bloomberg LP, MSCI, DWS Calculations. As of 30 Apr 2024. Past performance, actual or simulated, is not a reliable indicator of future results. Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect.

1. Risk measures (Volatility, Drawdown, Beta) are calculated over the last five years period using daily frequency observations.

2. 12 month estimated forward PE. Source MSCI, Bloomberg LLC. Data from December 1998 (from July 2005 for Small Cap).

3. Source: Morningstar, DWS Calculations. Weekly data for the last 12 months.

4. 11M Momentum is defined as the 11M performance of the index calculated as of 1 month ago (often referred in the literature as "1M removed").

5. All calculations are done over the last 15 years.

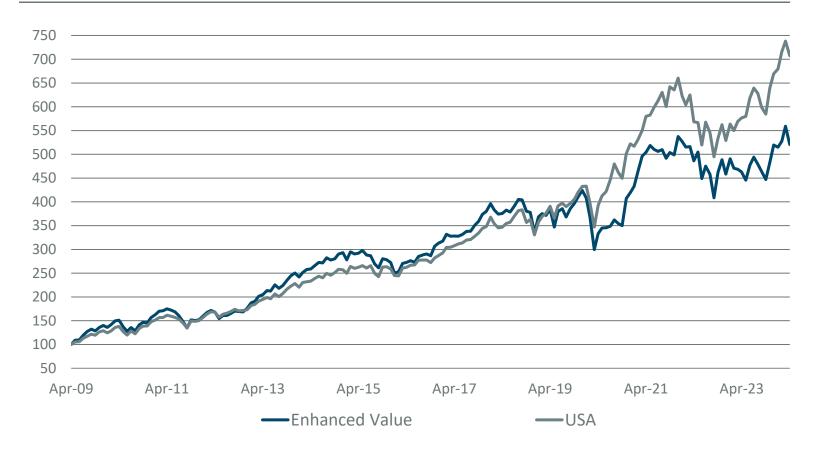
MSCI USA Enhanced Value

Introduction

The MSCI USA Enhanced Value Index captures large and mid-cap representation across US Equities exhibiting overall value style characteristics. The index is designed to represent the performance of securities that exhibit higher value characteristics relative to their peers within the corresponding GICS® sector. The value investment style characteristics for index construction are defined using three variables: Price-to-Book Value, Price-to-Forward Earnings and Enterprise Value-to-Cash flow from Operations.

Summary

Historical Performance



Risk and Return

Return	Enhanced Value	USA
Last 1M	-6.9%	-4.2%
Last 6M	16.5%	21.0%
Last 1Y	12.4%	22.8%
Last 5Y	6.3%	12.6%

Risk ¹	Enhanced Value	USA
5Y Vol.	23.5%	21.6%
6M Sharpe Ratio	2.7	4.2
Max DD	-39.5%	-34.2%
Beta	99%	-
Tracking Error	9.6%	-

Valuations (relative to historical averages)²

Factor	Current	Change ²	Current value (vs Historical Highs and Lows) ⁵
12M Forward P/E	6.8	-0.4	6.0 19
28			
24 20			Mm h
	mma m		malful have
12 May Warn	mmy when		man from a

