

The Big Picture

Global Asset Allocation 2023 Q2

Quarterly update from Invesco's Global Market Strategy Office

19 March 2023



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Global Asset Allocation 2023 Q2

Our economic cycle analysis suggests we are in a contraction regime, which pushes us to a more defensive stance (reinforced by ongoing problems among banks). We believe cash now offers relatively attractive rates, while bringing diversification. Within our Model Asset Allocation we boost cash to the Maximum, while reducing gold to Zero, equities to further Underweight and real estate (REITs) to Neutral. The relatively conservative stance is balanced by having a regional bias towards emerging market (EM) assets.

Model asset allocation

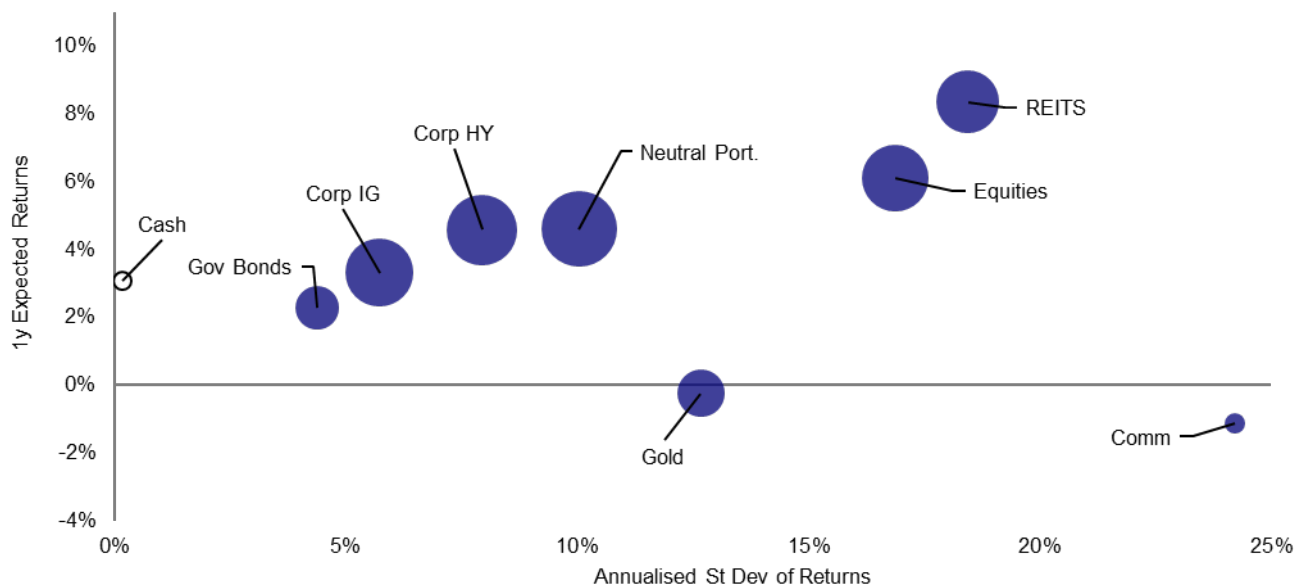
In our view:

- Cash rates are higher and offer diversification. We increase to the Maximum.
- Corporate investment-grade (IG) yields attractive but spreads may widen further. We remain Overweight.
- Corporate high-yield (HY) attractive despite risk of wider spreads/higher defaults. We remain Overweight.
- Government debt outlook dimmed by the recent fall in yields. We remain Neutral.
- Real estate (REITs) offers the best returns but with risk. We reduce to Neutral.
- Equities are handicapped by economic slowdown and bank sector risks. We go further Underweight.
- Gold has been strong and now appears expensive. We reduce to zero.
- Commodities are expensive and cyclical. We remain at zero.
- Regionally, we favour EM assets.

Our best-in-class assets (based on 12m projected returns)

- EM government bonds
- US IG
- Chinese equities
- GBP cash

Figure 1 – Projected 1-year returns for global assets and neutral portfolio



Based on annualised local currency returns. Returns are projected but standard deviation of returns is based on 5-year historical data. Size of bubbles is in proportion to average pairwise correlation with other assets. Cash is an equally weighted mix of USD, EUR, GBP and JPY. Neutral portfolio weights shown in Figure 3. As of 13 March 2023. **There is no guarantee that these views will come to pass.** See Appendices for definitions, methodology and disclaimers. Source: BAML, MSCI, GSCI, FTSE, Refinitiv Datastream and Invesco

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We add to cash and reduce gold, equities and real estate (REITs)

Summary and conclusions: contraction phase => more cash, less risk

Our economic cycle analysis suggests we are in a contraction phase, pushing us to be more defensive (reinforced by bank sector woes). We believe cash now offers relatively attractive rates, while bringing diversification. Within our Model Asset Allocation we boost cash to the Maximum, while reducing gold to Zero, equities to further Underweight and real estate (REITs) to Neutral (see **Figure 2**). The relatively conservative stance is balanced by having a regional bias towards emerging market (EM) assets.

Events dear boy, events

It's that time of year: in 2020 we had the pandemic and last year it was the invasion of Ukraine. This year it is bank failures/crises that have necessitated multiple rewrites and repricings of this document. Even before these events, we were preparing for a more defensive stance based on our belief that we are back in the contraction phase of the cycle, which has historically favoured defensive assets.

Uncertainty adds to the desire to be defensive

We don't know if recent bank collapses/crises are isolated incidents but it is interesting that they are all coming at once, after a period of calm (see the section called "Risk #1: Banking crisis?"). We think there is a common theme (lax monetary policy that encouraged risk taking and the unintended consequences of a rapid reversal of financial conditions) and, as such, we suspect this may not be over. If we believed there would be no more "accidents", we may be willing to add risk to the Model Asset Allocation. We don't, and conclude that the uncertainty further justifies our defensive approach.

Underlying assumptions

Underpinning our projections for the next 12 months are the following assumptions:

- Global GDP growth continues to slide, with China an obvious exception
- Global inflation will fall but remain above many central bank targets
- Major Western central banks are approaching the end of their tightening cycles
- Long-term government yields will be mixed; yield curves steepen during 2023 H2
- Credit spreads widen and defaults rise
- Equity and REIT dividend growth moderates and yields fall in some markets
- Commodities struggle as the global economy slows (except agricultural products)
- USD weakens as Fed tightening ends

Western central banks may tighten a bit more, then ease

The full set of assumptions is shown in **Appendix 4**, while the resultant market targets are in **Figure 35** and returns for global assets are in **Figure 2**. Perhaps the most important feature of the forecasts is that we expect Fed rates to be lower in 12 months (even if they rise in the meantime). We suspect that European policy rates will be little changed in 12 months (after rising in the interim) and that major Asian policy rates could be marginally higher. We expect further inversion of yield curves in the short term (as policy rates rise and long yields fall) but believe yield curves will be slightly steeper in 12 months. After some downward pressure in the near term, we suspect that 10-year yields will be little changed in 12 months (but with noticeable gains in the eurozone and Japan).

We expect higher returns on riskier assets but not enough to favour them

Despite our concerns, the 12-month projections shown in **Figures 1** and **2** suggest that risk will be rewarded (except for gold and commodities). However, the rewards are often insufficient to compensate for the extra risk, judging by the optimisation results shown in **Figure 37** (cash, investment grade credit (IG) and high yield credit (HY) are favoured).

Cash: the great diversifier that now offers return

In determining our Model Asset Allocation, we follow the optimisation results in direction, if not magnitude (we are wary of having too much exposure to HY at this moment). We increase cash and reduce gold, equities and real estate (REITs). After a further rise in policy rates and the recent surge in gold, we revert to using **cash** as our diversifier of choice (see **Figure 1**), rather than gold. Hence, we are boosting the cash allocation to the maximum allowed 10% from the previous 0% (versus a Neutral 2.5%). Further support for cash comes from doubts about correlation regimes and what that means for portfolio risk (see the later section called "Risk #2: Lack of diversification opportunities").

Gold reduced to Zero after a strong run

We moved to an Overweight allocation to **gold** in November and that has served us well. With bank failures in the background and bond yields falling, gold has obvious attractions. However, our models suggest that it is now expensive and we doubt that it can maintain much higher levels. We therefore revert to a Zero allocation.

We go further Underweight equities	Equities had been doing well until recent weeks. However, we suspect that profits will fall and are seeing signs of that in the US (see Figure 27). Our projections suggest there are better alternatives among risky assets (such as HY and real estate). We are slightly reducing the allocation to equities to 34% from the previous 37% (versus the Neutral 45%). Figure 3 shows that we reduce the allocations in the US (to further Underweight) and Japan (to Neutral), while boosting UK (Overweight) and Europe ex-UK (Underweight). We continue to favour EM equities and, in particular, those of China.
Real estate to generate the best returns but reduced to Neutral	Our return projections suggest real estate will be the most remunerative asset over the next 12 months but that comes with volatility. Fundamentals appear to be deteriorating again (based on the decline in REIT dividends) and the optimisation outcomes are mixed. We reduce to the Neutral 8%, by scaling back allocations to Japan and EM.
Government bonds stay at Neutral	We maintain the Neutral allocation to government bonds . Long yields had risen to interesting levels, in our opinion, but the onset of banking sector problems has driven them lower and removed the opportunity (we prefer a combination of cash and credit). We prefer duration in the near term but expect that preference to change as curves start to steepen into the latter part of our 12-month forecast period. We expect the lowest returns in the eurozone and Japan (and the best in EM). We go further Overweight in the US and further Underweight in Japan.
IG and HY preferred to government bonds	We make no changes to the allocations to credit categories and continue to be Overweight both IG and HY . This is despite believing that credit spreads versus government bonds will widen and that default rates will rise (as economies slow). Nevertheless, we find that current yields offer a reasonable cushion against risk.
We continue to avoid commodities	Commodities have recently generated losses and we expect weakening economies and normalising European natural gas markets to maintain downward pressure on prices. We maintain a zero allocation to the asset class.
EM assets preferred, partly as a hedge	From a regional perspective, we continue to prefer EM assets. This is partly because we find them to be relatively cheap (which boosts long-term potential, in our opinion) but also as a hedge in case we are wrong about being in the contraction phase of the cycle.
We expect dollar weakness and yen strength	From a currency perspective, we think the US dollar is expensive and that the Japanese yen is cheap. Given our belief that Fed tightening is coming to an end, we expect the dollar to weaken. If the BOJ starts to normalise, we think the yen could be very strong.
Two alternative bearish scenarios	Finally, we consider two bearish alternatives to our base case that central banks will soon end tightening (see "Risk #3: Alternative scenarios - persistent inflation and a bank crisis"). In a scenario where inflation stays higher for longer, we would expect more aggressive tightening and would favour defensive assets even more than we do. On the other hand, a scenario in which central banks ease aggressively because of bank sector problems would also favour defensive assets, in our opinion.

Figure 2 – Expected total returns (annualised, local currency) and Model Asset Allocation*

	Expected 1-year Total Return	Neutral Portfolio	Policy Range	Model Asset Allocation	Position Vs Neutral
Cash & Gold	1.4%	5%	0-10%	↑ 10%	Overweight
Cash	3.1%	2.5%	0-10%	↑ 10%	Overweight
Gold	-0.3%	2.5%	0-10%	↓ 0%	Underweight
Government Bonds	2.3%	25%	10-40%	25%	Neutral
Corporate IG	3.3%	10%	0-20%	15%	Overweight
Corporate HY	4.6%	5%	0-10%	8%	Overweight
Equities	6.1%	45%	25-65%	↓ 34%	Underweight
Real Estate (REITS)	8.3%	8%	0-16%	↓ 8%	Neutral
Commodities	-1.1%	2%	0-4%	0%	Underweight

*This is a theoretical portfolio and is for illustrative purposes only. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy. Arrows show direction of change in allocations. See appendices for definitions, methodology and disclaimers. **There is no guarantee that these views will come to pass.** Source: Invesco Global Market Strategy Office

Model asset allocation*

Figure 3 – Model asset allocation (19/03/2023)

	Neutral	Policy Range		Allocation	Position vs Neutral
Cash Equivalents	5%	0-10%		10%	
Cash	2.5%		↑	10%	
Gold	2.5%		↓	0%	
Bonds	40%	10-70%		48%	
Government	25%	10-40%		25%	
US	8%		↑	12%	
Europe ex-UK (Eurozone)	7%			5%	
UK	1%			2%	
Japan	7%		↓	2%	
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%		↓	6%	
Euro	1%		↑	2%	
Equities	45%	25-65%	↓	34%	
US	25%		↓	12%	
Europe ex-UK	7%		↑	5%	
UK	4%		↑	5%	
Japan	4%		↓	4%	
Emerging Markets	5%			8%	
China**	2%			4%	
Real Estate	8%	0-16%	↓	8%	
US	2%			3%	
Europe ex-UK	2%			1%	
UK	1%			2%	
Japan	2%		↓	1%	
Emerging Markets	1%		↓	1%	
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%		↓	45%	
EUR	20%		↑	18%	
GBP	7%		↑	14%	
JPY	15%		↓	10%	
EM	9%		↓	15%	
Total	100%			100%	

*This is a theoretical portfolio and is for illustrative purposes only. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy. **China is included in Emerging Markets allocations. Cash is an equally weighted mix of USD, EUR, GBP and JPY. Currency exposure calculations exclude cash. Arrows show direction of change in allocations. See appendices for definitions, methodology and disclaimers. Source: Invesco Global Market Strategy Office

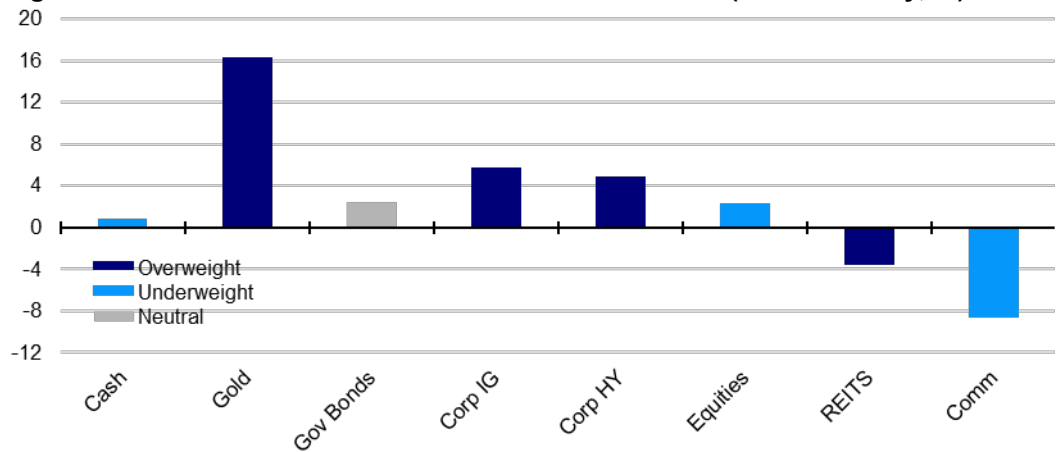
Since we last wrote

In the last Big Picture document we reduced cash to zero and boosted gold to Overweight within our Model Asset Allocation. We also reduced government bonds to Neutral and increased high yield credit (HY) to Overweight (see [Big Picture 2023 Outlook](#) published on 20 November 2022). From a regional perspective we favoured US and EM assets. **Figure 4** shows how global assets have performed since then (as of 13 March 2023). Full regional detail is shown in **Appendix 2**.

Most assets delivered positive returns but storm clouds are brewing

Most assets have generated positive returns in both USD and local currency, though the upward trend was interrupted, first by higher-than-expected inflation (reported during February 2023) and then by banking sector problems (see “Risk #1: Banking crisis?” at the end of this document). The one big exception was commodities, though Appendix 2 shows the problem there was really energy. Returns on emerging market assets were strong (especially Chinese equities), which rewarded our Overweight stance on EM assets. However, the Overweighting of US assets produced mixed results, especially given the weakness of the US dollar, though we were Underweight US equities.

Figure 4 – Global asset class total returns since 31/10/22 (local currency, %) *

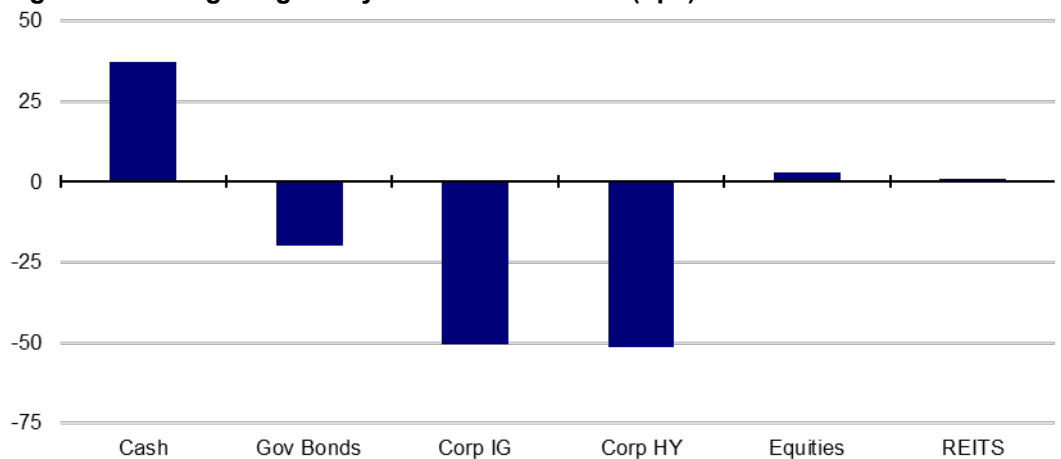


Past performance is no guarantee of future results. *31/10/22 to 13/03/23. Colours represent model allocations during this period. See appendices for definitions and disclaimers. Source: Refinitiv Datastream and Invesco

Cash rates up but bond yields are down

The positive performance of yield bearing assets was largely the result of a decrease in yields, especially on HY and IG corporate bonds (see **Figure 5**). Though government yields fell, it would appear there was a narrowing of credit spreads. The question now is whether the rise in cash rates relative to the yield on other assets (and government yields relative to credit yields) has been enough to justify a more defensive stance.

