

Uncommon truths Can both equities and bonds be right?

It's been a good start to the year, with positive returns on most assets. Upcoming Fed decisions may determine the immediate path of yields. But bonds are back and we think fund flows may push yields lower, to the benefit of equities and gold.

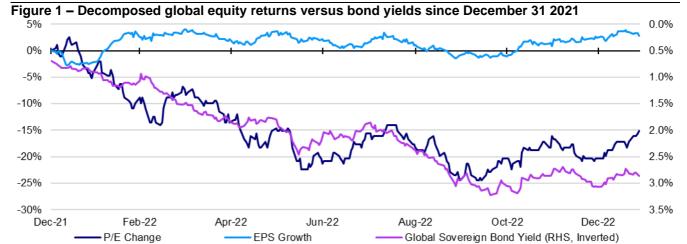
Equities are up and bond yields are down. As asked this week by erstwhile colleague Jay Pelosky (now at TPW Advisory): can both markets be right at the same time or will one be proven wrong? Meetings with investors over the last three weeks underline that confusion. The mood seemed to improve as the weeks passed (perhaps as markets rose) and, funnily enough, the closer we moved to the conflict in Ukraine. My year started in Lisbon and Madrid, where the mood was overall pessimistic, followed by further uncertainty in the Channel Isles. Investors in Dubai seemed to be still frozen in the headlights of 2022 but those in Bratislava, Vienna, Frankfurt and Munich seemed to be on the Datastream Total Market World Index). We more optimistic.

Questions were frequently asked about the risk of recession, to which my stock answer is that I think it probable in Europe and possible in the US. Data released last week in the US was confusing: initial jobless claims suggest the labour market remains strong and PMIs for January showed some improvement (from low levels); new home sales remained low but were slightly better than expected and durable goods orders were down a bit; finally, the leading index for December was down 1.0% and weaker than expected.

Perhaps the most confusing of all was the GDP data for Q4. GDP grew 2.9% (annualised guarter-onquarter), which was better than the expected 2.6%. However, more than half of that was due to an increase in inventories which added 1.5% to GDP, meaning that real final sales increased by only 1.4%, compared to 4.5% in the previous quarter. Consumer spending increased by 2.1%, broadly in line with the previous two quarters but with spending on goods increasing for the first time in four quarters, while spending on services seems to be decelerating (growth of 2.6%, versus 3.7% in Q3 and 4.6% in Q2).

Worryingly, fixed investment spending shrank for the third guarter in a row (-6.7%). I say worryingly because investment is the component of GDP that often leads the economy into recession (in my opinion). Still, financial markets don't seem overly concerned. Figure 1 shows that the historical P/E ratio on global equities has been expanding in recent months (based suspect this is linked to the decline in bond yields, as suggested by **Figure 1**. Even better, profits have been creeping higher (until recent days), so that expanding multiples have been applied to higher earnings.

This wasn't quite what we expected. When looking ahead to 2023, we predicted that both profits and longterm bond yields would fall (see The Big Picture - 2023 Outlook, published in November 2022). We also expected that the decline in bond yields would be enough to overcome the effect of falling profits, so that the equity asset class would generate small positive returns to the end of 2023. For example, our end-2023 forecasts envisaged that the US 10-year treasury yield would fall to 3.40% (currently 3.52%) and that the S&P 500 would climb to 4350 (currently 4071).



Notes: Past performance is no guarantee of future returns. Daily data from 31 December 2021 to 27 January 2023. 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-tomaturity of the ICE BofA Global Government Bond Index. All data shown in US dollar terms. Source: Refinitiv Datastream and Invesco



Since we published that 2023 Outlook, the US 10-year treasury yield has fallen from 3.84% to 3.52% (see **Figure 2**). Four-fifths of that decline came from a fall in the real (TIPS) yield (from 1.45% to 1.19%) and one-fifth from a reduction in the inflation breakeven (2.39% to 2.33%). That betrays not only confidence that inflation is heading back towards the Fed's 2% target but also perhaps concern about the state of the economic cycle (hence the decline in the real yield).

