

## Uncommon truths

### Seasonality, cyclical and perfect storms

**Volatility has returned, across a range of assets and geographies. This may be seasonal but I suspect there are also cyclical factors, which could be more problematic. This confluence of seasonal and cyclical problems comes when some assets are stretched, which is never a good time for the winds of change to arrive. I maintain a defensive stance within my Model Asset Allocation.**

Wow, some weeks are more action packed than others but the past week will take some beating. Heightened tensions in the Middle East. Civil unrest in Venezuela and the UK (and the BOE easing for the first time this cycle). BOJ tightening, a sharply appreciating yen and a crumbling Japanese stock market (see **Figure 3**). Finally, the Fed's indication that it may cut rates in September was outweighed by disappointing corporate results (especially in the tech sector) and signs of a weakening economy (bringing fears the Fed may have committed an error by waiting too long to ease).

The upshot was that equity prices fell in most places, despite the fall in bond yields fell (even in Japan). With the exception of Japan, though, the fall in equity markets during the week was not that dramatic (with the S&P 500 down 2.1%, for example). More concerning was the in-week volatility.

The problems started early in the week, with concerns about the outlook for semiconductor and mega cap stocks (with results awaited). The Fed then seemed to assuage fears by hinting of a rate cut in September (what happened to the idea of not easing so close to an election?). Despite the fact a September easing had been priced in for some time (according to Fed

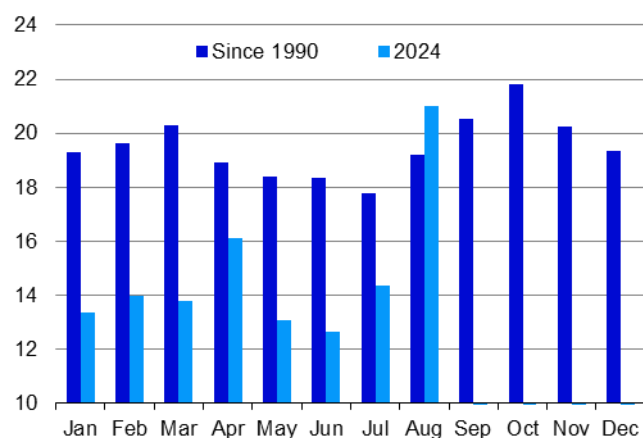
Fund Futures), bond yields fell and stocks rallied (with semiconductor stocks leading the way).

Bond yields continued to fall throughout the rest of the week: higher than expected jobless claims and weaker than expected ISM Manufacturing data on Thursday was followed by a disappointing employment report on Friday. The 10-year treasury yield closed the week at 3.79%, down 35 basis points (bps) in three days (and 90 bps lower than the 4.70% seen on 25 April). Despite the decline in bond yields, the previous stock market leaders led the way down as tech stocks failed to deliver the perfection that was built into their prices.

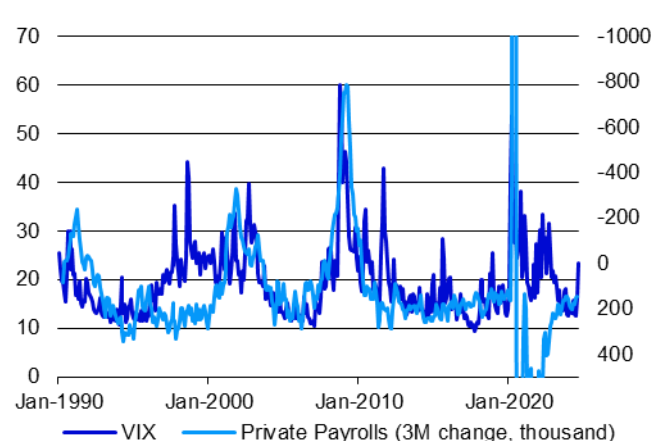
So, is this a temporary correction or something more sinister? On the optimistic side, markets tend to be thinner during the summer and volatility tends to pick up. **Figure 1a** shows monthly averages for the CBOE VIX index and there seems to be a seasonal pattern. Volatility tends to be lowest in the April-July period, but then picks up in August and carries on higher during September and October. Of course, these are averages over a number of decades and each year is different. Further, the August data for 2024 covers only two days. With those caveats in mind, the uptick in volatility in late July and early August 2024 fits with the historical pattern.