Figure 5 – Change in global yields since 31/10/23 (bps)



Past performance is no guarantee of future results. From 31/10/22 to 13/03/23. See appendices for definitions and disclaimers. Source: Refinitiv Datastream and Invesco

Invesco's 10-year CMAs have been published

Taking a step back: focusing on the next decade using Invesco's CMAs

Before considering projections for the next year, it may be instructive to use longer term return projections as a guide. Invesco Investment Solutions have just published their 10-year capital market assumptions. **Figure 6** shows their projected returns for global asset classes in a range of currency bases (their framework differs from ours, so we have had to adapt some of their categories – for instance, we use their US Treasury Short category to represent cash and precious metals is used for gold). A more detailed version showing regional projections is contained in **Appendix 3**.

Figure 6: Invesco 10-year capital market assumptions (global assets, % ann.)

	USD	EUR	GBP	CHF
Cash & Gold	5.1	3.8	4.9	2.9
Cash - US Treasury Short	4.2	2.9	4.0	1.9
Gold	6.0	4.7	5.8	3.8
Government Bonds	4.3	2.9	4.1	2.0
Corporate IG	5.0	3.6	4.7	2.7
Corporate HY - US HY	7.1	5.8	6.9	4.8
Equities	7.3	5.9	7.0	5.0
Real Estate (REITS)	6.5	5.1	6.3	4.2
Commodities	8.9	7.6	8.7	6.7

Note: Estimates as of 31 December 2022 and based on the 10-year capital market assumptions published by Invesco Investment Solutions in Long-Term Capital Market Assumptions (March 2023). The USD version of the CMAs is reproduced in Appendix 3. The above table uses the geometric expected return version for global asset classes ("gold" is based on the projections for precious metals and the "Cash & Gold" category shows the average of those two assets). These estimates reflect the views of Invesco Investment Solutions, the views of other investment teams at Invesco may differ from those presented here. **There is no guarantee that these views will come to pass.** Source: Invesco Investment Solutions

Commodities & HY dominate most 10-year CMA based optimal portfolios

Those projected returns are now higher than they were for cash and government bonds, though largely lower for HY and other riskier assets. Not surprisingly, the further we move along the risk spectrum, the higher the projected returns tend to be. The only hard-and-fast messages that come from the optimised solutions in **Figure 7** are the consistent maximum allocations to HY and commodities. Though results vary by currency base and depend on what is maximised (Sharpe Ratio or returns), there are some broad themes: for example, the combination of cash and gold is largely maximum allocated, while real estate (REITs) is largely underweighted. The messages are not clear for government bonds, IG or equities. Let's see how shortening the time horizon and allowing for the cycle impacts the conclusions.

Figure 7: Optimised global allocations based on Invesco's 10-year CMA projected returns

	Neutral Portfolio	Policy Range	Maximise Sharpe Ratio				Maximise Return			
			USD	EUR	GBP	CHF	USD	EUR	GBP	CHF
Cash & Gold	5%	0-10%	10%	10%	10%	10%	5%	10%	0%	10%
Cash	2.5%	0-10%	10%	10%	9%	0%	0%	0%	0%	0%
Gold	2.5%	0-10%	0%	0%	1%	10%	5%	10%	0%	10%
Government Bonds	25%	10-40%	40%	40%	40%	40%	10%	10%	10%	10%
Corporate IG	10%	0-20%	11%	11%	11%	11%	0%	2%	0%	3%
Corporate HY	5%	0-10%	10%	10%	10%	10%	10%	10%	10%	10%
Equities	45%	25-65%	25%	25%	25%	25%	65%	64%	65%	63%
Real Estate (REITS)	8%	0-16%	0%	0%	0%	0%	6%	0%	11%	0%
Commodities	2%	0-4%	4%	4%	4%	4%	4%	4%	4%	4%

Note: optimisations are based on the 10-year projected returns published by Invesco Investment Solutions in Long-Term Capital Market Assumptions (March 2023), as shown in **Figure 6** above. Optimisations are performed by the Asset Allocation Research team using our historical 10-year covariance matrices (for each currency). "Gold" is based on the projections for precious metals and the "Cash & Gold" category shows the sum of allocations for those two assets. "Maximise Sharpe Ratio" optimisations are performed by maximising the Sharpe Ratio subject to not violating the constraints implied by the policy ranges shown in the table. "Maximise Return" optimisations are performed by maximising return subject to the policy range constraints but also subject to the standard deviation of returns not exceeding that of the Neutral Portfolio (as shown in **Figure 3**). Though based on the projected returns provided by Invesco Investment Solutions, these optimal allocations do not represent their views, nor those of any other investment team at Invesco. See appendices for definitions, methodology and disclaimers. Source: Invesco Investment Solutions, Invesco

A business cycle framework

Contraction is signalled, which usually favours defensive assets

Market optimism has been pricked

Healthy consolidation or something more sinister?

Bank failures bring fresh uncertainty

A cyclical view of asset class performance

Having considered the long-term outlook, we will now shorten the time horizon and introduce cyclical considerations. The business cycle framework developed by Alessio de Longis (Invesco Investment Solutions) is summarised in **Figure 8**. Not surprisingly, cyclical assets such as equities and HY tend to do better in the early stages of the economic cycle, with more defensive assets (government bonds and IG) outperforming during the contractionary phase.

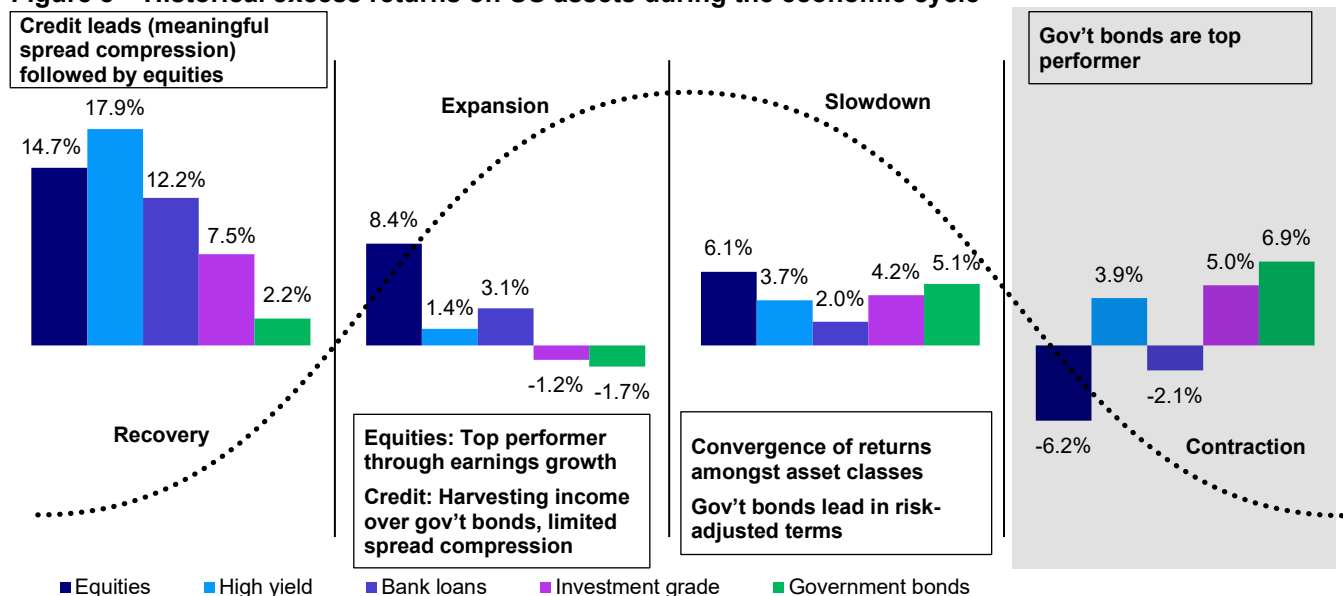
From an economic perspective, we would suggest that we are in the contraction phase, with global growth below trend and falling. However, recent asset market performance has not necessarily reflected the historical template, with most assets generating negative returns during 2022 but with strong positive returns since October 2022, more in line with what we would typically expect in the recovery phase.

That performance since October started to look as though markets were transitioning to a recovery mentality as inflation declined and in anticipation of a central bank pivot in mid-2023. However, the setback to markets since early February 2023 could suggest a change of heart, with recent banking sector problems reinforcing the negative sentiment.

The big question for the next 12 months is whether these setbacks are simply a period of necessary consolidation after the strong gains since October or whether they represent the start of a further (and deeper) leg of the downtrend that started in early 2022. How we answer that question will determine whether we adopt a risk-on or risk-off stance within our Model Asset Allocation.

No matter what we think about the economic cycle, there are important differences versus what we faced at the start of 2022. First, financial asset valuations are no longer as stretched as they were, with bond yields in more normal territory (see **Appendix 1**) and risk-asset valuations consequently less elevated. Second, we have already been through the inflation surprise, along with the aggressive reaction from central banks, and we think that is unlikely to be repeated. However, that aggressive reaction from central banks would now appear to be bringing unintended consequences within the financial system, which brings a whole new set of uncertainties (see "Risk #1" section).

Figure 8 – Historical excess returns on US assets during the economic cycle



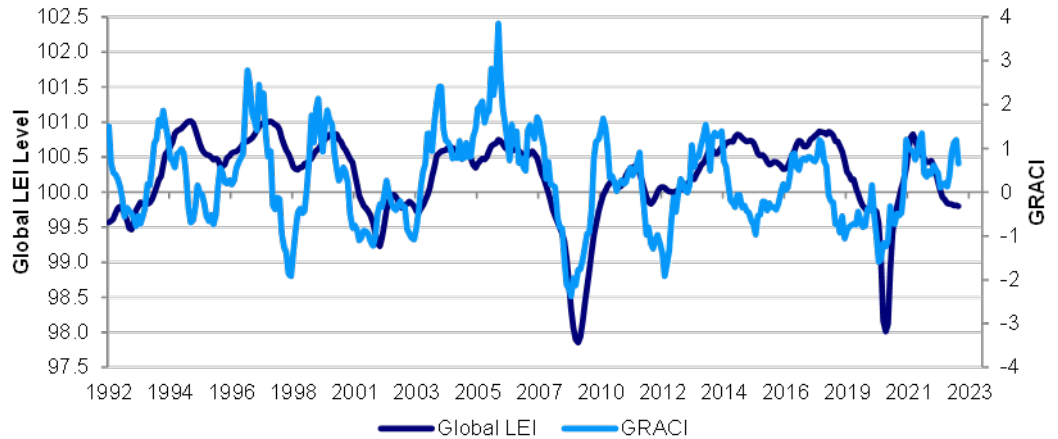
Notes: Index return information includes back-tested data. **Returns, whether actual or back tested, are no guarantee of future performance.** Annualised monthly returns from January 1970 – December 2021, or since asset class inception if a later date. Includes latest available data as of most recent analysis. Asset class excess returns defined as follows: Equities = MSCI ACWI - US T-bills 3-Month, High Yield = Bloomberg Barclays HY - US T-bills 3-Month, Bank loans = Credit Suisse Leveraged Loan Index – US T-bills 3-Month, Investment Grade = Bloomberg Barclays US Corporate - US T-bills 3-Month, Government bonds = FTSE GBI US Treasury 7-10y - US T-bills 3-Month. For illustrative purposes only. Please see appendices for further information.
Sources: Invesco Investment Solutions' proprietary global business cycle framework and Bloomberg L.P.

Proprietary indicators suggest we are in a contraction regime

Where are we in the cycle?

Figure 9 shows two proprietary indicators from Invesco Investment Solutions, designed to help decide where we are in economic and market cycles. The Global LEI (leading economic indicator) measure suggests that global growth is running below historical norms, while the GRACI (Global Risk Appetite Cycle Indicator) suggests that risk appetite has once again deteriorated, thus signalling a reversion to a contraction regime.

Figure 9 – Global risk appetite and the global business cycle



Note: **past performance does not guarantee future results.** Monthly data from January 1992 to February 2023 (as of 28 February). Both Global LEI (Leading Economic Indicator) and GRACI (Global Risk Appetite Cycle Indicator) are proprietary tools provided by Invesco Investment Solutions (IIS). Global LEI is a weighted average of leading indicators for 23 countries (both developed and emerging). A reading above (below) 100 signals growth above (below) a long-term average. GRACI measures the average incremental return received per incremental unit of risk taken in global financial markets (i.e., incremental return received for moving from government bonds to credit, from credit to developed equities, from developed equities to emerging equities, etc.). It is calculated using country-level total return indices across fixed income and equity markets. A reading above (below) zero signals a positive (negative) compensation for risk taking in global capital markets in the recent past. A rising index signals improving market sentiment and vice-versa. Sources: Bloomberg L.P., Macrobond, MSCI, FTSE, JP Morgan and Invesco Investment Solutions

Economic data had emboldened central banks but then banks started to suffer the consequences...

Nevertheless, economic data flows have been stronger than expected in the early part of 2023, with business surveys, activity and inflation often surprising to the upside. Though much of our attention is focused on US data, **Figure 10** shows that economic surprises first turned positive in the eurozone, with a notable recent uptick in China and even in the US. We believe these positive surprises played a role in toughening the resolve of central banks to continue raising rates, thereby contributing to February's market reversal. However, we note that periods of positive surprise tend to be followed by periods of negative surprise and the recent banking sector problems have weakened both the economic outlook and the tightening resolve of central banks, in our opinion.

Figure 10 – Citigroup Economic Surprise Indices

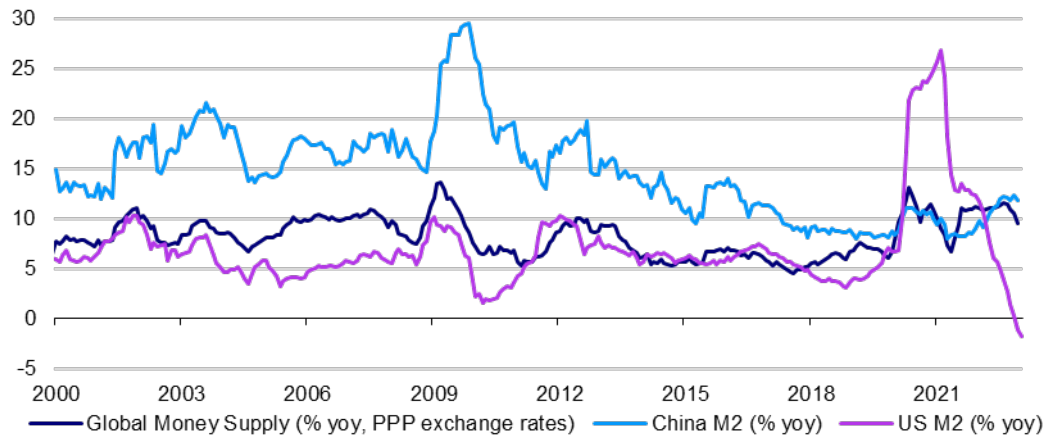


Note: based on daily data from 1 January 2019 to 1 March 2023. Source: Citigroup, Refinitiv Datastream and Invesco

The global monetary situation is more mixed than might be thought

The recent improvement in the Chinese economy (as hinted by **Figure 10**), may result from the ending of the zero-Covid policy. However, we were already expecting an improvement due to central bank easing (see the improved monetary growth in **Figure 11**). The contrast with the US is stark, which we think could provoke divergent economic performance over the coming year (improvement in China, deterioration in the US).