Indeed, market expectations of the path of Fed policy rates are instructive. Bloomberg's calculations based on Fed Funds Futures suggest the US central bank will raise rates by only 25 basis points at the meeting on Wednesday (1 February), followed by another 25 basis points at the next meeting (22 March). After that, however, the market is suggesting there will be no further rate hikes and that there will be two reductions by this time next year (with the first in November and the second in December or January).

That may seem dramatic but the market has been suggesting such an outcome since at least the start of the year and our 2023 projections were based on the same scenario. Our view was simply that US inflation would fall fast and that the US economy would weaken enough to push the Fed into easing.

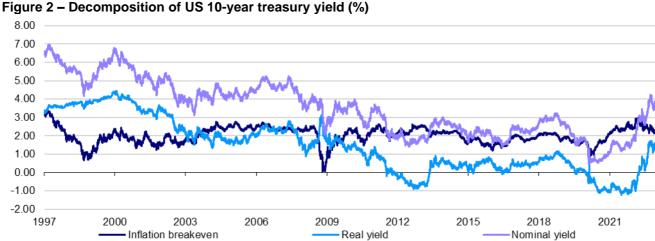
The immediate direction of long-term treasury yields probably depends upon what the Fed does this week (in my opinion). I believe that no hike would see yields fall, that a 25bp hike would see little movement in yields after an initial rise and a 50bp hike would see yields rise. Thereafter, I suspect it depends on the strength of the economy. Continued deceleration could push 10-year yields down to 3.00% over the coming months, in my opinion, but a reacceleration in the economy could provoke a rebound in yields (perhaps back to 4.00%). One ray of hope may be that mortgage applications have risen in each of the first three weeks of the year, which could suggest the recent decline in mortgage rates is having an effect.

In any case, a common refrain among investors over recent weeks is that bonds are back! Even though I think bond yields will continue to rise over the medium to long term (as central banks reduce their holdings and real yields normalise upwards), I think cyclical forces could first take them lower. More strategically, real yields are higher than at any time since the Global Financial Crisis (GFC), based on the evidence in **Figure 2**. Since mid-2022 I have felt that government bonds are at last worthy of consideration. As seen in **Figure 6** government bonds are currently accorded a Neutral weighting within our Model Asset Allocation, while investment grade (IG) and high yield (HY) credit are both Overweighted.

When it comes to the comparison with equities, dividend yield gaps (government bond yield minus equity dividend yield) suggest that government bonds are as attractive as at any time since 2010/11, in the US, UK and Eurozone. Anecdotal evidence suggests flows have recently been towards bonds and away from equities and not because of a fear of recession (see a Bloomberg article entitled "*Pension funds in historic surplus eye* \$1 *trillion of bond-buying*"). Basically, the rise in bond yields is reducing the present value of pension fund liabilities, thus allowing them to de-risk, rather than chase returns.

Luckily, if bond yields do fall, I suspect it will be to the benefit of equities (and other assets such as gold). So, even though some equity market consolidation may occur over the coming weeks (**Figure 1** shows that equity multiples have recently continued to rally despite a slight rise in bond yields), I suspect recent positive trends will then continue into 2023.

All data as of 27 January 2023, unless stated otherwise.



Note: past performance is no guarantee of future results. Daily data from 29 January 1997 to 27 January 2023. "Real yield" is the 10-year TIPS yield. Source: Refinitiv Datastream and Invesco



Figure 3 – Asset class total returns (%)

