Applied philosophy
Decomposing equity cycles

Are global equities in a recovery or still in the midst of a downturn? We analysed how valuations and earnings progressed through previous market cycles to get closer to an answer. While our findings provide some clues to the future path of equities this year, we think it hinges mostly on how inflation and economic growth develop.

Is this the real thing or another false dawn? Can we start believing or should we continue to hunker down? We believe that these are the main questions on the minds of investors after a positive end to 2022 and a strong start to 2023. Timing investments is a notoriously difficult process, in our view especially for risk assets, such as equities, whose returns tend to be cyclical. Anything that can help determine where we are in the market cycle is a big aid to our asset allocation process.

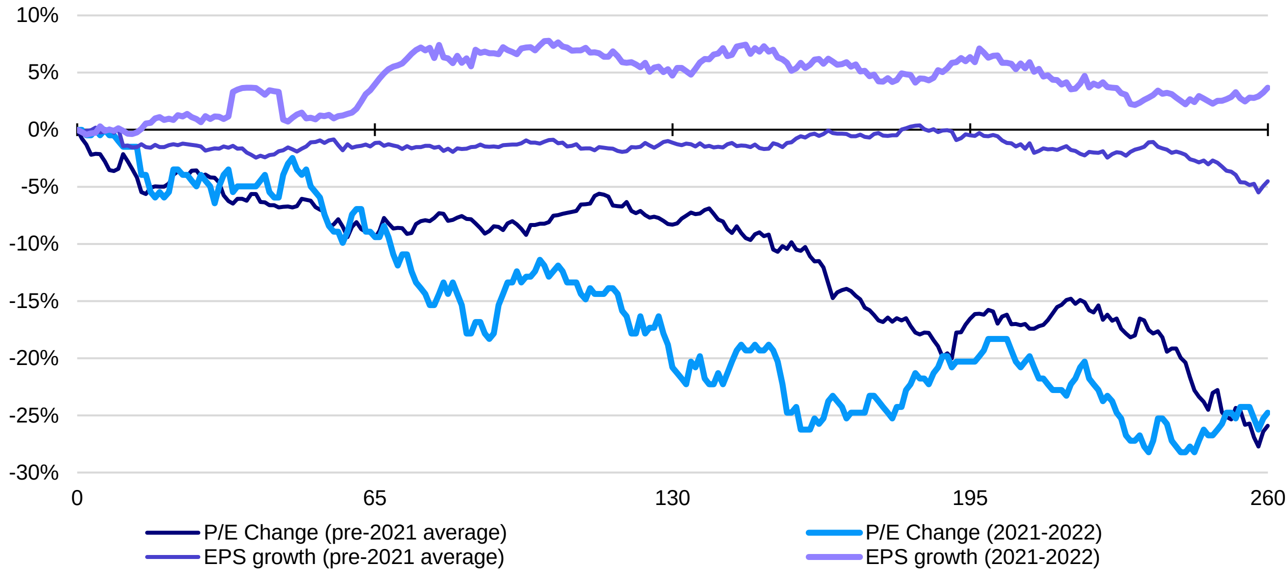
That process usually begins by working out where we are in the economic cycle, which we believe has a major influence on equity returns. However, we think equities tend to reflect the future state of the economy, hence we need to forecast 6-12 months ahead (otherwise we end up driving by looking in the rear-view mirror). Also, it seems to us that the direction of future economic growth is more important than its level. We think that this could give us a good indication of where earnings growth is heading, for example.

The other major component of equity capital returns is the change in valuations, which can have the biggest impact in the short term, though diminishes as the investment horizon lengthens. There are many factors that can be reflected in valuations, perhaps one of the most important being the discount rate used to calculate the present value of future earnings (or cash flows). Nevertheless, the lower those valuations, the higher the returns we would expect from the asset class over the long term.

How do earnings growth and valuations change throughout the market cycle? To answer that question, we use the five major market expansions and downturns (including the current one) identified for our analysis of the cyclicality of sector returns (see **Figures 9** and **10** and here for more detail). We will use this framework to analyse how earnings growth and price/earnings (P/E) ratios changed throughout these cycles. This, we hope, will contribute to our understanding of where we are in the cycle and how it might develop.

