Applied philosophy
The value outperformance dilemma

Value has outperformed so far in the current market cycle, as we would have expected based on previous experience. The periods of value outperformance tended to last for 5-7 years before the Global Financial Crisis but have since been shorter. What do our macroeconomic views suggest and can our sector views help us determine the future path of value?

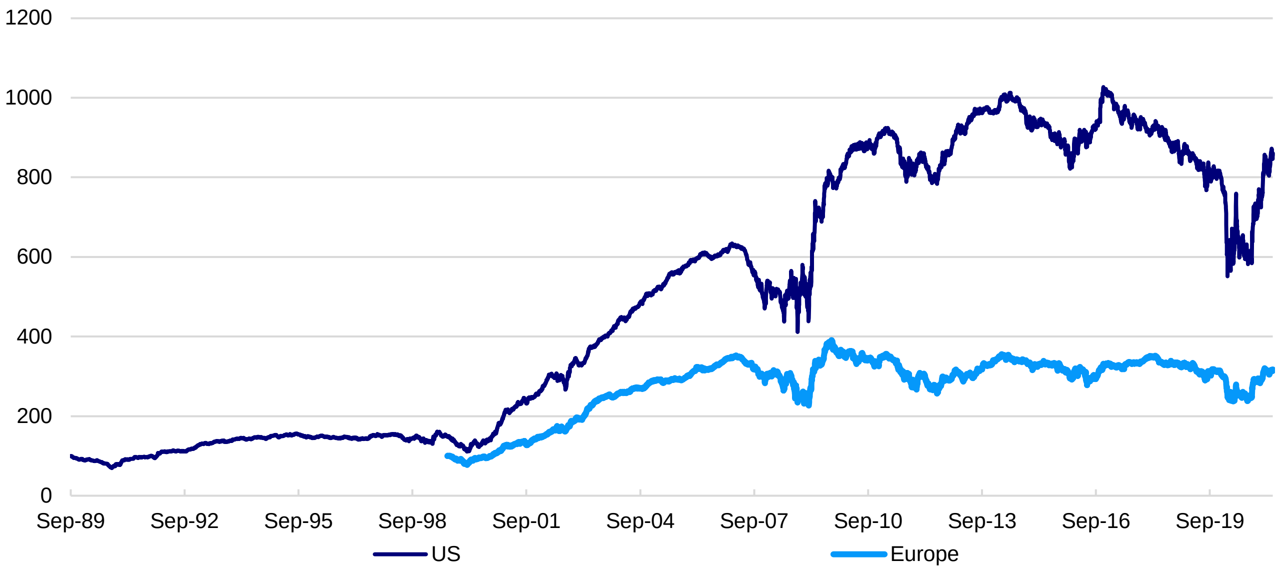
We have typically viewed our value factor as a recovery asset, rallying at the beginning of market cycles. Our US and European factor indices have indeed outperformed their respective benchmarks in this recovery and have even outperformed our growth index since the announcement of successful COVID-19 vaccine trials by Pfizer in early-November 2020. We believe this has been driven by value's exposure to stocks in so-called cyclical sectors, which tend to be the most sensitive to changes in the economic cycle. We also view value as a short duration asset, which we assume would do relatively well in periods when interest rate expectations rise.

However, we see signs that this outperformance has flattened and that made us wonder how long it can continue. Our US and European factor indices suggest that there is a large dispersion of the length of value factor outperformance periods. The first half of the 1990s and the pre-Global Financial Crisis (GFC) part of the 2000s were dominated by long periods when returns on our value index would have been higher than on the Stoxx 600 or the S&P 500. During those 5-7-year periods of outperformance, missing the early part of the recovery would not have been a big issue. However, after the GFC, these periods became shorter and, although value outperformed in the early part of market cycles, timing became more important.

According to our value indices, the current period of outperformance started close to the trough of the most recent bear market: 13th May 2020 in Europe vs the 18th March Stoxx 600 trough, and 18th March 2020 in the US vs the 23rd March S&P 500 low. Therefore, we are a little over a year into both the recovery and value outperformance. The question is whether we return to a pre-GFC regime of multi-year outperformance or if value returns will fade.

