Uncommon truths

2022: a year in review

Russia's invasion of Ukraine dominated our thoughts in 2022 but inflation and central banks seemed more important to markets. We expect central banks to dominate again in 2023.

A year ago, we were expecting less economic growth and a convergence (and lowering) of asset returns during 2022 (see 2021 in review). We got the inflation and rising bond yields that we expected (and more) but were surprised by the extent of the market downside.

The best performing assets so far in 2022 have been commodities and cash (see **Figure 3**). All other assets in **Figure 3** generated negative returns, except for Chinese bonds and UK equities (in local currency). The 6.9% USD total return on our Neutral portfolio in 2021 (10.2% in local currency) was followed by -16.1% in 2022 (-12.1%). The Neutral portfolio is a static mix of global cash, fixed income, equity, real estate and commodity assets (see **Figure 6** for weightings).

As a reminder of events, here are Bloomberg's most-read articles during 2022 (paraphrased):

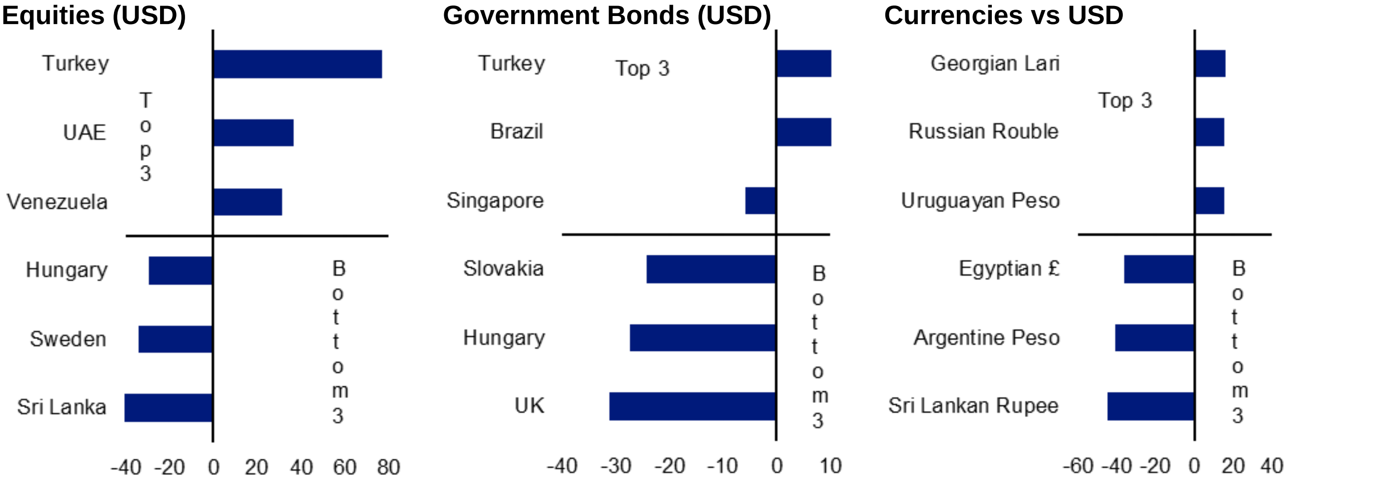
1. Taiwan to join US-led sanctions on Russia (Feb 25)
2. Russia invasion of Ukraine ignites European security crisis (Feb 24)
3. Russia steps up aerial campaign… (Mar 1)
4. Stocks surge in wild ride after CPI selloff (Oct 13)
5. Stocks storm back from 4% rout… (Jan 24)
6. Ukraine update: Russia's gas threat… (Mar 8)
7. Citi trader made error behind flash crash (May 3)
8. Russia vetoes UN resolution… (Feb 25)
9. Stocks sink to 13-month low… (May 9)
10. Blinken: meeting with Lavrov cancelled (Feb 23)

As always, bad news sells. Many of the most read stories were about Russia's invasion of Ukraine but Covid seems to have slipped into the background. Though there is a slight mention of inflation, it is amazing that central banks are absent from that top-10. However, #11 on the list is "Stocks crater as Fed-Policy jitters rock trading" from May 5, with more frequent mentions beyond item #20.