The main driving force in bear markets appears to be valuations. P/E ratios compressed in all five end-of-cycle bear markets that we analysed, while earnings kept growing in the first 6-12 months in three of them before declining (1981-1982, 2000-2002, 2007-2009), and they stagnated in one of them (1990). What we already know about the bear market that started in the

Figure 1 – Decomposed global equity capital returns in the first year of bear markets



Note: Data as of 8th November 2022. **Past performance is no guarantee of future results.** Chart shows the cumulative change in price/earnings ratios and EPS (earnings per share) for the Datastream Total Market World index. Capital returns are the sum of earnings growth and the change in P/E ratios. The averages include four major past bear markets excluding the current one: 1981-1982, 1990, 2000-2002 and 2007-2009. The 2021-now series includes daily data between 8th November 2021 and 8th November 2022. The x-axis shows number of trading days from the cyclical peak of the Datastream World Total Market price index in US dollars.
Source: Refinitiv Datastream and Invesco

autumn of 2021 is that earnings have yet to roll over, which can be explained by the resilience of the global economy in the face of inflation and a rapid rate hike cycle (**Figure 1**). Thus, it seems to us that bear markets tend to be valuation-driven events and the price index reaches its trough at or close to the bottom in P/E ratios.

The dislocation between earnings and valuations continues into the early cycle phase, which starts with a burst of hope. Valuations expand after the equity market trough and investors look through deteriorating economic data (**Figure 3**). This triumph of hope over fundamentals has also earned it the unflattering name “dash for trash” (i.e. the rally of the most beaten-up stocks in the previous bear market). It can be accompanied by central bank rate cuts lowering the discount rate used to value future earnings.

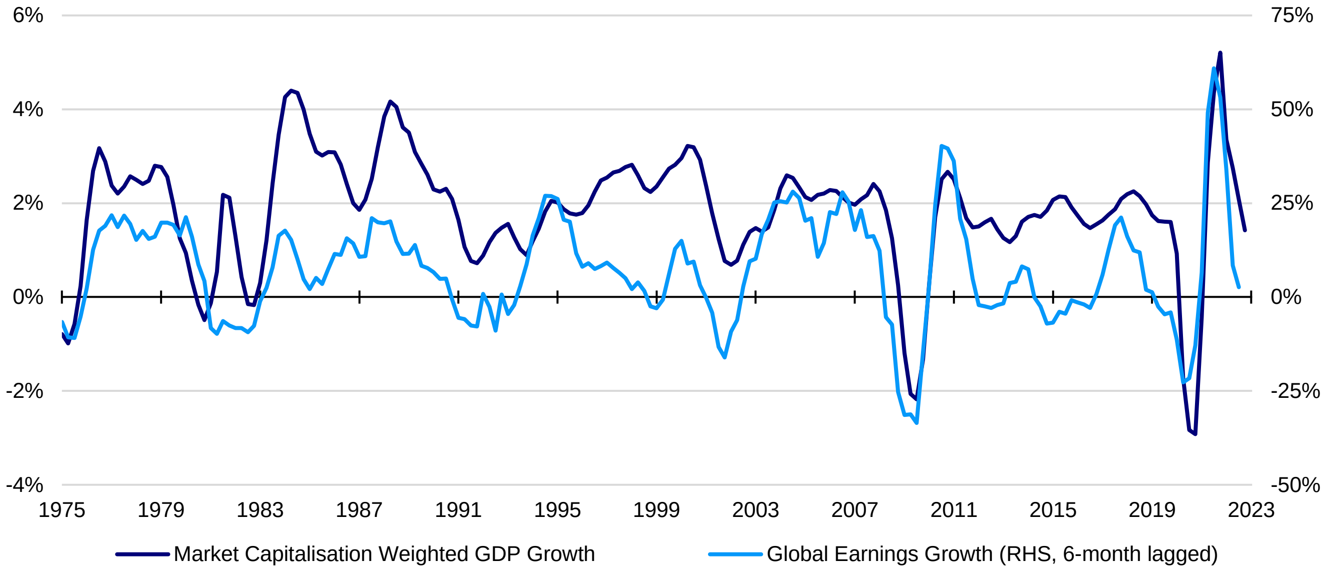
Meanwhile earnings may continue to decline in this period eventually reaching a trough during the early- or mid-cycle phase. We can observe this dynamic in all but one of the five market expansions: in the 2002-2007 bull market, earnings troughed during the preceding market downturn and started growing almost six months before the market trough (using the Datastream World Total Market price index in US dollar terms).

In the mid-cycle phase valuations tended to stabilise or retreat slightly and earnings growth took over as the main driver of equity market returns. We think that this is the phase when fundamentals are the most closely aligned with the performance of equities and the growth in earnings reflects the strength of the economy (see **Figure 11**). The only cycle when valuations expanded during this phase was during the 1982-1990 market expansion, perhaps driven by the rapid decline in long duration sovereign yields (and equity the discount rates).

Figure 2 highlights the strong correlation between economic growth and earnings growth. We used 12-month trailing real GDP growth in local currency in the nine markets that have been consistently among the largest by market capitalisation since 1973 in the Datastream World Total Market index (United States, Japan, United Kingdom, Eurozone, Canada, China including A+H-shares, Australia, Switzerland and South Korea). We then calculated a weighted average annual GDP growth measure using those market capitalisations in US dollars and compared it with global earnings growth derived from the price index and P/E ratio of the Datastream World Total Market index. Based on these series, the direction of GDP growth has lead earnings growth by about 6 months since 1975.