Data as at 27/01/2023		Current	٦	Total Re	turn (US	SD. %)	1	Total I	Return (Local C	urrency	. %)
	Index	Level/RY	1w	1m	QTD	YTD	12m	10tai 1	1m		YTD	, //) 12m
Equities	IIIUEX	Leven/KT	IW	1111	QID	ПD	12111	IVV	1111	QID		12111
•	MOOL	050	24	75	7 4	7 4	4.2	0.4	07	<u> </u>	<u> </u>	2 5
World	MSCI	650	2.1	7.5	7.4	7.4	-4.3	2.1	6.7	6.8	6.8	-2.5
Emerging Markets	MSCI	1051	1.4	9.8	10.0	10.0	-8.8	1.3	8.2	8.6	8.6	-5.0
China	MSCI	75	3.2	18.1	17.2	17.2	-4.0	3.2	17.9	17.1	17.1	-2.6
US	MSCI	3871	2.6	6.8	6.4	6.4	-4.9	2.6	6.8	6.4	6.4	-4.9
Europe	MSCI	1884	0.7	8.4	8.9	8.9	-2.3	0.7	6.5	7.2	7.2	1.7
Europe ex-UK	MSCI	2316	1.0	8.9	9.6	9.6	-2.8	1.0	7.3	8.3	8.3	-0.3
UK	MSCI	1147	-0.2	6.6	6.8	6.8	-0.5	-0.1	3.7	4.0	4.0	7.9
Japan	MSCI	3357	3.0	7.1	6.9	6.9	-2.9	3.1	4.4	5.3	5.3	9.4
Government Bonds												
World	BofA-ML	2.86	-0.2	3.0	2.9	2.9	-13.8	-0.3	1.7	1.9	1.9	-10.3
Emerging Markets	BBloom	7.61	0.4	4.9	5.3	5.3	-15.3	0.4	4.9	5.3	5.3	-15.3
China	BofA-ML	2.72	0.1	2.9	2.7	2.7	-3.6	0.1	0.1	0.1	0.1	2.6
US (10y)	Datastream	3.52	-0.2	3.6	3.3	3.3	-11.9	-0.2	3.6	3.3	3.3	-11.9
Europe	Bofa-ML	2.88	-0.5	4.1	4.0	4.0	-18.0	-0.6	2.3	2.4	2.4	-15.7
Europe ex-UK (EMU, 10y)	Datastream	2.20	-0.5	4.8	4.0 5.0	5.0	-19.7	-0.6	3.0	3.3	3.3	-17.4
		3.33							3.0 2.7			
UK (10y)	Datastream		0.4	5.6	5.8	5.8	-22.3	0.5		3.0	3.0	-15.8
Japan (10y)	Datastream	0.18	0.7	5.4	3.8	3.8	-10.7	0.7	2.7	2.3	2.3	0.5
IG Corporate Bonds	D (1) D	4										
Global	BofA-ML	4.75	0.3	3.8	3.8	3.8	-11.0	0.2	3.2	3.2	3.2	-9.8
Emerging Markets	BBloom	7.10	0.5	5.7	5.3	5.3	-15.1	0.5	5.7	5.3	5.3	-15.1
China	BofA-ML	3.58	0.1	2.9	2.7	2.7	-4.4	0.1	0.2	0.1	0.1	1.8
US	BofA-ML	5.09	0.3	3.7	3.7	3.7	-9.6	0.3	3.7	3.7	3.7	-9.6
Europe	BofA-ML	3.89	0.1	4.1	3.8	3.8	-13.8	0.0	2.3	2.2	2.2	-11.3
UK	BofA-ML	5.14	0.5	6.9	6.9	6.9	-20.9	0.6	4.0	4.1	4.1	-14.2
Japan	BofA-ML	0.89	-0.2	2.7	1.7	1.7	-13.0	-0.2	0.1	0.2	0.2	-2.1
HY Corporate Bonds												
Global	BofA-ML	8.19	0.5	3.9	4.3	4.3	-7.2	0.4	3.4	3.9	3.9	-6.5
US	BofA-ML	8.17	0.4	3.1	4.0	4.0	-5.4	0.4	3.1	4.0	4.0	-5.4
Europe	BofA-ML	6.98	0.5	5.2	4.9	4.9	-10.3	0.4	3.3	3.3	3.3	-7.7
Cash (Overnight LIBOR)	-			-	-			-				
US		4.31	0.1	0.4	0.2	0.2	1.8	0.1	0.4	0.2	0.2	1.8
Euro Area		2.00	1.8	2.0	1.3	1.3	-5.3	0.0	0.4	0.2	0.2	0.1
UK		3.55	1.0	-0.7	1.3	1.2	-9.3	0.0	0.2	0.1	0.1	1.6
		-0.13	3.3	6.0	2.5	2.5	-10.8	0.1	0.0	0.0	0.0	-0.1
Japan Baal Estata (BEITa)		-0.13	3.3	0.0	2.5	2.5	-10.8	0.0	0.0	0.0	0.0	-0.1
Real Estate (REITs)	FTOF	1000	0.4	0.0	0.4	0.4		0.0	7.0	7 4	7 4	7.0
Global	FTSE	1696	3.1	9.2	9.1	9.1	-9.9	3.0	7.3	7.4	7.4	-7.3
Emerging Markets	FTSE	1466	2.5	8.5	7.9	7.9	-8.5	2.4	6.6	6.3	6.3	-5.9
US	FTSE	3104	3.6	9.5	9.9	9.9	-7.7	3.6	9.5	9.9	9.9	-7.7
Europe ex-UK	FTSE	2463	1.9	14.7	14.0	14.0	-29.2	1.8	12.7	12.3	12.3	-27.2
UK	FTSE	853	2.5	12.5	11.8	11.8	-28.7	2.5	9.4	8.8	8.8	-22.8
Japan	FTSE	2180	2.6	1.9	0.7	0.7	-10.3	2.7	-0.7	-0.8	-0.8	1.0
Commodities												
All	GSCI	3507	-1.1	0.3	0.3	0.3	14.5	-	-	-	-	-
Energy	GSCI	605	-2.5	-1.2	-0.9	-0.9	21.5	-	-	-	-	-
Industrial Metals	GSCI	1817	0.2	8.7	8.4	8.4	-4.7	-	-	-	-	-
Precious Metals	GSCI	2186	0.0	5.4	5.2	5.2	7.0	-	-	-	-	-
Agricultural Goods	GSCI	559	1.8	1.0	0.0	0.0	8.0	_	-	-	_	_
Currencies (vs USD)*		559	1.0	1.0	0.0	0.0	0.0	-	-	-	-	-
		1 00	0.4		4 5	4 5	<u> </u>					
EUR		1.09	0.1	2.2	1.5	1.5	-2.5	-	-	-	-	-
JPY		129.87	-0.2	2.8	1.0	1.0	-11.2	-	-	-	-	-
GBP		1.24	-0.1	2.8	2.7	2.7	-7.7	-	-	-	-	-
CHF		1.09	0.0	0.9	0.4	0.4	1.1	-	-	-	-	-
CNY	1	6.78	0.0	2.6	1.7	1.7	-6.1	-	-	-	-	-

