Invesco

The Big Picture

Global Asset Allocation 2023 Outlook

20 November 2022

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Global Asset Allocation: 2023 Outlook

Given our view that 2023 will be a year of transition from a contraction regime to one of recovery, we reduce the defensiveness of our Model Asset Allocation, while keeping some powder dry for when recovery is confirmed. We are reducing the government bond allocation to Neutral, while increasing the allocation to high yield (to Overweight). We also reduce the cash allocation to zero, replacing it as diversifier of choice with an Overweight allocation to gold. From a regional perspective EM and US are preferred.

Model asset allocation

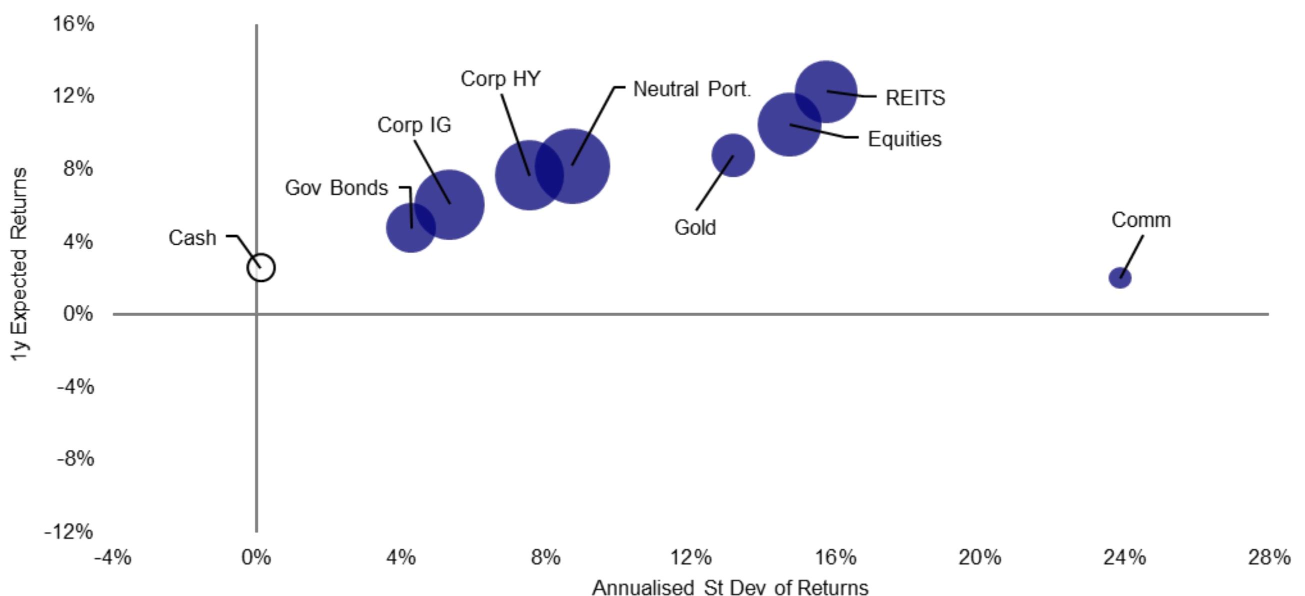
In our view:

- Real estate (REITS) has the potential to produce the best returns. We remain Overweight.
- Equities offer decent potential but not on a risk-adjusted basis. We remain Underweight.
- Corporate high yield (HY) is now more attractive and does well in recoveries. We increase to Overweight.
- Corporate investment grade (IG) has an attractive risk-reward trade-off. We remain Overweight.
- Government debt less favoured as we transition from contraction to recovery. We reduce to Neutral.
- Cash returns better than for some time but we think there are better options. We reduce to zero.
- Commodities could be helped by weakening dollar but some are expensive. We remain at Zero.
- Gold may be helped by falling long yields and a weakening dollar. We increase to Overweight.
- Regionally, we favour the EM and US (a barbell approach).
- US dollar expected to weaken but we do not hedge.

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

- Japan equities
- EM real estate
- US HY
- Gold

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



There is no guarantee that these views will come to pass. 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 10 November 2022. See Appendices for definitions, methodology and disclaimers. Source: BAML, MSCI, GSCI, FTSE, Refinitiv Datastream and Invesco. Forecasts are not reliable indicators of future performance.