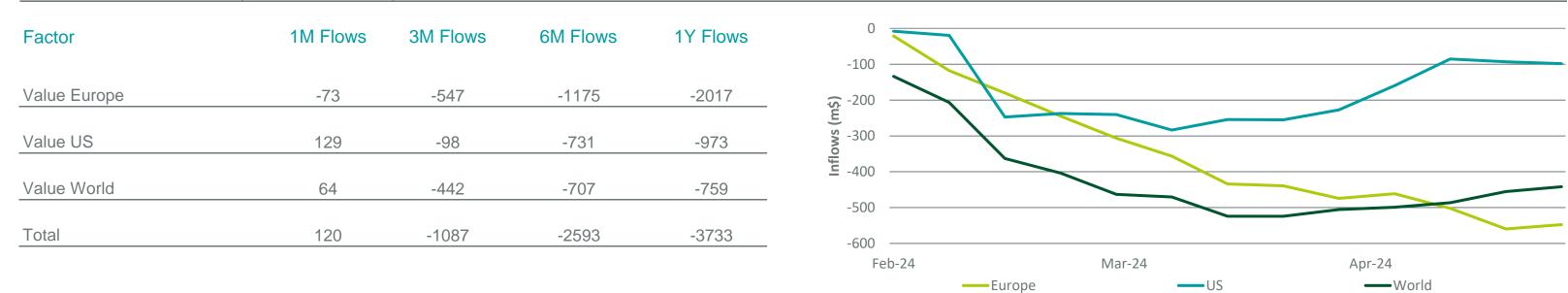
Valuations (relative to USA)²







Cumulative Flows (UCITS ETFs)³



11 Month Momentum⁴

11 Month Performance (1M Removed)

Enhanced Value	20.7%
USA	28.1%

Risk Profile Analysis⁵



Source Bloomberg LP, MSCI, DWS Calculations. As of 30 Apr 2024. Past performance, actual or simulated, is not a reliable indicator of future results. Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect.

1. Risk measures (Volatility, Drawdown, Beta) are calculated over the last five years period using daily frequency observations.

2. 12 month estimated forward PE. Source MSCI, Bloomberg LLC. Data from December 1998 (from July 2005 for Small Cap).

3. Source: Morningstar, DWS Calculations. Weekly data for the last 12 months.

4. 11M Momentum is defined as the 11M performance of the index calculated as of 1 month ago (often referred in the literature as "1M removed").

5. All calculations are done over the last 15 years.

MSCI USA Quality Sector Neutral

Introduction

The MSCI USA Sector Neutral Quality Index captures large and mid-cap representation across US Equities. The index aims to capture the performance of securities that exhibit stronger quality characteristics relative to their peers within the same GICS® sector by identifying stocks with high quality scores based on three main fundamental variables: high Return-on-Equity (ROE), low leverage and low earnings variability.

Summary

Historical Performance

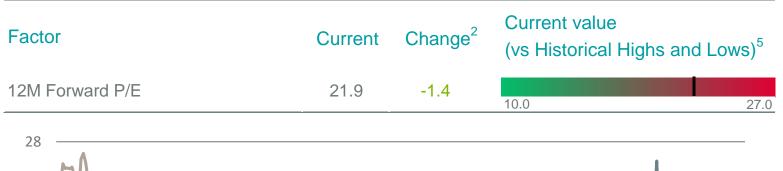


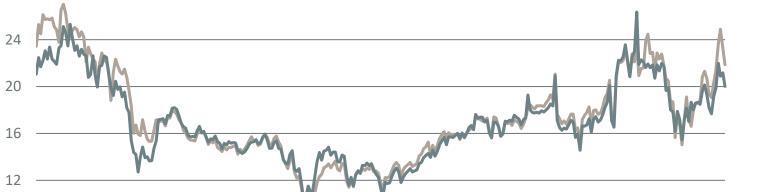
Risk and Return

Return	Quality Sector Neutral	USA
Last 1M	-4.4%	-4.2%
Last 6M	21.4%	21.0%
Last 1Y	25.6%	22.8%
Last 5Y	12.6%	12.6%

6M Sharpe Ratio 4.1 4.1 Max DD -34.0% -34.2% Beta 100% -	Risk ¹	Quality Sector Neutral	USA
Max DD -34.0% -34.2% Beta 100% -	5Y Vol.	22.0%	21.6%
Beta 100% -	6M Sharpe Ra	atio 4.1	4.2
	Max DD	-34.0%	-34.2%
Tracking Error 3.4% -	Beta	100%	-
	Tracking Erro	r 3.4%	-