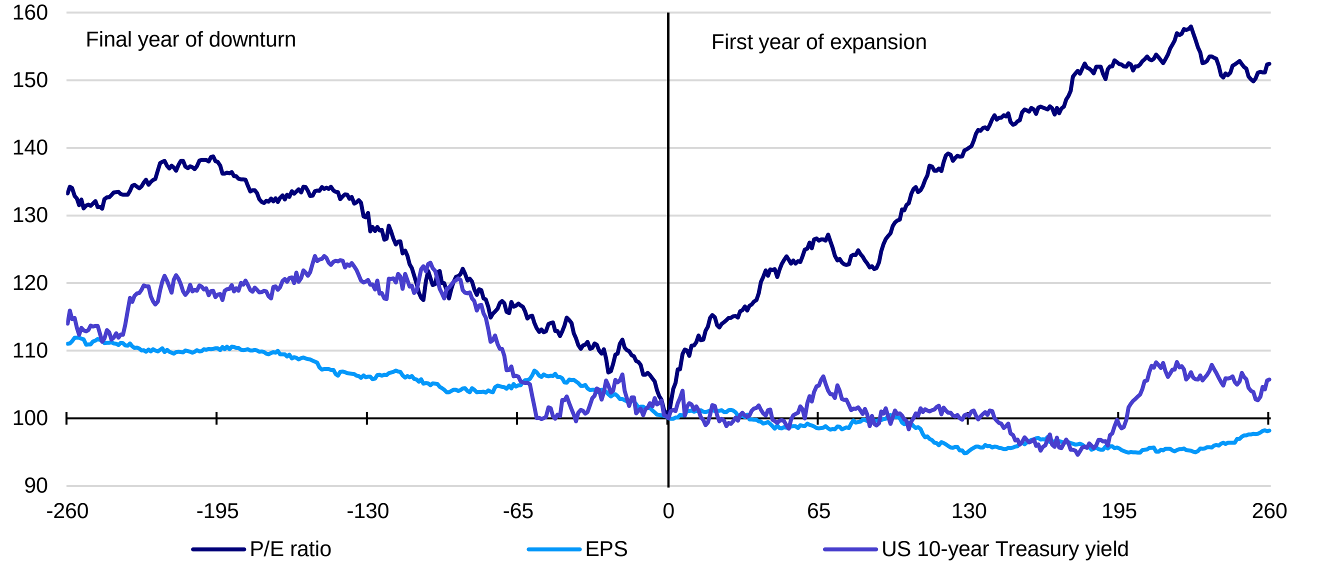
In the late cycle phase, expanding valuations tended to boost returns exceeding the contribution from earnings growth in three out of the five market expansions in our sample: 1974-1981, 1990-2000 and 2009-2021 (see **Figure 11**). We suspect that in this period investors

Figure 2 – Global GDP growth and earnings growth since 1975



Notes: Data as of 2nd January 2023. **Past performance is no guarantee of future results.** We show a proxy measure for global GDP growth using trailing 12-month real GDP figures in local currency for the United States, Japan, the United Kingdom, the Eurozone, Canada, China, Australia, Switzerland and South Korea. We calculate a weighted average annual GDP growth using their market capitalisations based on Datastream Total Market indices in US dollar. Showing quarterly data since 1st January 1975. GDP data included in the GDP growth series from 1975 for US, UK, Canada, Australia, South Korea, from 1981 for Japan and Switzerland, from 1993 for China and 1996 for the Euro Area. Global earnings growth is derived from the price index and P/E ratio of the Datastream World Total Market index in US dollars.
Source: Refinitiv Datastream and Invesco

Figure 3 – Decomposed global equity capital returns around bear market troughs vs 10y Treasury yields



Notes: Data as of 16th February 2023. The x-axis shows number of trading days from bear market trough. **Past performance is no guarantee of future results.** We show price/earnings ratios and earnings per share for the Datastream World Total Market index, and United States 10-year Treasury yields averaged across cyclical troughs in the Datastream World Total Market price index in US dollar terms. For each cycle all measures are rebased to 100 at the time of the market trough. The four market troughs included are: 12/08/1982, 28/09/1990, 09/10/2002, 09/03/2009. Source: Refinitiv Datastream and Invesco

chase the winners of the cycle at all costs and there seems to be a collective hope that cyclicality has been extinguished. Earnings growth may still be strong in this period, underlining the view that increasing valuations are correctly foreseeing a more profitable future. There was only one period within our sample – the final stage of the 1974-1981 market expansion – where earnings growth rolled over before the price index peaked. The 1990-2000 and the 2009-2021 expansions were two examples that included intra-expansion bear markets, which preceded earnings declines, but where growth reaccelerated in both cases before the market expansion ended. These market events were also triggered by shocks that may have been difficult to foresee: the default of Russia contributing to the collapse of Long-Term Capital Management and the lockdowns during the COVID-19 pandemic.

