# Uncommon truths
## The peaking of Eurozone inflation

**Unusually, inflation in the Eurozone is well above that of the US. We believe that two important factors, dollar and European gas price strength, are already fading. Hence, we think Eurozone inflation may have peaked and expect it to fall below that of the US over the coming year or so.**

Before turning to the main topic of this document, it is worth examining the US employment report for November that provided a slight setback for markets. Despite weak ADP employment (+127k, reported a few days earlier), a big rise in layoffs (Challenger Job Cuts were up 417% yoy) and a falling ISM Employment index (48.4), non-farm payrolls increased by 263k (all data for November). Though there has been a slowdown in job gains (an average of 272k in the last three months versus 374k in the previous three), these are respectable gains.

However, there were conflicting messages within the overall report. The Household Survey (from where unemployment is calculated) suggested a second consecutive monthly decline in employment (-138k in November after -328k in October). The only reason that unemployment remained stable at 3.7% is that there was also a decline in the labour force (-186k). Whatever the true employment picture, it is troubling that average hourly earnings growth seems to be picking up again, with a 0.6% monthly gain in November (after 0.5% in October) and a 5.1% year-on-year (yoy) increase, up from 4.9%. This suggests that whatever happens to headline data, core inflation could prove stickier than we had hoped.

This said, it is generally presumed that inflation has peaked in the US and that it will take longer for that to happen in Europe. However, data released in the last week gives hope that Eurozone inflation is now on a downward path. Most dramatically, it was reported that Eurozone producer price index (PPI) inflation fell to 30.8% in October from 41.9% in September and a peak of 43.4% in August. Yes, 30.8% is an improvement!

When it comes to consumer price index (CPI) inflation, there were declines reported in Belgium (from 12.3% in October to 10.6% in November), Germany (from 10.4% to 10.0%), the Netherlands (from 16.8% to 11.2%) and Spain (from 7.3% to 6.8%, having peaked at 10.8% in July). As for the Eurozone as a whole, CPI inflation eased from 10.6% to 10.0%.

**Figure 1a** compares inflation in the Eurozone and the US. Inflation appears to have peaked first in the US (in June at 9.0%) but we can now hope that inflation in the Eurozone has passed its apex. Unusually, within the 26-year history shown in that chart, Eurozone inflation is now well above that of the US. Having been well below US inflation in December 2020 (-0.3% versus +1.3%), partly because of temporary cut in German VAT rates, Eurozone inflation has since climbed more rapidly and it finally exceeded that of the US in July of this year (10.6% in October versus 7.8%).

One factor that may have contributed to the increase in Eurozone inflation relative to the US is the strength of the dollar (or weakness of the euro) over the last 18 months. To the extent that goods imported into Europe are priced in US dollars (energy and other commodities, for example), dollar appreciation versus the euro should boost prices when converted to euros. **Figure 1b** points to a correlation between EURUSD and the difference between US and Eurozone inflation.

## Figure 1a – Eurozone and US CPI inflation (% yoy)



## Figure 1b – EURUSD and inflation differentials
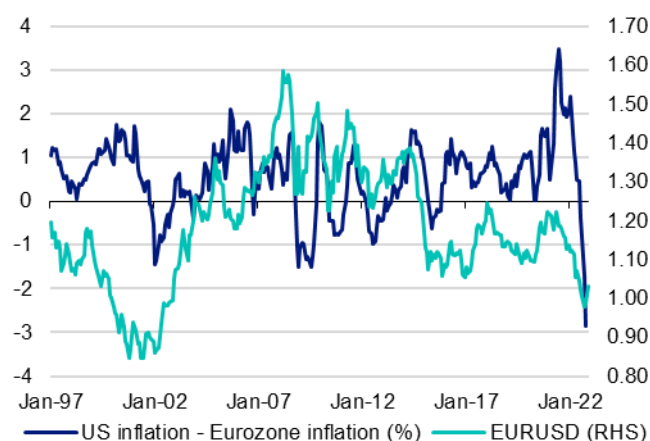


Notes: **Past performance is no guarantee of future results.** Figure 1a shows headline consumer price inflation from January 1997 to November 2022 (monthly data). Figure 1b is based on monthly data from January 1997 to November 2022 (as of 15 November 2022). "US inflation – Eurozone inflation" shows the difference between US and Eurozone headline consumer price inflation.
Source: Refinitiv Datastream and Invesco.