That could be reassuring, in that it suggests the uptick in volatility may be nothing more than seasonal and could therefore pass within a few months. However, those few months can still be painful (remember 1987?), especially with uncertainty about Fed policy and US elections in the background (along with rising geopolitical tensions in the Middle East).

**Figure 1a – VIX monthly averages since 1990 (%)**



**Figure 1b – VIX (%) and US employment trends**



Notes: **Past performance is no guarantee of future results.** The VIX index is designed to be a market estimate of the implied volatility of the S&P 500 Index, and is calculated by using the midpoint of real-time S&P 500 Index option bid/ask quotes (it is annualised implied volatility of a hypothetical S&P 500 stock option with 30 days to expiration). Figure 1a is based on daily data from 3 January 1990 to 2 August 2024. Figure 1b is based on monthly data from January 1990 to August 2024 (as of 2 Aug 2024)

Source: CBOE, Bloomberg, LSEG Datastream and Invesco Global Market Strategy Office



What is more concerning is that as well as appearing to be seasonal, volatility also seems to have cyclical characteristics. **Figure 1b** suggests there is an inverse relationship between the US labour market and volatility. Though the labour market could not be described as recessionary, last week's data confirmed that there has been a weakening. At the very least, I conclude that the ultra low volatility of recent months is no longer justified. At worst, if the economic deceleration continues (perhaps into recession), I would expect to see elevated volatility for some time.

The overlap of seasonal and cyclical factors may have exacerbated recent market volatility but I believe there is another factor at play: crowded trades and rich valuations. When assets become popular and expensive, they are vulnerable to sudden changes in the direction of the wind. Extreme concentration has driven broad US equity valuations to unsustainable levels (in my opinion). A market priced for better than perfection, with less than perfect outcomes, and indications of economic slowdown, have combined to bring sharp price movements in thin markets.

Of course, it is not just equity markets where valuations have been extended: US high yield spreads have been surprisingly tight, given the state of the economy (see **Figure 2a**). I recently reduced high yield to zero within my Model Asset Allocation (see **Figure 5**), in the belief that, with spreads so narrow, the return on high yield would struggle to exceed that on government bonds, especially if economic weakening raised default rates and caused spreads to widen (as appears to have happened).

The other market anomaly that I have highlighted for some time is the Japanese yen, which had fallen to

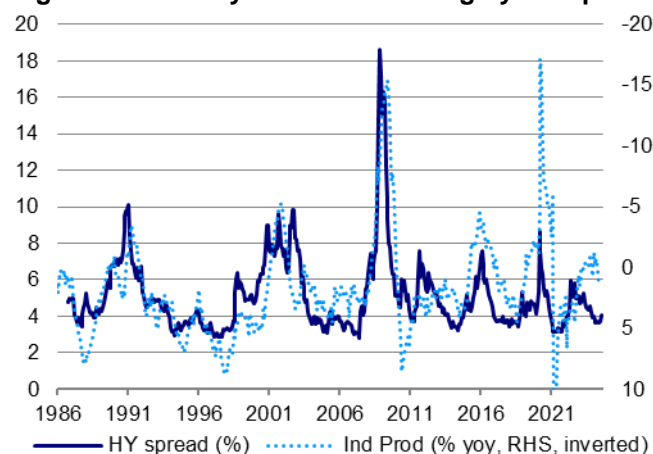
extreme lows. The reason was obvious: the BOJ maintained a very accommodative stance, while most other central banks tightened aggressively over recent years. However, I was expecting the yen to recover once the BOJ started tightening and as other central banks started to ease. It may have taken longer than I expected, but, once it came, yen appreciation was swift. Having peaked at 162 on 10 July 2024, USDJPY yen had fallen to 146 by 2 August. I'm not a technical analyst but a glance at the chart suggests to me that 141 will be the next stop (which is where it was at the start of the year), and then 128.

Unlike many others with whom I have discussed the topic, I always believed yen appreciation would pose a threat to Japanese stocks (based on the evidence in **Figure 2b**). The 6% decline in major Japanese indices on Friday suggests the historical correlation is alive and kicking (**Figure 5** shows that I am Underweight Japanese stocks and have been partially hedged from USD into JPY). Of course, such volatility can impact other markets, especially considering that Japan is a net investor in the rest of the world: losses at home could provoke sales of overseas assets.