One of the most interesting insights we gained from this analysis is that equity markets are a fascinating reflection of collective human behaviour. We are correct in focusing on economic growth to explain how company earnings develop much of the time. However, out of the 13079 trading days from 1st January 1973 to 16th February 2023, only 6776 days (about 52%) fell into what we would consider mid-cycle periods, when the relationship between earnings growth and market returns is the strongest. The rest of the time, equities are pulled higher or lower by the changes in how much investors are willing to pay for those earnings. This may partly explain why there is so little correlation between economic growth and equity returns. It also highlights to us why turning points in markets are hard to pinpoint in real time.

Nevertheless, **Figure 3** illustrates what tended to happen around the past four global equity market troughs (using the Datastream World Total Market price index in US dollar terms). Valuations fell during bear markets, and then quickly expanded after the market bottomed and remained the main driver of returns during the early-cycle period. At the same time, earnings may have fallen somewhat, but remained quite stable throughout on average. So far, our current experience is similar to what happened in the past, even if we assume that the market downturn has not ended. The big difference is how Treasury yields have behaved this time. In the past, they tended to fall before the trough in the bear market, mainly driven by investor expectations of an impending recession, in our view. Thus, we think that de-rating tended to be caused by a prospective deterioration of earnings. However, in 2022, bond yields rose rapidly mostly driven by sharp tightening by the US Federal Reserve. Therefore, unless the cyclical trough is already behind us (as of mid-October 2022), falling Treasury yields would not be unusual at this point in the cycle.

What does this mean for where equities are headed in the next 12 months? One of the possibilities is that valuations are yet to reach their lowest level for this cycle and may turn lower yet again. This would not be unusual based on previous experience, especially if we are in a multi-year bear market, similar to those in 1981-1982, 2000-2002 or 2007-2009. We envision this would happen in the "persistent inflation" scenario outlined in our 2023 Outlook, if inflation proved to be stickier than we currently expect and perhaps even reaccelerated prompting central banks to raise rates higher than reflected in rate futures at the moment, while keeping them elevated for longer.

Another possibility is that the early cycle phase started when P/E ratios troughed in mid-October. This would be closest to the experience in the 1990s when valuations recovered well before earnings. We think this is only possible if inflation falls rapidly as we currently expect, and the global economy avoids a deep recession allowing valuations to rise. Recent economic data releases have increased the probability of this scenario, in our view.

We think the recent consolidation in equities reflects concerns that markets may have got too optimistic too soon about inflation and growth. Further de-rating is a possibility, though earnings could remain resilient in the first half of 2023. In our view, the interest rate cycle must turn before we can be fully confident that the valuation adjustment is behind us. When looking ahead to 2023 (in November) we forecast positive equity returns but felt the risk-reward comparison favoured credit and gold (**Figure 7**). We also maintained a balance between early-cyclicals and defensive sectors in our model sector allocation (**Figure 8**). However, based on our analysis, we think that global equities are in the early phase of an expansion, which implies strong returns for the rest of the year.

Figure 4 – Asset class total returns (%, annualised)

