



## Uncommon truths

### Alternatives during the pandemic

**Did so-called alternative assets provide a true alternative to conventional assets during the volatility of 2020? Our analysis suggests that gold did but that most others did not. Given this, and as with conventionals, our choice among alternatives relies critically upon economic/market projections.**

In May 2020 we studied the potential role of alternative assets in our asset allocation process (see – [Private equity is from Mars; hedge funds are from Venus](#)). We considered that some were candidates to be core holdings (real estate, say), many were more tactical in nature (private equity and commodities, say), while it was hard to see a role for some (the broad hedge fund category mimics government debt but not as well). Fine wines have historically provided similar returns to private equity but with less volatility and the possibility of drowning your sorrows if all goes wrong!

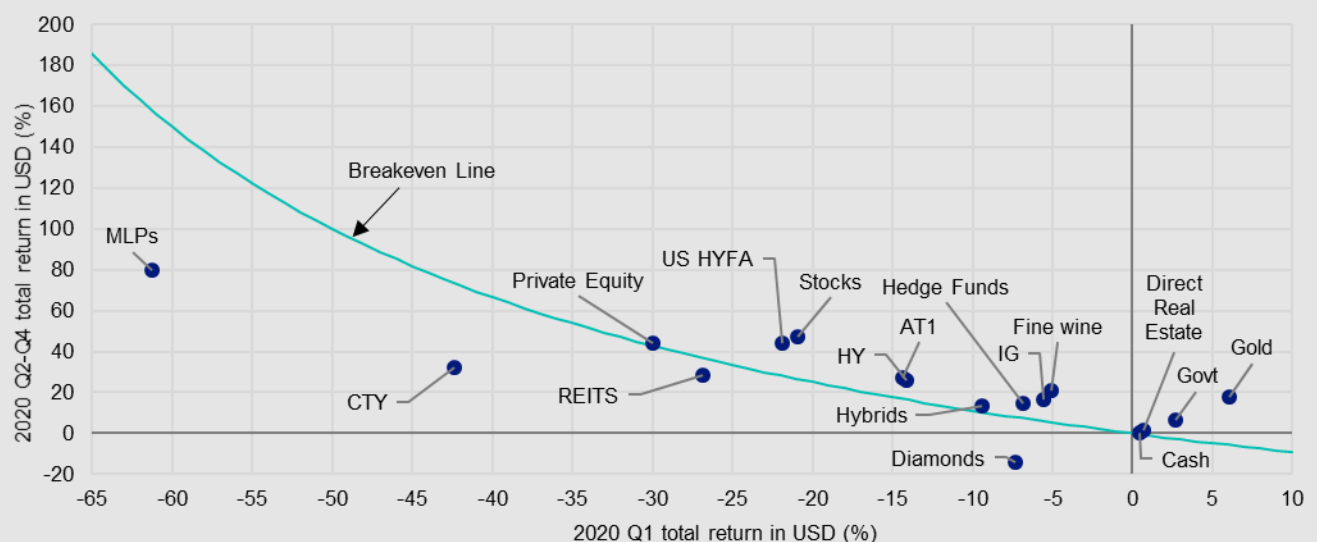
So, how did alternative assets perform during the 2020? Did they offer an alternative to the roller coaster ride suffered by many assets? **Figure 1** shows the performance of a range of global assets during 2020, broken down into two periods. The horizontal axis shows performance during the first quarter of the year, when markets got to grips with the impact of the pandemic (hence the negative return on most assets).

The vertical axis shows the performance during the rest of the year, which was largely a period of rebound as policy makers came to the rescue and lockdowns eased (until much later in the year).

Assets that declined in value during Q1 experienced a rebound during the rest of the year (diamonds excepted). The most notable example was MLPs (Master Limited Partnerships), which produced both the biggest loss during Q1 and the biggest gain during the rest of the year (among the assets that we include in the analysis). However, the 80% return offered by MLPs during 2020 Q2-Q4 was not enough to compensate for the 61% loss suffered in Q1 (the “Breakeven Line” shows, for a given performance during Q1, what would have been required in the rest of the year to give zero return during the whole year). Assets above that line produced positive returns during 2020 and those below produced negative returns.