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Summary and conclusions: 2023 – from contraction to recovery

We are becoming less defensive but keeping some powder dry

Given our view that 2023 will be a year of transition from a contraction regime to one of recovery, we reduce the defensiveness of our Model Asset Allocation, while keeping some powder dry for when recovery is confirmed. We are reducing the government bond allocation to Neutral, while increasing the allocation to high yield (to Overweight). We also reduce the cash allocation to zero, replacing it as diversifier of choice with an Overweight allocation to gold. From a regional perspective EM and US are preferred.

The economic slowdown during 2022 was more severe than we expected, with recession now possible. However, we believe markets were most impacted by high inflation, aggressive central bank tightening and rising bond yields. The latter has been more important than any profit slowdown in depressing equity markets, in our opinion.

We expect disinflation in 2023, causing a regime shift in markets by end-2023 Q1 (to recovery)

Hence, we believe the path of inflation will be critical for financial markets in 2023. Our base case assumes a rapid decline in headline inflation to below core inflation (assumed to remain above target over the coming years). We expect sufficient disinflation in early 2023 to allow central banks to first scale back and then end rate hikes (in 2023 Q2 for the Fed and 2023 H2 for the ECB/BOE). We believe markets will anticipate this and expect a market regime switch from contraction to recovery by the end of 2023 Q1.

Underlying assumptions

Underpinning our asset projections for 2023 are the following assumptions:

- Global GDP growth slips to 3% with some economies in recession
- Global inflation will fall but remain above many central bank targets
- The Fed, ECB and BOE continue hiking; rates peak in mid-2023 (PBOC loosens)
- Long-term government bond yields fall; yield curves flatten/invert
- Credit spreads widen (but not to historical peaks) and defaults rise
- Equity and REIT dividend growth moderates and yields fall slightly
- Commodities eventually recover once the recovery phase starts
- USD weakens as Fed tightening ends

Fed to stop hiking rates during 2023 Q2, which should help EM assets and gold

The full set of assumptions is shown in **Appendix 4**, while the resultant market targets are shown in **Figure 30**. Projected returns for global assets are shown in **Figures 1** and **32**. Perhaps the single most important forecast is that Fed and other major central bank policy rates will peak in mid-2023 and be moving lower by the end of the year. We expect this to help long-term bond yields edge lower, with the US dollar weakening as the Fed signals an end of its tightening is in view. We think this combination could help gold during 2023 and offer support to other commodities (though those sensitive to the economic cycle may remain under pressure early in the year). We also believe that the ending of the Fed's tightening cycle and a weakening of the dollar could help EM assets.

Optimisation process favours IG, HY and gold

Our optimisation process (based on the projections shown in **Figure 1**) favours investment grade credit (IG), high yield credit (HY) and gold (see **Figure 32**), while cash, commodities and equities are out of favour. The problem is that we expect a transition from a contraction regime (defensive assets preferred) to a recovery regime (riskier assets preferred) during the early part of 2023. So we have a foot in both camps. We also think there is a risk that we are wrong about inflation falling rapidly and our alternative "Persistent inflation" scenario envisages that we remain in a contraction regime during 2023. Though we reduce the defensiveness of our Model Asset Allocation, we don't want to go too far until the transition to recovery is confirmed.

Govt. bonds and cash reduced; HY and gold boosted

Hence, within our Model Asset Allocation, we have chosen to reduce the **government bond** allocation to a Neutral 25%, versus the previous Overweight 30% and have reduced **cash** to zero (see **Figure 3**). Within government bonds we reduce the eurozone and Japan allocations, while boosting the UK (where yields are now higher). These reductions allow us to boost the allocations to **HY** to an Overweight 8% (with a preference for the US) and **gold** (to an Overweight 5% from zero). Though we expect HY spreads to widen further and defaults to rise, the projected returns are relatively attractive and HY tends to perform well in the early stages of recovery. Gold would not normally be a recovery choice but if yields and the dollar fall during 2023, we think it could do well.