I would love to be able to conclude that recent volatility is nothing more than a bit of summer madness but the confluence of a range of factors that have concerned me for some time (US economic deceleration and extended valuations across a range of assets), suggest that what appears to be seasonality may have more cyclical features behind it. I am happy to maintain the cautious stance shown in **Figure 5** until asset prices become more reasonable and/or economies improve.

*Unless stated otherwise, all data as of 02 August 2024.*

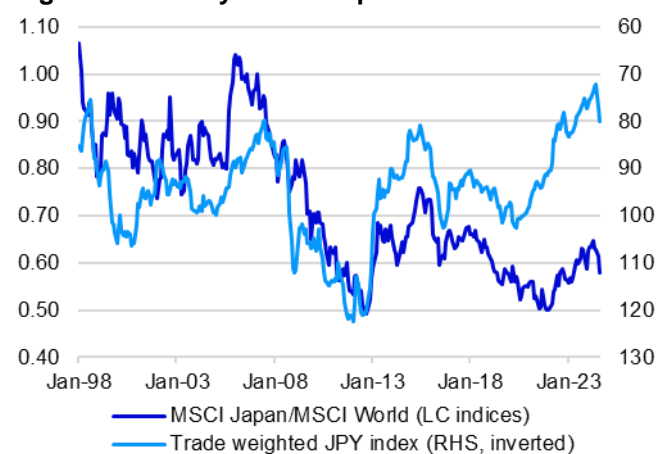
**Figure 2a – The cycle and the US high yield spread**



Notes: **Past performance is no guarantee of future results.** Figure 2a is based on monthly data from January 1986 to August 2024 (as of 2 August 2024). HY spread is the difference between the yield to maturity on the ICE BofA US High Yield Index and the US 10-year treasury yield. Figure 2b is based on monthly data from January 1998 to August 2024 (as of 02 August 2024). Trade weighted JPY index is calculated by the Bank for International Settlements (BIS) but with own calculations for July and August 2024.