Figure 11 – Global money supply growth

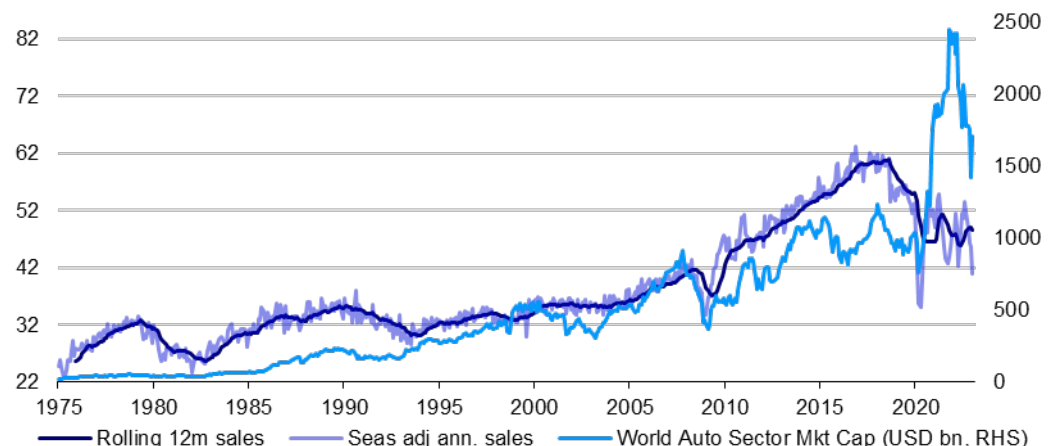


Note: monthly data from January 1980 to January 2023. “Global Money Supply” is based on an aggregation of broad money supply aggregates (usually M3) for the following countries: Australia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Czech Republic, Denmark, Eurozone, Hungary, Iceland, India, Indonesia, Israel, Japan, Mexico, New Zealand, Norway, Poland, Russia, South Africa, South Korea, Sweden, Switzerland, Turkey, United Kingdom and United States. The aggregation is based on national money supplies using purchasing power parity (PPP) exchange rates to convert to US dollars (PPP exchange rates are those which equalise spending power across countries and are usually more stable than market exchange rates). Source: MSCI, OECD, Oxford Economics, Refinitiv Datastream and Invesco

Evidence from auto sales is inconclusive but we expect further weakness

The move to negative money supply growth in the US is contributing to deceleration in global monetary aggregates (see our analysis in **Figure 11**). **Figure 12** suggests no clear trend in global auto sales, which could be one barometer of economic trends. However, the release of pent-up demand as supply-chain blockages eased may have offset some of the effect of the squeeze on real incomes (and rise in financing costs). We fear that cannot last and wouldn't be surprised to see lower sales as 2023 unfolds.

Figure 12 – Global auto sales (million) and market capitalisation of auto stocks



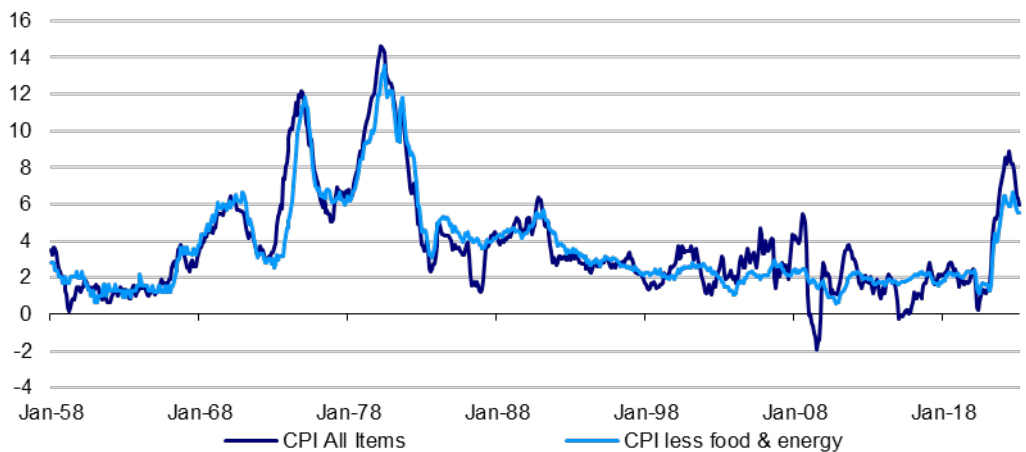
Notes: **Past performance is no guarantee of future results.** Monthly data from January 1975 to January 2022 (as of 31 January 2023). Sales are annualised and based on an aggregation of country sales data (Australia, Austria, Belgium, Brazil, Bulgaria, China, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malaysia, Mexico, Netherlands, New Zealand, Norway, Panama, Philippines, Poland, Portugal, Romania, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, UK, US, Vietnam.). “Seas adj. ann. sales” is seasonally adjusted version of annualised monthly data. “World Auto Sector Mkt Cap” is based on the Datastream World Automobile Index, expressed in US dollars. Source: National data sources, OECD, European Automobile Manufacturers' Association, Refinitiv Datastream, Invesco

US inflation falling but stickier than we expected

How persistent will inflation be?

We expect inflation to remain a critical driver of financial markets, via expectations about central bank policies. Inflation appeared to have peaked and was falling but data for early 2023 is challenging our belief that it would continue to fall during 2023. It is not so much that consumer price inflation has turned higher in the US (see **Figure 13**), rather that it has fallen less than was expected. The 0.5% monthly gain in headline CPI in January would give a 6.2% rate of inflation if it were repeated every month for a year (above the 6.0% recorded in February). However, January may have been an outlier, with the monthly gain easing to 0.4% in February. Extending the analysis to the last three months (to February) gives an annualised rate of 4.2%. The same analysis for core CPI gives an annualised rate of 5.2% in the three months to February, versus the actual rate of 5.5% in February. That is still relatively high.

Figure 13 – US inflation appears to have peaked

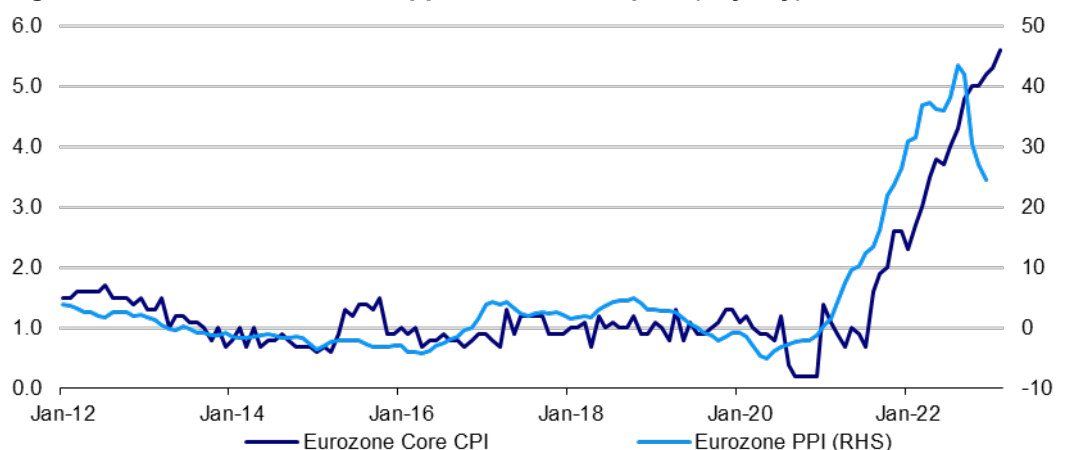


Based on monthly data from January 1958 to February 2023.
Source: Refinitiv Datastream and Invesco

Eurozone inflation yet to peak and the ECB needs to catch up

Even if the monthly gain in prices continued at the January pace, US headline CPI inflation would fall to 4.5% in June (before rising again) and core CPI inflation would fall to 5.0% (and then move slightly lower). That suggests momentum is in the right direction but it may not satisfy the Fed. However, we expect the trend to be better than that, given that money supply is now shrinking in the US (see **Figure 11**) and that house prices are falling, which has historically been a sign that the shelter component of CPI (around one-third of the overall index) is about to weaken. The picture in the eurozone is less clear, with core CPI inflation yet to peak and producer price index (PPI) inflation falling but elevated (see **Figure 14**). Apart from the effect of the war in Ukraine on European energy prices, this lag versus US inflation may reflect the delay in ECB tightening (versus the Fed) and may suggest the ECB still has more catching up to do.

Figure 14 – Eurozone inflation appears more complex (% y-o-y)

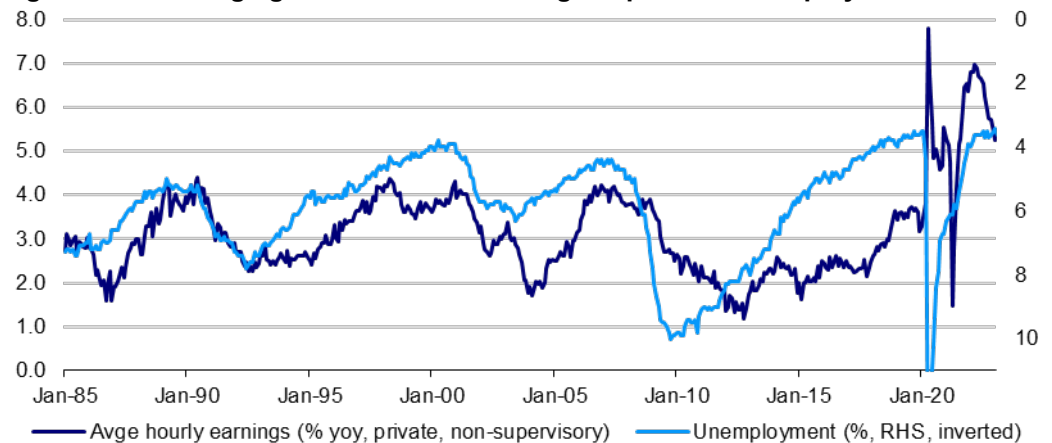


Note: Based on monthly data from January 2012 to February 2023. Source: Refinitiv Datastream and Invesco

Wages have accelerated where labour markets are tight but US data suggests recent easing

It is commonly thought that rising wage inflation is an impediment to the decline in core inflation. Indeed, the Phillips curve relationship suggests that wage inflation will be higher when unemployment is lower (see **Figure 15**). However, that chart also shows that US wage growth peaked in early 2022, even though unemployment remains very low. This is perhaps due to an easing of post-pandemic labour shortages in some parts of the economy (hospitality, say). This should help limit core inflation in the US but the trends are less obvious in Europe, with UK and German wage inflation appearing to have flattened out, while the trend still looks upward in France and the eurozone as a whole.

Figure 15 – US wage growth has been easing despite low unemployment



Notes: based on monthly data from January 1985 to February 2023.
Source: Refinitiv Datastream and Invesco

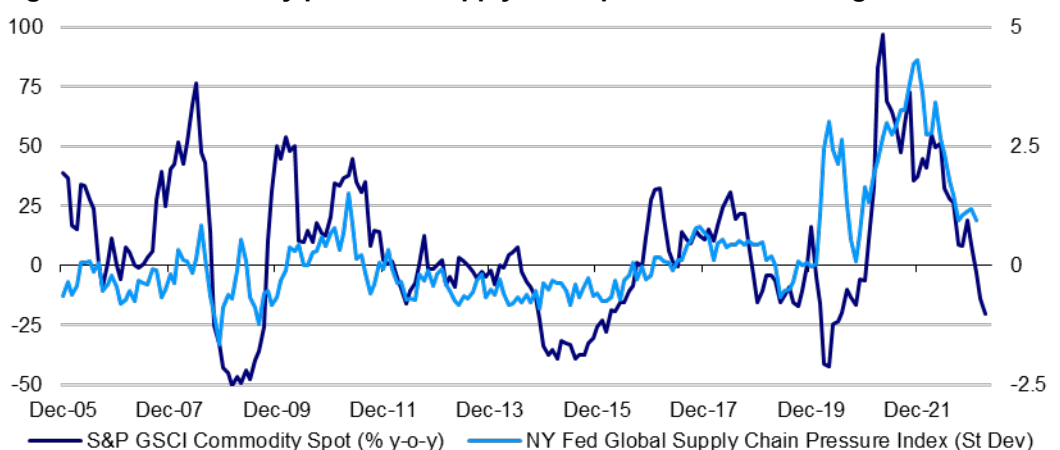
Commodity prices now driving headline inflation lower

However, there are some global forces that should ease inflation rates over the coming months. First, commodity price inflation has now turned negative, thanks to the price highs that were reached a year ago (upon the invasion of Ukraine) and the subsequent decline (see **Figure 16**). This should drive headline inflation lower, taking it below core inflation (in our view). Second, supply chain issues are easing (**Figure 16**) and the opening up of the Chinese economy may bring further relief on that score.

We think global inflation may have peaked but China may be an exception

Overall, it is our belief that global inflation has passed the peak for this cycle. However, the picture varies by region, with the US likely to see further easing of inflation over the coming months (in our opinion), while in Europe a downtrend is likely to establish itself. On the other hand, China could see a pick-up in inflation as the economy emerges from the very slow growth of 2022, aided by central bank easing. Given its importance in global supply chains, a pick-up in Chinese inflation could temper the decline elsewhere, though low inflation during 2022 (currently 2.1%) didn't prevent the global inflation shock.

Figure 16 – Commodity price and supply chain pressures are easing



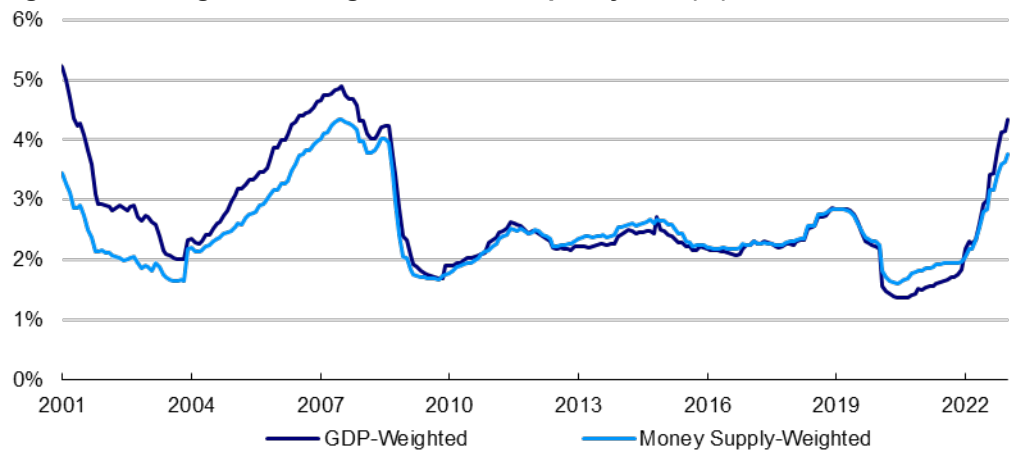
Notes: **Past performance is no guarantee of future results.** Monthly data from December 2005 to March 2023 (as of 3 March 2023). Source: Refinitiv Datastream and Invesco

We think central banks stayed too loose for too long, then tightened aggressively and are now faced with the consequences

Central bank policy complicated by unintended consequences

Figure 17 shows how rapidly major central banks have adjusted their policy rates since late 2021 (it shows a weighted average of policy rates across the 20 largest economies). Unsurprisingly, this had a big impact upon bond yields and other asset categories during 2022. The rally in financial markets since October 2022 was driven largely in anticipation of a peaking of central bank rates during mid-2023. Recent data flows had pushed markets to a less optimistic viewpoint (more rate hikes)...until the banking mini crisis.

Figure 17 – Weighted average central bank policy rate (%)



Based on monthly data from February 2001 to February 2023 (as of 28 February 2023). Based on the 20 largest economies during each calendar year, according to nominal GDP in US dollars (based on data from the IMF World Economic Outlook October 2022). Source: IMF, Refinitiv Datastream and Invesco

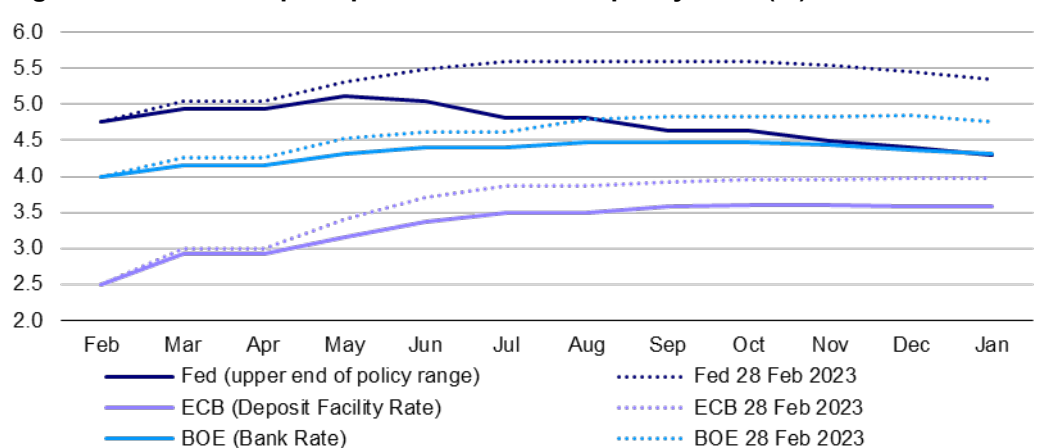
Positive data surprises led to belief in a more aggressive policy stance

Starting with the big US payroll gain for the month of January, February delivered a range of economic surprises including surveys, consumer spending and inflation, all higher than expected (across a range of countries). **Figure 18** shows that the market implied paths of Fed, ECB and BOE policy rates at the end of February anticipated a good degree of further tightening. For example, the December 2023 implied rate for the Fed Funds (upper rate) was then 75 bps higher than it was at the start of the year.