However, we believe the dollar has now peaked (as hinted in the chart) and we expect a reversal of that currency effect during 2023. If we are right, the gap between Eurozone and US inflation could decline.

Another reason why inflation is higher in the Eurozone is shown in **Figure 2a**. The price of gas in Europe started to climb rapidly in the second half of 2021 as Russia limited supply (under the guise of maintenance work). It then surged in mid-2022 as Russia invaded Ukraine and limited the flow of gas once again to Europe. Energy had a CPI weighting of 11% in the Eurozone in 2021 (7% in the US) and gas accounted for around 25% of primary energy usage in 2021 (32% in the US). Hence, gas may have had a 2%-3% weighting within Eurozone CPI (similar in the US), assuming the weighting of gas for households was the same as for the economy as a whole.

So, the five-fold increase in wholesale gas prices in the Eurozone in the year to mid-2022 (versus two-fold in the US), could easily explain the inflation differential. The energy components of the respective CPI's give corroborating evidence. The energy component of US CPI was rising faster than its Eurozone counterpart until the start of 2022. In June 2021, the yoy gains were 26% in the US and 13% in the Eurozone but by January 2022 Eurozone energy inflation was higher (29% versus 27%). By October 2022, the gap had grown to 42% in the Eurozone versus 18% in the US.

Importantly, energy component inflation in the US appears to be on a downward path, having peaked at

42% in June. Based on the information shown in **Figure 2a**, we suspect that Eurozone inflation will also decline over the coming months and quarters, especially given that oil prices have also been falling and that we expect the dollar to weaken.

Even better, if European gas prices eventually decline towards US levels over the coming year or so (as Europe transitions away from reliance on gas from Russia), then we believe Eurozone headline inflation could fall below that of the US during 2023/24 (after all, core inflation is lower in the Eurozone).

On the topic of Europe's reliance on Russian gas, it is impressive to what extent gas reserves have been filled in most countries. **Figure 2b** shows how gas reserves compared in November to the norms for that month since 2011. Use of storage capacity is close to the historical November peak for most countries, with the notable exceptions of Hungary and the Netherlands (Ukraine is obviously a case apart). That is not to say there cannot be shortages (if Russia cuts supply and the winter is cold) but most countries have put themselves in the best possible position (note that the numbers in parenthesis show current storage levels as days of 2021 consumption, assuming usage is spread evenly through the year, which it is not).
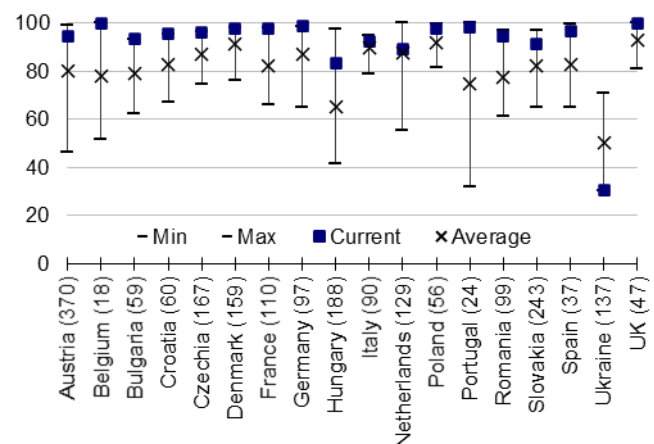
In conclusion, we think that Eurozone inflation may have peaked and believe it could fall below that of the US over the next year or so under the pressure of a weakening dollar and falling energy prices.