Valuations (relative to historical averages)²



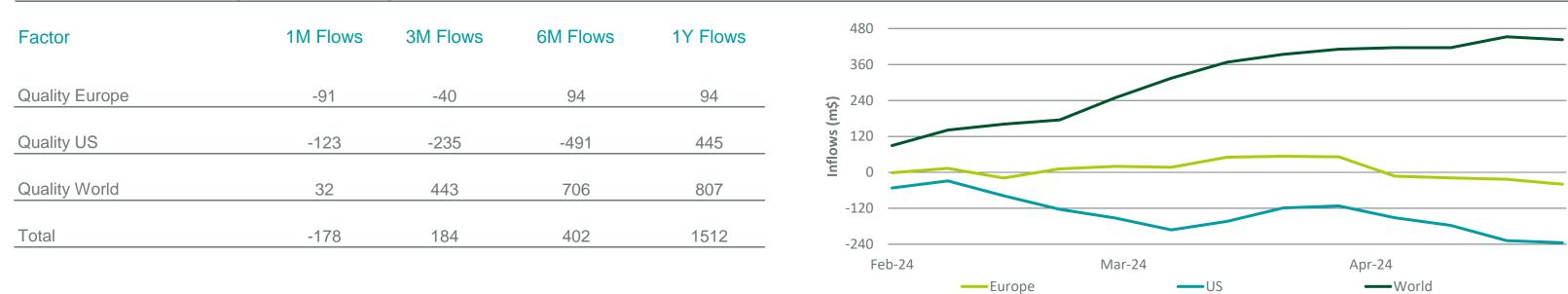


Valuations (relative to USA)²





Cumulative Flows (UCITS ETFs)³

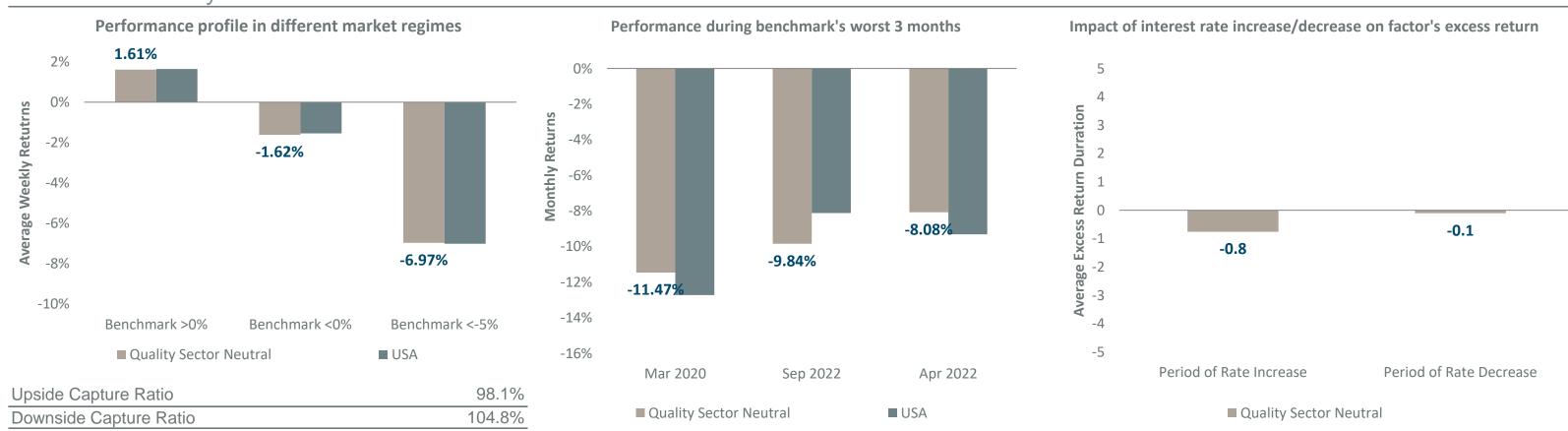


11 Month Momentum⁴

11 Month Performance (1M Removed)

Quality Sector Neutral	31.5%
USA	28.1%

Risk Profile Analysis⁵



Source Bloomberg LP, MSCI, DWS Calculations. As of 30 Apr 2024. Past performance, actual or simulated, is not a reliable indicator of future results. Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect.

1. Risk measures (Volatility, Drawdown, Beta) are calculated over the last five years period using daily frequency observations.

2. 12 month estimated forward PE. Source MSCI, Bloomberg LLC. Data from December 1998 (from July 2005 for Small Cap).