Real estate is our favoured cyclical asset; Underweight equities and commodities

Real estate remains our favourite cyclical asset, aided by generous yields. We remain at an Overweight 10% but boost the allocation to Japan at the expense of the eurozone (based on our 12-month return projections). We maintain the **equity** allocation at an Underweight 37% but have boosted the US (still Underweight) and Japan while reducing the UK, eurozone and EM. We expect a slight decline in bond yields to help US indices on a relative basis (due to the prevalence of growth stocks). **Commodities** remain at zero, as we think cyclical pressures will remain negative in the short term.

EM and the US are the preferred regions

Our preferred regions across all assets are EM and the US, while the Eurozone is the biggest Underweight. **Figure 3** shows EM are preferred in most categories, partly due to value considerations and partly because we are looking ahead to a Fed pivot and dollar weakness. In the case of the US, the Overweight in fixed income assets outweighs the Underweight in equities and is largely due to superior yields and the expectation the Fed will stop tightening ahead of European central banks. Though we expect the dollar to weaken we have chosen not to hedge USD exposure (the Overweight is minimal).

We expect equity factor preferences to switch from low vol to size and sector preferences to go from defensive to early cyclical

When focusing on equities, we expect the transition from contraction to recovery to bring a change in preference from the low volatility factor to size. Across sectors, we have stated a preference for defensives (such as consumer staples and healthcare) throughout the contraction regime but anticipate a switch to early cyclicals (such as consumer products & services and technology).

Alternative scenario imagines inflation staying higher for longer

Geopolitical risks are likely to persist as a result of the Russia-Ukraine war and the US-China tensions that are never far below the surface. However, when looking at alternatives to our base case scenario we are focused on economics, with a persistent inflation variant that imagines inflation staying higher for much longer than in the base case, with central banks continuing to tighten throughout 2023 and long-term bond yields moving higher. We believe this would keep us in a contraction regime throughout the year (see **Figure 2** for a summary and asset preferences).

Figure 2 – Two scenarios for 2023 and our favoured assets

	Base case	Alternative
Inflation trend	Disinflation	Persistent inflation
Central bank policy	Rates peak in mid-2023	Rates rise throughout 2023
Yield curves	Further inversion with pivot (short rates up, long rates down)	Further inversion (yields rise along the curve but more at short-end)
Global growth	Moderate risk of shallow recession	Elevated risk of deep recession
Market regime	Contraction => recovery before end 2023 Q1	Contraction regime persists
Favoured currencies	USD => CAD EUR AUD GBP EM	USD EUR GBP
Favoured assets	Cash => HY credit Government bonds Real estate IG credit Equities Industrial metals Gold	Cash Government bonds IG credit

See appendices for definitions, methodology and disclaimers. Source: Invesco

Model asset allocation*

Figure 3 – Model asset allocation (10/11/2022)

	Neutral	Policy Range		Allocation	Position vs Neutral
Cash Equivalents	**5%**	**0-10%**	↓	**5%**	
Cash	2.5%		↓	0%	
Gold	2.5%		↑	5%	
Bonds	**40%**	**10-70%**	↑	**48%**	
Government	25%	10-40%	↓	**25%**	
US	8%			11%	
Europe ex-UK (Eurozone)	7%		↓	5%	
UK	1%		↑	2%	
Japan	7%		↓	3%	
Emerging Markets	2%			4%	
China**	0.2%			0%	
Corporate IG	10%	0-20%		**15%**	
US Dollar	5%		↑	9%	
Euro	2%		↓	2%	
Sterling	1%			2%	
Japanese Yen	1%			0%	
Emerging Markets	1%			2%	
China**	0.1%			0%	
Corporate HY	5%	0-10%	↑	**8%**	
US Dollar	4%		↑	7%	
Euro	1%		↑	1%	
Equities	**45%**	**25-65%**		**37%**	
US	25%		↑	19%	
Europe ex-UK	7%		↓	2%	
UK	4%		↓	2%	
Japan	4%		↑	6%	
Emerging Markets	5%		↓	8%	
China**	2%			4%	
Real Estate	**8%**	**0-16%**		**10%**	
US	2%			3%	
Europe ex-UK	2%		↓	1%	
UK	1%			2%	
Japan	2%		↑	2%	
Emerging Markets	1%			2%	
Commodities	**2%**	**0-4%**		**0%**	
Energy	1%			0%	
Industrial Metals	0.3%			0%	
Precious Metals	0.3%			0%	
Agriculture	0.3%			0%	
Total	**100%**			**100%**	

Currency Exposure (including effect of hedging)					
USD	48%		↑	54%	
EUR	20%		↓	11%	
GBP	7%		↓	8%	
JPY	15%			11%	
EM	9%		↓	16%	
Total	**100%**			**100%**	

*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

A glance in the rear-view mirror

2022 saw convergence – to the downside

A year ago, we expected economic slowdown and suggested there would therefore be convergence of asset returns (as is typical in that phase of the cycle – see **Figure 13**). **Figure 4** shows that convergence did occur but very much to the downside.