*Unless stated otherwise, all data as of 2 December 2022.*

**Figure 2a – Natural gas prices (USD per MWh)**
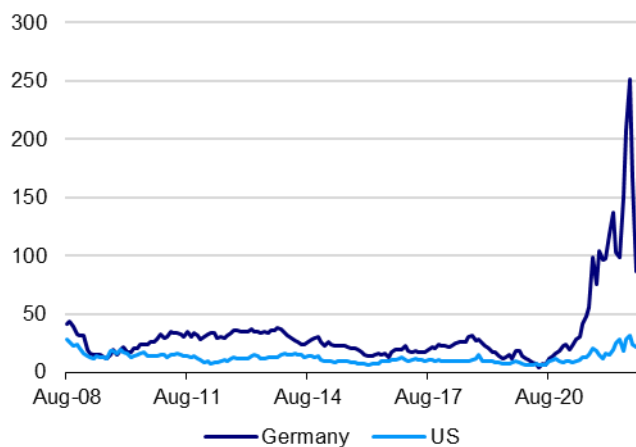


**Figure 2b – Gas storage in Nov 22 (% of capacity)**



Notes: **Past performance is no guarantee of future results.** Figure 2a is based on monthly data from August 2008 to November 2022 (as of 30 November 2022). Figure 2b is based on monthly data from January 2011 to November 2022 (as of 28 November 2022). "Current" shows the gas storage level in November 2022 as a percentage of storage capacity as reported by Gas Infrastructure Europe. "Min", "Max" and "Average" show the minimum, maximum and average November levels from November 2011 to November 2022. The numbers in parenthesis show current gas storage as the number of days' worth of gas consumption, based on 2021 consumption and assuming that consumption is spread equally throughout the year (which it is not). Gas consumption data is taken from the 2022 bp Statistical Review of World Energy. Source: bp, Bloomberg, Gas Infrastructure Europe, Refinitiv Datastream and Invesco.