Then came the unintended consequences and a change of view

However, problems in the banking sector (in particular the failure of Silicon Valley Bank and concerns about Credit Suisse), caused a reassessment of how much tightening is possible (Fed purchases of bonds at par value from banks would be an effective easing). **Figure 18** shows by how much market expectations have adjusted since 28 February, with the biggest downgrade concerning the path of Fed rates (the implied rate for December 2023 is now 30 basis points lower than it was at the beginning of the year).

Figure 18 – Market implied path of central bank policy rates (%)

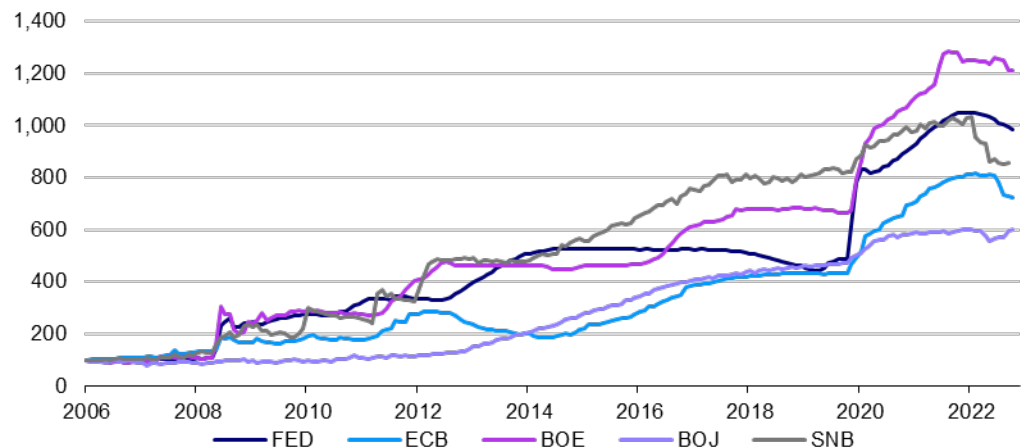


From February 2023 to January 2024. Based on Fed Funds Futures (for the Fed) and Overnight Index Swaps (for the BOE and ECB) as calculated by Bloomberg. Rates are calculated for central bank policy meeting dates. For months where there is no meeting, we show the same rate as the month before. As of 14 March 2023. Source: Bloomberg and Invesco

From quantitative easing to quantitative tightening

Of course, central bank tightening consists of more than raising interest rates. A number of major central banks have undertaken extensive quantitative easing since the Global Financial Crisis (GFC), as shown in **Figure 19**. Asset purchase programmes led to a sizeable and unusual increase in the size of their balance sheets during and after the GFC and eurozone debt crisis. This was repeated during the Covid pandemic. However, those balance sheets have recently started to shrink. This is partly due to the decline in the value of assets held by those central banks but has also been due to the decisions taken by the Fed and BOE to reduce their asset holdings (and they have now been joined by the ECB). It is to be seen whether the Fed will now reverse or reduce its quantitative tightening (if for no other reason than it has to buy treasuries from banks).

Figure 19 – Central bank balance sheets (rebased to 100 as of 31/5/2006)

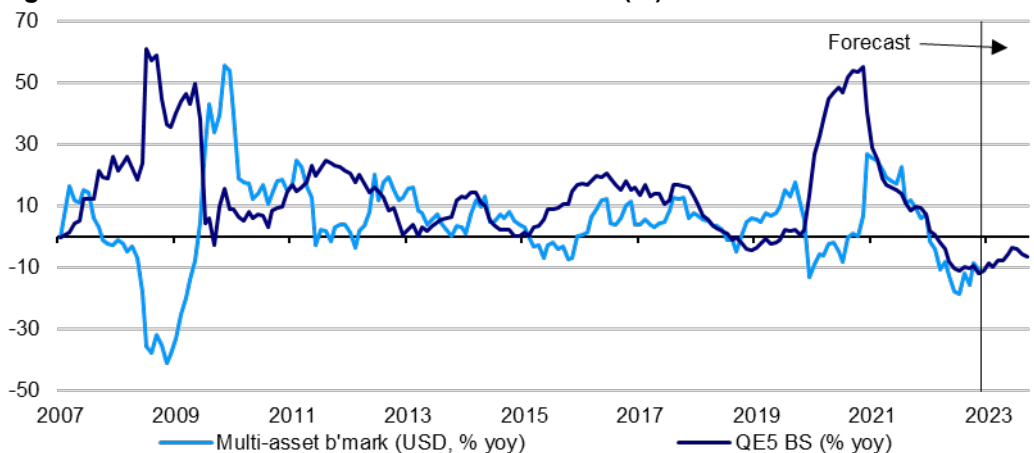


Monthly data from May 2006 to February 2023 (as of 7 March 2023). Based on local currency data. Source: Refinitiv Datastream and Invesco

And that could depress asset returns if the plans are executed

Figure 20 shows the growth in the aggregate balance sheet of those five central banks and compares it to the returns on a diversified mix of global assets (represented by the Neutral stance within our Model Asset Allocation -- see **Figure 3**). If there is a correlation between balance sheet expansion and asset returns (which seems logical), and given our view of how balance sheets will develop to end-2023 (based on pre-banking crisis plans), we conclude that financial market returns will be less than otherwise over the coming quarters as central banks release assets into markets.

Figure 20 – QE5 balance sheet and asset returns (%)



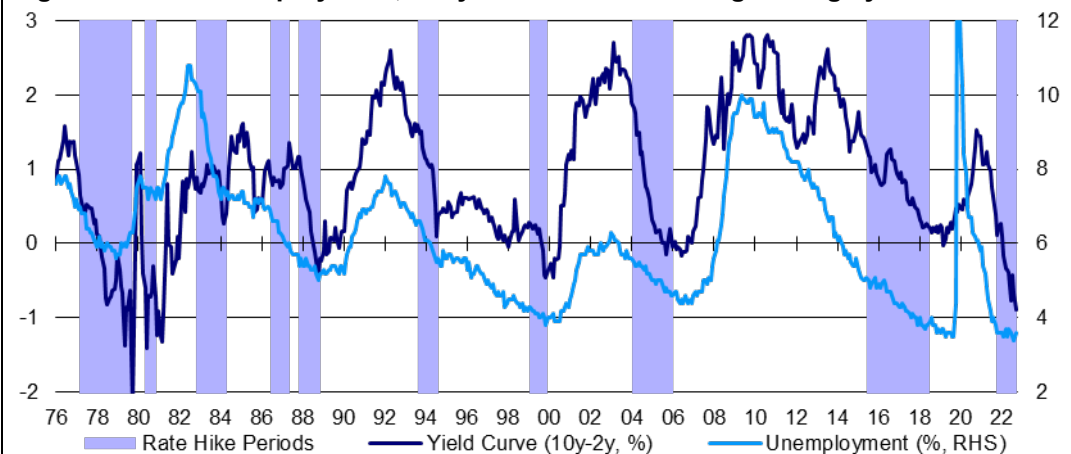
Notes: **Past performance is no guarantee of future results.** QE5 BS is the aggregate balance sheet of Fed, ECB, BOE, BOJ and SNB in USD. Forecast considers asset purchase plans of the central banks but ignores other sources of growth. The Fed has announced an asset holding reduction plan of \$95bn per month (we assume it stays at that rate to end-2023). The ECB has started to reduce its asset holdings by €15bn per month and we assume the monthly reduction increases to €30bn in July 2023. The BOE has started to reduce its asset holdings and we assume a pace of £10bn per month during the rest of 2023. We assume no change in BOJ and SNB asset holdings over the forecast horizon. The multi-asset benchmark is a fixed weighted index based on the Neutral asset allocation of Invesco's Asset Allocation Research team. From May 2007 to December 2023. As of 28 February 2023. Source: BOE, Refinitiv Datastream and Invesco

Yield curves are very inverted

From economic to market cycles

Yield curves have become inverted in many countries, which is often taken as a precursor to recession. **Figure 21** shows that the US yield curve (10y-2y) is as inverted as at any time since the early 1980s. It also shows that the yield curve typically becomes less steep/more inverted when the Fed is raising rates (short rates rise more than long rates). Further, Fed tightening cycles tend to come to an end when unemployment is very low (which it is now) and about to bottom out (which we expect in the near future). Indeed, there is a remarkable coincidence in the turning points of unemployment and the yield curve.

Figure 21 – US unemployment, the yield curve and Fed tightening cycles



Notes: **past performance is no guarantee of future results.** Based on monthly data from June 1976 to February 2023 (as of 28 February 2023). The shaded areas show periods when the US Federal Reserve was raising interest rates (from first to last rate hike). Source: Refinitiv Datastream and Invesco

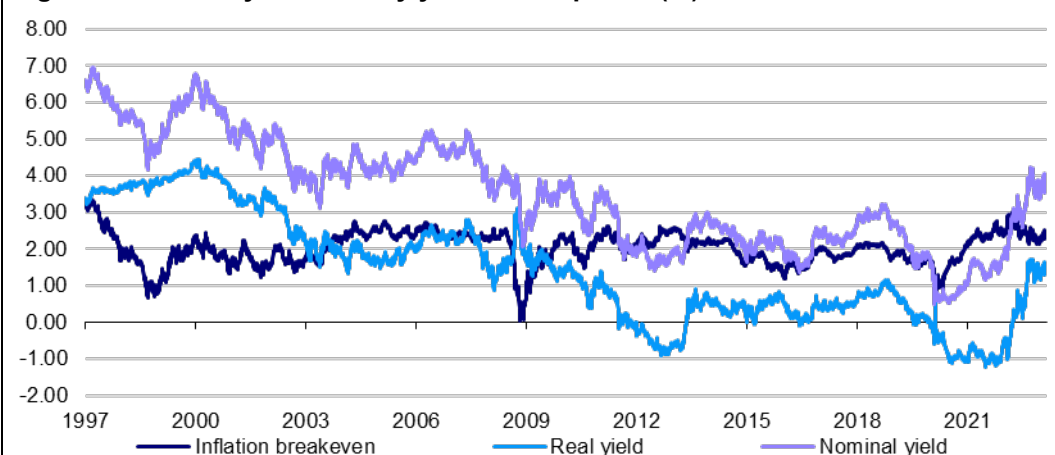
US long treasury yields may have peaked

Yield curve inversion is often the result of bear flattening in the early stages, with rates rising along the yield curve but with the biggest gains at the short end. However, towards the end of a central bank tightening cycle, we would normally expect inversion to be the result of a pivot, with short rates continuing to rise (with policy rates) while long rates fall (in anticipation of economic slowdown and eventual policy easing). **Figure 22** suggests to us that the 10-year US treasury yield may have peaked at around 4.00%.

We expect yield curve steepening within the 12-month forecast horizon

Though recent data surprises pushed those 10-year yields back towards 4.00%, we have seen a sudden collapse since the revelation of problems in the banking sector. We suspect the yield curve may invert further in the short term (the Fed may still raise rates, while concerns are growing about the economy). However, we believe that steepening will over our 12-month forecast horizon as major Western central banks start to ease.

Figure 22 – US 10-year treasury yield decomposed (%)

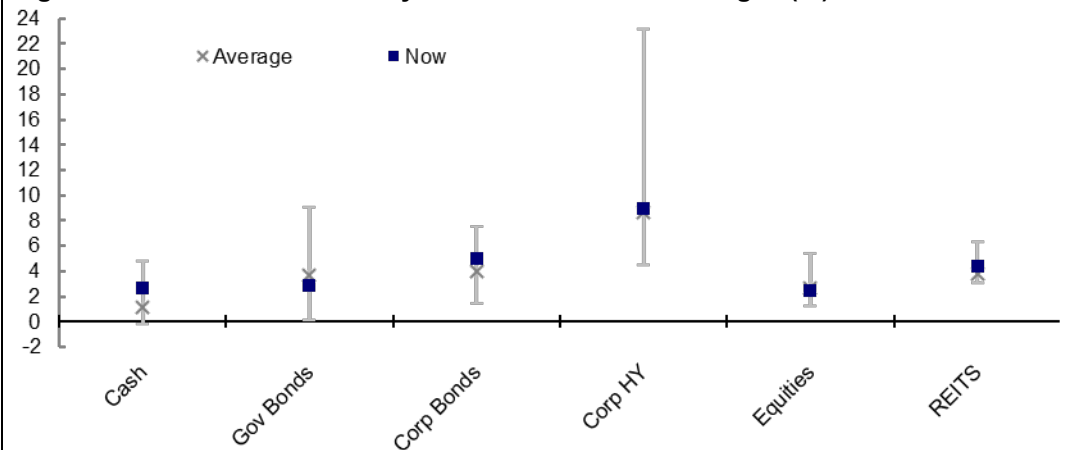


Note: **past performance is no guarantee of future results.** Daily data from 29 January 1997 to 13 March 2023. "Real yield" is the 10-year TIPS yield. Source: Refinitiv Datastream and Invesco

Cash rates and bond yields are now more competitive than for some time

We believe that a decline in long term bond yields will help the valuation of other assets and **Figure 23** shows that most global assets are now close to historical average valuations (judged by yields). This is very different to what we had become used to, with cash rates and bond yields at or close to historical lows over recent years. The steep rise in cash rates was hinted at by the increase in central bank policy rates shown in **Figure 17**, while **Figure 22** showed 10-year US treasury yields are at levels last seen at the time of the GFC. **Figures 23** and **25** also show that government bond yields are now above or equal to local equity dividend yields (which used to be the norm but hasn't always been the case of late). This is even more the case for corporate IG yields versus dividend yields and **Appendix 1** shows that Japan is the only real exception.

Figure 23 – Global asset class yields within historical ranges (%)

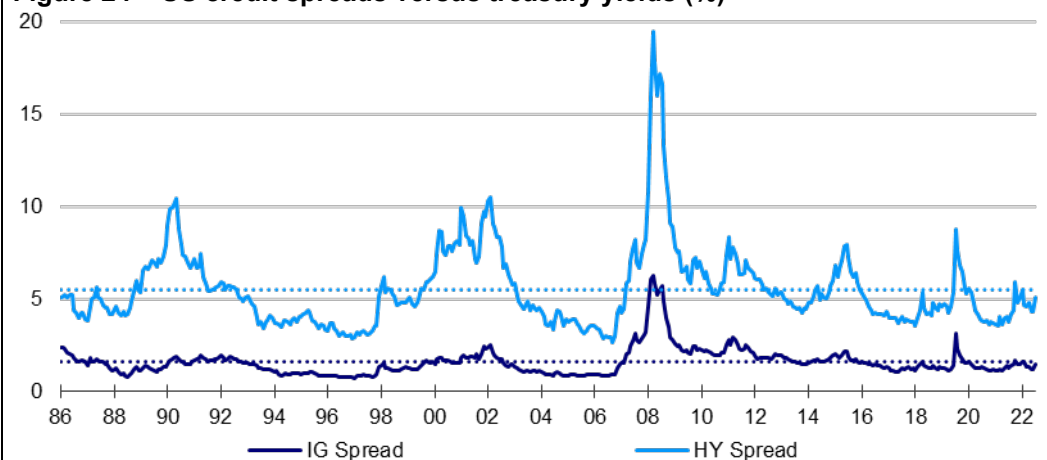


Start dates for historical ranges are cash 1/1/01; govt bonds 31/12/85; corp bonds 31/12/96; corp HY 31/12/97; equities 1/1/73; REITs 18/2/05. See appendices for definitions, methodology and disclaimers. As of 13 March 2023. Source: Refinitiv Datastream and Invesco

Bonds are back but we expect credit spreads to widen

Hence, it is often heard among investors that “bonds are back”. Yields have risen sufficiently that government bonds are no longer the poor relation of the asset allocation world, while we preferred IG and HY credit to equities when we published our 2023 Outlook. **Figure 4** shows that both credit categories have outperformed all assets (except gold) over the intervening four months, driven by an impressive decline in IG and HY yields (see **Figure 5**). Indeed, the spread versus government yields has fallen over that period (see **Figure 24**), when we expected the opposite as economies slow. Those spreads have widened recently on concerns about the banking sector and we forecast a further widening (and an increase in defaults) as economies slow.