Data as at 16/02/2023		Current	Total Return (USD, %)					Total Return (Local Currency, %)				
	Index	Level/RY	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Equities												
World	MSCI	648	-0.1	1.7	7.2	7.2	-7.9	0.3	2.3	7.3	7.3	-5.2
Emerging Markets	MSCI	1011	-1.3	-1.9	5.8	5.8	-16.0	-0.7	-0.5	5.9	5.9	-10.9
China	MSCI	69	-3.1	-4.0	7.6	7.6	-16.1	-2.9	-3.3	7.9	7.9	-14.5
US	MSCI	3894	0.4	2.8	7.2	7.2	-7.8	0.4	2.8	7.2	7.2	-7.8
Europe	MSCI	1898	-0.1	1.0	9.8	9.8	-2.9	0.9	2.2	9.9	9.9	4.3
Europe ex-UK	MSCI	2334	-0.1	1.2	10.5	10.5	-3.3	0.7	2.3	10.6	10.6	2.1
UK	MSCI	1152	0.2	0.5	7.5	7.5	-1.7	1.5	2.2	7.6	7.6	11.1
Japan	MSCI	3276	-1.8	1.6	4.4	4.4	-9.8	0.7	6.1	6.2	6.2	4.9
Government Bonds												
World	BofA-ML	3.11	-1.7	-2.7	0.1	0.1	-14.8	-0.9	-1.3	0.5	0.5	-9.6
Emerging Markets	BBloom	8.05	-2.0	-1.8	1.6	1.6	-16.8	-2.0	-1.8	1.6	1.6	-16.8
China	BofA-ML	2.71	-0.9	-1.7	1.7	1.7	-4.8	0.1	0.1	0.2	0.2	3.0
US (10y)	Datastream	3.87	-1.4	-2.3	0.7	0.7	-12.3	-1.4	-2.3	0.7	0.7	-12.3
Europe	Bofa-ML	3.14	-2.2	-3.3	0.8	0.8	-19.5	-1.4	-1.9	0.8	0.8	-14.3
Europe ex-UK (EMU, 10y)	Datastream	2.44	-2.2	-3.7	1.4	1.4	-21.4	-1.4	-2.4	1.4	1.4	-16.3
UK (10y)	Datastream	3.50	-2.8	-2.2	1.6	1.6	-24.3	-1.6	-0.6	1.8	1.8	-14.4
Japan (10y)	Datastream	0.50	-2.5	-2.5	0.1	0.1	-13.5	-0.1	1.9	1.8	1.8	0.6
IG Corporate Bonds												
Global	BofA-ML	5.05	-1.5	-1.7	1.6	1.6	-11.0	-1.2	-1.2	1.5	1.5	-8.8
Emerging Markets	BBloom	7.53	-1.7	-1.2	2.5	2.5	-15.1	-1.7	-1.2	2.5	2.5	-15.1
China	BofA-ML	3.57	-0.9	-1.5	1.9	1.9	-5.7	0.1	0.3	0.4	0.4	2.0
US	BofA-ML	5.45	-1.4	-1.7	1.5	1.5	-9.0	-1.4	-1.7	1.5	1.5	-9.0
Europe	BofA-ML	4.11	-1.8	-1.9	1.5	1.5	-15.0	-1.0	-0.5	1.5	1.5	-9.5
UK	BofA-ML	5.31	-2.6	-1.7	3.1	3.1	-22.1	-1.3	-0.1	3.3	3.3	-12.0
Japan	BofA-ML	0.87	-2.4	-3.8	-1.4	-1.4	-15.4	0.0	0.4	0.3	0.3	-1.6
HY Corporate Bonds												
Global	BofA-ML	8.53	-1.4	-0.9	2.9	2.9	-7.1	-1.2	-0.6	2.9	2.9	-5.6
US	BofA-ML	8.57	-1.4	-1.4	2.5	2.5	-4.9	-1.4	-1.4	2.5	2.5	-4.9
Europe	BofA-ML	6.96	-1.3	-0.2	4.0	4.0	-10.6	-0.5	1.2	4.0	4.0	-4.8
Cash (Overnight LIBOR)												
US		4.56	0.1	0.4	0.6	0.6	2.2	0.1	0.4	0.6	0.6	2.2
Euro Area		2.45	-0.6	-1.2	-0.1	-0.1	-5.8	0.0	0.2	0.3	0.3	0.4
UK		3.91	-1.0	-1.3	-0.4	-0.4	-10.0	0.1	0.3	0.5	0.5	1.9
Japan		-0.18	-1.8	-4.0	-2.1	-2.1	-13.9	0.0	0.0	0.0	0.0	-0.1
Real Estate (REITs)												
Global	FTSE	1658	-0.9	0.9	6.9	6.9	-13.3	-0.1	2.3	6.9	6.9	-7.7
Emerging Markets	FTSE	1387	-1.0	-1.9	2.3	2.3	-16.3	-0.2	-0.5	2.3	2.3	-10.9
US	FTSE	3085	0.0	3.2	9.4	9.4	-9.6	0.0	3.2	9.4	9.4	-9.6
Europe ex-UK	FTSE	2369	-3.4	-5.7	9.7	9.7	-32.0	-2.6	-4.4	9.7	9.7	-27.6
UK	FTSE	823	-2.1	-1.6	8.7	8.7	-30.5	-0.8	0.0	8.8	8.8	-21.5
Japan	FTSE	2084	-2.8	-2.0	-3.4	-3.4	-15.5	-0.4	2.3	-1.7	-1.7	-1.7
Commodities												
All	GSCI	3404	0.2	-2.3	-2.6	-2.6	5.0	-	-	-	-	-
Energy	GSCI	582	0.7	-3.7	-4.7	-4.7	8.9	-	-	-	-	-
Industrial Metals	GSCI	1701	-2.8	-4.7	1.5	1.5	-13.4	-	-	-	-	-
Precious Metals	GSCI	2080	-1.4	-4.7	0.1	0.1	-2.4	-	-	-	-	-
Agricultural Goods	GSCI	564	0.8	2.9	0.9	0.9	5.1	-	-	-	-	-
Currencies (vs USD)*												
EUR		1.07	-0.6	-1.4	-0.3	-0.3	-6.2	-	-	-	-	-
JPY		133.95	-1.8	-4.0	-2.1	-2.1	-13.8	-	-	-	-	-
GBP		1.20	-1.3	-1.6	-0.1	-0.1	-11.5	-	-	-	-	-
CHF		1.08	-0.3	0.1	-0.1	-0.1	-0.3	-	-	-	-	-
CNY		6.86	-1.2	-1.9	0.6	0.6	-7.6	-	-	-	-	-