We think this is going to be partly determined by the macroeconomic environment. We believe, the value factor will produce stronger returns if global economic growth remains strong, boosting employment and driving inflation higher, thus allowing central banks to raise rates. If, however, inflation returned to lower levels after the current surge and central banks kept rates near current levels, this would support what we consider longer duration assets, such as our growth factor index, but only if tapering did not cause a significant rise in long rates. We currently believe that economic growth will be strong enough for a gradual tapering of asset purchases by central banks and a cautious withdrawal of support, and, although we do

Figure 1 –US and European value factor index relative performance since 29th September 1989



Notes: Data as at 27th May 2021 close. Our proprietary value factor index includes stocks in the lowest quintile based on price/book value ratios within the S&P 500 index for the US and the Stoxx 600 index for Europe. Relative performance is based on total return indices for our value factor indices vs the Stoxx 600 in Europe and the S&P 500 in the US. **Past performance is no guarantee of future results.**
Source: Refinitiv Datastream and Invesco

not expect policy rates to rise, we foresee a rise in bond yields and a further steepening of the yield curve, which may support our value factor index.

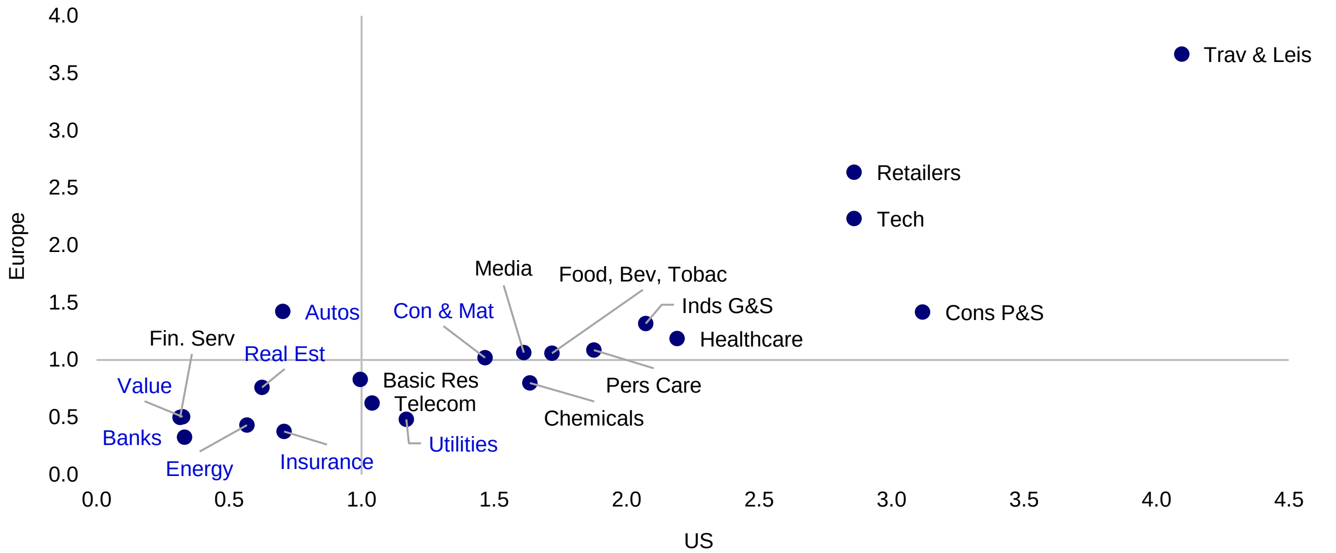
Since our macroeconomic expectations fall somewhere in the middle, we must find another way to help us determine the future direction of value, for example, using sectors. In order to categorise sectors into value or growth, we ran a multiple regression analysis on monthly total returns of Datastream sector indices vs our value and growth factor indices. Based on this analysis, the sectors whose returns have the strongest relationship with our value factor in both regions are automobiles & parts, banks, construction & materials, energy, insurance, real estate and utilities. These sectors currently make up two-thirds of our European value factor index and about half of the US index.