Figure 24 – US credit spreads versus treasury yields (%)

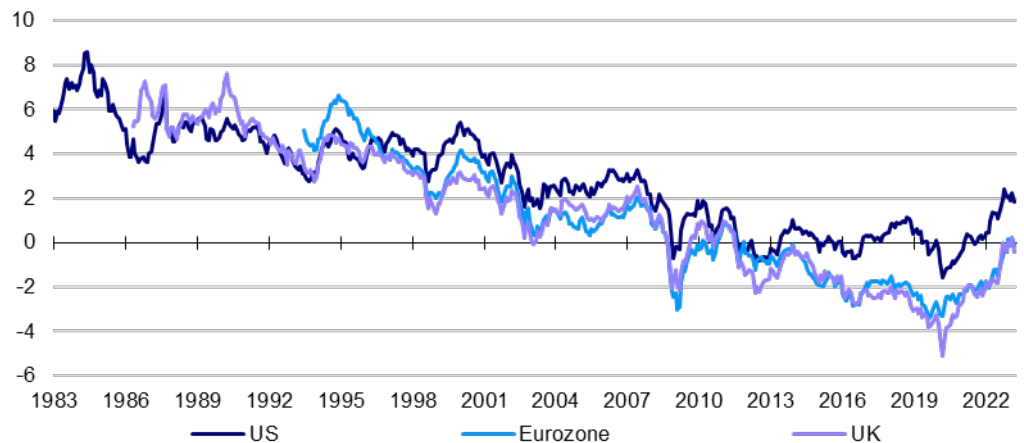


Note: **Past performance is no guarantee of future results.** Monthly data from September 1986 to March 2023 (as of 13 March 2023). IG and HY spreads are calculated by subtracting the redemption yield on the ICE BofA US Treasury Index, from the redemption yields on the ICE BofA US Corporate Index and the ICE BofA US High Yield Index, respectively. The dotted lines show the average spreads over the full period shown. Source: ICE BofA, Refinitiv Datastream and Invesco

Yield gaps suggest the pendulum is swinging back to government bonds and away from equities

Dividend yield gaps have moved in favour of government bonds and away from equities (see **Figure 25**). Other things being equal, this should shift our preferences back towards government bonds, having shunned the asset class for a number of years. Further, the feeling that the global economy is at greater risk of recession (due to aggressive policy tightening and the fallout for banks) may further shift the pendulum towards government debt (in our opinion) due to the possibility of a fall in both long-term yields and corporate profits. Of course, the decline in long-term yields could help to offset the effect of falling profits (via expanding valuation multiples), so long as equity-bond correlations remain as they have been over the last year (see “Risk #2” section).

Figure 25 – Yield gaps were moving in favour of bonds (%)

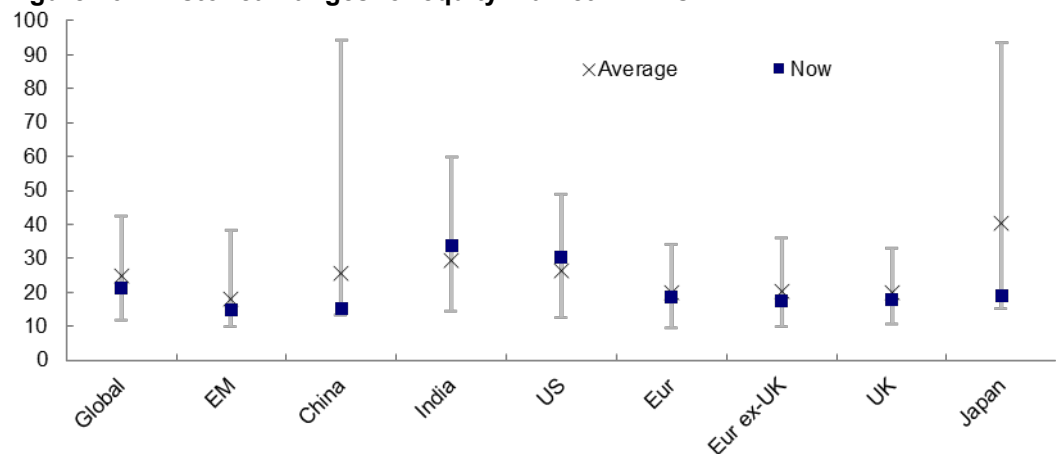


Note: **past performance is no guarantee of future results.** Monthly data from January 1983 to March 2023 (as of 13 March 2023). Yield gap is 10-year government bond yield minus equity dividend yield (based on Datastream equity indices). Source: Refinitiv Datastream and Invesco

Chinese equities continue to represent good value, in our opinion

Though equities may be challenged by the profit cycle, there are some differences across regions. In particular, Chinese equities continue to look good value (in our opinion), relative to both historical norms and other markets (see **Figure 26**). The comparison is starkest with the US and India, especially when considering our view that economic momentum will be better in China than in the US. Otherwise, EM, European (including UK) and Japanese valuations are broadly in line with each other and below historical norms (according to our measure of cyclically adjusted price-earnings ratios). As ever, Japanese valuations look well below the historical norm but we think this is largely because the historical average is boosted by the extreme bubble of the 1980s and early 1990s.

Figure 26 – Historical ranges for equity market CAPEs

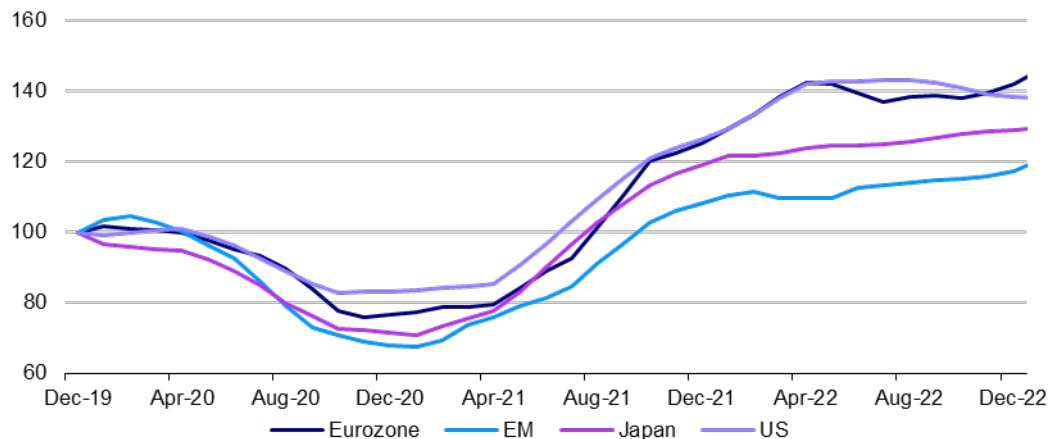


Note: CAPE = Cyclically Adjusted Price/Earnings and uses a 10-year moving average of earnings. Based on daily data from 3 January 1983 (except for China from 1 April 2004, India from 31 December 1999 and EM from 3 January 2005), using Datastream indices. As of 13 March 2023. Source: Refinitiv Datastream and Invesco

Business profits have been surprisingly resilient but are now falling in the US

We have already mentioned that we expect corporate profits to weaken this year (as financing costs rise and economies slow) but there has been little evidence of that so far. **Figure 27** shows that corporate earnings per share (EPS) did fall in the eurozone in mid-2022 but that was short-lived. However, and surprisingly, there has been a recent decline in US EPS, which is not normally where most commentators would have expected to see weakness. This may reflect the problems reported at some large US companies that had previously been expected to consistently grow profits (in the technology, consumer and media sectors, in particular).

Figure 27 – Earnings per share trends (3MMA, December 2019 = 100)

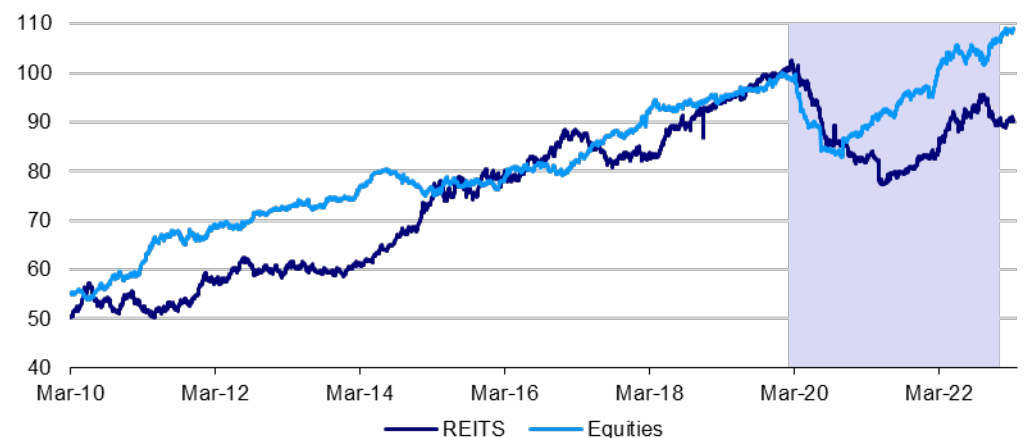


Notes: monthly data from December 2019 to February 2023. The chart shows rolling three-month averages of earnings per share, rebased to 100 in December 2019. Based on Datastream country/regional indices, with EPS calculated as the quotient of the price index and price-earnings ratios. Source: Refinitiv Datastream and Invesco

REIT dividends have weakened again

One part of the equity market that has seen a recent deterioration in dividends is the real estate sector (as shown by REIT dividends in **Figure 28**). There was an understandable decline during the pandemic, with increased work from home and internet shopping expected to reduce the demand for certain types of real estate. However, the decline since October 2022 is disappointing and perhaps suggests more deep-seated problems. Recent defaults and financing problems in the real estate sector are further confirmation of fundamental problems that have not been helped by the sudden rise in bond yields. **Appendix 2** shows that global REITs have performed almost as badly as government debt over the last 12 months. Luckily, we had reduced our exposure to Neutral a year ago but then subsequently moved to a slight Overweight, which has done us no favours.

Figure 28 – Global real estate (REIT) and equity dividends (31/12/19 = 100)



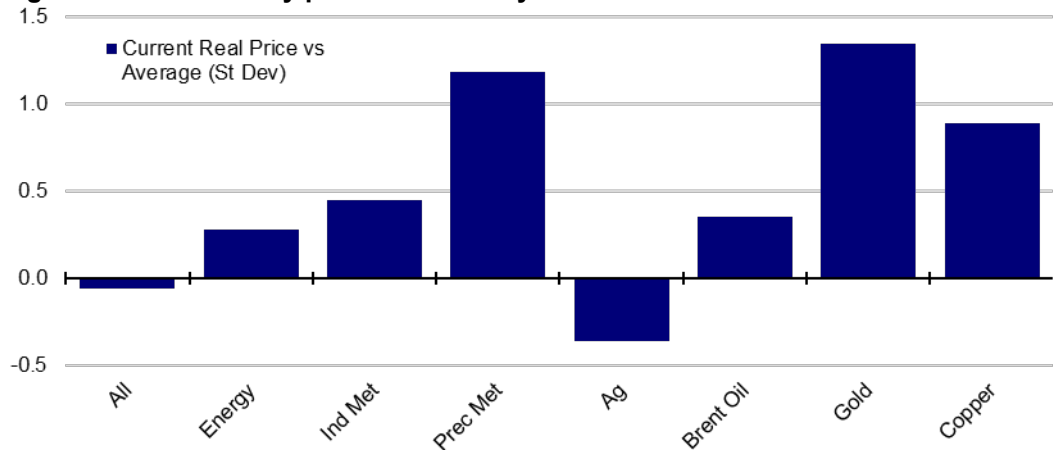
Note: daily data from 2 March 2010 to 13 March 2023. For both REITs and Equities, the level of dividends is calculated from the reported dividend yield and index levels (and indexed to 100 on 31 December 2019). REIT dividends are based on FTSE EPRA/NAREIT Global Index. Equity dividends are based on the Datastream World Index. Shaded area shows the Covid-19 pandemic period (from 1 February 2020 to end-2022). Source: FTSE EPRA/NAREIT, Refinitiv Datastream and Invesco

Commodity prices have fallen but remain elevated

Commodities and currencies

Most commodity prices fell over the last four months, with the obvious exception of precious metals (see **Appendix 2**). **Figure 29** shows that most commodity categories are more expensive than normal, when adjusted for inflation. The one exception is agricultural commodities, which have appeared cheap on this measure for a number of years (though the comparison is perhaps distorted by some very high prices in the 1970s).

Figure 29 – Commodity prices deflated by US CPI versus historical norms

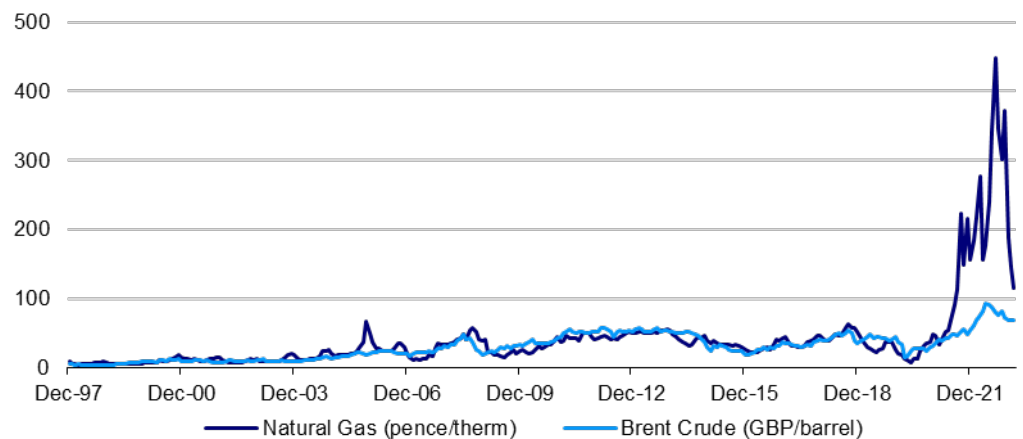


Abbreviations: “Ind Met” is industrial metals, “Prec Met” is precious metals and “Ag” is agriculture. Historical ranges start on: All and Ag 31/12/69; Energy 31/12/82; Ind Met 3/1/77; Prec Met 2/1/73; Brent 1/6/87; gold 1/1/74; copper 1/1/74. As of 28 February 2023. See appendices for definitions, methodology and disclaimers. Source: GSCI, Refinitiv Datastream, Invesco

We expect further energy price weakness

We often hear that energy prices are low and that they will trend upwards over the medium to long term. We take the opposite view. First, **Figure 29** suggests that energy prices are above historical norms (when expressed in real terms). In particular, we suspect that European natural gas prices remain distorted by the situation in Ukraine and the desire to move away from Russian supply. Indeed, **Figure 30** shows that, despite recent weakness, UK natural gas prices have yet to come down to “normal” levels, when expressed in inflation-adjusted terms (the same also applies to crude oil but less obviously so). Second, we believe that climate change mitigation will require large quantities of hydrocarbons to remain in the ground and we doubt this is compatible with rising real prices. We expect real prices to trend lower over the coming decades as demand wanes.

Figure 30 – UK natural gas and crude oil prices (expressed in today’s prices)

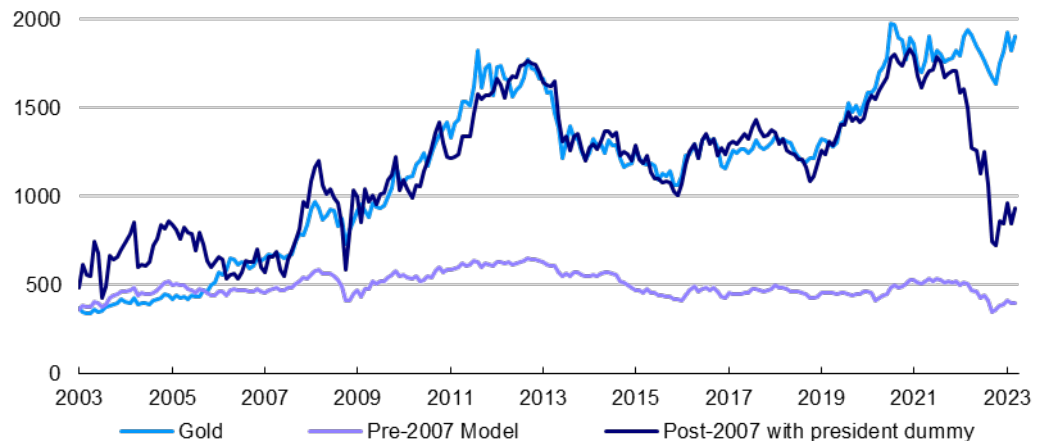


Note: **Past performance is no guarantee of future results.** Monthly data from December 1997 to February 2023 (as of 28 February 2023). Natural Gas is the ICE Natural Gas 1-month forward price. Brent Crude is the ICE London Brent Crude Oil Index (converted to sterling). Prices are expressed in real terms (today’s prices) by using the UK Consumer Price Index. Source: ICE, Refinitiv Datastream and Invesco

Gold could benefit from economic slowdown but we think a lot is in the price

Given the backdrop of a sharp rise in bond yields and an appreciating dollar, gold has performed surprisingly well since the start of 2022. Our econometric model, based on real treasury yields, inflation expectations and the US dollar, suggests that gold should have fallen more than it did (see **Figure 31**). Perhaps there has been a change in the way that gold reacts to inflation, with the negative correlation seen since the GFC reverting to positive (because deflation is no longer the concern). Time will tell. In the meantime, a weakening dollar could help sustain the elevated gold price.