Source: BIS, MSCI, LSEG Datastream and Invesco Global Market Strategy Office

**Figure 2b – The yen and Japanese stocks**



**Figure 3 – Asset class total returns (%)**

Data as at 02/08/2024		Current Level/Ry	Total Return (USD, %)					Total Return (Local Currency, %)				
Index	1w		1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m	
<b>Equities</b>												
World	MSCI	787	-2.0	-2.3	-1.7	9.7	16.1	-2.4	-3.0	-2.4	10.8	16.7
Emerging Markets	MSCI	1061	-1.0	-1.3	-1.8	5.7	7.1	-1.1	-1.4	-1.5	9.5	10.3
China	MSCI	55	-0.6	-3.5	-3.4	1.3	-11.2	-0.8	-3.8	-3.7	1.4	-11.2
US	MSCI	5082	-2.1	-2.9	-2.1	12.5	20.1	-2.1	-2.9	-2.1	12.5	20.1
Europe	MSCI	2075	-2.3	-1.0	-0.9	5.4	11.5	-3.0	-2.9	-2.8	6.7	10.9
Europe ex-UK	MSCI	2560	-2.5	-1.8	-1.6	4.5	10.7	-3.6	-4.0	-3.8	6.2	10.3
UK	MSCI	1248	-1.6	1.8	1.6	8.7	14.1	-1.2	0.8	0.3	8.2	13.1
Japan	MSCI	3835	-1.6	-3.0	-1.5	4.9	10.6	-6.0	-11.9	-10.2	9.1	13.1
<b>Government Bonds</b>												
World	BofA-ML	3.03	2.9	5.7	5.3	-0.1	4.0	1.9	3.3	3.0	1.3	4.6
Emerging Markets	BBloom	7.49	1.5	4.1	3.2	5.9	15.0	1.5	4.1	3.2	5.9	15.0
China	BofA-ML	1.89	1.1	1.8	1.9	3.5	6.8	0.5	1.0	1.2	5.3	7.3
US (10y)	Datastream	3.80	3.3	5.5	5.0	3.0	6.2	3.3	5.5	5.0	3.0	6.2
Europe	BofA-ML	2.79	1.9	4.8	4.8	-0.3	5.9	1.3	3.1	2.8	0.8	5.9
Europe ex-UK (EMU, 10y)	Datastream	2.11	2.6	5.8	5.0	-0.5	5.8	1.9	4.0	3.0	0.6	5.8
UK (10y)	Datastream	3.88	1.7	4.7	4.3	0.9	10.8	2.1	3.6	2.9	0.4	9.8
Japan (10y)	Datastream	0.96	5.7	11.7	10.8	-5.7	-3.8	1.0	1.4	1.0	-1.9	-1.6
<b>IG Corporate Bonds</b>												
Global	BofA-ML	4.57	1.9	3.8	3.7	2.9	8.9	1.7	3.3	3.1	3.4	9.0
Emerging Markets	BBloom	6.28	1.7	3.9	3.6	9.3	16.3	1.7	3.9	3.6	9.3	16.3
China	BofA-ML	2.56	0.8	1.4	1.4	2.0	4.8	0.3	0.7	0.7	3.7	5.3
US	BofA-ML	5.02	2.1	3.8	3.6	3.7	9.4	2.1	3.8	3.6	3.7	9.4
Europe	BofA-ML	3.49	1.4	3.9	4.0	1.5	7.6	0.8	2.2	2.1	2.6	7.6
UK	BofA-ML	5.21	0.9	3.7	3.8	2.8	12.3	1.3	2.7	2.4	2.3	11.2
Japan	BofA-ML	1.11	4.8	10.4	9.9	-4.3	-2.4	0.2	0.2	0.2	-0.5	-0.2
<b>HY Corporate Bonds</b>												
Global	BofA-ML	7.68	0.1	2.0	1.9	4.7	11.8	0.0	1.6	1.6	5.0	11.8
US	BofA-ML	7.89	-0.1	1.7	1.6	4.3	11.4	-0.1	1.7	1.6	4.3	11.4
Europe	BofA-ML	6.56	0.7	2.6	3.0	3.1	10.6	0.1	1.0	1.1	4.3	10.7
<b>Cash (Overnight LIBOR)</b>												
US		5.34	0.1	0.5	0.2	2.9	5.5	0.1	0.5	0.2	2.9	5.5
Euro Area		3.66	0.7	1.2	1.9	0.9	1.8	0.1	0.3	0.1	2.1	3.9
UK		5.20	1.5	2.0	3.0	4.9	5.4	0.1	0.4	0.2	2.8	5.3
Japan		0.08	1.8	-0.7	1.9	-10.6	-12.3	0.0	0.0	0.0	0.0	0.0
<b>Real Estate (REITs)</b>												
Global	FTSE	1634	1.2	6.1	6.0	2.4	8.6	0.6	4.4	4.0	3.6	8.7
Emerging Markets	FTSE	1163	-2.2	-1.0	-0.9	-6.0	-7.6	-2.8	-2.6	-2.7	-5.0	-7.6
US	FTSE	3190	1.5	7.4	7.1	6.3	12.1	1.5	7.4	7.1	6.3	12.1
Europe ex-UK	FTSE	2503	3.7	7.1	7.6	0.9	24.5	3.0	5.3	5.6	2.1	24.5
UK	FTSE	864	1.8	5.6	5.4	2.1	17.2	2.2	4.5	4.1	1.6	16.1
Japan	FTSE	2099	0.6	5.3	5.1	-1.4	5.4	-3.9	-4.4	-4.1	2.6	7.9
<b>Commodities</b>												
All	GSCI	3468	-2.9	-7.7	-6.7	3.6	-1.0	-	-	-	-	-
Energy	GSCI	616	-4.3	-10.3	-8.8	6.3	0.5	-	-	-	-	-
Industrial Metals	GSCI	1595	-0.7	-8.1	-8.2	-0.3	1.1	-	-	-	-	-
Precious Metals	GSCI	2717	1.8	3.5	3.3	17.3	23.8	-	-	-	-	-
Agricultural Goods	GSCI	463	-0.8	-5.9	-5.2	-9.7	-15.2	-	-	-	-	-
<b>Currencies (vs USD)*</b>												
EUR		1.09	0.5	1.5	1.8	-1.2	-0.3	-	-	-	-	-
JPY		146.54	4.9	10.2	9.8	-3.7	-2.2	-	-	-	-	-
GBP		1.28	-0.4	1.0	1.3	0.5	0.9	-	-	-	-	-
CHF		1.17	3.0	5.4	4.8	-1.9	2.3	-	-	-	-	-
CNY		7.16	1.3	1.6	1.5	-0.8	0.4	-	-	-	-	-

Notes: **Past performance is no guarantee of future results.** \*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). Please see appendix for definitions, methodology and disclaimers.