3. Source: Morningstar, DWS Calculations. Weekly data for the last 12 months.

4. 11M Momentum is defined as the 11M performance of the index calculated as of 1 month ago (often referred in the literature as "1M removed").

5. All calculations are done over the last 15 years.

MSCI USA Small Cap

Introduction

The MSCI USA Small Cap Index captures small cap representation across US Equities.

Summary

44

40 36 32

28 24

20

Historical Performance

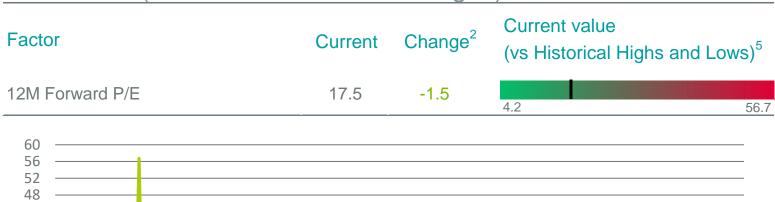


Risk and Return

Small Cap	USA
-6.6%	-4.2%
19.6%	21.0%
13.6%	22.8%
7.4%	12.6%
	-6.6% 19.6% 13.6%

Risk ¹	Small Cap	USA
5Y Vol.	26.3%	21.6%
6M Sharpe Ratio	2.3	4.2
Max DD	-42.5%	-34.2%
Beta	110%	-
Tracking Error	11.7%	-

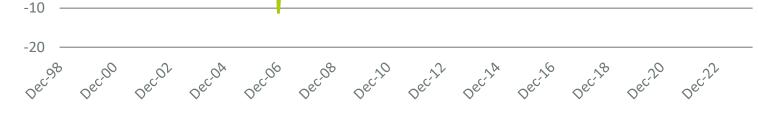
Valuations (relative to historical averages)²





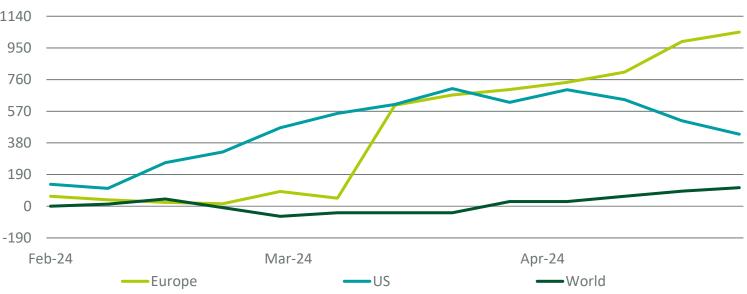






Cumulative Flows (UCITS ETFs)³

Factor	1M Flows	3M Flows	6M Flows	1Y Flows	1140	
					950	
Size Europe	345	1045	1847	1683	760	
Size US	-191	432	1347	1939	(\$ 570 380	
Size World	83	111	314	388	bju 190	
					0	
Total	237	1627	3653	4143	-190	



11 Month Momentum⁴

11 Month Performance (1M Removed)

Small Cap	21.6%
USA	28.1%

Risk Profile Analysis⁵



Source Bloomberg LP, MSCI, DWS Calculations. As of 30 Apr 2024. Past performance, actual or simulated, is not a reliable indicator of future results. Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect.

1. Risk measures (Volatility, Drawdown, Beta) are calculated over the last five years period using daily frequency observations.

2. 12 month estimated forward PE. Source MSCI, Bloomberg LLC. Data from December 1998 (from July 2005 for Small Cap).

3. Source: Morningstar, DWS Calculations. Weekly data for the last 12 months.

4. 11M Momentum is defined as the 11M performance of the index calculated as of 1 month ago (often referred in the literature as "1M removed").