Figure 31 – Gold versus model fair value (US\$ per ounce)



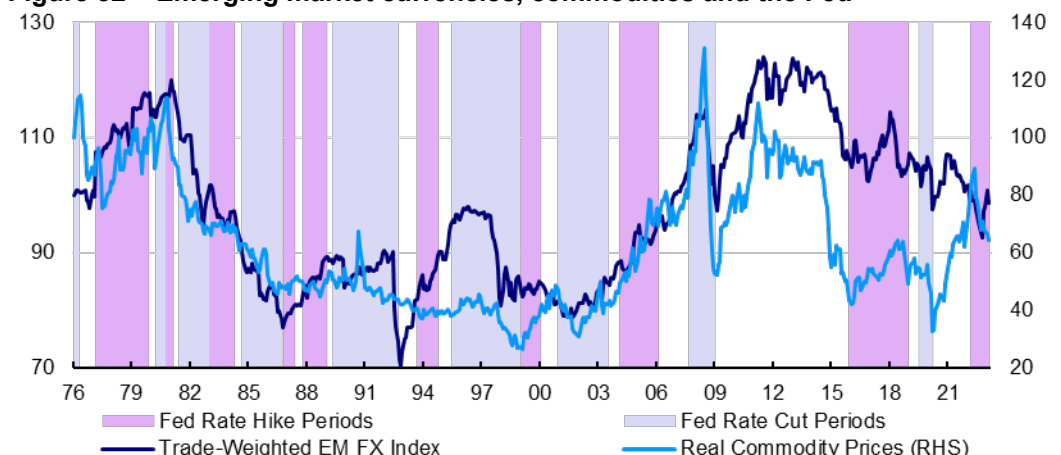
Notes: **Past performance is no guarantee of future results.** Monthly data from January 2003 to March 2023 (as of 13 March 2023). Gold is modelled as a function of real 10-year US Treasury yield, 10-year US inflation breakeven and trade-weighted USD. “Pre-2007 Model” is based on data from 31 January 1997 to 31 December 2006. “Post-2007 Model” is based on data from 31 January 2007 to 30 April 2020. “President dummy” is a dummy variable that was set at zero prior to November 2016 (when President Trump was elected) and one thereafter. **There is no guarantee that these views will come to pass.**

Source: Refinitiv Datastream and Invesco

We don't expect a big EM FX trend over the next 12 months

Figure 32 suggests a good historical relationship between our EM FX index and commodity prices, though the relationship is less obvious than it was. Given that our EM FX index is in line with historical norms, we suspect that commodity price movements could be decisive. Though we expect some downward movement in energy prices, we don't see a big commodity (and EM FX) trend over the next 12 months.

Figure 32 – Emerging market currencies, commodities and the Fed

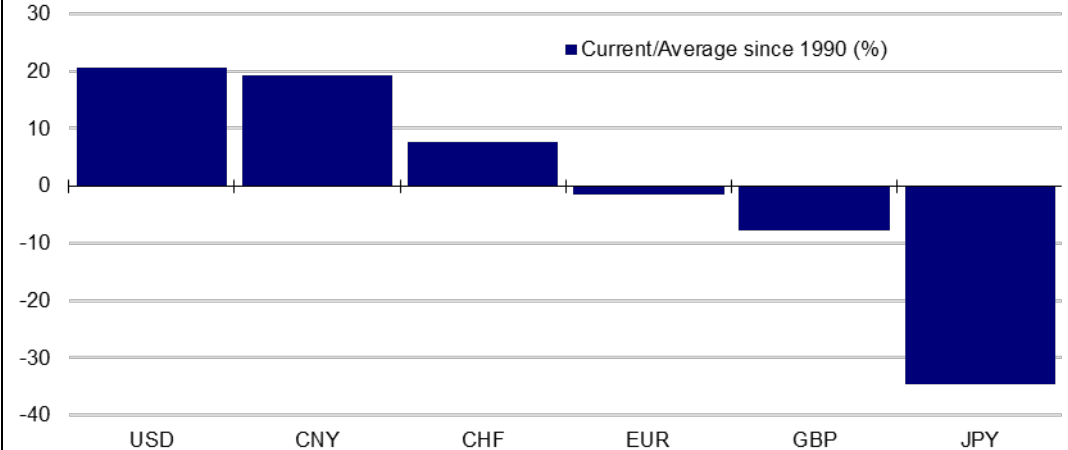


Note: **Past performance is no guarantee of future results.** Monthly data from January 1976 to February 2023. Real trade-weighted EM FX index is a trade weighted average of national currencies versus US dollar (trade weights are based on total trade flows for each country). There are 18 currencies in the EM basket – those of China, Brazil, South Korea, Mexico, Singapore, India, Russia, Poland, Thailand, Turkey, Czech Republic, Malaysia, Indonesia, Hungary, Philippines, South Africa, Chile and Nigeria. Real adjustments use national CPI indices versus that of the US. Real commodity price index is based on the S&P GSCI Commodity Spot Price Index, adjusted by the US CPI index. All indices rebased to 100 as of January 1976. As of 28 February 2023. Source: IMF, OECD, Oxford Economics, S&P GSCI, Bloomberg L.P., Refinitiv Datastream, Invesco.

USD more expensive than usual in real trade-weighted terms and JPY looks cheap

When it comes to major currencies, the big valuation contrast is between USD and JPY (see **Figure 33**). The Japanese currency continues to look cheap in real terms (compared to historical norms) and we expect it to be among the better performing currencies over the medium term but lack of policy tightening is penalising it right now.

Figure 33 – Real effective exchange rates*



*Currency indices measured against a trade-weighted basket of currencies and adjusted for inflation differentials. As of 31 January 2023. Source: OECD, Datastream and Invesco

It is time for the BOJ to start normalising, in our opinion, which could strengthen the yen

However, we wonder if the change of leader at the Bank of Japan (BOJ) could herald a new approach (Governor Haruhiko Kuroda is being replaced Kazuo Ueda on 8 April). The BOJ has been battling to raise inflation for decades. With CPI inflation reaching 4.3% in January (or 3.2% when excluding food & energy), we think the time has come for the central bank to start normalising (the BOJ now owns more than 50% of outstanding Japanese government bonds and more than 100% of some issues, according to Nikkei.com). Put another way, when will the BOJ ever be able to start normalising if not now? Surely, it can't carry on accumulating Japanese government debt.

That could dampen the performance of Japanese equities

We suspect that normalisation of BOJ policy will start with removal of yield curve control (YCC) and the tapering of asset purchases (though rising bond yields will impose losses on BOJ portfolios). Any such moves could strengthen the yen, in our opinion, especially given that other major central banks appear to be approaching the end of their tightening cycles. One downside to a stronger yen could be the effect on Japanese equities via the depressing effect on revenues and profits earned overseas (see **Figure 34**). This is one factor that tempers our enthusiasm for Japanese stocks.

Figure 34 – Trade weighted JPY and Japanese equity relative performance



Note: **Past performance is no guarantee of future results.** Monthly data from January 1998 to February 2023. Trade weighted JPY is an index calculated by the Bank for International Settlements measures the value of the Japanese yen versus a basket of currencies, weighted by trade flows. As of 28 February 2023. Source: BIS, MSCI, Refinitiv Datastream and Invesco.

Economies to slow and risk aversion to rise

Projections for the next year

We think that economies were already slowing and believe that the mini-banking crisis could further dampen growth, as risk aversion rises (investment projects may be delayed/cancelled and banks may be less willing to provide financing, especially for riskier projects). This may be an example of where financial conditions tighten despite a decline in government bond yields. We think central bank decisions have now become more complex, with conflict between the inflation and financial stability mandates.

We assume less growth and less inflation and that central banks will soften their approach

Underpinning our projections for the next 12 months are the following assumptions:

- Global GDP growth continues to slide, with China an obvious exception
- Global inflation will fall but remain above many central bank targets
- Major Western central banks are approaching the end of their tightening cycles
- Long-term government yields will be mixed; yield curves steepen during 2023 H2
- Credit spreads widen and defaults rise
- Equity dividend growth moderates and equity yields fall in some markets
- Real estate (REIT) dividend growth moderates and yields fall slightly
- Commodities struggle as the global economy slows (except agricultural products)
- USD weakens as Fed tightening ends

We expect Fed rates to be lower in 12 months

The assumptions behind our projections are laid out in **Appendix 4**, while **Figure 35** shows the implied market targets. Perhaps the single most important forecast is that Fed policy rates will be lower in 12 months (even if they rise in the meantime). Elsewhere, we think that European central bank rates will be little changed in 12 months (up first, then down), while we look for some tightening from the BOJ and the PBOC. On the whole we expect some steepening of yield curves over the next 12 months, with short rates eventually falling (our forecasts for 10-year yields are mixed).

Equity and REIT yields to face conflicting influences

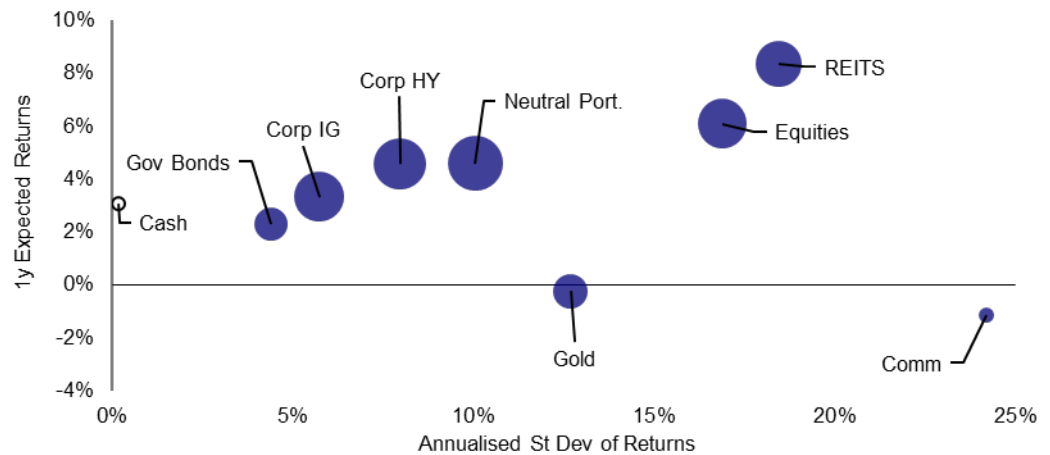
Yields on equities and real estate will face competing forces: we expect slowing economies to push them to the upside but this may be balanced in part by falling bond yields. Overall, we expect them to be flat to down. We also expect less dividend growth.

Figure 35 – Market forecasts

		Current (13/03/23*)	Forecast 12-month
Central Bank Rates	US	4.75	4.25
	Eurozone	3.00	3.00
	China	3.65	4.00
	Japan	-0.10	0.00
	UK	4.00	4.00
10yr Bond Yields	US	3.55	3.40
	Eurozone	2.27	2.70
	China	2.88	3.00
	Japan	0.31	0.60
	UK	3.26	3.20
Exchange Rates/US\$	EUR/USD	1.07	1.15
	USD/CNY	6.85	6.70
	USD/JPY	133.21	120.00
	GBP/USD	1.22	1.25
	USD/CHF	0.91	0.90
Equity Indices	S&P 500	3856	4000
	Euro Stoxx 50	4097	4200
	FTSE A50	13080	15400
	Nikkei 225	27833	30000
	FTSE 100	7549	8000
Commodities (US\$)	Brent/barrel	80	75
	Gold/ounce	1905	1900
	Copper/tonne	8918	9000

Notes: * except for central bank rates which take account of subsequent changes. **There is no guarantee that these views will come to pass.** See Appendices for definitions, methodology and disclaimers. Source: Refinitiv Datastream and Invesco Global Market Strategy Office

Figure 36 – Projected 12m return versus risk for global assets



Based on local currency returns. Returns are projected but standard deviation of returns is based on 5-year historical data. Size of bubbles is in proportion to average pairwise correlation with other assets. Cash is an equally weighted mix of USD, EUR, GBP and JPY. Neutral portfolio weights shown in **Figure 3**. As of 13 March 2022. **There is no guarantee that these views will come to pass.** See Appendices for definitions, methodology and disclaimers. Source: BAML, MSCI, GSCI, FTSE, Refinitiv Datastream and Invesco

Our return projections are lower than they were, except for cash

The return projections shown in **Figure 36** are nearly all lower than when we published our 2023 Outlook in November 2022. This is because most assets have performed well since then (except commodities and REITs), pushing yields lower while we believe the growth outlook has deteriorated. Gold has performed so well that we think it will struggle to sustain much higher levels. The only asset for which our projection has improved is cash because rates are higher. In general we think that risk will be rewarded (except for gold and commodities) but it is not clear that the returns on risky assets are enough to balance the extra risk.

Optimisation favours cash, IG and HY

Trying to construct a diversified multi-asset portfolio on the back of our projections requires more than simply choosing our favourite assets: after all, we may be wrong! We use an optimisation process to help us balance risk and reward and **Figure 37** shows the results. The outcome favours cash and credit (both IG and HY), while shunning commodities, gold and equities (the outcome for government bonds and real estate depends upon what is being maximised – Sharpe Ratio or returns).

Cash boosted; gold, equities and real estate reduced

Within our Model Asset Allocation, we follow the output of the optimiser, in direction if not magnitude. We boost cash to Maximum, while reducing gold to zero, equities to further Underweight and real estate (REITs) to Neutral. Otherwise, we make no changes, sticking to Overweight positions in IG and HY, and Neutral in government bonds.

Figure 37 – Optimised allocations for global assets (using local currency returns)

	Neutral Portfolio	Policy Range	Projected Returns	Optimisations Sharpe Ratio	Max Return	Model Asset Allocation*
Cash & Gold	5%	0-10%	1.4%	10%	10%	↑ 10%
Cash	2.5%	0-10%	3.1%	10%	10%	↑ 10%
Gold	2.5%	0-10%	-0.3%	0%	0%	↓ 0%
Govt Bonds	25%	10-40%	2.3%	40%	10%	25%
Corporate IG	10%	0-20%	3.3%	15%	19%	15%
Corporate HY	5%	0-10%	4.6%	10%	10%	8%
Equities	45%	25-65%	6.1%	25%	35%	↓ 34%
Real Estate	8%	0-16%	8.3%	0%	16%	↓ 8%
Commodities	2%	0-4%	-1.1%	0%	0%	0%

Notes: Based on local currency returns (for both the one-year projected returns and five-year historical covariance matrix). Cash is an equally weighted mix of USD, EUR, GBP and JPY. "Sharpe Ratio" shows the results of maximising the Sharpe Ratio. "Max Return" maximises returns while not exceeding the volatility of the Neutral Portfolio. *This is a theoretical portfolio and is for illustrative purposes only. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy. See appendices for definitions, methodology and disclaimers. Source: Invesco Global Market Strategy Office

	Model Asset Allocation: contraction phase => more cash, less risk
We go more defensive by boosting cash, while reducing gold, equities and real estate	Our economic cycle analysis suggests we are in a contraction regime, which pushes us to a more defensive stance (reinforced by ongoing problems among banks). We believe cash now offers relatively attractive rates, while bringing diversification. Within our Model Asset Allocation we boost cash to the Maximum, while reducing gold to Zero, equities to further Underweight and real estate (REITs) to Neutral (see Figure 37). The relatively conservative stance is balanced by having a regional bias towards EM assets.
We take cash to the maximum allocation	Policy rates have continued to rise, though we think the end of that process is close, especially in the US. Hence, we think that cash now offers a return potential not seen for some time (see Figure 36). Further, we find the diversification qualities of cash to be particularly appealing in a time of uncertainty (though bank risks may add peril), especially when equities and bonds are correlated (see later discussion about the lack of diversification). We expect cash to outperform many other assets on a risk-adjusted basis and boost it to the Maximum allowed 10% from 0% (versus Neutral 2.5%).
We reduce gold to zero	We were previously Overweight gold and it has served us well. However, with US treasury yields already down a lot (and with our model suggesting gold is expensive), we doubt that it can sustain a much higher price. We therefore reduce gold to Zero.
Cyclical exposure reduced by scaling back equities...	Otherwise, the boost to cash is financed by reducing the equity and REIT allocations. Equity prices rebounded from mid-October lows but appear to be on the slide again. Though dividend yields have risen marginally at the global level, we worry about the economic and profit outlook (profits are already falling in the US). We thus reduce the equity allocation to a further Underweight 34% from the previous 37% (versus Neutral 45%). We were already at the maximum allocation to Chinese equities and Overweight EM equities, which we believe are good value (see Figure 3 for regional detail). We have reduced the allocations to the US (to further Underweight) and to Japan (to Neutral), while boosting the UK (to Overweight) and the eurozone (to less Underweight).
...and real estate (REITs)	Real estate is reduced to a Neutral 8% (from 10%), with EM reduced to Neutral (after relatively strong performance in recent months) and Japan reduced to Underweight. There has been further weakness in global REIT dividends which points to problems.
We like government bonds but yields have fallen recently – we remain Neutral	Government yields had risen to attractive levels but fears about the banking sector sparked flows into defensive assets which brought those yields down again. Though we prefer government bonds to equities, we think cash looks even better. We therefore maintain a Neutral stance on government bonds (25% allocation). Given our belief that major central bank tightening is nearly over, we expect yield curves to steepen within our 12-month forecast horizon (with short yields starting to fall and long yields having already fallen). For now we stick with longer duration bonds but that could change over the next 12 months. We remain Overweight EM government bonds and raise the allocation to the US (to more Overweight), while reducing Japan to further Underweight.
Credit yields provide a nice cushion – we remain Overweight	Credit spreads have narrowed since we last wrote but we expect them to widen as economies weaken (and default rates to rise). However, we think the yields provide enough of a cushion (unless there is deep recession or financial meltdown) and we expect relatively attractive returns. We make no changes to the Overweight credit allocations, with IG at 15% (Neutral 10%) and HY at 8% (Neutral 5%).
We remain zero allocated to commodities	Commodities suffered during recent months and we expect a weakening global economy and falling European natural gas prices to depress returns (agriculture may be the exception). We therefore remain zero allocated.
EM favoured	Regionally, we favour EM assets. This is largely because we think they are cheap (relative to both other regions and their own history). EM assets also serve as our hedge in case the global economy does better than we expect.
No currency hedges	Finally, though we believe the US dollar is overvalued and will depreciate, we have not hedged our US dollar position given that we are slightly Underweight US assets.