Real estate and utilities may have been held back by concerns about structural pandemic-driven changes and their more defensive nature. However, most of those sectors have outperformed their local benchmarks since the market trough and also since our value factor has started outperforming. For example, automobiles & parts has been the best performing sector in this current phase of value outperformance in both the US and Europe, while European banks and US energy were also in the top 5 performing sectors in their regions.

We tend to become cautious after periods of strong returns and European value has outperformed the Stoxx 600 by 34% since 13th May 2020 and US value outperformed the S&P 500 by 56% since 18th March 2020 (as of 27th May 2021). In our view, starting valuations are one of the key determinants of future returns. The price/book value ratio of our value indices rose from 0.64 to 0.89 in Europe and from 0.72 to 1.53 in the US (we use this metric to construct these indices, by including the cheapest quintile of stocks in both regions). Even if valuations have moved higher in absolute terms, they have not shifted meaningfully relative to their local benchmarks. However, this may just mean that value always remains good value as relative underperformers replace outperformers that have become too expensive to be included. The value sectors themselves have become more expensive relative to the market in both regions using price/book value, except utilities, insurance and US real estate.

So, unless the macroeconomic outcome is radically different to our current expectations, we would struggle to make the case for prolonged outperformance of value. We do not currently expect another commodity super-cycle, or a significant further steepening of the yield curve, for example, that would boost the prospects for energy and banks. If, on the other hand, economic growth and inflation surprise to the upside, continued outperformance would be more likely. However, structural trends, such as the digitisation and automation of the economy and the growing importance of entertainment, could boost growth sectors, such as technology and media. This makes it more likely that we remain in the post-GFC environment of no durable factor leadership. Also, based on our conclusions in [Do equity factors have personalities?] it may be best to keep our factor and sector allocations balanced between value and growth.

Figure 2 – Sector and value factor price/book value ratios relative to local benchmarks



Note: Data as at 27th May 2021. We use Datastream sector indices in both regions and compare valuations to their respective Datastream Total Market indices. The sectors highlighted in blue are what we consider value sectors. **Past performance is no guarantee of future returns.** Source: Refinitiv Datastream and Invesco.

Figure 3 – Asset class total returns (%, annualised)