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

Data as at 16/02/2023	Global				
	1w	1m	QTD	YTD	12m
Energy	**1.2**	**-1.0**	**-4.0**	**-4.0**	**20.7**
Basic Materials	**-0.4**	**-3.0**	**-0.2**	**-0.2**	**4.3**
Basic Resources	-0.9	-4.5	0.0	0.0	7.7
Chemicals	0.4	-0.9	-0.5	-0.5	0.1
Industrials	**0.0**	**-0.5**	**-0.2**	**-0.2**	**3.3**
Construction & Materials	0.8	0.5	3.0	3.0	2.5
Industrial Goods & Services	-0.1	-0.6	-0.6	-0.6	3.5
Consumer Discretionary	**0.2**	**2.7**	**6.5**	**6.5**	**-6.3**
Automobiles & Parts	-0.6	16.2	16.2	16.2	-16.5
Media	-0.6	4.0	8.4	8.4	-10.5
Retailers	0.2	-2.1	2.0	2.0	-9.3
Travel & Leisure	0.6	1.8	5.2	5.2	1.9
Consumer Products & Services	0.6	0.8	6.0	6.0	3.1
Consumer Staples	**0.3**	**-3.8**	**-7.0**	**-7.0**	**3.8**
Food, Beverage & Tobacco	0.5	-3.2	-6.4	-6.4	4.7
Personal Care, Drug & Grocery Stores	-0.1	-5.0	-8.3	-8.3	1.9
Healthcare	**-0.7**	**-4.2**	**-7.6**	**-7.6**	**5.9**
Financials	**-0.1**	**-1.0**	**-0.7**	**-0.7**	**1.1**
Banks	-0.4	-0.6	0.1	0.1	-1.0
Financial Services	0.2	-0.9	-0.5	-0.5	0.4
Insurance	-0.2	-2.3	-2.9	-2.9	8.5
Real Estate	**-2.2**	**-3.1**	**-2.5**	**-2.5**	**-8.2**
Technology	**-0.3**	**6.5**	**7.7**	**7.7**	**-9.6**
Telecommunications	**1.9**	**-0.1**	**0.3**	**0.3**	**-0.3**
Utilities	**0.7**	**-6.1**	**-8.3**	**-8.3**	**8.6**

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 6a – US factor index total returns (%)

Data as at 16/02/2023	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	0.8	5.3	12.2	12.2	0.2	0.5	2.8	5.1	5.1	7.7
Low volatility	0.9	-1.6	-0.6	-0.6	3.7	0.6	-4.0	-6.9	-6.9	11.6
Price momentum	0.9	-0.6	1.3	1.3	-0.3	0.6	-3.0	-5.2	-5.2	7.3
Quality	0.5	1.8	8.4	8.4	2.5	0.2	-0.6	1.5	1.5	10.3
Size	0.3	3.0	12.5	12.5	-0.4	0.0	0.5	5.4	5.4	7.1
Value	0.7	2.4	9.8	9.8	-2.8	0.4	0.0	2.9	2.9	4.5
Market	0.3	2.4	6.8	6.8	-7.0					
Market - Equal-Weighted	0.6	1.6	7.1	7.1	-1.6					

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 6b – European factor index total returns relative to market (%)

Data as at 16/02/2023	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	-0.1	2.7	11.7	11.7	-6.8	-0.8	0.3	1.8	1.8	-9.3
Low volatility	1.1	2.4	6.4	6.4	1.5	0.4	-0.1	-3.0	-3.0	-1.1
Price momentum	1.3	3.6	6.5	6.5	-6.9	0.6	1.1	-2.8	-2.8	-9.3
Quality	-0.9	1.7	10.2	10.2	-1.9	-1.6	-0.7	0.4	0.4	-4.5
Size	-0.5	1.7	11.1	11.1	-6.7	-1.2	-0.8	1.3	1.3	-9.2
Value	0.1	3.2	15.4	15.4	0.0	-0.6	0.8	5.2	5.2	-2.6
Market	0.7	2.4	9.7	9.7	2.7					
Market - Equal-Weighted	0.2	2.6	10.8	10.8	-4.5					