Risk #1: Banking crisis?

We had become complacent

We have become used to a lack of crises in the banking sector. Of the 561 US bank failures from 2001 to 2022, only 8 occurred in 2018-2022 (involving assets of only \$0.7bn), with zero failures in 2021 and 2022 (based on Federal Deposit Insurance Corporation data). By way of comparison, there were 165 failures during 2008/9, involving assets of \$545bn.

Recent bank collapses and other problems have revealed the risks

Well, that has now changed with the collapse of Silicon Valley Bank (assets of \$209bn) and Signature Bank (\$110bn), both during March 2023. Also in March came the voluntary liquidation of Silvergate Bank. Finally, the problems spread to Europe with concerns about Credit Suisse, whose assets were reported to be CHF531bn (\$575bn) at end 2022, down from CHF756bn (\$829bn) a year earlier. By way of context, the BIS reported Swiss bank assets of \$3,454bn in 2022 Q3 and US bank assets of \$19,507bn.

And stress indices are up

Figure 38 shows a range of indicators of stress in financial markets. Not surprisingly, there has been an increase in US bank credit default swap (CDS) spreads and implied volatility in equity (VIX) and treasury (MOVE) markets. All three indicators are related to the cost of insuring against losses and tend to rise in times of uncertainty.

Different but the same

The concern is that the problems seen in recent weeks are indicative of a broader problem within the banking and financial sectors. Though each incident appears idiosyncratic, it is interesting that they are all occurring at the same time. We think there is also a troubling theme which is that they in some ways reflect the risk-taking behaviour encouraged by lax monetary policies (and a regulatory environment that encouraged the belief that government bonds are risk free) and the unintended consequences of a rapid worsening in financial conditions provoked by aggressive central bank tightening.

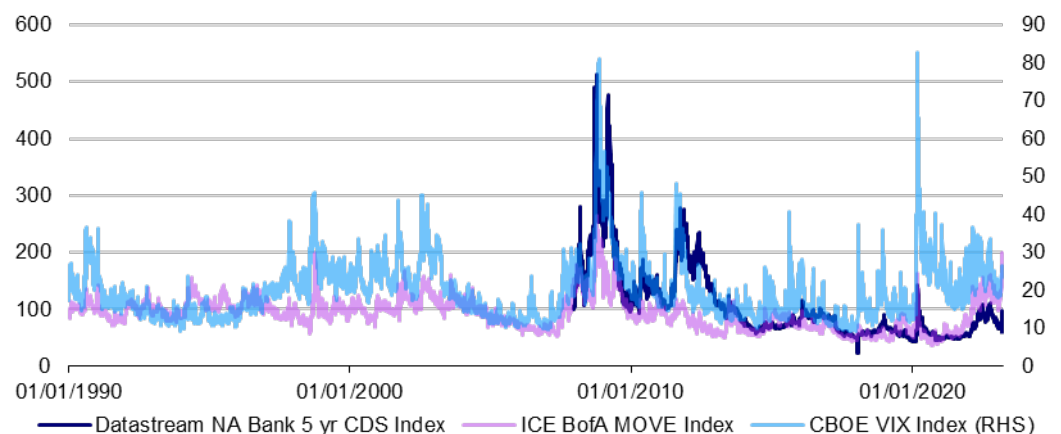
We can't know if other problems will occur but central banks have taken steps to limit the damage

We believe it would be naïve to think these are isolated incidents but we doubt that anybody has the data and models to predict when and where others will erupt. However, central banks, governments and regulators have been quick to react: in the US there are now additional deposit guarantees (to stem bank runs) and Fed willingness to accept treasury securities at par value as collateral for loans to banks (to avoid losses being realised), while the Swiss National Bank has provided extra liquidity to Credit Suisse in case of further deposit losses (there was a deposit outflow above \$100bn in 2022 Q4).

Caution is our watchword

It is now supposed that central banks will be more cautious about further tightening. That may explain the relatively contained movements shown in **Figure 38**. However, we fear that authorities may not have foreseen all potential problems and caution is our watchword, which pushes us to a more defensive short-term stance than otherwise.

Figure 38 – Measures of US banking sector and financial market stress



Note: **past performance is no guarantee of future results.** Based on daily data from 1 January 1990 to 15 March 2023. Datastream NA Bank 5yr CDS Index is a measure of the cost of insuring against default risk when investing in the bonds of US banks in basis points (CDS is Credit Default Swap). ICE BofA MOVE Index is a yield curve weighted index of the normalised implied volatility on 1-month treasury options. CBOE VIX Index is a market estimate of the expected volatility of the S&P 500 index. MOVE and VIX are barometers of uncertainty in US treasury and US equity markets. Source: ICE BofA, CBOE, Refinitiv Datastream and Invesco

Diversifiers are hard to find

Risk #2: Lack of diversification opportunities

As we all discovered in 2022, diversification opportunities can disappear when you need them most. Among the assets we cover, only commodities and cash offered positive returns (and the latter depended on where you were). Worst of all, the correlation between equities and bonds flipped from negative to positive, with global government bonds generating similar losses to global equities (**Appendix 2** shows that bonds generated bigger losses than equities in the most recent 12 months).

Equity/bond correlations changed in 2021/22

Figure 39 shows the correlation between daily changes in the S&P 500 and the 10-year US treasury yield. When this correlation is positive, it suggests that equities rise when the treasury yield rises (and vice-versa), which usually indicates a negative correlation between the returns on the two assets. As shown in the chart, the correlation between equities and treasury yields had been largely positive since the turn of the century.

Is this a permanent change?

Hence, we had become used to the idea that equities rise with bond yields, which seems counterintuitive (effectively equities appeared to be reacting to the positive economic news that was driving bond yields higher). However, that started to change in 2021, with correlations measured over one month becoming more equally distributed between positive and negative, while the correlation measured over one year became negative in November 2022 (i.e. for the year running from November 2012 to November 2022) and has become more so. Hence, 2022 was unusual in the context of the last 20 years.

Our optimisation work assumes not, which may therefore underestimate portfolio risk

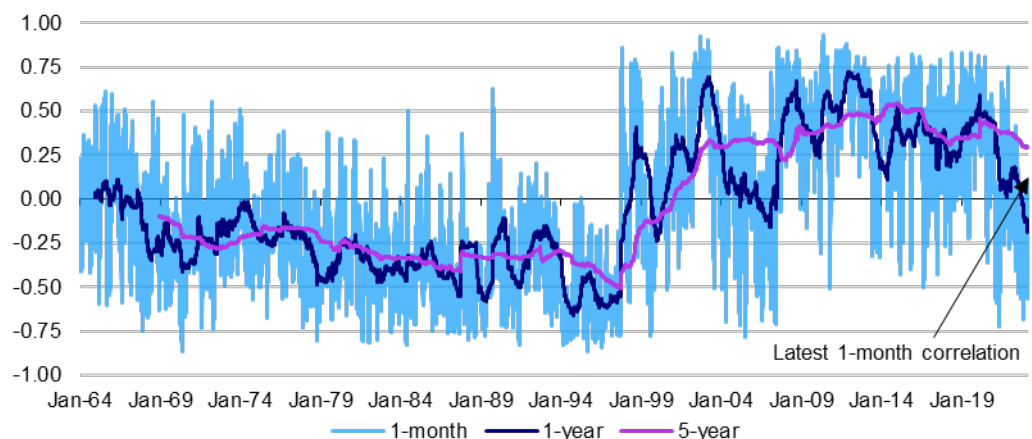
The problem for asset allocators is to understand whether this was a temporary blip (as in 1999-2000 and 2006-07) or whether it represents a permanent change. In our optimisation work, we use a 5-year covariance matrix to avoid the flip-flopping apparent in the 1-month correlations shown in **Figure 39**. The correlation measured over five years remains positive, and using it assumes that bond and equity prices will move in opposite directions. Hence, if the correlation regime has changed permanently, our optimisation work will overestimate the diversification potential of equities and bonds.

This makes us even more keen to use cash

The problem being that it is difficult to know for sure. Perhaps the correlation changed in 2021/22 because of the rise in inflation and the reaction of central banks. If that were the case, we would expect the correlation to revert to the pre-2022 regime as inflation falls (as we think it will). Interestingly, the 1-month correlation has very recently turned positive (falling bond yield associated with falling equity prices) but it is pretty volatile.

We believe that the only asset that offers diversification is cash (see the lack of correlation indicated in **Figure 36**). So in these times of uncertainty about investment returns and covariance matrices, we think it sensible to boost the role of cash within our Model Asset Allocation (though a widespread banking crisis could test this hypothesis).

Figure 39 – Correlation between daily changes in S&P 500 and US 10-year yield



Note: **past performance is no guarantee of future results**. Based on daily data from 31 December 1963 to 15 March 2023. Correlations are calculated based on the percentage daily changes in the S&P 500 and 10-year US treasury yield. The correlations are measured over 1-month, 1-year and 5-year periods.
Source: Refinitiv Datastream and Invesco

Our base case is that we are in contraction, with central bank rates close to peaking

Alternative #1: central banks tighten more aggressively

Alternative #2: central banks ease aggressively

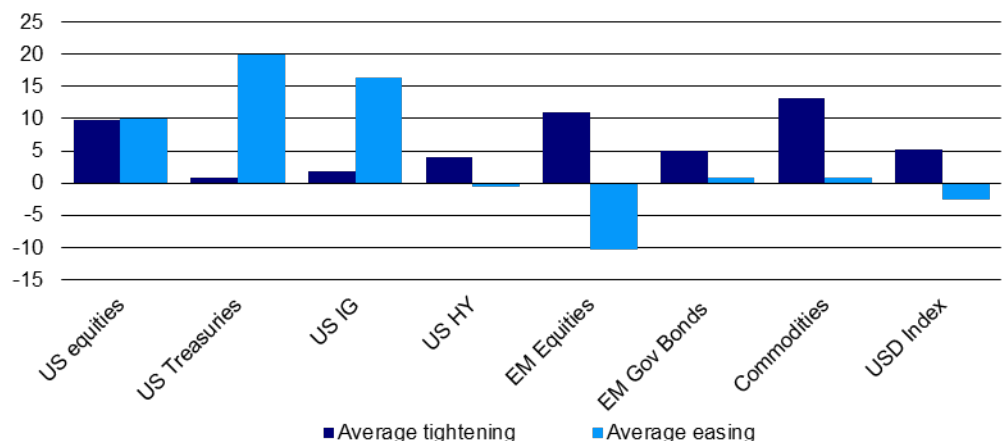
Risk #3: Alternative scenarios - persistent inflation and a bank crisis

Our central scenario is that we are in a contraction regime and that usually favours defensive assets such as government bonds. We also assume central banks will now be less hawkish than previously thought (as a direct result of the fragility in the banking sector). However, we need to consider how we could be wrong and what difference that would make to asset performance. We consider two alternative scenarios:

- **Central banks continue to tighten (due to persistence of inflation)**
 - We suppose that persistent inflation could cause central banks to be more aggressive than we assume, pushing short term bond yields higher.
 - We believe this would increase the risk and depth of recession, thereby widening credit spreads and increasing default rates.
 - We also suppose that business profits and real estate rentals will suffer.
 - We would be even more favourable towards defensive assets such as cash and government bonds (especially longer maturity) and would be extremely wary of riskier assets such as equities, real estate and HY credit.
 - Despite higher inflation, we believe industrial commodities would be weakened by deep recession.
 - From a regional perspective, we believe such a dramatic scenario would benefit the US dollar (the Fed would be even more aggressive) and US assets. We suspect that Asia (including China and Japan) could be sheltered to some extent under such a scenario due to their low inflation, thus allowing their equity markets to outperform.

- **Central banks loosen aggressively in response to bank crisis and low inflation**
 - We believe central bank peak rates would be lower than in the central scenario and easing would come sooner and be aggressive.
 - Given the reasons for the easing, we would expect cash and government debt to outperform, while we think riskier assets would suffer in the first instance (including HY credit, equities and EM assets).
 - **Figure 40** shows how a range of assets have performed during previous Fed easing cycles, though we think that template is overly optimistic about US equities (the GFC may be a better template).

Figure 40 – Annualised USD total returns during Fed rate cycles (%)

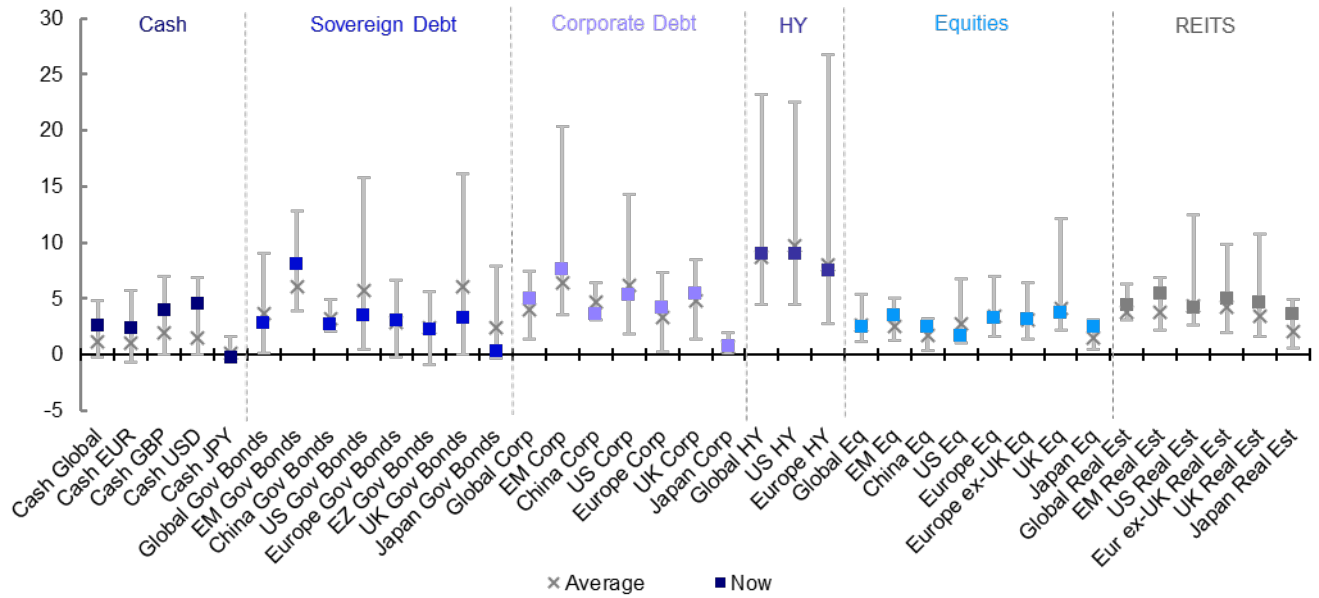


Note: **past performance is no guarantee of future results.** Based on monthly total return indices in US dollars from April 1980 to April 2020. The following indices are used: MSCI USA (US equities), Datastream US Benchmark 10 Year (US treasuries), ICE BofA US Corporate Master (US IG), ICE BofA US HY Master II (US HY), MSCI Emerging Markets (EM Equities), JP Morgan EMBI Global Composite (EM Gov Bonds until 2015), Bloomberg EM USD Aggregate Sovereign (EM Gov Bonds from 2015), S&P GSCI Commodity Total Return (Commodities), Federal Reserve US Dollar Major Currency Index (USD Index). We identify six previous Fed tightening episodes starting in March 1983 (except for US HY which covers five episodes starting in November 1986 and EM Equities and EM Gov Bonds which cover four episodes starting in January 1994). "Average tightening" shows the annualised return averaged across those episodes, excluding the current tightening cycle. We identify eight previous easing cycles, starting in April 1980, except for US HY and EM Equities which cover five episodes starting in May 1989 and EM Gov Bonds which covers four episodes starting in June 1995. "Average easing" shows the annualised return averaged across those episodes. Source: Bloomberg, ICE BofA, JP Morgan, MSCI, S&P GSCI, Refinitiv Datastream and Invesco

Appendices

Appendix 1: Global valuations vs history

Regional yields within historical ranges (%)



Notes: **Past performance is no guarantee of future results.** As of 13 March 2023. See appendices for definitions, methodology and disclaimers. Source: Bloomberg Barclays, BofAML, FTSE, Refinitiv Datastream and Invesco