5. All calculations are done over the last 15 years.

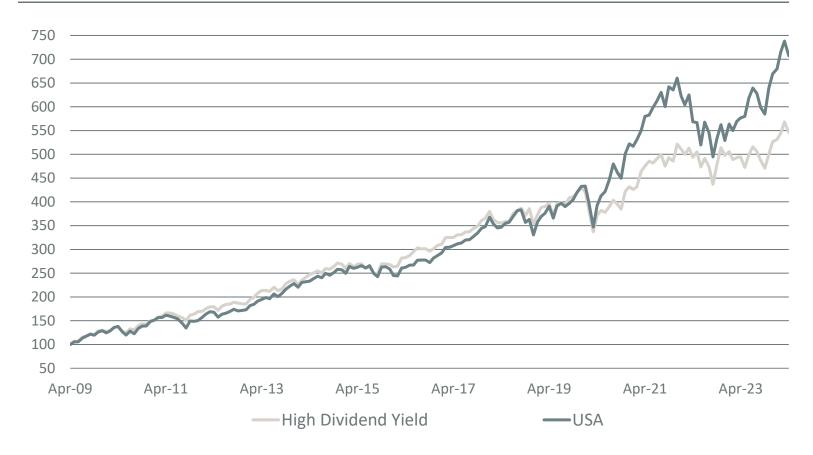
MSCI USA High Dividend Yield

Introduction

The MSCI USA High Dividend Yield Index is based on the MSCI USA Index, its parent index, and includes large and mid cap stocks across US equities. The index is designed to reflect the performance of equities in the parent index (ex REITs) with higher dividend income and quality characteristics than average. Starting in May 2013, the index also applies quality screens and reviews 12-month past performance to omit stocks with potentially deteriorating fundamentals that could force them to cut or reduce dividends.

Summary

Historical Performance



Risk and Return

Return	High Dividend Yield	USA
Last 1M	-3.9%	-4.2%
Last 6M	16.0%	21.0%
Last 1Y	10.4%	22.8%
Last 5Y	6.6%	12.6%

h Dividend Yield	USA
18.8%	21.6%
3.5	4.2
-33.3%	-34.2%
80%	-
8.7%	-
	18.8% 3.5 -33.3% 80%

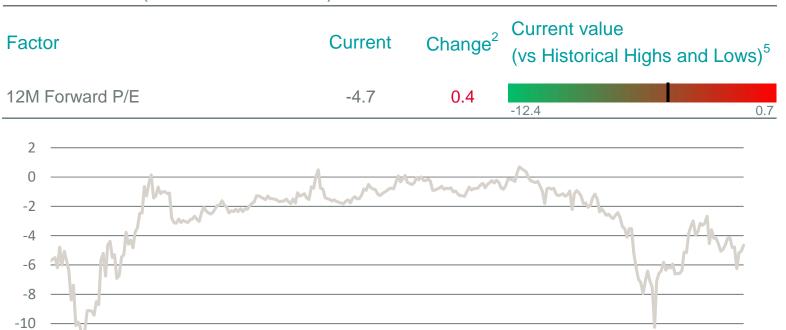
Valuations (relative to historical averages)²



Valuations (relative to USA)²

-12

-14

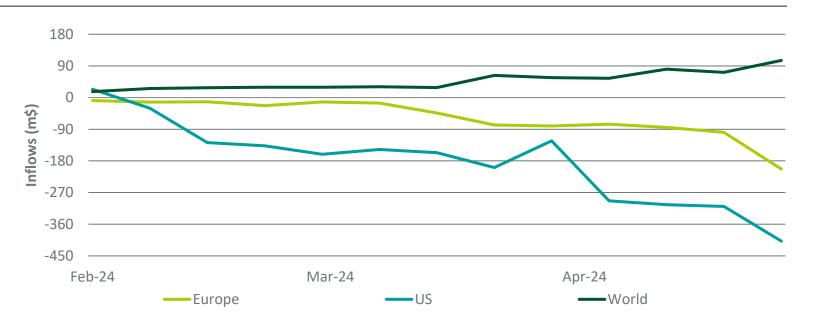


Jan-99 Jan-01 Jan-03 Jan-05 Jan-07 Jan-09 Jan-11 Jan-13 Jan-15 Jan-17 Jan-19 Jan-21 Jan-23

 Jan-99 Jan-01 Jan-03 Jan-05 Jan-07 Jan-09 Jan-11 Jan-13 Jan-15 Jan-17 Jan-19 Jan-21 Jan-23