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

| Data as at 02/12/2022 | Index | Current Level/RY | Total Return (USD, %) | | | | | Total Return (Local Currency, %) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1w | 1m | QTD | YTD | 12m | 1w | 1m | QTD | YTD | 12m |
| **Equities** | | | | | | | | | | | | |
| World | MSCI | 634 | 1.4 | 9.8 | 14.8 | -14.3 | -11.3 | 1.0 | 7.8 | 12.6 | -11.5 | -8.5 |
| Emerging Markets | MSCI | 974 | 3.5 | 11.8 | 11.5 | -18.5 | -18.6 | 2.7 | 8.5 | 8.4 | -13.8 | -13.9 |
| China | MSCI | 61 | 8.7 | 20.9 | 8.9 | -25.0 | -27.6 | 8.0 | 19.3 | 8.0 | -23.7 | -26.4 |
| US | MSCI | 3866 | 1.2 | 8.5 | 13.6 | -14.6 | -11.3 | 1.2 | 8.5 | 13.6 | -14.6 | -11.3 |
| Europe | MSCI | 1774 | 1.3 | 13.9 | 22.2 | -12.5 | -7.8 | 0.6 | 7.3 | 14.1 | -4.9 | -0.6 |
| Europe ex-UK | MSCI | 2165 | 1.2 | 14.2 | 22.9 | -15.4 | -10.9 | 0.6 | 7.6 | 15.5 | -8.7 | -4.4 |
| UK | MSCI | 1105 | 1.9 | 13.0 | 20.2 | -2.2 | 3.1 | 0.9 | 6.1 | 9.8 | 8.4 | 12.3 |
| Japan | MSCI | 3181 | -0.3 | 9.4 | 14.6 | -15.3 | -14.1 | -3.0 | 0.8 | 7.3 | -0.4 | 3.0 |
| **Government Bonds** | | | | | | | | | | | | |
| World | BofA-ML | 2.72 | 1.7 | 6.6 | 6.0 | -16.6 | -17.4 | 0.9 | 2.8 | 2.2 | -10.8 | -11.6 |
| Emerging Markets | BBloom | 7.69 | 3.4 | 13.2 | 14.1 | -21.6 | -20.9 | 3.4 | 13.2 | 14.1 | -21.6 | -20.9 |
| China | BofA-ML | 2.73 | 1.3 | 2.3 | 0.3 | -6.9 | -6.2 | -0.4 | -1.1 | -0.4 | 2.9 | 3.6 |
| US (10y) | Datastream | 3.50 | 1.7 | 4.6 | 2.7 | -15.0 | -15.0 | 1.7 | 4.6 | 2.7 | -15.0 | -15.0 |
| Europe | Bofa-ML | 2.46 | 1.5 | 9.2 | 10.4 | -20.9 | -21.8 | 0.9 | 2.9 | 3.3 | -14.1 | -15.5 |
| Europe ex-UK (EMU, 10y) | Datastream | 1.86 | 1.7 | 8.9 | 9.7 | -22.4 | -23.5 | 1.1 | 2.7 | 2.6 | -15.8 | -17.3 |
| UK (10y) | Datastream | 3.10 | 1.2 | 9.3 | 19.0 | -23.5 | -23.2 | 0.2 | 2.6 | 8.7 | -15.1 | -16.3 |
| Japan (10y) | Datastream | 0.25 | 2.8 | 8.6 | 6.9 | -15.8 | -17.4 | 0.0 | 0.0 | 0.0 | -0.9 | -1.0 |
| **IG Corporate Bonds** | | | | | | | | | | | | |
| Global | BofA-ML | 4.83 | 1.6 | 7.1 | 7.0 | -15.5 | -15.4 | 1.4 | 5.2 | 4.8 | -13.0 | -13.2 |
| Emerging Markets | BBloom | 8.06 | 3.8 | 13.8 | 8.9 | -23.0 | -22.9 | 3.8 | 13.8 | 8.9 | -23.0 | -22.9 |
| China | BofA-ML | 3.46 | 1.5 | 2.5 | 0.2 | -7.1 | -6.6 | -0.2 | -1.0 | -0.5 | 2.6 | 3.1 |
| US | BofA-ML | 5.24 | 1.7 | 6.3 | 5.4 | -13.9 | -13.9 | 1.7 | 6.3 | 5.4 | -13.9 | -13.9 |
| Europe | BofA-ML | 3.70 | 1.6 | 9.5 | 10.8 | -18.9 | -18.9 | 0.9 | 3.2 | 3.7 | -12.0 | -12.4 |
| UK | BofA-ML | 5.41 | 0.6 | 9.9 | 19.6 | -26.0 | -25.7 | -0.4 | 3.2 | 9.3 | -18.0 | -19.1 |
| Japan | BofA-ML | 0.76 | 2.7 | 8.4 | 6.6 | -16.4 | -18.1 | -0.1 | -0.2 | -0.3 | -1.7 | -1.8 |
| **HY Corporate Bonds** | | | | | | | | | | | | |
| Global | BofA-ML | 8.62 | 1.2 | 5.3 | 7.6 | -12.7 | -11.6 | 1.0 | 4.0 | 6.0 | -11.0 | -10.0 |
| US | BofA-ML | 8.49 | 0.9 | 2.8 | 5.6 | -9.8 | -8.4 | 0.9 | 2.8 | 5.6 | -9.8 | -8.4 |
| Europe | BofA-ML | 7.15 | 1.0 | 10.2 | 13.2 | -17.5 | -16.7 | 0.3 | 3.9 | 5.9 | -10.5 | -10.0 |
| **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 | 1603 | 0.4 | 9.2 | 10.2 | -21.6 | -17.6 | -0.2 | 2.9 | 3.1 | -14.9 | -11.0 |
| Emerging Markets | FTSE | 1341 | 1.0 | 19.1 | 10.6 | -13.6 | -13.6 | 0.3 | 12.2 | 3.5 | -6.2 | -6.7 |
| US | FTSE | 2983 | 0.7 | 8.4 | 10.1 | -21.2 | -15.4 | 0.7 | 8.4 | 10.1 | -21.2 | -15.4 |
| Europe ex-UK | FTSE | 2184 | -0.9 | 10.6 | 15.8 | -40.2 | -39.7 | -1.5 | 4.3 | 8.3 | -35.0 | -34.8 |
| UK | FTSE | 767 | -0.3 | 9.3 | 17.4 | -36.9 | -33.8 | -1.3 | 2.6 | 7.3 | -30.1 | -27.8 |
| Japan | FTSE | 2202 | -0.3 | 6.9 | 6.3 | -13.2 | -13.1 | -3.0 | -1.6 | -0.5 | 2.1 | 4.3 |
| **Commodities** | | | | | | | | | | | | |
| All | GSCI | 3491 | 1.2 | -5.1 | 3.3 | 25.8 | 34.9 | - | - | - | - | - |
| Energy | GSCI | 616 | 1.1 | -9.3 | 3.2 | 43.6 | 59.6 | - | - | - | - | - |
| Industrial Metals | GSCI | 1712 | 7.2 | 12.6 | 16.0 | -5.7 | -0.8 | - | - | - | - | - |
| Precious Metals | GSCI | 2047 | 2.9 | 10.0 | 9.3 | -1.9 | 1.9 | - | - | - | - | - |
| Agricultural Goods | GSCI | 535 | -2.1 | -4.6 | -5.7 | 7.3 | 8.6 | - | - | - | - | - |
| **Currencies (vs USD)*** | | | | | | | | | | | | |
| EUR | | 1.05 | 1.4 | 7.3 | 7.5 | -7.3 | -6.7 | - | - | - | - | - |
| JPY | | 134.32 | 3.6 | 10.1 | 7.8 | -14.3 | -15.7 | - | - | - | - | - |
| GBP | | 1.22 | 1.0 | 6.6 | 9.4 | -9.8 | -8.2 | - | - | - | - | - |
| CHF | | 1.07 | 0.9 | 7.1 | 5.3 | -2.6 | -1.8 | - | - | - | - | - |
| CNY | | 7.02 | 2.1 | 3.9 | 1.4 | -9.5 | -9.2 | - | - | - | - | - |