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 7 – Model asset allocation

	Neutral	Policy Range		Allocation	Position vs Neutral
Cash Equivalents	**5%**	**0-10%**	↓	**5%**	
Cash	2.5%		↓	0%	
Gold	2.5%		↑	5%	
Bonds	**40%**	**10-70%**	↑	**48%**	
Government	25%	10-40%	↓	**25%**	
US	8%			11%	
Europe ex-UK (Eurozone)	7%		↓	5%	
UK	1%		↑	2%	
Japan	7%		↓	3%	
Emerging Markets	2%			4%	
China**	0.2%			0%	
Corporate IG	10%	0-20%		**15%**	
US Dollar	5%		↑	9%	
Euro	2%		↓	2%	
Sterling	1%			2%	
Japanese Yen	1%			0%	
Emerging Markets	1%			2%	
China**	0.1%			0%	
Corporate HY	5%	0-10%	↑	**8%**	
US Dollar	4%		↑	7%	
Euro	1%		↑	1%	
Equities	**45%**	**25-65%**		**37%**	
US	25%		↑	19%	
Europe ex-UK	7%		↓	2%	
UK	4%		↓	2%	
Japan	4%		↑	6%	
Emerging Markets	5%		↓	8%	
China**	2%			4%	
Real Estate	**8%**	**0-16%**		**10%**	
US	2%			3%	
Europe ex-UK	2%		↓	1%	
UK	1%			2%	
Japan	2%		↑	2%	
Emerging Markets	1%			2%	
Commodities	**2%**	**0-4%**		**0%**	
Energy	1%			0%	
Industrial Metals	0.3%			0%	
Precious Metals	0.3%			0%	
Agriculture	0.3%			0%	
Total	**100%**			**100%**	

Currency Exposure (including effect of hedging)					
USD	48%		↑	54%	
EUR	20%		↓	11%	
GBP	7%		↓	8%	
JPY	15%			11%	
EM	9%		↓	16%	
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 8 – Model allocations for Global sectors

	Neutral	Invesco	Preferred Region
Energy	**8.1%**	**Underweight**	**EM**
Basic Materials	**4.5%**	**Overweight**	**Europe**
Basic Resources	2.6%	Overweight	Europe
Chemicals	1.9%	Neutral	Japan
Industrials	**13.1%**	**Neutral**	**Japan**
Construction & Materials	1.5%	Underweight	US
Industrial Goods & Services	11.6%	Neutral	Japan
Consumer Discretionary	**13.6%**	**Overweight**	**Europe**
Automobiles & Parts	2.3%	Neutral	Europe
Media	1.0%	Neutral	Japan
Retailers	4.6%	Overweight	Europe
Travel & Leisure	2.0%	Underweight	EM
Consumer Products & Services	3.7%	Overweight	Europe
Consumer Staples	**6.7%**	**Overweight**	**US**
Food, Beverage & Tobacco	4.4%	Overweight	US
Personal Care, Drug & Grocery Stores	2.3%	Overweight	Europe
Healthcare	**10.7%**	**Overweight**	**US**
Financials	**16.2%**	**Underweight**	**Japan**
Banks	7.9%	Underweight	Japan
Financial Services	5.2%	Underweight	EM
Insurance	3.1%	Neutral	Europe
Real Estate	**3.2%**	**Neutral**	**EM**
Technology	**16.5%**	**Overweight**	**US**
Telecommunications	**3.5%**	**Underweight**	**Japan**
Utilities	**3.8%**	**Underweight**	**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 4

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). From 1st January 2022, we use the Refinitiv overnight deposit rate for the euro, the British pound and the Japanese yen. 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.

Figure 9 – List of bear markets (peak-to-trough market drawdowns of more than 20%) since October 1974 using Datastream World Total Market US dollar price index:

06/01/1981 to 12/08/1982 (connected to end of economic cycle)
27/08/1987 to 26/10/1987 (intra market expansion drawdown before a late-cycle period)
04/01/1990 to 28/09/1990 (connected to end of economic cycle)
20/07/1998 to 05/10/1998 (intra market expansion drawdown before a late-cycle period)
27/03/2000 to 09/10/2002 (connected to end of economic cycle)
31/10/2007 to 09/03/2009 (connected to end of economic cycle)
17/01/2020 to 23/03/2020 (intra market expansion drawdown before a late-cycle period)
08/11/2021 to now (assuming cyclical trough is ahead of us)

Figure 10 – Phases of market expansion

Early cycle		Mid cycle		Late cycle	
Start	**End**	**Start**	**End**	**Start**	**End**
04/10/1974	15/07/1975	01/10/1975	13/02/1980	27/03/1980	06/01/1981
12/08/1982	02/05/1984	24/07/1984	27/08/1987	26/10/1987	04/01/1990
28/09/1990	06/01/1992	08/04/1992	20/07/1998	05/10/1998	27/03/2000
09/10/2002	12/04/2004	17/05/2004	09/05/2006	13/06/2006	31/10/2007
09/03/2009	02/05/2011	04/10/2011	17/01/2020	23/03/2020	08/11/2021