Appendix 2: Asset class total returns

Data as at 13/03/2023	Index	Current Level/Ry	Total Return (USD, %)				Total Return (Local Currency, %)			
			4m	YTD	12m	5y*	4m	YTD	12m	5y*
Equities										
World	MSCI	620	-0.1	1.8	-5.3	5.6	-0.8	1.8	-3.3	6.8
Emerging Markets	MSCI	941	3.4	0.7	-8.5	-2.0	2.8	1.1	-4.6	0.9
China	MSCI	63	14.1	-0.2	-3.4	-5.9	13.5	0.0	-2.0	-5.9
US	MSCI	3762	-3.0	0.9	-7.3	8.7	-3.0	0.9	-7.3	8.7
Europe	MSCI	1793	7.3	5.3	4.3	3.6	3.9	4.7	7.7	6.2
Europe ex-UK	MSCI	2216	7.1	6.0	4.9	4.0	3.7	5.5	6.9	6.5
UK	MSCI	1073	7.7	3.0	2.3	2.3	4.3	1.9	10.1	5.2
Japan	MSCI	3188	4.9	4.9	-0.3	1.2	0.4	5.8	13.4	5.8
Government Bonds										
World	BofA-ML	2.85	3.6	2.3	-11.8	-2.5	1.6	2.3	-7.9	-0.5
Emerging Markets (USD)	BBloom	8.13	8.6	1.8	-8.3	-1.3	8.6	1.8	-8.3	-1.3
China	BofA-ML	2.71	3.1	1.3	-5.3	3.0	0.0	0.5	3.3	4.8
US (10y)	Datastream	3.58	3.9	3.5	-10.1	1.3	3.9	3.5	-10.1	1.3
Europe	Bofa-ML	2.95	3.7	2.5	-15.2	-4.4	-0.2	2.0	-13.3	-1.6
Europe ex-UK (EMU, 10y)	Datastream	2.25	4.1	4.0	-16.5	-4.8	0.2	3.4	-14.7	-2.0
UK (10y)	Datastream	3.33	3.1	5.0	-19.3	-4.5	-0.1	3.9	-13.1	-1.7
Japan (10y)	Datastream	0.29	6.5	2.8	-10.2	-3.9	2.0	3.7	2.2	0.5
IG Corporate Bonds										
Global	BofA-ML	5.14	4.9	2.2	-7.6	-0.2	3.9	2.1	-6.5	0.7
Emerging Markets (USD)	BBloom	7.76	14.8	2.4	-4.3	0.5	14.8	2.4	-4.3	0.5
China	BofA-ML	3.57	2.7	1.4	-6.2	2.7	-0.4	0.7	2.4	4.5
US	BofA-ML	5.54	4.7	2.1	-6.3	1.5	4.7	2.1	-6.3	1.5
Europe	BofA-ML	4.23	5.7	2.2	-10.0	-4.1	1.7	1.6	-8.0	-1.3
UK	BofA-ML	5.50	6.5	4.5	-16.8	-3.4	3.2	3.3	-10.4	-0.6
Japan	BofA-ML	0.75	4.1	-0.1	-13.2	-4.3	-0.3	0.8	-1.2	0.0
HY Corporate Bonds										
Global	BofA-ML	9.02	4.7	1.9	-4.5	1.2	3.8	1.8	-3.9	1.8
US	BofA-ML	8.95	2.4	1.6	-4.7	2.5	2.4	1.6	-4.7	2.5
Europe	BofA-ML	7.67	7.0	3.0	-5.7	-2.2	2.9	2.4	-3.6	0.6
Cash (Overnight LIBOR)										
US		4.55	1.4	0.9	2.6	1.3	1.4	0.9	2.6	1.3
Euro Area		2.47	2.7	-0.5	-3.3	-3.2	0.6	0.4	0.6	-0.3
UK		3.97	2.9	0.9	-5.9	-2.1	1.2	0.8	2.2	0.7
Japan		-0.10	4.3	-2.0	-11.3	-4.6	0.0	0.0	-0.1	-0.1
Real Estate (REITs)										
Global	FTSE	1532	-2.0	-0.6	-17.6	0.5	-5.7	-1.1	-15.8	3.4
Emerging Markets	FTSE	1290	4.4	-3.8	-12.8	-8.2	0.5	-4.4	-10.9	-5.5
US	FTSE	2818	-3.3	0.2	-17.4	4.8	-3.3	0.2	-17.4	4.8
Europe ex-UK	FTSE	2095	-4.6	-0.5	-33.9	-6.4	-8.2	-1.1	-32.5	-3.7
UK	FTSE	733	-4.4	-0.4	-32.8	-5.4	-7.4	-1.5	-27.7	-2.7
Japan	FTSE	2080	-2.7	-1.5	-9.0	-0.7	-6.8	-0.6	3.5	3.8
Commodities										
All	GSCI	3297	-10.5	-5.7	-12.7	5.4	-	-	-	-
Energy	GSCI	562	-16.2	-8.1	-12.6	4.3	-	-	-	-
Industrial Metals	GSCI	1656	-1.3	-1.2	-25.0	3.6	-	-	-	-
Precious Metals	GSCI	2152	7.5	3.6	-5.2	6.2	-	-	-	-
Agricultural Goods	GSCI	532	-3.9	-4.8	-14.8	5.7	-	-	-	-
Currencies (vs USD)**										
EUR		1.07	3.6	0.3	-1.6	-2.8	-	-	-	-
JPY		133.21	4.2	-1.6	-11.9	-4.4	-	-	-	-
GBP		1.22	3.2	1.1	-7.1	-2.8	-	-	-	-
CHF		1.10	3.3	1.4	2.5	0.7	-	-	-	-
CNY		6.85	3.8	0.8	-7.4	-1.6	-	-	-	-

Notes: **Past performance is no guarantee of future results.** *Five-year returns are annualised. **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.

Appendix 3: Invesco 10-year Capital Market Assumptions (USD version)

	Asset Class	Index	Expected geometric return	Expected arithmetic return	Expected Risk	Arithmetic return to risk ratio
			%	%	%	
Fixed income	US Treasury Short	BBG BARC US Treasury Short	4.2	4.2	1.5	2.79
	US Treasury Intermediate	BBG BARC US Treasury Intermediate	4.1	4.2	4.6	0.90
	US Treasury Long	BBG BARC US Treasury Long	3.4	4.0	12.0	0.34
	US TIPS	BBG BARC US TIPS	4.3	4.4	5.8	0.77
	US Bank Loans	CSFB Leverage Loan Index	9.3	9.7	8.3	1.16
	US Aggregate	BBG BARC US Aggregate	4.5	4.7	6.1	0.77
	US Inv Grd Corps	BBG BARC US Investment Grade	4.8	5.0	7.8	0.65
	US MBS	BBG BARC US MBS	4.7	5.0	6.7	0.74
	US Preferred Stocks	BOA ML Fixed Rate Pref Securities	5.6	6.3	12.3	0.51
	US High-Yield Corps	BBG BARC US High Yield	7.1	7.6	10.2	0.74
	US Muni	BOA ML US Muni	3.6	3.9	7.0	0.55
	US Muni (Taxable)	ICE BOA US Taxable Muni Securities Plus	4.7	5.0	8.0	0.62
	US HY Muni	BBG US Muni Bond HY	4.3	4.7	8.7	0.53
	Global Aggregate	BBG BARC Global Aggregate	4.4	4.6	7.2	0.64
	Global Aggregate-Ex US	BBG BARC Global Aggregate- Ex US	4.4	4.9	10.5	0.46
	Global Treasury	BBG BARC Global Treasuries	4.3	4.6	8.6	0.54
	Global Sovereign	BBG BARC Global Sovereign	4.2	4.5	8.1	0.56
	Global Corporate	BBG BARC Global Corporate	4.9	5.2	8.1	0.65
	Global Inv Grd	BBG BARC Global Corporate Inv Grd	5.0	5.3	8.2	0.64
	Eurozone Corporate	BBG BARC Euro Aggregate Credit - Corporate	5.0	5.9	13.6	0.43
	Eurozone Treasury	BBG BARC Euro Aggregate Government - Treasury	4.5	5.3	12.8	0.41
	Asian Dollar Inv Grd	BOA Merrill Lynch ACIG	5.0	5.4	8.3	0.65
	EM Aggregate	BBG BARC EM Aggregate	6.2	7.0	13.2	0.53
	EM Agg IG	BBG BARC EM USD Agg IG	4.7	5.0	8.9	0.57
	China Policy Bk & Tsy	BBG BARC China PB Tsy TR	4.4	4.5	4.3	1.03
	China RMB Credit	BBG BARC China Corporate	4.5	4.6	3.8	1.20
Equities	World Equity	MSCI ACWI	7.3	8.6	17.1	0.50
	World Ex-US Equity	MSCI ACWI Ex-US	7.4	9.0	19.0	0.47
	US Broad	Russell 3000	7.4	8.8	17.6	0.50
	US Large Cap	S&P 500	7.2	8.5	16.9	0.50
	US Mid Cap	Russell Midcap	7.6	9.4	19.7	0.48
	US Small Cap	Russell 2000	9.1	11.4	23.0	0.50
	MSCI EAFE	MSCI EAFE	6.8	8.4	18.8	0.45
	MSCI Europe	MSCI Europe	6.9	8.5	18.9	0.45
	Eurozone	MSCI Euro X UK	7.0	8.7	20.0	0.44
	UK Large Cap	FTSE 100	6.5	8.3	20.2	0.41
	UK Small Cap	FTSE Small Cap UK	8.2	11.1	25.8	0.43
	Canada	S&P TSX	6.3	8.1	20.4	0.40
	Japan	MSCI JP	6.1	8.4	22.5	0.37
	Emerging Market	MSCI EM	8.9	11.6	25.0	0.46
	Asia Pacific Ex JP	MSCI APXJ	8.3	11.0	25.1	0.44
China Large Cap	CSI 300	9.4	14.3	34.6	0.41	
Alternatives	Global Infra	DJ Brookfield Global Infra	8.7	9.6	14.8	0.65
	Global REITs	FTSE EPRA/NAREIT Developed Index	6.5	8.1	18.8	0.43
	Hedge Funds	HFRI HF Index	5.1	5.4	8.7	0.62
	Commodities	S&P GSCI	8.9	11.4	23.8	0.48
	Agriculture	S&P GSCI Agriculture	4.4	6.5	21.4	0.31
	Energy	S&P GSCI Energy	11.7	17.1	37.0	0.46
	Industrial Metals	S&P GSCI Industrial Metals	8.3	10.8	24.2	0.45
Precious Metals	S&P GSCI Precious Metals	6.0	7.6	18.5	0.41	

Notes: Estimates as of 31 December 2022, as published in Long-Term Capital Market Assumptions (March 2023). These estimates reflect the views of Invesco Investment Solutions, the views of other investment teams at Invesco may differ from those presented here. **There is no guarantee that these views will come to pass.** TIPS = treasury inflation protected securities, MBS = mortgage-backed securities. Source: Invesco Investment Solutions

Appendix 4: Key assumptions

Key assumptions for 1-year projected returns

	US	Eurozone/ Europe ex-UK	UK	Japan	EM	China
Central bank rates (%)	4.25	3.00	4.00	0.00	-	4.00
Sovereign spreads vs rates (bps)	-30	50	-50	75	-	-
Corporate IG spreads vs sovereign (bps)	180	150	250	45	-	-
Corporate HY spreads vs sovereign (bps)	575	500	-	-	-	-
Corporate HY default rates (%)	4.0	4.0	-	-	-	-
Corporate HY recovery rates (%)	40	40	-	-	-	-
Equities dividend growth (%)*	3.0	3.0	0.0	7.0	2.0	5.0
Equities dividend yield (%)*	1.7	3.1	3.5	2.5	3.3	2.5
Real estate (REITS) dividend growth (%)*	2.0	2.0	2.0	0.0	-2.0	-
Real estate (REITS) dividend yield (%)*	4.0	5.0	4.5	3.5	5.3	-

Notes: *assumptions for Europe ex-UK. One-year assumptions are based on our analysis of how current values compare to historical norms (assuming some degree of reversion to the mean, except where our analysis suggests historical norms are unlikely to be a guide to the future), adjusted for our view about the development of the economic and financial market cycles over the next year in each region.

There is no guarantee that these views will come to pass.

Source: Invesco Global Market Strategy Office

Appendix 5: 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.

Appendix 6: Definitions of data and benchmarks

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

Cash: returns are based on a proprietary index calculated using the Intercontinental Exchange Benchmark Administration overnight LIBOR (London Interbank Offer Rate). From 1st January 2022, we use the Refinitiv overnight deposit rate for the euro, the British pound and the Japanese yen. The global rate is the average of the euro, British pound, US dollar and Japanese yen rates. The series started on 1 January 2001 with a value of 100.

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

Government bonds: Current values in the market forecast table (**Figure 35**) use Datastream benchmark 10-year yields for the US, Eurozone, Japan and the UK and the Thomson Reuters China benchmark 10-year yield for China. Historical and projected yields and returns (**Figures 1, 2, 4, 5, 23, 35, 36**) are based on Bank of America Merrill Lynch government bond indices with historical ranges starting on 31 December 1985 for the Global, Europe ex-UK, UK and Japanese indices, 30 January 1978 for the US and 31 December 2004 for China. The emerging markets yields and returns are based on the Barclays Bloomberg emerging markets sovereign US dollar bond index with the historical range starting on 28 February 2003. The same indices are used to construct Appendix 1.

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

Corporate high yield (HY) bonds: Bank of America Merrill Lynch high yield indices with historical ranges starting on 29 August 1986 for the US dollar, and 31 December 1997 for the Global and euro indices.

Equities: We use MSCI benchmark indices to calculate projected returns and calculate long-term total returns with historical ranges starting on 31 December 1969 for the Global, US, Europe ex-UK, UK and Japanese indices, 31 December 1987 for the emerging markets index and 31 December 1992 for the China index (**Figures 1, 2, 36 & 37**). Equity index valuations (**Figures 4, 5, 23, 26 and Appendix 1**) are based on dividend yields and price-earnings ratios using Datastream benchmark indices with historical ranges starting on 1 January 1973 for the Global, US, Europe ex-UK and Japanese indices, 31 December 1969 for the UK index, 2 January 1995 for the Emerging Markets index, 26 August 1991 for the China A-Shares index and 1 January 1990 for the India index.

Real estate: We use FTSE EPRA/NAREIT indices with historical ranges starting on 29 December 1989 for the US, Europe ex-UK, UK and Japanese indices, 18 February 2005 for the Global index, and 31 October 2008 for the Emerging Markets index.

Commodities: Goldman Sachs Commodity Index with historical ranges starting on 31 December 1969 for the All Commodities and Agriculture indices, 31 December 1982 for the Energy index, 3 January 1977 for the Industrial Metals index, and 2 January 1973 for the Precious Metals index. "Industrial commodities" is oil & gas and industrial metals.

Definitions of data and benchmarks for Appendix 2

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). From 1st January 2022, we use the Refinitiv overnight deposit rate for the euro, the British pound and the Japanese yen. The global rate is the average of the euro, British pound, US dollar and Japanese yen rates. The series started on 1 January 2001 with a value of 100.

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

Government bonds: Current levels, yields and total returns use Datastream benchmark 10-year yields for the US, Eurozone, Japan and the UK, and the Bank of America Merrill Lynch government bond total return index for China, 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 and the Barclays Bloomberg emerging markets corporate US dollar bond total return index for emerging markets.

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

Appendix 7: IIS Capital Market Assumptions methodology (Figure 6 & Appendix 3)

We show a summary of the Capital Market Assumptions produced by Invesco's Investment Solutions team (IIS) and this is a summary of their methodology.

Invesco Investment Solutions (IIS) employ a fundamentally based "building block" approach to estimating asset class returns. Estimates for income and capital gain components of returns for each asset class are informed by fundamental and historical data. Components are then combined to establish estimated returns. This is a summary of key elements of the methodology used to produce long-term (10-year) and medium term (5-year) estimates.

Fixed income returns are composed of the average of the starting (initial) yield and expected yield for bonds, estimated changes in valuation given changes in the Treasury yield curve, roll return which reflects the impact on the price of bonds that are held over time, and a credit adjustment which estimates the potential impact on returns from credit rating downgrades and defaults.

Equity returns are composed of: a dividend yield, calculated using dividend per share divided by price per share, buyback yield, calculated as the percentage change in shares outstanding resulting from companies buying back or issuing shares, valuation change, the expected change in value given the current Price/Earnings (P/E) ratio and the assumption of reversion to the long-term average P/E ratio, and the estimated growth of earnings based on the long-term average real GDP per capita and inflation.

Alternative returns are composed of a variety of public versus private assets with heterogeneous drivers of return given their distinct nature. They range from a beta driven proxy to public markets or a bottom up, building block methodology like that of fixed income or equities, depending on whether they are more bond like or stock like.

Volatility estimates for the different asset classes are derived using rolling historical quarterly returns of various market benchmarks. Given that benchmarks have differing histories within and across asset classes, volatility estimates of shorter-lived benchmarks are normalised to ensure that all are measured over similar time periods.

For the full Capital Market Assumptions methodology, please contact the IIS team.

Important information

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

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