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

| Data as at 02/12/2022 | Global | | | | |
|---|---|---|---|---|---|
| | **1w** | **1m** | **QTD** | **YTD** | **12m** |
| **Energy** | **-1.7** | **-7.2** | **-3.2** | **43.2** | **43.2** |
| **Basic Materials** | **1.0** | **5.2** | **5.6** | **11.2** | **11.2** |
| Basic Resources | 2.7 | 8.6 | 8.7 | 18.9 | 18.9 |
| Chemicals | -1.2 | 0.8 | 1.6 | 2.1 | 2.1 |
| **Industrials** | **-0.4** | **1.5** | **5.5** | **1.2** | **1.2** |
| Construction & Materials | -0.6 | 1.6 | 2.1 | -4.1 | -4.1 |
| Industrial Goods & Services | -0.4 | 1.4 | 5.9 | 2.0 | 2.0 |
| **Consumer Discretionary** | **1.2** | **0.4** | **-3.5** | **-12.0** | **-12.0** |
| Automobiles & Parts | 1.2 | -5.8 | -12.7 | -20.5 | -20.5 |
| Media | 1.6 | -0.9 | 1.1 | -20.2 | -20.2 |
| Retailers | 0.4 | 0.4 | -7.4 | -12.0 | -12.0 |
| Travel & Leisure | 1.9 | 1.6 | 4.2 | 3.4 | 3.4 |
| Consumer Products & Services | 1.7 | 5.3 | 4.5 | -9.8 | -9.8 |
| **Consumer Staples** | **0.8** | **0.3** | **0.0** | **13.0** | **13.0** |
| Food, Beverage & Tobacco | 0.8 | -0.3 | -0.3 | 15.2 | 15.2 |
| Personal Care, Drug & Grocery Stores | 0.7 | 1.5 | 0.7 | 8.9 | 8.9 |
| **Healthcare** | **0.6** | **-1.4** | **1.1** | **6.5** | **6.5** |
| **Financials** | **-1.1** | **-1.0** | **1.4** | **7.7** | **7.7** |
| Banks | -1.7 | -2.6 | -0.5 | 8.8 | 8.8 |
| Financial Services | -1.0 | 0.0 | 2.3 | 1.4 | 1.4 |
| Insurance | 0.0 | 1.2 | 4.8 | 16.7 | 16.7 |
| **Real Estate** | **-0.5** | **0.9** | **-4.1** | **-8.9** | **-8.9** |
| **Technology** | **0.8** | **3.8** | **-1.0** | **-18.4** | **-18.4** |
| **Telecommunications** | **-0.9** | **-3.0** | **-1.4** | **2.1** | **2.1** |
| **Utilities** | **-1.2** | **-2.7** | **-3.0** | **13.8** | **13.8** |