Notes: Data as of 16th February 2023. Using Datastream World Total Market US dollar price index. We include the major drawdowns separating these cycles within the mid-cycle period.
Source: Refinitiv Datastream and Invesco

Figure 11 – Decomposed global equity returns during the four phases of the market cycle

	Absolute			Annualised		
Bear market	**P/E change**	**EPS growth**	**Capital Return**	**P/E change**	**EPS growth**	**Capital Return**
1981-1982	-12.0%	-15.0%	-25.2%	-7.7%	-9.7%	-16.6%
1990	-29.3%	2.5%	-27.5%	-37.8%	3.4%	-35.6%
2000-2002	-46.6%	-8.8%	-51.2%	-21.9%	-3.5%	-24.7%
2007-2009	-47.1%	-24.3%	-59.9%	-37.4%	-18.6%	-49.1%
2021-Now*	-18.8%	5.4%	-14.5%	-15.1%	4.2%	-11.5%
Early-cycle						
1974-1981	59.0%	-7.7%	46.7%	81.4%	-9.8%	63.6%
1982-1990	44.3%	13.3%	63.5%	23.7%	7.5%	33.0%
1990-2000	37.5%	-5.8%	29.5%	28.4%	-4.6%	22.5%
2002-2007	23.3%	29.5%	59.7%	14.9%	18.7%	36.3%
2009-2021	65.6%	27.8%	111.5%	26.5%	12.1%	41.7%
Mid-cycle						
1974-1981	-34.7%	87.0%	22.2%	-8.7%	14.2%	4.3%
1982-1990	55.1%	37.1%	112.7%	13.4%	9.5%	24.2%
1990-2000	-8.6%	69.9%	55.3%	-1.3%	8.2%	6.7%
2002-2007	-23.4%	57.3%	20.5%	-11.6%	23.2%	9.0%
2009-2021	-11.4%	13.1%	0.2%	-1.4%	1.4%	0.0%
Late-cycle						
1974-1981	23.5%	10.3%	36.2%	31.0%	13.4%	48.5%
1982-1990	9.1%	37.1%	49.6%	4.1%	15.5%	20.2%
1990-2000	59.7%	6.3%	69.7%	37.3%	4.2%	43.1%
2002-2007	10.4%	32.3%	46.1%	7.4%	22.4%	31.5%
2009-2021	53.0%	26.3%	93.4%	29.8%	15.4%	49.9%

Notes: Data as of 16th February 2023. **Past performance is no guarantee of future results.** See **Figure 10** for the beginning and end date of the phases of the market cycles. We use the Datastream World Total Market index in US dollar terms to calculate the change in P/E ratios, earnings per share growth and capital returns.
Source: Refinitiv Datastream and Invesco

Authors

András Vig
Multi-Asset Strategist
T. +44 (0)20 3370 1152
E. andras.vig@invesco.com

Paul Jackson
Global Head of Asset Allocation Research
T. +44 (0)20 3370 1172
E. paul.jackson@invesco.com

Telephone calls may be recorded

Data as of 16th February 2023 unless stated otherwise.

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Authors

Paul Jackson
Global Head of Asset Allocation Research
Telephone +44(0)20 3370 1172
paul.jackson@invesco.com
London, EMEA

András Vig
Multi-Asset Strategist
Telephone +44(0)20 3370 1152
andras.vig@invesco.com
London, EMEA

Global Market Strategy Office

Kristina Hooper
Chief Global Market Strategist
kristina.hooper@invesco.com
New York, Americas

Tomo Kinoshita
Global Market Strategist, Japan
tomo.kinoshita@invesco.com
Tokyo, Asia Pacific

Brian Levitt
Global Market Strategist, Americas
brian.levitt@invesco.com
New York, Americas

Talley Léger
Investment Strategist, Equities
talley.leger@invesco.com
New York, Americas

Arnab Das
Global Market Strategist
arnab.das@invesco.com
London, EMEA

Adam Burton
Senior Economist
adam.burton@invesco.com
London, EMEA

Paul Jackson
Global Head of Asset Allocation Research
paul.jackson@invesco.com
London, EMEA

András Vig
Multi-Asset Strategist
andras.vig@invesco.com
London, EMEA

David Chao
Global Market Strategist, Asia Pacific
david.chao@invesco.com
Hong Kong, Asia Pacific

Thomas Wu
Market Strategies Analyst, Asia Pacific
thomas.wu@invesco.com
Hong Kong, Asia Pacific

Ashley Oerth
Senior Investment Strategy Analyst
ashley.oerth@invesco.com
London, EMEA

Cyril Birks
Global Thought Leadership Intern
cyril.birks@invesco.com
London, EMEA

*Affiliated member

Telephone calls may be recorded.