It is my opinion that the poor performance of most assets had more to do with inflation and central bank tightening than with Russia's invasion of Ukraine. When measured in US dollars, there has been little to choose between the year-to-date total return on equities and government bonds, with MSCI World suggesting -17.9% on equities and the ICE BofA Global Government Bond Index indicating -17.1% (see **Figure 3**). The big exceptions in **Figure 3** are UK equities (where energy and metals & mining companies feature prominently) and Chinese bonds (perhaps benefiting from having one of the few easing central banks).

Figure 1 shows the results of our annual ranking within asset groups. As is often the case, emerging markets dominate both ends of the spectrum, though Swedish equities and UK gilts appear in the bottom three of their categories. Turkey has made a good comeback – in 2021 Turkey had the worst performing equity and bond markets, along with the weakest currency, but this year has the top performing equity and bond markets (despite more currency weakness). It is hardly surprising that Sri Lanka is among the worst performers. More surprising is that the Russian rouble features among the strongest currencies (and that it appreciated against the US dollar).

Figure 1 – Top and bottom performers by asset class in 2022 (year-to-date total returns, %)



Past performance is no guarantee of future results. As of 16 December 2022. Equity data is based on Datastream indices; government bond indices are supplied by ICE BofA; currencies are based on WM/Refinitiv exchange rates. Source: Refinitiv Datastream and Invesco.

One way in which the invasion of Ukraine made its mark on the rankings in **Figure 1** is the presence of European markets among the worst equity and fixed income performers. Europe is not only dependent upon Russia for a large part of its energy, but is also likely to suffer from the effect that sanctions are having on exports to Russia. In general, we find that the closer one gets to Russia (geographically) the larger are likely to be those negative effects and Hungary may also have suffered from its geopolitical ties with Russia (and ambiguous relationship with the EU).

It may be thought that the poor showing of UK government bonds is due to sterling weakness. However, the UK has the same ranking whether we measure in USD or in local currency and it appears that political turmoil and fiscal missteps may also have played a role (we didn't predict the chaos in Westminster).

With some success on Turkish bonds (whether in local currency or USD) and Brazilian stocks (ditto), now is the moment of truth for my full list of 10 surprises for 2022 (published on 9 January 2022 - see The Aristotle List), with my self-evaluation in blue:

1. S&P 500 finishes year lower than it started (yes)
2. US 10-year treasury yield goes above 2.5% (yes)
3. Travel & leisure outperforms on great reopening (yes)
4. The US Senate remains Democrat (yes)
5. Australia changes government and emissions policies (yes)
6. Bitcoin falls below $30,000 during 2022 (yes)
7. Turkey government debt outperforms (yes)
8. Brazilian stocks outperform major indices (yes)
9. EU Carbon goes above €100 per tonne (no)
10. Argentina wins FIFA World Cup (TBD)

Remember, this list does not represent our central scenario but is rather an attempt to identify non-consensus ideas that I believe have a reasonable chance of occurring (thereby surprising most investors). They must therefore be put in the context of the prevailing sentiment at the start of the year (when the S&P 500 was hitting records and the 10-year US treasury yield was 1.5%).

At the time of writing we do not know the winner of the FIFA World Cup but otherwise it has been an unusually successful year for the Aristotle List (in 2021 the success rate was only 5/10). The one obvious miss was that EU carbon didn't go above €100, though it did reach €98 and perhaps I should have been braver about Bitcoin (I still believe will go below $10,000).