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 27/01/2023			Global		
	1w	1m	QTD	YTD	12m
Energy	-1.1	-3.6	-3.1	-3.1	21.4
Basic Materials	-0.5	2.1	2.8	2.8	9.5
Basic Resources	-0.7	3.8	4.7	4.7	18.1
Chemicals	-0.4	-0.3	0.1	0.1	-0.9
Industrials	-0.5	-1.1	-0.8	-0.8	2.1
Construction & Materials	-0.7	0.7	1.4	1.4	0.3
Industrial Goods & Services	-0.5	-1.3	-1.0	-1.0	2.4
Consumer Discretionary	2.2	6.3	6.0	6.0	-4.7
Automobiles & Parts	8.7	13.4	10.5	10.5	-19.4
Media	2.3	9.5	8.4	8.4	-6.4
Retailers	0.8	3.2	3.6	3.6	-5.8
Travel & Leisure	0.7	4.8	5.2	5.2	9.1
Consumer Products & Services	0.8	5.9	6.1	6.1	2.4
Consumer Staples	-2.1	-7.6	-6.6	-6.6	2.2
Food, Beverage & Tobacco	-2.0	-7.2	-6.4	-6.4	3.6
Personal Care, Drug & Grocery Stores	-2.1	-8.3	-7.1	-7.1	-0.6
Healthcare	-2.4	-6.3	-6.5	-6.5	5.9
Financials	-0.2	-0.2	-0.4	-0.4	1.7
Banks	0.1	0.7	0.3	0.3	0.3
Financial Services	-0.5	-0.5	-0.9	-0.9	-0.5
Insurance	-0.3	-1.9	-1.5	-1.5	10.0
Real Estate	0.3	0.9	0.9	0.9	-6.9
Technology	2.2	5.7	5.1	5.1	-11.5
Telecommunications	-0.4	-0.5	-0.4	-0.4	-0.6
Utilities	-2.7	-6.2	-6.1	-6.1	6.5