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 02/12/2022 | Absolute | | | | | Relative to Market | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1w | 1m | QTD | YTD | 12m | 1w | 1m | QTD | YTD | 12m |
| **Growth** | 3.9 | 14.0 | 17.7 | -16.6 | -12.6 | 2.6 | 5.1 | 3.3 | -3.8 | -3.3 |
| **Low volatility** | 1.6 | 7.1 | 15.5 | 1.9 | 9.6 | 0.4 | -1.4 | 1.3 | 17.5 | 21.3 |
| **Price momentum** | 0.6 | 5.0 | 17.3 | -2.0 | 0.5 | -0.6 | -3.3 | 2.9 | 13.0 | 11.2 |
| **Quality** | 1.0 | 11.1 | 20.7 | -6.5 | -1.2 | -0.2 | 2.4 | 5.9 | 7.8 | 9.3 |
| **Size** | 1.1 | 10.7 | 17.3 | -4.9 | 1.1 | -0.1 | 2.0 | 2.9 | 9.7 | 11.9 |
| **Value** | 0.1 | 7.9 | 17.1 | -1.0 | 3.5 | -1.1 | -0.6 | 2.8 | 14.1 | 14.5 |
| **Market** | 1.2 | 8.5 | 13.9 | -13.3 | -9.6 | | | | | |
| **Market - Equal-Weighted** | 1.1 | 9.1 | 17.2 | -7.0 | -2.3 | | | | | |

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 02/12/2022 | Absolute | | | | | Relative to Market | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1w | 1m | QTD | YTD | 12m | 1w | 1m | QTD | YTD | 12m |
| **Growth** | 1.8 | 12.0 | 19.4 | -26.6 | -23.5 | 1.2 | 4.3 | 4.2 | -21.7 | -22.1 |
| **Low volatility** | 0.2 | 5.3 | 10.0 | -4.8 | -0.4 | -0.4 | -2.0 | -4.0 | 1.6 | 1.4 |
| **Price momentum** | -0.1 | 4.3 | 10.6 | -20.9 | -17.4 | -0.8 | -2.9 | -3.5 | -15.6 | -15.9 |
| **Quality** | 0.1 | 8.9 | 18.2 | -13.9 | -10.1 | -0.5 | 1.4 | 3.1 | -8.1 | -8.5 |
| **Size** | 0.4 | 9.8 | 20.8 | -18.9 | -15.6 | -0.2 | 2.2 | 5.4 | -13.4 | -14.1 |
| **Value** | -0.5 | 8.5 | 20.0 | -7.3 | -3.6 | -1.1 | 1.0 | 4.7 | -1.1 | -1.9 |
| **Market** | 0.6 | 7.4 | 14.6 | -6.3 | -1.8 | | | | | |
| **Market - Equal-Weighted** | 0.3 | 8.2 | 16.1 | -15.1 | -11.4 | | | | | |

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 |
|---|---|---|---|---|---|
| **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 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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