Source: LSEG Datastream and Invesco Global Market Strategy Office

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

Data as at 02/08/2024	Global				
	1w	1m	QTD	YTD	12m
<b>Energy</b>	<b>-0.5</b>	<b>-0.5</b>	<b>-0.3</b>	<b>-6.9</b>	<b>-8.8</b>
<b>Basic Materials</b>	<b>0.5</b>	<b>1.0</b>	<b>0.3</b>	<b>-8.1</b>	<b>-8.6</b>
Basic Resources	-0.2	-0.7	-1.2	-8.3	-6.3
Chemicals	1.4	3.7	2.6	-7.8	-11.6
<b>Industrials</b>	<b>-0.1</b>	<b>2.5</b>	<b>2.1</b>	<b>-2.0</b>	<b>-2.1</b>
Construction & Materials	-1.1	4.8	4.0	0.2	3.7
Industrial Goods & Services	0.1	2.1	1.9	-2.3	-2.9
<b>Consumer Discretionary</b>	<b>-1.3</b>	<b>-3.2</b>	<b>-2.9</b>	<b>-6.5</b>	<b>-8.3</b>
Automobiles & Parts	-2.3	-5.9	-2.2	-13.4	-19.3
Media	-0.2	-3.0	-3.5	1.8	2.2
Retailers	-1.6	-3.6	-3.1	2.2	4.5
Travel & Leisure	-0.9	-3.2	-4.8	-13.2	-16.7
Consumer Products & Services	-0.6	-0.5	-1.9	-11.6	-14.2
<b>Consumer Staples</b>	<b>3.0</b>	<b>7.1</b>	<b>6.4</b>	<b>-3.2</b>	<b>-10.0</b>
Food, Beverage & Tobacco	3.1	7.2	6.6	-4.2	-11.4
Personal Care, Drug & Grocery Stores	2.7	6.9	5.9	-1.3	-7.5
<b>Healthcare</b>	<b>2.5</b>	<b>6.2</b>	<b>4.9</b>	<b>3.1</b>	<b>0.7</b>
<b>Financials</b>	<b>-1.1</b>	<b>2.1</b>	<b>2.2</b>	<b>2.5</b>	<b>5.6</b>
Banks	-1.7	0.9	1.3	2.5	5.4
Financial Services	-1.4	2.5	2.5	0.4	4.2
Insurance	1.0	4.3	4.0	6.1	8.5
<b>Real Estate</b>	<b>3.1</b>	<b>8.2</b>	<b>7.4</b>	<b>-5.4</b>	<b>-5.4</b>
<b>Technology</b>	<b>-1.5</b>	<b>-7.0</b>	<b>-6.2</b>	<b>8.1</b>	<b>12.0</b>
<b>Telecommunications</b>	<b>2.5</b>	<b>3.6</b>	<b>3.1</b>	<b>-2.3</b>	<b>-0.8</b>
<b>Utilities</b>	<b>4.4</b>	<b>7.3</b>	<b>6.5</b>	<b>3.2</b>	<b>0.3</b>