Cumulative Flows (UCITS ETFs)³

1M Flows	3M Flows	6M Flows	1Y Flows
-122	-203	-475	-830
-285	-408	-393	-1192
49	106	204	559
-331	-455	-747	-1398
	-122 -285 49	-122 -203 -285 -408 49 106	-122 -203 -475 -285 -408 -393 49 106 204

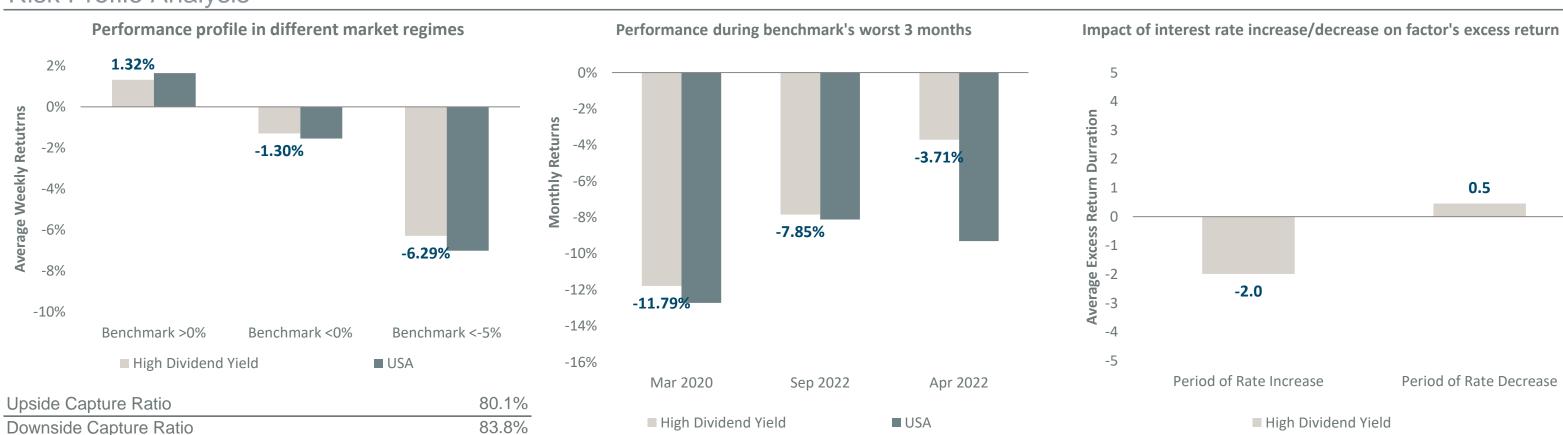


11 Month Momentum⁴

11 Month Performance (1M Removed)

High Dividend Yield	14.9%
USA	28.1%

Risk Profile Analysis⁵



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1. Risk measures (Volatility, Drawdown, Beta) are calculated over the last five years period using daily frequency observations.

2. 12 month estimated forward PE. Source MSCI, Bloomberg LLC. Data from December 1998 (from July 2005 for Small Cap).

3. Source: Morningstar, DWS Calculations. Weekly data for the last 12 months.

4. 11M Momentum is defined as the 11M performance of the index calculated as of 1 month ago (often referred in the literature as "1M removed").