Perhaps the most interesting group of assets is that which produced positive returns during Q1 (notably gold and government debt but also cash and direct real estate). Amazingly, they also produced positive returns during the rest of the year and could therefore be said to have offered a truly alternative outcome to most other assets.

**Figure 1 – A year of two halves (global asset returns in 2020)**



Note: Calculated using total return indices in US dollars unless stated otherwise: spot price of gold per ounce, spot price of one carat flawless diamonds (Polished Prices Index), BofAML 0-3 month US treasury total return index (Cash), BofAML Global Government Index (Govt), BofAML Global Corporate Index (IG), BofAML Global HY Index (HY), GPR General World Index (REITS), S&P GSCI total return index for commodities (CTY), MSCI World Index (Stocks), Hedge Fund Research Global Hedge Fund Index (Hedge Funds), LPX Major Market Listed Private Equity Index (Private Equity), US NCREIF Property Total Return Index (Direct Real Estate), Liv-ex Fine Wine Investable (Fine Wine, price index converted to US dollars), Morningstar MLP Composite Index (MLPs), ICE BofA Global Hybrid Non-Financial Corporate Index (Hybrids), FTSE Time-Weighted US Fallen Angel Bond Select Index (US HYFA), Markit iBoxx USD Contingent Convertible Liquid Developed Market AT1 Index (AT1). Note that Direct Real Estate data is only available to 2020 Q3, so end-2020 index assumes that 2020 Q4 year-on-year gain is the same as for 2020 Q3. “Breakeven Line” shows the 2020 Q2-Q4 performance needed to produce zero total return for the full year, after allowing for the performance during Q1. Past performance is no guarantee of future results. Source: Bloomberg, Refinitiv Datastream, BofA ML, FTSE, iBoxx, ICE, MSCI, Morningstar, Polished Prices, S&P GSCI, GPR, LPX, FHFA, Liv-ex, Hedge Fund Research, Invesco



Of course, not all those assets could be called alternative. Some consider gold and direct real estate to be alternative but it is unlikely that cash or government debt would be put into that category (note that Q4 data for direct real estate is not yet available, thus requiring some imputation – see the footnote to **Figure 1**). Among the assets covered in this report, gold was the clear stand-out and could be said to have provided an alternative to the more conventional defensive groups (Bitcoin was a more extreme example but we have reservations about using it in our framework – see [The builder’s guide to Bitcoin](#)).

At the other extreme was diamonds which produced negative returns in both parts of 2020 (the full year loss of 20.2% came on top of a loss of 11.6% in 2019). This may be proof of the maxim that not all that glitters is gold!

Overall, there were more assets that produced positive returns during 2020 (above the “breakeven line”) than produced negative outcomes. The latter group included MLPs, REITs and commodities, which are either cyclical and/or suffered a Covid-specific impact (REITs). The hedge fund category was among those producing positive returns but it seemed to perform very much like IG credit (we noted above that over the longer term it performs like government debt, though with less return and more volatility).

Looking forward, we suspect the performance of the various alternative assets will depend upon the sort of

economic and market environment that we face. If market sentiment continues to focus on economic recovery (aided by the roll out of vaccines), then we would expect cyclical assets to outperform, including alternatives such as private equity, industrial commodities and REITs.

However, if there is disappointment about short-term economic performance due to lockdowns and problems with vaccinations (lack of supply or lack of effectiveness against new variants etc.), then we would expect more defensive assets to outperform (for example, gold among alternatives). Looking further out, we think the biggest risk could be the threat of central bank asset purchase tapering, which could see bond yields rise. Under such a scenario, we suspect that gold would suffer as a result of higher yields and we would prefer cash as a defensive asset.