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

**Figure 5 – Model asset allocation**

	Neutral	Policy Range	Allocation	Position vs Neutral	Hedged	Currency
<b>Cash Equivalents</b>	<b>5%</b>	<b>0-10%</b>	<b>6%</b>			
Cash	2.5%		6%			
Gold	2.5%		0%			
<b>Bonds</b>	<b>40%</b>	<b>10-70%</b>	<b>39%</b>			
Government	25%	10-40%	27%			
US	8%		16%			25% JPY
Europe ex-UK (Eurozone)	7%		3%			
UK	1%		2%			
Japan	7%		2%			
Emerging Markets	2%		4%			
China**	0.2%		0%			
Corporate IG	10%	0-20%	12%			
US Dollar	5%		7%			50% JPY
Euro	2%		1%			
Sterling	1%		2%			
Japanese Yen	1%		0%			
Emerging Markets	1%		2%			
China**	0.1%		0%			
Corporate HY	5%	0-10%	0%			
US Dollar	4%		0%			
Euro	1%		0%			
<b>Bank Loans</b>	<b>4%</b>	<b>0-8%</b>	<b>8%</b>			
US	3%		6%			
Europe	1%		2%			
<b>Equities</b>	<b>45%</b>	<b>25-65%</b>	<b>35%</b>			
US	25%		10%			
Europe ex-UK	7%		11%			
UK	4%		3%			
Japan	4%		3%			
Emerging Markets	5%		8%			
China**	2%		4%			
<b>Real Estate</b>	<b>4%</b>	<b>0-8%</b>	<b>8%</b>			
US	1%		2%			
Europe ex-UK	1%		1%			
UK	1%		2%			
Japan	1%		1%			
Emerging Markets	1%		2%			
<b>Commodities</b>	<b>2%</b>	<b>0-4%</b>	<b>4%</b>			
Energy	1%		2%			
Industrial Metals	0.3%		1%			
Precious Metals	0.3%		0%			
Agriculture	0.3%		1%			
<b>Total</b>	<b>100%</b>		<b>100%</b>			
<b>Currency Exposure (including effect of hedging)</b>						
USD	52%		39%			
EUR	19%		20%			
GBP	7%		11%			
JPY	13%		15%			
EM	9%		16%			
<b>Total</b>	<b>100%</b>		<b>100%</b>			

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 Global Market Strategy Office

**Figure 6 – Model allocations for global sectors**

	<b>Neutral</b>	<b>Invesco</b>	<b>Preferred Region</b>
<b>Energy</b>	<b>6.6%</b>	<b>Neutral</b>	<b>EM</b>
<b>Basic Materials</b>	<b>3.8%</b>	<b>Neutral</b>	<b>Japan</b>
Basic Resources	2.3%	Neutral	Japan
Chemicals	1.5%	Neutral	US
<b>Industrials</b>	<b>12.7%</b>	<b>Underweight ↓</b>	<b>US</b>
Construction & Materials	1.7%	Underweight	US
Industrial Goods & Services	11.0%	Underweight ↓	US
<b>Consumer Discretionary</b>	<b>13.9%</b>	<b>Underweight ↓</b>	<b>US</b>
Automobiles & Parts	2.4%	Underweight	Europe
Media	1.1%	Neutral	Japan
Retailers	5.2%	Overweight	US
Travel & Leisure	1.9%	Underweight	EM
Consumer Products & Services	3.3%	Underweight ↓	Japan
<b>Consumer Staples</b>	<b>5.2%</b>	<b>Overweight</b>	<b>US</b>
Food, Beverage & Tobacco	3.3%	Overweight	US
Personal Care, Drug & Grocery Stores	1.9%	Overweight	Europe
<b>Healthcare</b>	<b>9.2%</b>	<b>Overweight</b>	<b>US</b>
<b>Financials</b>	<b>15.4%</b>	<b>Overweight</b>	<b>US</b>
Banks	7.4%	Overweight	Europe
Financial Services	5.1%	Overweight	US
Insurance	2.9%	Underweight	US
<b>Real Estate</b>	<b>2.6%</b>	<b>Neutral</b>	<b>Japan</b>
<b>Technology</b>	<b>24.0%</b>	<b>Neutral</b>	<b>EM</b>
<b>Telecommunications</b>	<b>3.3%</b>	<b>Underweight</b>	<b>US</b>
<b>Utilities</b>	<b>3.2%</b>	<b>Neutral ↑</b>	<b>US</b>

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: LSEG Datastream and Invesco Global Market Strategy Office

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## Appendix

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### Methodology for asset allocation, expected returns and optimal portfolios

#### Portfolio construction process

The optimal portfolios are theoretical and not real. We use optimisation processes to guide our allocations around “neutral” and within prescribed policy ranges based on our estimations of expected returns and using historical covariance information. This guides the allocation to global asset groups (equities, government bonds etc.), which is the most important level of decision. For the purposes of this document the optimal portfolios are constructed with a one-year horizon.

#### Which asset classes?

We look for investibility, size and liquidity. We have chosen to include equities, bonds (government, corporate investment grade and corporate high yield), bank loans, REITs to represent real estate, commodities and cash (all across a range of geographies). We use cross-asset correlations to determine which decisions are the most important.

#### Neutral allocations and policy ranges

We use market capitalisation in USD for major benchmark indices to calculate neutral allocations. For commodities, we use industry estimates for total ETP market cap + assets under management in hedge funds + direct investments. We use an arbitrary 5% for the combination of cash and gold. We impose diversification by using policy ranges for each asset category (the range is usually symmetric around neutral).