Data as at 27/05/2021	Index	Current Level/RY	Total Return (USD, %) 1w	1m	QTD	YTD	12m	Total Return (Local Currency, %) 1w	1m	QTD	YTD	12m
Equities												
World	MSCI	709	1.1	0.7	5.7	10.6	42.7	1.1	0.4	4.6	10.9	38.3
Emerging Markets	MSCI	1354	2.0	-0.4	3.2	5.6	49.6	1.4	-1.1	1.5	5.6	42.9
China	MSCI	108	1.6	-1.8	1.0	0.6	38.3	1.5	-2.0	0.5	0.4	36.4
US	MSCI	4071	1.1	0.1	5.8	11.6	42.1	1.1	0.1	5.8	11.6	42.1
Europe	MSCI	2052	0.9	3.2	8.9	13.5	44.9	0.9	1.8	4.9	13.0	29.2
Europe ex-UK	MSCI	2576	1.2	3.0	9.1	13.0	47.5	1.2	1.9	4.8	13.6	32.9
UK	MSCI	1166	0.1	3.8	8.3	15.1	36.3	-0.2	1.8	5.3	10.8	17.3
Japan	MSCI	3848	0.4	-0.4	-0.9	0.8	25.9	1.2	0.8	-1.6	7.1	28.2
Government Bonds												
World	BofA-ML	0.50	0.1	0.0	1.7	-4.2	1.6	0.4	-0.1	0.2	-2.9	-2.2
Emerging Markets	BBloom	4.31	0.7	1.8	4.6	-3.1	10.4	0.7	1.8	4.6	-3.1	10.4
China	BofA-ML	2.97	1.2	2.5	4.3	4.9	13.3	0.3	0.8	1.4	2.3	1.0
US (10y)	Datastream	1.61	0.3	0.3	2.0	-4.8	-6.1	0.3	0.3	2.0	-4.8	-6.1
Europe	Bofa-ML	0.09	0.6	0.3	2.6	-3.8	11.9	0.7	-0.7	-1.2	-3.5	0.6
Europe ex-UK (EMU, 10y)	Datastream	-0.17	0.5	0.2	2.6	-3.8	9.0	0.6	-0.8	-1.2	-3.5	-2.0
UK (10y)	Datastream	0.86	0.4	1.6	3.2	-1.9	9.7	0.1	-0.4	0.4	-5.5	-5.6
Japan (10y)	Datastream	0.07	-0.7	-1.1	1.0	-6.2	-2.0	0.1	0.1	0.3	-0.3	-0.2
IG Corporate Bonds												
Global	BofA-ML	1.72	0.4	0.7	2.3	-2.1	8.3	0.4	0.3	1.1	-2.2	4.4
Emerging Markets	BBloom	3.71	0.4	1.2	2.4	0.4	16.2	0.4	1.2	2.4	0.4	16.2
China	BofA-ML	3.85	1.1	2.3	3.9	4.7	13.9	0.1	0.6	1.0	2.0	1.5
US	BofA-ML	2.18	0.4	0.5	1.8	-2.8	4.3	0.4	0.5	1.8	-2.8	4.3
Europe	BofA-ML	0.48	0.2	0.6	3.6	-1.2	16.4	0.3	-0.3	-0.2	-0.9	4.7
UK	BofA-ML	1.88	0.7	1.7	3.8	0.1	20.3	0.4	-0.3	0.9	-3.6	3.5
Japan	BofA-ML	0.39	-0.7	-1.1	0.9	-5.6	-0.7	0.1	0.1	0.2	0.3	1.0
HY Corporate Bonds												
Global	BofA-ML	4.60	0.3	0.7	2.2	2.1	18.0	0.4	0.5	1.4	2.1	15.4
US	BofA-ML	4.73	0.4	0.3	1.3	2.2	15.5	0.4	0.3	1.3	2.2	15.5
Europe	BofA-ML	2.91	0.2	1.2	4.6	2.0	26.2	0.3	0.2	0.8	2.3	13.5
Cash (Overnight LIBOR)												
US		0.06	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Euro Area		-0.58	-0.3	0.8	3.9	-0.4	10.2	0.0	0.0	-0.1	-0.2	-0.6
UK		0.04	0.1	2.1	3.1	3.9	16.0	0.0	0.0	0.0	0.0	0.0
Japan		-0.10	-0.9	-1.0	0.8	-6.0	-2.0	0.0	0.0	0.0	0.0	-0.1
Real Estate (REITs)												
Global	FTSE	1988	1.2	1.5	6.9	13.2	34.0	1.3	0.5	2.9	13.6	20.5
Emerging Markets	FTSE	2026	2.0	1.2	-1.1	3.6	18.4	2.2	0.2	-4.8	3.9	6.4
US	FTSE	3297	1.1	0.9	8.1	18.5	37.1	1.1	0.9	8.1	18.5	37.1
Europe ex-UK	FTSE	3913	2.9	4.2	14.3	6.1	40.3	3.0	3.1	10.1	6.4	26.2
UK	FTSE	1529	0.2	3.0	10.2	14.7	44.0	-0.1	1.0	7.1	10.5	23.9
Japan	FTSE	2852	-0.3	1.1	1.9	10.0	24.1	0.5	2.3	1.2	16.9	26.2
Commodities												
All	GSCI	2500	3.7	3.7	11.4	26.5	64.4	-	-	-	-	-
Energy	GSCI	364	6.1	5.7	12.0	36.1	82.3	-	-	-	-	-
Industrial Metals	GSCI	1730	2.5	3.7	13.4	23.6	69.2	-	-	-	-	-
Precious Metals	GSCI	2206	0.6	6.5	10.9	0.3	11.1	-	-	-	-	-
Agricultural Goods	GSCI	478	0.3	-2.1	12.9	19.6	61.5	-	-	-	-	-
Currencies (vs USD)*												
EUR		1.22	-0.3	0.8	4.0	-0.2	10.8	-	-	-	-	-
JPY		109.82	-0.9	-1.0	0.8	-6.0	-1.9	-	-	-	-	-
GBP		1.42	0.2	2.0	2.9	3.8	16.2	-	-	-	-	-
CHF		1.12	0.1	1.9	5.2	-1.3	8.0	-	-	-	-	-
CNY		6.38	0.8	1.6	2.7	2.2	12.3	-	-	-	-	-