Talking of yields, **Figure 2** puts current yields into a historical perspective. The yields on most assets are at or close to historical lows, even among some alternatives such as AT1s, fallen angels and hybrids. Notably, the yield on MLPs was around 12% at the end of 2020, well above the historical norm (7.7%). Real estate (REIT) yields are also higher than normal.

In conclusion, except for gold, alternative assets did not offer a true alternative to the returns seen on more traditional assets during 2020.

*All data as of 21 January 2021, unless stated otherwise.*

**Figure 2 – Asset yields within historical ranges**



Notes: As of 31 December 2020. Past performance is no guarantee of future results. US MLPs is based on the Morningstar MLP Composite Index (starting 15 June 2001). AT1 is based on Markit iBoxx USD Contingent Convertible Liquid Developed Market AT1 Index (starting 2 January 2014). Hybrids (YTW) is a yield-to-worst measure based on the ICE BofA Global Hybrid Non-Financial Corporate Index (starting 31 December 2001). US Fallen Angels is based on the FTSE Time-Weighted US Fallen Angel Bond Select Index (starting 2 January 2002). See appendices for definitions, methodology and disclaimers (especially Appendix 1 for details of indices used for assets not mentioned above). Source: BofAML, Barclays Bloomberg, FTSE, iBoxx, ICE, Morningstar, Refinitiv Datastream, Invesco