5. All calculations are done over the last 15 years.

Factor Assesment Framework - Glossary

Definitions	
Flows	Amount of money invested in UCITS ETFs
Sharpe Ratio	The Sharpe Ratio is a measure for calculating risk-adjusted return, and this ratio has become the industry standard for such calculations. It was developed by Nobel laureate William F. Sharpe. The Sharpe ratio is the average return earned in excess of the risk-free rate per unit of volatility or total risk.
Volatility	Historical volatility is an indicator of risk. It measures the degree of variation of a trading price series over time, as measured by the standard deviation of returns. In this case, it is calculated over the last 5 years using daily returns.
Maximum Drawdown	Maximum drawdown is an indicator of risk. It measures the largest drop from peak to trough in the price of an asset.
Beta	Beta is a measure of the risk compared to a given benchmark (here the large cap index). Beta is calculated using regression analysis. A beta of less than 1 means that the small cap index will be less volatile than the large cap index.
Tracking Error	Tracking error is a measure of relative risk versus a given benchmark. It is defined as the annualized divergence between the price behavior of an index and the price behavior of a benchmark calculated as the standard deviation of the difference between their returns. Here, it is calculated over the last 5 years using daily returns.
12m Forward P/E (Consensus)	Weighted Average Price/Earnings per Share ratio based on 12-month-forward Earnings
11 Month Momentum	Momentum refers to the rate of change of price movements for a particular index – that is, the speed at which the price is changing. In this case, the traditional measure of momentum is used i.e. the 11 Month performance of the index calculated a month ago.
Historical Median	Value lying at the midpoint of a frequency distribution of observed values, such that there is an equal probability of falling above or below it.
5 Year Historical Z-Score	A z-score (aka, a standard score) indicates how many standard deviations an element is from the mean. It is a dimensionless quantity obtained by subtracting the population mean from an individual raw score and then dividing the difference by the population's standard deviation. Here, the last 5 year data observed on a monthly basis is used.

Performance Profile	This analysis aims to define the behavior of the factor in different market regimes. 3 market regimes are defined using weekly returns of the benchmark: Benchmark positive returns, Benchmark negative returns and Benchmark negative returns under -5%. The average weekly return of the factor in each of these 3 regimes is then calculated over the last 15 years. Cyclical factors will tend to show higher average returns during positive return regime and lower average in the other two. Defensive factors would react inversely.
Worst 3 months Performance	This analysis aims to define the behavior of the factor in crisis. The analysis focuses on the worst 3 months for the benchmark in term of performance over the last 15 years. The performance of the each factors over those 3 months is then compared to the benchmark's performance. Cyclical factors tend to show larger drawdowns and Defensive factors smaller ones
Impact of interest rate	This analysis aims to define the behavior of the factor with respect to interest rate changes. The analysis define periods in which the interest rates increase or decrease over the last 15 years. For each defined period, the sensitivity to interest rate is calculated by dividing the performance of the factor over/under the benchmark by the change in interest rate. Then the average of all the sensitivities during rate hike and rate decrease is calculated and displayed in the graph. A positive sensitivity indicate that the factor tends to move with the rate ie outperform the benchmark when rate increase and underperform the benchmark when rate decrease.

Rolling 12 Months Performance as of 30-Apr-2024

Name	Currency					30-Apr-19- 30-Apr-20					
MSCI USA	USD	22.8%	1.4%	-2.0%	47.8%	0.4%	12.7%	12.6%	17.4%	-0.2%	12.5%
MSCI USA Min Vol	USD	10.1%	1.8%	3.2%	23.6%	-0.1%	17.3%	9.0%	12.4%	8.3%	13.9%
MSCI USA Momentum	USD	27.3%	-0.6%	-14.8%	45.4%	5.0%	9.2%	26.7%	18.1%	5.2%	17.5%
MSCI USA Enhanced Value	USD	12.4%	-4.8%	-3.6%	51.3%	-13.3%	2.3%	14.4%	20.5%	-6.7%	12.9%
MSCI USA Quality Sector Neutral	USD	25.6%	3.4%	-2.2%	41.9%	0.5%	14.2%	13.0%	13.7%	2.7%	12.3%
MSCI USA Small Cap	USD	13.6%	-2.1%	-12.3%	75.5%	-16.6%	7.5%	11.5%	21.5%	-4.5%	10.5%
MSCI USA High Dividend Yield	USD	10.4%	0.2%	3.9%	27.9%	-6.3%	11.7%	9.3%	15.0%	5.1%	8.7%

Source: Bloomberg LP, DWS Calculations. As of 30-Apr-2024 Past performance, actual or simulated, is not a reliable indicator of future results. Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect. DWS Research House (House of Data) - Factor Assessment Framework - Monthly Update - April 2024 DWS is the brand name of DWS Group GmbH & Co. KGaA and its subsidiaries under which they operate their business activities. The respective legal entities offering products or services under the DWS brand are specified in the respective contracts, sales materials and other product information documents. DWS, through DWS Group GmbH & Co. KGaA, its affiliated companies and its officers and employees (collectively "DWS") are communicating this document in good faith and on the following basis.

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