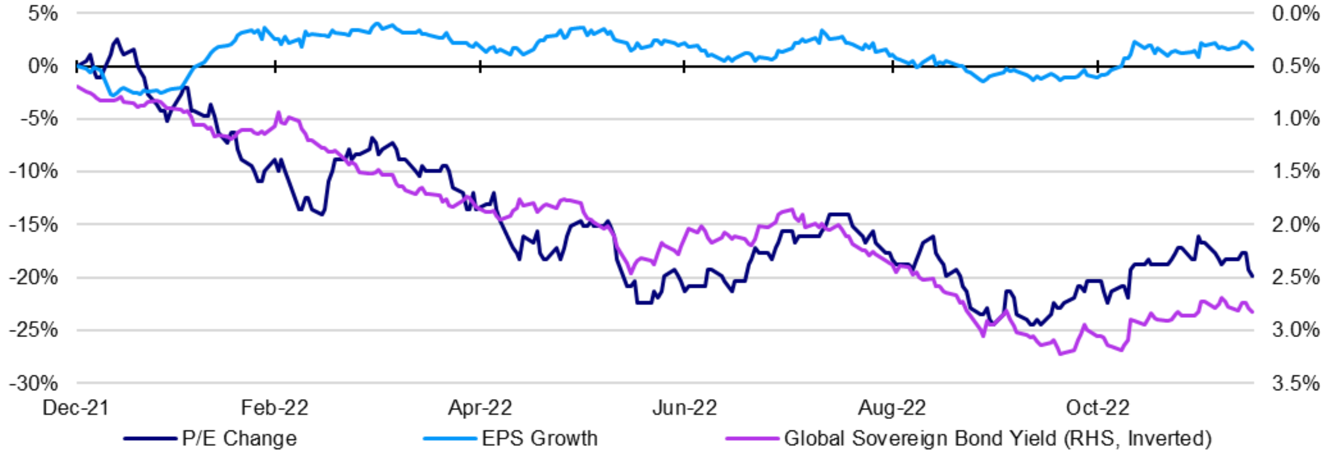
I will publish the selections for 2023 in early January. Unlike in the two previous years, I have had plenty of direct contact with investors over recent months and this has helped me judge the prevailing mood.

As usual, I believe the main driver of returns will be the economic cycle. I think that rising inflation and tightening central banks were the major driving forces in 2022 and expect the decline of inflation and the ending of central bank tightening to be key in 2023. Hence, I am more optimistic about market outcomes for next year, despite the risk of recession. **Figure 2** suggests that rising bond yields were more important than falling profits to equity markets in 2022. I suspect that profits will fall in 2023 but that bond yields will fall, with the latter being the (positive) driving force.

On that note, all that remains is for Andras and I to wish you and your loved ones a happy holiday season.

Unless stated otherwise, all data as of 16 December 2022.

Chart of the year: global equity market losses have been about rising bond yields and not falling profits



Notes: **Past performance is no guarantee of future returns**. Daily data from 31 December 2021 to 16 December 2022. Chart shows the cumulative change in price/earnings ratios and EPS (earnings per share) for the Datastream Total Market World index since 31 December 2021. Capital returns are the sum of earnings growth and the change in P/E ratios. The sovereign bond yield is represented by the yield-to-maturity of the ICE BofA Global Government Bond Index. All data shown in US dollar terms. Source: Refinitiv Datastream and Invesco