Figure 3 – Asset class total returns

Data as at 21/01/2021	Index	Current Level/Ry	Total Return (USD, %)					Total Return (Local Currency, %)				
			1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
<b>Equities</b>												
World	MSCI	670	1.2	5.6	3.7	3.7	18.6	1.2	5.4	3.8	3.8	16.2
Emerging Markets	MSCI	1406	2.6	12.1	8.9	8.9	27.8	2.6	11.9	9.2	9.2	28.4
China	MSCI	121	5.9	13.7	12.0	12.0	42.7	5.8	13.5	11.9	11.9	41.4
US	MSCI	3768	1.5	4.3	2.8	2.8	21.1	1.5	4.3	2.8	2.8	21.1
Europe	MSCI	1883	-0.2	5.7	2.4	2.4	7.7	-0.4	5.2	2.8	2.8	-0.8
Europe ex-UK	MSCI	2360	0.1	5.1	1.8	1.8	12.3	-0.1	5.4	2.4	2.4	2.4
UK	MSCI	1077	-1.0	7.9	4.5	4.5	-6.0	-1.3	4.7	4.1	4.1	-10.6
Japan	MSCI	3975	-0.3	4.7	3.1	3.1	18.6	-0.6	4.8	3.4	3.4	11.8
<b>Government Bonds</b>												
World	BofA-ML	0.29	0.0	-0.6	-1.1	-1.1	8.2	-0.2	-0.8	-0.8	-0.8	3.3
Emerging Markets	BBloom	4.03	0.2	-1.4	-2.0	-2.0	3.7	0.2	-1.4	-2.0	-2.0	3.7
China	BofA-ML	3.06	0.0	2.3	1.6	1.6	9.3	-0.1	1.0	0.4	0.4	2.3
US (10y)	Datastream	1.11	0.2	-1.5	-1.8	-1.8	9.1	0.2	-1.5	-1.8	-1.8	9.1
Europe	BofA-ML	-0.15	-0.4	-1.3	-1.4	-1.4	13.3	-0.5	-0.8	-0.7	-0.7	3.5
Europe ex-UK (EMU, 10y)	Datastream	-0.53	-0.4	-1.1	-1.2	-1.2	12.3	-0.5	-0.6	-0.5	-0.5	2.5
UK (10y)	Datastream	0.35	0.0	1.9	-0.6	-0.6	8.8	-0.4	-1.2	-1.1	-1.1	3.6
Japan (10y)	Datastream	0.02	0.3	-0.2	-0.3	-0.3	6.2	0.0	-0.1	0.0	0.0	0.0
<b>IG Corporate Bonds</b>												
Global	BofA-ML	1.49	0.1	-0.2	-0.9	-0.9	8.6	0.0	-0.3	-0.8	-0.8	5.8
Emerging Markets	BBloom	3.60	0.5	0.0	-0.3	-0.3	9.7	0.5	0.0	-0.3	-0.3	9.7
China	BofA-ML	4.00	0.0	2.1	1.6	1.6	9.9	-0.1	0.7	0.5	0.5	2.9
US	BofA-ML	1.93	0.1	-0.5	-1.1	-1.1	7.2	0.1	-0.5	-1.1	-1.1	7.2
Europe	BofA-ML	0.34	-0.1	-0.5	-0.7	-0.7	11.8	-0.2	0.0	0.0	0.0	2.2
UK	BofA-ML	1.54	0.2	2.5	-0.5	-0.5	10.7	-0.2	-0.6	-0.9	-0.9	5.3
Japan	BofA-ML	0.40	0.3	0.0	-0.3	-0.3	6.5	0.1	0.0	0.1	0.1	0.3
<b>HY Corporate Bonds</b>												
Global	BofA-ML	4.71	0.3	1.1	0.3	0.3	7.6	0.3	1.1	0.4	0.4	5.8
US	BofA-ML	4.83	0.4	1.6	0.7	0.7	6.1	0.4	1.6	0.7	0.7	6.1
Europe	BofA-ML	3.02	0.4	0.5	0.1	0.1	12.7	0.3	1.0	0.8	0.8	2.9
<b>Cash (Overnight LIBOR)</b>												
US		0.09	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3
Euro Area		-0.59	0.0	-0.7	-0.5	-0.5	9.1	0.0	-0.1	0.0	0.0	-0.6
UK		0.04	0.3	2.0	0.4	0.4	5.4	0.0	0.0	0.0	0.0	0.1
Japan		-0.07	0.3	-0.2	-0.2	-0.2	6.0	0.0	0.0	0.0	0.0	-0.1
<b>Real Estate (REITs)</b>												
Global	FTSE	1783	1.1	3.2	0.4	0.4	-10.1	1.0	3.8	1.1	1.1	-17.9
Emerging Markets	FTSE	2047	3.5	5.6	3.9	3.9	-10.1	3.3	6.1	4.6	4.6	-17.9
US	FTSE	2828	1.8	3.2	0.6	0.6	-11.9	1.8	3.2	0.6	0.6	-11.9
Europe ex-UK	FTSE	3582	-2.5	-0.3	-4.6	-4.6	-3.2	-2.7	0.2	-3.9	-3.9	-11.6
UK	FTSE	1326	-1.5	5.2	-1.6	-1.6	-11.7	-1.9	2.1	-2.0	-2.0	-15.9
Japan	FTSE	2598	0.6	2.5	-0.9	-0.9	-10.7	0.3	2.6	-0.6	-0.6	-15.8
<b>Commodities</b>												
All	GSCI	2086	-0.8	7.4	5.5	5.5	-17.4	-	-	-	-	-
Energy	GSCI	289	-1.1	9.4	8.3	8.3	-39.1	-	-	-	-	-
Industrial Metals	GSCI	1435	-0.4	0.9	2.5	2.5	16.8	-	-	-	-	-
Precious Metals	GSCI	2163	0.7	-1.1	-1.6	-1.6	18.5	-	-	-	-	-
Agricultural Goods	GSCI	420	-2.0	11.9	5.1	5.1	20.0	-	-	-	-	-
<b>Currencies (vs USD)*</b>												
EUR		1.22	0.0	-0.7	-0.4	-0.4	9.7	-	-	-	-	-
JPY		103.51	0.3	-0.2	-0.2	-0.2	6.2	-	-	-	-	-
GBP		1.37	0.3	3.1	0.4	0.4	5.1	-	-	-	-	-
CHF		1.13	0.3	0.0	0.0	0.0	9.4	-	-	-	-	-
CNY		6.46	0.2	1.4	1.0	1.0	6.9	-	-	-	-	-