Notes: *The currency section is organised so that in all cases the numbers show the movement in the mentioned currency versus USD (+ve indicates appreciation, -ve indicates depreciation). **Past performance is no guarantee of future results.** Please see appendix for definitions, methodology and disclaimers.
Source: Refinitiv Datastream and Invesco

Figure 4 – Global equity sector total returns relative to market (%)

Data as at 27/05/2021	Global				
	1w	1m	QTD	YTD	12m
Energy	**-1.0**	**2.2**	**-2.5**	**2.0**	**-11.1**
Basic Materials	**-1.1**	**0.7**	**3.6**	**6.2**	**15.4**
Basic Resources	-1.4	1.1	6.4	9.5	23.5
Chemicals	-0.6	0.1	0.0	2.1	6.0
Industrials	**0.5**	**0.4**	**0.8**	**2.5**	**5.2**
Construction & Materials	0.1	1.1	1.2	4.4	8.2
Industrial Goods & Services	0.6	0.3	0.8	2.2	4.8
Consumer Discretionary	**1.0**	**-1.6**	**-1.5**	**-3.1**	**4.1**
Automobiles & Parts	3.6	-0.7	-3.6	-2.0	40.0
Media	0.9	-2.7	-5.2	-7.4	0.6
Retailers	-1.0	-3.4	-2.1	-6.2	-9.0
Travel & Leisure	2.3	-1.8	-3.4	-0.2	2.8
Consumer Products & Services	1.6	0.8	3.0	0.7	10.7
Consumer Staples	**-1.4**	**2.4**	**0.0**	**-4.3**	**-13.3**
Food, Beverage & Tobacco	-1.0	2.8	1.8	-2.4	-11.1
Personal Care, Drug & Grocery Stores	-2.2	1.7	-3.3	-7.8	-17.4
Healthcare	**-1.4**	**-0.8**	**-0.4**	**-4.8**	**-15.6**
Financials	**0.3**	**3.8**	**2.8**	**8.4**	**9.8**
Banks	0.5	4.9	2.6	10.8	11.8
Financial Services	0.7	3.3	4.1	7.2	9.9
Insurance	-0.8	1.9	1.1	4.4	5.0
Real Estate	**0.3**	**0.8**	**0.8**	**1.4**	**-7.7**
Technology	**0.6**	**-3.3**	**-0.8**	**-1.8**	**8.2**
Telecommunications	**-0.4**	**0.8**	**-1.4**	**-2.0**	**-10.8**
Utilities	**-1.7**	**-0.1**	**-2.1**	**-5.9**	**-13.3**

Notes: Returns shown are for Datastream sector indices versus the total market index. **Past performance is no guarantee of future results.** Source: Refinitiv Datastream and Invesco

Figure 5a – US factor index total returns (%)

Data as at 27/05/2021	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	1.1	-0.7	14.8	14.8	51.8	0.1	-1.2	2.0	2.0	8.0
Low volatility	-0.2	1.5	10.5	10.5	32.1	-1.2	1.0	-1.8	-1.8	-6.0
Price momentum	3.4	2.5	13.5	13.5	44.1	2.4	2.0	0.8	0.8	2.5
Quality	0.9	1.4	19.6	19.6	49.8	-0.2	0.9	6.3	6.3	6.5
Size	1.6	3.0	31.7	31.7	79.4	0.5	2.5	17.1	17.1	27.6
Value	1.7	5.6	36.8	36.8	80.2	0.7	5.1	21.6	21.6	28.2
Market	1.0	0.5	12.5	12.5	40.6					
Market - Equal-Weighted	1.2	1.7	18.9	18.9	50.9					