Commodities again led the way but equities and REITS incurred big losses, as did govt bonds and IG

As in 2021, commodities produced the best returns (the 2022 returns in **Figure 4** are annualised year-to-date, as of end-October). Surprisingly, in a year when asset returns have been largely negative, government bonds and IG credit have been among the worst performing assets. This is no doubt a function of the sharp rise in bond yields from abnormally low levels. Among cyclical assets, REITS have gone from near top performance in 2021 to the bottom performing asset in 2022 and stocks have also slipped down the rankings. Cash was a stabilising influence on performance.

Regional performance was mixed: China led fixed income rankings

From a regional perspective, US asset returns were aided by the strength of the US dollar (see **Appendix 2**). However, US assets were never the best performer within any asset class (except for HY, where we only compare with Europe). China was the best performer among fixed income assets, with positive year-to-date returns for both government bonds and IG (though with losses when expressed in USD). Unfortunately, broader EM fixed income performance was the worst across the regions we consider.

While Japanese equities and REITS were strong performers

Matters were very different within equities, with China the worst performing market (the UK and Japan were the best). Japan was also the best performer among the REITS, followed by EM. The local currency performance of Japanese assets may have been aided by the extreme weakness of the yen. Within commodities, the strength came from the energy sub-group, with metals prices falling during the year.

1990 is the best template for 2022 and asset performance improved in 1991

It is hard to find a historical template for 2022 asset performance, though 1990 came close with commodities producing strong returns while REITS, stocks and gold all made losses. The catalysts then were Iraq's invasion of Kuwait and recession in the US, with the Savings & Loan crisis a factor. The Fed was cutting rates aggressively throughout 1990 and the dollar weakened, a big difference to now. What followed in 1991 was a rebound in equities and REITS and losses on commodities.

We expect a transition to "recovery" type performance in the coming months

We believe we are in the contraction phase of the global economic cycle, with growth below trend and slowing, a phase in which defensive assets typically outperform. However, we suspect there will be a transition to the recovery phase during 2023, with financial markets anticipating that transition over the coming months.

Figure 4 – Total returns on global assets by calendar year (in USD)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
Govt 10.9%	HY 62.0%	Gold 29.3%	Gold 11.1%	REITS 27.3%	Stocks 27.4%	REITS 12.1%	Cash 0.2%	HY 14.8%	Stocks 23.1%	Cash 2.0%	Stocks 28.4%	Gold 24.8%	CTY 40.4%	CTY 37.0%
Gold 3.1%	REITS 33.0%	REITS 18.6%	Govt 6.8%	HY 19.3%	HY 8.0%	Stocks 5.5%	REITS 0.1%	CTY 11.4%	REITS 13.9%	Govt -0.3%	REITS 21.7%	Stocks 16.5%	REITS 23.1%	Cash 1.0%
Cash 3.1%	Stocks 30.8%	HY 13.9%	IG 4.5%	Stocks 16.5%	REITS 3.3%	IG 3.1%	Stocks -0.3%	Gold 9.0%	Gold 12.6%	Gold -1.7%	Gold 18.7%	IG 10.3%	Stocks 22.3%	Gold -12.0%
IG -8.3%	Gold 27.1%	Stocks 12.3%	HY 2.6%	IG 11.1%	Cash 0.2%	Govt 0.2%	Govt -2.6%	Stocks 8.2%	HY 10.2%	HY -3.3%	CTY 17.6%	Govt 9.2%	HY 1.4%	HY -20.0%
HY -27.9%	IG 19.2%	CTY 9.0%	Cash 0.2%	Gold 5.6%	IG 0.1%	Cash 0.2%	IG -3.8%	REITS 4.4%	IG 9.2%	IG -3.5%	HY 13.7%	HY 8.0%	Cash 0.0%	Stocks -23.2%
Stocks -40.3%	CTY 13.5%	IG 6.0%	CTY -1.2%	Govt 1.7%	CTY -1.2%	HY -0.1%	HY -4.2%	IG 4.3%	Govt 6.5%	REITS -5.4%	IG 11.4%	Cash 0.5%	IG -3.0%	IG -24.6%
REITS -41.8%	Govt 2.3%	Govt 5.6%	Stocks -5.0%	Cash 0.2%	Govt -4.3%	Gold -1.8%	Gold -10.4%	Govt 1.7%	CTY 5.8%	Stocks -8.2%	Govt 5.5%	REITS -6.3%	Gold -4.0%	Govt -25.0%
CTY -46.5%	Cash 0.4%	Cash 0.3%	REITS -5.6%	CTY 0.1%	Gold -27.3%	CTY -33.1%	CTY -32.9%	Cash 0.5%	Cash 1.1%	CTY -13.8%	Cash 2.3%	CTY -23.7%	Govt -6.9%	REITS -31.1%