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


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

Data as at 21/01/2021	Global				
	1w	1m	QTD	YTD	12m
<b>Energy</b>	<b>-2.8</b>	<b>0.9</b>	<b>1.2</b>	<b>1.2</b>	<b>-27.9</b>
<b>Basic Materials</b>	<b>-1.7</b>	<b>1.2</b>	<b>1.3</b>	<b>1.3</b>	<b>13.3</b>
Basic Resources	-1.7	1.7	2.3	2.3	18.5
Chemicals	-1.7	0.5	0.1	0.1	7.2
<b>Industrials</b>	<b>-1.2</b>	<b>-1.8</b>	<b>-1.8</b>	<b>-1.8</b>	<b>-2.9</b>
Construction & Materials	-1.6	1.0	0.2	0.2	-2.1
Industrial Goods & Services	-1.1	-2.2	-2.1	-2.1	-3.0
<b>Consumer Discretionary</b>	<b>0.8</b>	<b>-0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>11.2</b>
Automobiles & Parts	0.3	9.7	7.4	7.4	49.6
Media	2.1	-1.7	-2.5	-2.5	3.1
Retailers	1.7	-2.4	-0.2	-0.2	13.0
Travel & Leisure	-1.0	-2.6	-3.4	-3.4	-14.5
Consumer Products & Services	0.3	-1.1	-1.6	-1.6	12.0
<b>Consumer Staples</b>	<b>-1.3</b>	<b>-4.0</b>	<b>-4.1</b>	<b>-4.1</b>	<b>-11.9</b>
Food, Beverage & Tobacco	-1.1	-4.5	-4.7	-4.7	-14.2
Personal Care, Drug & Grocery Stores	-1.7	-3.1	-3.2	-3.2	-7.6
<b>Healthcare</b>	<b>0.1</b>	<b>-0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>2.8</b>
<b>Financials</b>	<b>-2.0</b>	<b>0.8</b>	<b>0.0</b>	<b>0.0</b>	<b>-14.1</b>
Banks	-2.9	0.8	0.3	0.3	-18.3
Financial Services	-0.9	1.9	0.6	0.6	-6.4
Insurance	-1.2	-0.3	-1.4	-1.4	-14.7
<b>Real Estate</b>	<b>0.7</b>	<b>-2.1</b>	<b>-2.6</b>	<b>-2.6</b>	<b>-19.4</b>
<b>Technology</b>	<b>3.5</b>	<b>2.8</b>	<b>3.2</b>	<b>3.2</b>	<b>28.8</b>
<b>Telecommunications</b>	<b>-0.3</b>	<b>-2.8</b>	<b>-1.8</b>	<b>-1.8</b>	<b>-6.6</b>
<b>Utilities</b>	<b>-1.3</b>	<b>-0.5</b>	<b>-2.4</b>	<b>-2.4</b>	<b>-13.4</b>

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



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

Data as at 21/01/2021	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
<b>Growth</b>	1.2	5.6	3.9	3.9	31.7	-0.3	1.1	1.2	1.2	11.5
<b>Low volatility</b>	0.4	0.3	-1.1	-1.1	11.8	-1.1	-3.9	-3.6	-3.6	-5.4
<b>Price momentum</b>	1.5	5.1	4.3	4.3	21.0	0.0	0.6	1.6	1.6	2.4
<b>Quality</b>	0.0	4.5	3.5	3.5	16.1	-1.5	0.1	0.8	0.8	-1.7
<b>Size</b>	-1.1	8.9	6.4	6.4	12.3	-2.6	4.3	3.7	3.7	-5.0
<b>Value</b>	-2.4	9.9	7.5	7.5	10.7	-3.9	5.2	4.7	4.7	-6.3
<b>Market</b>	1.5	4.4	2.7	2.7	18.2					
<b>Market - Equal-Weighted</b>	-0.2	5.1	3.4	3.4	14.6					