#### Expected/projected returns

The process for estimating expected returns is based upon yield (except commodities, of course). After analysing how yields vary with the economic cycle, and where they are situated within historical ranges, we forecast the direction and amplitude of moves over the next year. Cash returns are calculated assuming a straight-line move in short term rates towards our targets (with, of course, no capital gain or loss). Bond returns assume a straight-line progression in yields, with capital gains/losses predicated upon constant maturity (effectively supposing constant turnover to achieve that). Forecasts of corporate investment-grade, high-yield and bank loan spreads are based upon our view of the economic cycle (as are forecasts of credit losses). Coupon/interest payments are added to give total returns. Equity and REIT returns are based on dividend growth assumptions. We calculate total returns by applying those growth assumptions and adding the forecast dividend yield. No such metrics exist for commodities; therefore, we base our projections on US CPI-adjusted real prices relative to their long-term averages and views on the economic cycle. All expected returns are calculated in local currency and then, where necessary, converted into other currency bases using our exchange rate forecasts.

#### Optimising the portfolio

Using a covariance matrix based on monthly local currency total returns for the last 5 years and we run an optimisation process that maximises the Sharpe Ratio. Another version maximises Return subject to volatility not exceeding that of our Neutral Portfolio. The optimiser is based on the Markowitz model.

#### Currency hedging

We adopt a cautious approach when it comes to currency hedging as currency movements are notoriously difficult to accurately predict and sometimes hedging can be costly. Also, some of our asset allocation choices are based on currency forecasts. We use an amalgam of central bank rate forecasts, policy expectations and real exchange rates relative to their historical averages to predict the direction and amplitude of currency moves.

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**Definitions of data and benchmarks for Figure 3**

**Sources:** we source data from LSEG 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 1<sup>st</sup> 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 1 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 ICE BofA government bond total return index for the World and Europe. The emerging markets yields and returns are based on the Barclays Bloomberg emerging markets sovereign US dollar bond index.

**Corporate investment grade (IG) bonds:** ICE BofA investment grade corporate bond total return indices, except for in emerging markets where we use the Barclays Bloomberg emerging markets corporate US dollar bond index.

**Corporate high yield (HY) bonds:** ICE BofA 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



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**Important information****Your capital is at risk. You may not get back the amount you invested.**

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**Authors**

Paul Jackson  
Global Head of Asset Allocation Research  
[paul.jackson@invesco.com](mailto:paul.jackson@invesco.com)  
London, EMEA

**Global Market Strategy Office**

Kristina Hooper  
Chief Global Market Strategist  
[kristina.hooper@invesco.com](mailto:kristina.hooper@invesco.com)  
New York, Americas

Ashley Oerth  
Associate Global Market Strategist  
[ashley.oerth@invesco.com](mailto:ashley.oerth@invesco.com)  
London, EMEA

Brian Levitt  
Global Market Strategist, Americas  
[brian.levitt@invesco.com](mailto:brian.levitt@invesco.com)  
New York, Americas

James Anania  
Investment Strategy Analyst, Americas  
[james.anania@invesco.com](mailto:james.anania@invesco.com)  
New York, Americas

David Chao  
Global Market Strategist, Asia Pacific  
[david.chao@invesco.com](mailto:david.chao@invesco.com)  
Hong Kong, Asia Pacific

Thomas Wu  
Market Strategy Analyst, Asia Pacific  
[thomas.wu@invesco.com](mailto:thomas.wu@invesco.com)  
Hong Kong, Asia Pacific

Tomo Kinoshita  
Global Market Strategist, Japan  
[tomo.kinoshita@invesco.com](mailto:tomo.kinoshita@invesco.com)  
Tokyo, Asia Pacific

Arnab Das  
Global Macro Strategist  
[arnab.das@invesco.com](mailto:arnab.das@invesco.com)  
London, EMEA

Paul Jackson  
Global Head of Asset Allocation Research  
[paul.jackson@invesco.com](mailto:paul.jackson@invesco.com)  
London, EMEA

Andr as Vig  
Multi-Asset Strategist  
[andras.vig@invesco.com](mailto:andras.vig@invesco.com)  
London, EMEA

Telephone calls may be recorded