Figure 3 – Asset class total returns

Data as at 16/12/2022		Current	Total Return (USD, %)					Total Return (Local Currency, %)				
	Index	Level/RY	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Equities												
World	MSCI	606	-2.1	-1.5	9.9	-17.9	-16.3	-2.0	-1.8	7.9	-15.2	-13.7
Emerging Markets	MSCI	957	-2.1	0.6	9.7	-19.8	-19.1	-1.8	0.2	7.2	-14.7	-14.4
China	MSCI	64	-2.7	7.8	13.1	-22.1	-22.5	-2.7	7.1	12.0	-20.9	-21.4
US	MSCI	3654	-2.0	-2.7	7.5	-19.2	-17.4	-2.0	-2.7	7.5	-19.2	-17.4
Europe	MSCI	1722	-2.6	0.9	18.7	-15.0	-12.6	-2.7	-1.0	10.0	-8.4	-6.6
Europe ex-UK	MSCI	2104	-2.5	0.4	19.5	-17.7	-15.5	-2.9	-1.3	11.0	-12.3	-10.5
UK	MSCI	1068	-3.0	2.2	16.1	-5.5	-2.4	-1.9	0.0	6.7	5.3	7.1
Japan	MSCI	3141	-0.7	0.9	13.2	-16.4	-18.2	-0.7	-1.1	6.9	-0.8	-1.7
Government Bonds												
World	BofA-ML	2.82	-0.3	1.4	5.4	-17.1	-17.7	-0.4	0.4	1.6	-11.4	-12.0
Emerging Markets	BBloom	7.74	0.4	4.9	14.2	-21.5	-21.5	0.4	4.9	14.2	-21.5	-21.5
China	BofA-ML	2.77	-0.3	1.3	1.3	-5.9	-5.5	0.0	-0.3	-0.4	2.9	3.4
US (10y)	Datastream	3.48	0.8	1.7	3.0	-14.7	-15.0	0.8	1.7	3.0	-14.7	-15.0
Europe	Bofa-ML	2.84	-1.6	0.9	9.0	-21.9	-22.6	-2.3	-1.1	0.6	-16.3	-17.5
Europe ex-UK (EMU, 10y)	Datastream	2.16	-1.3	0.8	8.3	-23.4	-24.2	-2.0	-1.2	0.0	-17.9	-19.2
UK (10y)	Datastream	3.33	-2.2	-0.9	14.2	-26.5	-26.8	-1.1	-3.0	4.9	-18.1	-19.7
Japan (10y)	Datastream	0.25	0.0	1.9	6.0	-16.5	-17.7	0.0	0.0	0.1	-0.9	-1.1
IG Corporate Bonds												
Global	BofA-ML	4.87	0.2	2.7	7.2	-15.3	-15.3	0.1	2.2	4.8	-13.0	-13.2
Emerging Markets	BBloom	7.83	1.1	7.7	11.1	-21.4	-21.8	1.1	7.7	11.1	-21.4	-21.8
China	BofA-ML	3.65	-0.6	0.7	0.6	-6.8	-6.6	-0.3	-0.8	-1.1	2.0	2.3
US	BofA-ML	5.21	0.6	3.0	5.8	-13.6	-13.6	0.6	3.0	5.8	-13.6	-13.6
Europe	BofA-ML	3.97	-0.4	2.4	11.0	-18.8	-18.8	-1.1	0.4	2.5	-13.0	-13.5
UK	BofA-ML	5.44	-1.7	2.0	18.6	-26.6	-26.6	-0.5	-0.2	9.0	-18.2	-19.5
Japan	BofA-ML	0.77	-0.1	1.7	5.6	-17.2	-18.3	-0.1	-0.3	-0.3	-1.7	-1.8
HY Corporate Bonds												
Global	BofA-ML	8.71	0.1	2.2	7.8	-12.5	-12.1	0.0	1.8	6.0	-11.1	-10.8
US	BofA-ML	8.57	0.0	1.4	5.5	-10.0	-9.4	0.0	1.4	5.5	-10.0	-9.4
Europe	BofA-ML	7.47	0.3	2.7	13.8	-17.1	-16.5	-0.4	0.7	5.0	-11.2	-11.1
Cash (Overnight LIBOR)												
US		3.82	0.1	0.3	0.5	1.3	1.3	0.1	0.3	0.5	1.3	1.3
Euro Area		1.47	0.7	4.4	6.2	-8.7	-7.4	0.0	0.1	0.2	-0.1	-0.2
UK		3.00	1.8	5.7	8.8	-9.6	-8.2	0.1	0.2	0.4	1.2	1.2
Japan		-0.08	0.9	6.3	4.1	-17.3	-17.1	0.0	0.0	0.0	-0.1	-0.1
Real Estate (REITs)												
Global	FTSE	1564	-1.8	0.4	7.7	-23.4	-20.8	-2.5	-1.6	-0.6	-17.9	-15.7
Emerging Markets	FTSE	1362	-2.6	5.8	12.4	-12.3	-12.1	-3.3	3.7	3.7	-6.0	-6.4
US	FTSE	2852	-2.3	-0.7	5.6	-24.5	-21.2	-2.3	-0.7	5.6	-24.5	-21.2
Europe ex-UK	FTSE	2134	-3.4	-2.3	13.2	-41.5	-39.9	-4.0	-4.3	4.5	-37.4	-36.0
UK	FTSE	745	-3.9	-2.1	12.1	-39.8	-36.4	-2.7	-4.1	3.0	-32.8	-30.2
Japan	FTSE	2213	1.3	2.7	6.8	-12.8	-13.0	1.4	0.7	0.9	3.5	4.6
Commodities												
All	GSCI	3365	2.9	-7.5	-0.4	21.3	24.6	-	-	-	-	-
Energy	GSCI	583	5.2	-11.4	-2.4	35.8	40.5	-	-	-	-	-
Industrial Metals	GSCI	1648	-3.9	-0.4	11.7	-9.2	-5.9	-	-	-	-	-
Precious Metals	GSCI	2041	-0.6	1.5	9.1	-2.2	-0.3	-	-	-	-	-
Agricultural Goods	GSCI	540	1.5	-2.7	-4.8	8.3	9.0	-	-	-	-	-
Currencies (vs USD)*												
EUR		1.06	0.5	1.8	8.0	-6.9	-6.6	-	-	-	-	-
JPY		136.71	-0.1	2.1	5.9	-15.8	-16.8	-	-	-	-	-
GBP		1.22	-1.2	2.2	8.9	-10.3	-8.9	-	-	-	-	-
CHF		1.07	0.1	1.2	5.7	-2.3	-1.5	-	-	-	-	-
CNY		6.97	-0.2	1.7	2.0	-8.9	-8.7	-	-	-	-	-