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

Data as at 21/01/2021	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
<b>Growth</b>	0.1	5.3	1.8	1.8	21.1	0.4	-0.9	-1.2	-1.2	21.5
<b>Low volatility</b>	-0.2	4.5	1.8	1.8	0.3	0.1	-1.7	-1.2	-1.2	0.6
<b>Price momentum</b>	1.3	7.0	4.0	4.0	17.2	1.5	0.6	0.9	0.9	17.6
<b>Quality</b>	0.1	7.9	4.1	4.1	8.5	0.4	1.4	1.0	1.0	8.9
<b>Size</b>	0.5	8.7	4.0	4.0	7.0	0.8	2.3	0.9	0.9	7.4
<b>Value</b>	-1.8	7.4	3.2	3.2	-4.9	-1.6	1.0	0.2	0.2	-4.6
<b>Market</b>	-0.2	6.3	3.0	3.0	-0.4					
<b>Market - Equal-Weighted</b>	-0.1	6.8	3.1	3.1	3.7					

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 6 – Model asset allocation

	Neutral	Policy Range		Allocation	Position vs Neutral
<b>Cash Equivalents</b>	<b>5%</b>	<b>0-10%</b>		<b>10%</b>	
Cash	2.5%			10%	
Gold	2.5%			0%	
<b>Bonds</b>	<b>40%</b>	<b>10-70%</b>	↓	<b>20%</b>	
Government	25%	10-40%		15%	
US	8%		↓	2%	
Europe ex-UK (Eurozone)	7%		↑	4%	
UK	1%		↑	2%	
Japan	7%		↓	3%	
Emerging Markets	2%			4%	
China**	0.2%			1%	
Corporate IG	10%	0-20%	↓	0%	
US Dollar	5%		↓	0%	
Euro	2%		↓	0%	
Sterling	1%		↓	0%	
Japanese Yen	1%		↓	0%	
Emerging Markets	1%		↓	0%	
China**	0.1%			0%	
Corporate HY	5%	0-10%	↓	5%	
US Dollar	4%		↓	4%	
Euro	1%		↓	1%	
<b>Equities</b>	<b>45%</b>	<b>20-60%</b>	↑	<b>50%</b>	
US	25%		↑	18%	
Europe ex-UK	7%		↑	12%	
UK	4%		↑	6%	
Japan	4%			6%	
Emerging Markets	5%		↑	8%	
China**	2%			3%	
<b>Real Estate</b>	<b>8%</b>	<b>0-16%</b>	↑	<b>16%</b>	
US	2%		↑	3%	
Europe ex-UK	2%		↑	4%	
UK	1%			3%	
Japan	2%		↓	3%	
Emerging Markets	1%		↑	3%	
<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	48%		↓	36%	
EUR	20%		↑	23%	
GBP	7%		↑	12%	
JPY	15%		↓	13%	
EM	9%		↑	15%	
<b>Total</b>	<b>100%</b>			<b>100%</b>	

Notes: 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 allocation for global sectors