Notes: All indices are subsets of the S&P 500 index, they are rebalanced monthly, use data in US dollars and are equal-weighted. Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio); Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months; Price momentum includes stocks in the top quintile based on their performance in the previous 12 months; Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value); Size includes stocks in the bottom quintile based on their market value in US dollars. Value includes stocks in the bottom quintile based on their price to book value ratios. The market represents the S&P 500 index. **Past performance is no guarantee of future results.**
Source: Refinitiv Datastream and Invesco

Figure 5b – European factor index total returns relative to market (%)

Data as at 27/05/2021	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	2.3	1.8	19.1	19.1	53.0	1.2	-0.4	4.7	4.7	16.6
Low volatility	0.8	2.2	10.3	10.3	24.1	-0.4	0.0	-3.0	-3.0	-5.4
Price momentum	2.8	0.2	10.3	10.3	36.5	1.6	-1.9	-3.0	-3.0	4.1
Quality	1.1	3.2	15.6	15.6	45.6	0.0	1.1	1.6	1.6	11.0
Size	1.4	1.4	15.6	15.6	46.8	0.2	-0.8	1.6	1.6	11.9
Value	1.9	5.2	25.0	25.0	62.1	0.8	2.9	9.9	9.9	23.6
Market	1.1	2.2	13.8	13.8	31.2					
Market - Equal-Weighted	1.4	1.8	13.7	13.7	37.9					

Notes: All indices are subsets of the STOXX 600 index, they are rebalanced monthly, use data in euros and are equal-weighted. Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio); Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months; Price momentum includes stocks in the top quintile based on their performance in the previous 12 months; Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value); Size includes stocks in the bottom quintile based on their market value in euros; Value includes stocks in the bottom quintile based on their price to book value ratios. The market represents the STOXX 600 index. **Past performance is no guarantee of future results.**
Source: Refinitiv Datastream and Invesco

Figure 5 – Model asset allocation

	Neutral	Policy Range		Allocation	Position vs Neutral
Cash Equivalents	**5%**	**0-10%**		**10%**	
Cash	2.5%			10%	
Gold	2.5%			0%	
Bonds	**40%**	**10-70%**	↑	**22%**	
Government	25%	10-40%	↑	17%	
US	8%		↑	5%	
Europe ex-UK (Eurozone)	7%			4%	
UK	1%		↓	1%	
Japan	7%		↑	4%	
Emerging Markets	2%		↓	3%	
China**	0.2%		↓	0%	
Corporate IG	10%	0-20%		0%	
US Dollar	5%			0%	
Euro	2%			0%	
Sterling	1%			0%	
Japanese Yen	1%			0%	
Emerging Markets	1%			0%	
China**	0.1%			0%	
Corporate HY	5%	0-10%		5%	
US Dollar	4%		↑	5%	
Euro	1%		↓	0%	
Equities	**45%**	**25-65%**		**50%**	
US	25%			18%	
Europe ex-UK	7%			12%	
UK	4%		↑	7%	
Japan	4%		↓	5%	
Emerging Markets	5%			8%	
China**	2%		↓	2%	
Real Estate	**8%**	**0-16%**		**16%**	
US	2%		↑	4%	
Europe ex-UK	2%			4%	
UK	1%		↓	1%	
Japan	2%		↑	4%	
Emerging Markets	1%			3%	
Commodities	**2%**	**0-4%**	↓	**2%**	
Energy	1%		↓	1%	
Industrial Metals	0.3%		↓	0%	
Precious Metals	0.3%			0%	
Agriculture	0.3%			1%	
Total	**100%**			**100%**	
Currency Exposure (including effect of hedging)					
USD	48%		↑	40%	
EUR	20%		↓	22%	
GBP	7%		↓	10%	
JPY	15%		↑	14%	
EM	9%		↓	14%	
Total	**100%**			**100%**	

Notes: **China is included in Emerging Markets allocations. This is a theoretical portfolio and is for illustrative purposes only. See the latest The Big Picture document for more details. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy. Arrows indicate the direction of the most recent changes.
Source: Invesco