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: Refinitiv Datastream and Invesco

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

Data as at 16/12/2022	Global				
	1w	1m	QTD	YTD	12m
Energy	**2.3**	**-4.9**	**-5.0**	**40.5**	**39.8**
Basic Materials	**-0.8**	**0.6**	**5.7**	**11.3**	**11.7**
Basic Resources	-1.9	2.0	8.8	19.1	20.8
Chemicals	0.6	-1.2	1.6	2.1	1.1
Industrials	**0.2**	**0.6**	**5.8**	**1.6**	**1.7**
Construction & Materials	-0.2	1.0	3.2	-3.0	-2.8
Industrial Goods & Services	0.2	0.5	6.2	2.2	2.3
Consumer Discretionary	**-1.1**	**-1.2**	**-4.8**	**-13.2**	**-12.8**
Automobiles & Parts	-4.2	-6.3	-18.0	-25.3	-23.8
Media	-2.4	-1.0	-1.8	-22.5	-21.7
Retailers	0.0	-1.7	-8.4	-13.0	-13.9
Travel & Leisure	-0.4	2.3	5.4	4.7	8.1
Consumer Products & Services	-0.4	1.2	5.3	-9.1	-9.0
Consumer Staples	**0.4**	**4.0**	**1.8**	**15.1**	**14.5**
Food, Beverage & Tobacco	0.6	3.7	1.3	17.1	16.4
Personal Care, Drug & Grocery Stores	-0.1	4.6	3.0	11.4	11.0
Healthcare	**0.4**	**3.3**	**2.6**	**8.2**	**8.0**
Financials	**0.2**	**0.0**	**1.8**	**8.1**	**7.1**
Banks	0.7	-0.3	0.1	9.5	8.4
Financial Services	-0.6	-1.7	1.3	0.4	-0.5
Insurance	0.1	3.7	7.0	19.2	18.3
Real Estate	**0.1**	**2.1**	**-2.0**	**-7.0**	**-6.5**
Technology	**-0.6**	**-1.7**	**-2.2**	**-19.4**	**-18.9**
Telecommunications	**-0.4**	**0.4**	**-1.4**	**2.1**	**1.5**
Utilities	**0.6**	**2.4**	**-0.4**	**16.8**	**16.6**