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



			US					US		
Data as at 27/01/2023		Α	bsolute				Relativ	ve to Mar	ket	
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	2.6	10.1	9.4	9.4	2.3	0.1	3.5	3.1	3.1	7.0
Low volatility	0.9	-1.4	-0.7	-0.7	4.3	-1.6	-7.4	-6.5	-6.5	9.1
Price momentum	1.4	0.4	1.4	1.4	6.9	-1.1	-5.7	-4.5	-4.5	11.8
Quality	1.2	6.7	6.8	6.8	4.5	-1.2	0.2	0.6	0.6	9.3
Size	3.4	12.4	12.1	12.1	5.8	0.9	5.6	5.7	5.7	10.6
Value	3.5	10.0	9.8	9.8	2.4	1.0	3.4	3.5	3.5	7.1
Market	2.5	6.4	6.1	6.1	-4.3					
Market - Equal-Weighted	2.2	6.7	6.7	6.7	2.1					

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

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 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 (% annualised)

		E	Europe				E	Europe		
Data as at 27/01/2023		Α	bsolute				Relativ	ve to Mar	ket	
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	2.4	9.6	9.4	9.4	-10.5	1.7	3.0	2.0	2.0	-10.3
Low volatility	0.0	3.3	4.2	4.2	-1.7	-0.7	-2.9	-2.8	-2.8	-1.6
Price momentum	0.4	3.6	4.5	4.5	-8.1	-0.3	-2.7	-2.6	-2.6	-7.9
Quality	2.0	9.2	9.6	9.6	-5.3	1.3	2.6	2.3	2.3	-5.2
Size	1.8	9.9	10.0	10.0	-8.4	1.1	3.2	2.6	2.6	-8.3
Value	3.0	13.2	13.5	13.5	-0.1	2.3	6.4	5.9	5.9	0.0
Market	0.7	6.4	7.2	7.2	-0.1					
Market - Equal-Weighted	1.5	8.3	8.8	8.8	-6.5					

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 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	Allo		Position vs	Neutral
Cash Equivalents	5%	0-10%	Ļ	5%		
Cash	2.5%		Ļ	0%		
Gold	2.5%		1	5%		
Bonds	40%	10-70%	1	48%		
Government	25%	10-40%	Ļ	25%		
US	8%			11%		
Europe ex-UK (Eurozone)	7%		Ļ	5%		
UK	1%		1	2%		
Japan	7%		Ļ	3%		
Emerging Markets	2%			4%		
China**	0.2%			0%		
Corporate IG	10%	0-20%		15%		
US Dollar	5%		1	9%		
Euro	2%		Ļ	2%		
Sterling	1%			2%		
Japanese Yen	1%			0%		
Emerging Markets	1%			2%		
China**	0.1%			0%		
Corporate HY	5%	0-10%	1	8%		
US Dollar	4%		1	7%		
Euro	1%		ŕ	1%		
Equities	45%	25-65%		37%		
US	25%		↑	19%		
Europe ex-UK	7%		i i	2%		
UK	4%		Ť	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	1%		
UK	1%		¥	2%		
Japan	2%		↑	2%		
Emerging Markets	1%		I	2%		
Commodities	2%	0-4%		0%		
Energy	1%	C . /0		0%		
Industrial Metals	0.3%			0%		
Precious Metals	0.3%			0%		
	0.3%			0%		
Agriculture Total	<u> </u>			100%		

Currency Exposure (in	ncluding 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 <u>The Big Picture</u> 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	8.1%	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 1	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 1	EM
Technology	16.5%	Overweight	US
Telecommunications	3.5%	Underweight \downarrow	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 <u>Strategic Sector Selector</u> 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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