	Neutral	Invesco	Preferred Region
<b>Energy</b>	<b>5.8%</b>	<b>Neutral</b>	<b>US</b>
<b>Basic Materials</b>	<b>4.3%</b>	<b>Underweight</b> ↓	<b>Europe</b>
Basic Resources	2.4%	Underweight	Europe
Chemicals	1.9%	Neutral ↓	US
<b>Industrials</b>	<b>12.8%</b>	<b>Neutral</b> ↓	<b>US</b>
Construction & Materials	1.6%	Neutral	Europe
Industrial Goods & Services	11.3%	Neutral ↓	US
<b>Consumer Discretionary</b>	<b>16.5%</b>	<b>Overweight</b> ↑	<b>Japan</b>
Automobiles & Parts	2.7%	Underweight	Japan
Media	1.4%	Overweight ↑	US
Retailers	6.1%	Underweight ↓	EM
Travel & Leisure	2.1%	Overweight ↑	US
Consumer Products & Services	4.2%	Overweight ↑	Japan
<b>Consumer Staples</b>	<b>6.6%</b>	<b>Overweight</b>	<b>Europe</b>
Food, Beverage & Tobacco	4.3%	Overweight	Europe
Personal Care, Drug & Grocery Stores	2.3%	Underweight	Europe
<b>Healthcare</b>	<b>10.3%</b>	<b>Underweight</b> ↓	<b>Europe</b>
<b>Financials</b>	<b>13.7%</b>	<b>Neutral</b>	<b>EM</b>
Banks	6.3%	Neutral	EM
Financial Services	4.1%	Overweight	US
Insurance	3.2%	Neutral ↑	Europe
<b>Real Estate</b>	<b>3.4%</b>	<b>Overweight</b>	<b>EM</b>
<b>Technology</b>	<b>19.0%</b>	<b>Overweight</b>	<b>US</b>
<b>Telecommunications</b>	<b>4.2%</b>	<b>Neutral</b>	<b>Europe</b>
<b>Utilities</b>	<b>3.4%</b>	<b>Neutral</b>	<b>Europe</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: 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.






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## Asset class descriptions and sources for Figure 2

Data sourced from Refinitiv Datastream unless stated otherwise

**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. The same data is used to construct historical comparisons (yields within historical ranges, say).

**Government bonds:** Historical and projected yields and returns are based on Bank of America Merrill Lynch government bond indices with historical ranges starting on 31st December 1985 for the Global, Europe ex-UK, UK and Japanese indices, 30th January 1978 for the US and 31<sup>st</sup> December 2004 for China. The emerging market yield and returns are based on the Barclays Bloomberg emerging markets sovereign US dollar bond index with the historical range starting on 28th February 2003. The same indices are used to construct historical comparisons (yields within historical ranges, say).

**Corporate investment grade (IG) bonds:** Bank of America Merrill Lynch investment grade corporate bond indices with historical ranges starting on 31st December 1996 for the Global, 31st January 1973 for the US dollar, 1st January 1996 for the euro, 31st December 1996 for the British pound, 6th September 2001 for the Japanese yen and 31<sup>st</sup> December 2004 for the Chinese yuan index. The emerging market yield and returns are based on the Barclays Bloomberg emerging markets corporate US dollar bond index with the historical range starting on 28th February 2003.

**Corporate high-yield (HY) bonds:** Bank of America Merrill Lynch High-Yield indices with historical ranges starting on 29th August 1986 for the US dollar, and 31st December 1997 for the Global and euro indices. The same indices are used to construct historical comparisons (yields within historical ranges, say).

**Equities:** We use MSCI benchmark indices to calculate projected returns and calculate long-term total returns with historical ranges starting on 31st December 1969 for the Global, US, Europe ex-UK, UK and Japanese indices, 31st December 1987 for the emerging markets index and 31<sup>st</sup> December 1992 for China. Equity index valuations (such as yields within historical ranges) are based on dividend yields using Datastream benchmark indices with historical ranges starting on 1st January 1973 for the Global, US, Europe ex-UK and Japanese indices, on 31st December 1969 for the UK index, 2nd January 1995 for the Emerging Markets index and 26<sup>th</sup> August 1991 for China. The same indices are used to construct historical comparisons (yields within historical ranges, say).

**Real estate:** We use FTSE EPRA/NAREIT indices with historical ranges starting on 29th December 1989 for the US, Europe ex-UK, UK and Japanese indices, 18th February 2005 for the Global index, and 31st October 2008 for the Emerging Markets index. The same indices are used to construct historical comparisons (yields within historical ranges, say).



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

**Sources:** we source data from Datastream unless otherwise indicated.

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

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

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

**Corporate investment grade (IG) bonds:** Bank of America Merrill Lynch 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:** 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




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