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

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

Data as at 16/12/2022	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	-1.6	-0.5	11.7	-20.8	-18.4	0.5	2.1	3.6	-3.6	-2.7
Low volatility	-1.4	1.6	11.4	-1.7	0.0	0.6	4.2	3.3	19.8	19.3
Price momentum	-0.6	-1.4	11.9	-6.5	-3.9	1.5	1.1	3.7	13.9	14.6
Quality	-1.3	-0.4	15.1	-10.8	-8.7	0.8	2.2	6.8	8.6	8.8
Size	-1.6	-2.1	10.7	-10.2	-7.3	0.4	0.5	2.7	9.4	10.6
Value	-2.0	-2.7	10.7	-6.4	-4.8	0.0	-0.2	2.6	13.9	13.5
Market	-2.0	-2.5	7.9	-17.9	-16.1					
Market - Equal-Weighted	-1.8	-1.9	11.3	-11.7	-9.4					

Notes: **Past performance is no guarantee of future results.** 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. Source: Refinitiv Datastream and Invesco

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

Data as at 16/12/2022	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	-4.0	-1.7	12.9	-30.6	-28.0	-0.7	-0.6	2.8	-22.7	-21.7
Low volatility	-2.6	-0.6	6.5	-7.8	-5.7	0.7	0.6	-3.0	2.7	2.6
Price momentum	-2.1	0.6	7.4	-23.2	-20.6	1.2	1.7	-2.2	-14.5	-13.6
Quality	-3.7	-1.4	13.0	-17.7	-15.5	-0.4	-0.3	2.9	-8.4	-8.1
Size	-3.5	-2.1	14.4	-23.2	-20.1	-0.2	-1.0	4.1	-14.5	-13.1
Value	-2.9	-1.4	15.8	-10.5	-7.8	0.4	-0.3	5.5	-0.4	0.2
Market	-3.3	-1.1	9.8	-10.2	-8.0					
Market - Equal-Weighted	-3.3	-1.6	11.0	-18.8	-16.2					

Notes: **Past performance is no guarantee of future results.** 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. Source: Refinitiv Datastream and Invesco

Figure 6 – 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 7 – Model allocations for Global sectors

	Neutral	Invesco	Preferred Region
Energy	**8.3%**	**Underweight**	**US**
Basic Materials	**4.3%**	**Neutral**	**Europe**
Basic Resources	2.4%	Neutral	Europe
Chemicals	1.9%	Neutral	Japan
Industrials	**12.4%**	**Neutral**	**US**
Construction & Materials	1.5%	Underweight ↓	US
Industrial Goods & Services	10.9%	Neutral	US
Consumer Discretionary	**14.5%**	**Neutral**	**US**
Automobiles & Parts	3.0%	Underweight	Europe
Media	1.0%	Overweight	US
Retailers	5.0%	Neutral	US
Travel & Leisure	1.9%	Underweight	US
Consumer Products & Services	3.5%	Overweight ↑	Europe
Consumer Staples	**6.7%**	**Overweight**	**US**
Food, Beverage & Tobacco	4.4%	Overweight	US
Personal Care, Drug & Grocery Stores	2.2%	Overweight	US
Healthcare	**10.4%**	**Overweight**	**US**
Financials	**15.5%**	**Underweight**	**Japan**
Banks	7.6%	Underweight	Japan
Financial Services	5.0%	Underweight	EM
Insurance	2.9%	Underweight	US
Real Estate	**3.3%**	**Overweight**	**EM**
Technology	**17.4%**	**Overweight**	**US**
Telecommunications	**3.5%**	**Neutral**	**Japan**
Utilities	**3.8%**	**Underweight**	**US**

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

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), 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 and high-yield spreads are based upon our view of the economic cycle (as are forecasts of credit losses). Coupon 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 first 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.

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 ICE BofA government bond total return index for the World and Europe. The emerging markets yields and returns are based on the 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 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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