Figure 6 – Model allocations for Global sectors

	Neutral	Invesco	Preferred Region
Energy	**6.1%**	**Underweight**	**US**
Basic Materials	**4.5%**	**Neutral**	**Europe**
Basic Resources	2.5%	Neutral	Europe
Chemicals	2.0%	Neutral	US
Industrials	**12.9%**	**Neutral**	**US**
Construction & Materials	1.6%	Neutral	Europe
Industrial Goods & Services	11.3%	Neutral	US
Consumer Discretionary	**16.2%**	**Overweight**	**US**
Automobiles & Parts	2.8%	Underweight	Japan
Media	1.3%	Overweight	US
Retailers	5.8%	Neutral	US
Travel & Leisure	2.2%	Overweight	US
Consumer Products & Services	4.0%	Overweight	EM
Consumer Staples	**6.3%**	**Overweight**	**Japan**
Food, Beverage & Tobacco	4.1%	Overweight	Japan
Personal Care, Drug & Grocery Stores	2.2%	Underweight	Europe
Healthcare	**9.8%**	**Underweight**	**Europe**
Financials	**14.7%**	**Neutral**	**Japan**
Banks	7.4%	Underweight	Japan
Financial Services	3.8%	Overweight	US
Insurance	3.4%	Neutral	Europe
Real Estate	**3.4%**	**Overweight**	**EM**
Technology	**18.9%**	**Overweight**	**US**
Telecommunications	**4.0%**	**Neutral**	**Europe**
Utilities	**3.2%**	**Neutral**	**Europe**

Notes: These are theoretical allocations which are for illustrative purposes only. They do not represent an actual portfolio and are not a recommendation of any investment or trading strategy. See the latest Strategic Sector Selector for more details.
Source: Refinitiv Datastream and Invesco

Appendix

Definitions of data and benchmarks for Figure 3

Sources: we source data from Datastream unless otherwise indicated.

Cash: returns are based on a proprietary index calculated using the Intercontinental Exchange Benchmark Administration overnight LIBOR (London Interbank Offer Rate). The global rate is the average of the euro, British pound, US dollar and Japanese yen rates. The series started on 1st January 2001 with a value of 100.

Gold: London bullion market spot price in USD/troy ounce.

Government bonds: Current levels, yields and total returns use Datastream benchmark 10-year yields for the US, Eurozone, Japan and the UK, and the Bank of America Merrill Lynch government bond total return index for the World and Europe. The emerging markets yields and returns are based on the Bloomberg Barclays emerging markets aggregate government bond index.

Corporate investment grade (IG) bonds: Bank of America Merrill Lynch investment grade corporate bond total return indices. The emerging markets yields and returns are based on the Bloomberg Barclays emerging markets aggregate corporate bond index.

Corporate high yield (HY) bonds: Bank of America Merrill Lynch high yield total return indices

Equities: We use MSCI benchmark gross total return indices for all regions.

Commodities: Goldman Sachs Commodity total return indices

Real estate: FTSE EPRA/NAREIT total return indices

Currencies: Global Trade Information Services spot rates

Factor index definitions

We focus on relatively large-cap stocks, as we suspect that most investors will be conscious of liquidity constraints when implementing such strategies. We have chosen six factors, that we think cover the classic definitions used by most investors. We aim to capture roughly a fifth of the market in each of our factor indices using the historical constituents of the STOXX 600 since August 1999 and the S&P 500 since September 1989, with monthly rebalancing. All our rankings are based on data in euros for Europe and in US dollars for the US. All factor indices are equal-weighted. We use the following definitions:

Growth: stocks in both the top third based on their 5-year sales per share trend and the top-third based on their internal growth rate (the product of the 5-year average return on equity and the retention ratio).

Low volatility: stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months.

Price momentum: stocks in the top quintile based on their performance in the previous 12 months.

Quality: stocks in both the top third based on their return on invested capital and the top third based on their EBIT to EV ratio (earnings before interest and taxes to enterprise value). This follows Joel Greenblatt's "magic formula" from his 2005 book: The little book that beats the market.

Size: stocks in the bottom quintile based on their market value.

Value: stocks in the bottom quintile based on their price to book value ratios.

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