Notes: **Past performance is no guarantee of future results.** Based on annual total return data from 2008 to 2022 in USD (*2022 is created by annualising data up to 31 October). Calculated using spot price of gold, BofAML 0-3-month US treasury index (Cash), BofAML Global Government Index (Govt), BofAML Global Corporate Index (IG), BofAML Global HY Index (HY), GPR General World Index (REITS), S&P GSCI total return index for commodities (CTY) and MSCI World Index (Stocks).
Source: BofAML, GPR, JP Morgan, MSCI, S&P GSCI, 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 5** 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 for gold). A more detailed version showing regional projections is contained in **Appendix 3**.

Figure 5: Invesco 10-year capital market assumptions (global assets, % ann.)

	USD	EUR	GBP	CHF
Cash & Gold	4.5	2.8	4.9	1.9
Cash - US Treasury Short	3.7	2.0	4.0	1.1
Gold	5.3	3.7	5.7	2.8
Government Bonds	4.2	2.5	4.5	1.6
Corporate IG	5.0	3.4	5.4	2.5
Corporate HY - US HY	7.8	6.2	8.2	5.2
Equities	7.9	6.2	8.3	5.3
Real Estate (REITS)	6.8	5.2	7.2	4.3
Commodities	8.4	6.7	8.8	5.8

Note: Estimates as of 30 September 2022 and based on the 10-year capital market assumptions published by Invesco Investment Solutions in Long-Term Capital Market Assumptions (November 2022). 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

HY and commodities dominate 10-year CMA based optimal portfolios

Not surprisingly, the further we move along the risk spectrum, the higher the projected returns. However, Real Estate (REITS) is the only cyclical asset class that hardly features in the optimal solutions (see **Figure 6**). Though results vary by currency base and depend on what is maximised (Sharpe Ratio or returns), there are some broad themes: HY is maximised in all cases, as are commodities in all but one case. The combination of cash and gold is mainly maximum allocated (but they are never present together). Equity allocations are either minimised (when maximising the Sharpe Ratio) or near maximum (when maximising returns), with government bond allocations the opposite. IG allocations are largely Underweight, though with a few exceptions. Let's see how shortening the time horizon and allowing for the cycle impacts the conclusions.

Figure 6: 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%	7%	10%	0%	10%
Cash	2.5%	0-10%	10%	10%	10%	0%	0%	0%	0%	0%
Gold	2.5%	0-10%	0%	0%	0%	10%	7%	10%	0%	10%
Government Bonds	25%	10-40%	40%	40%	40%	40%	10%	10%	10%	10%
Corporate IG	10%	0-20%	13%	11%	11%	6%	0%	4%	0%	4%
Corporate HY	5%	0-10%	10%	10%	10%	10%	10%	10%	10%	10%
Equities	45%	25-65%	25%	25%	25%	30%	65%	62%	65%	62%
Real Estate (REITS)	8%	0-16%	0%	0%	0%	0%	4%	0%	11%	0%
Commodities	2%	0-4%	2%	4%	4%	4%	4%	4%	4%	4%

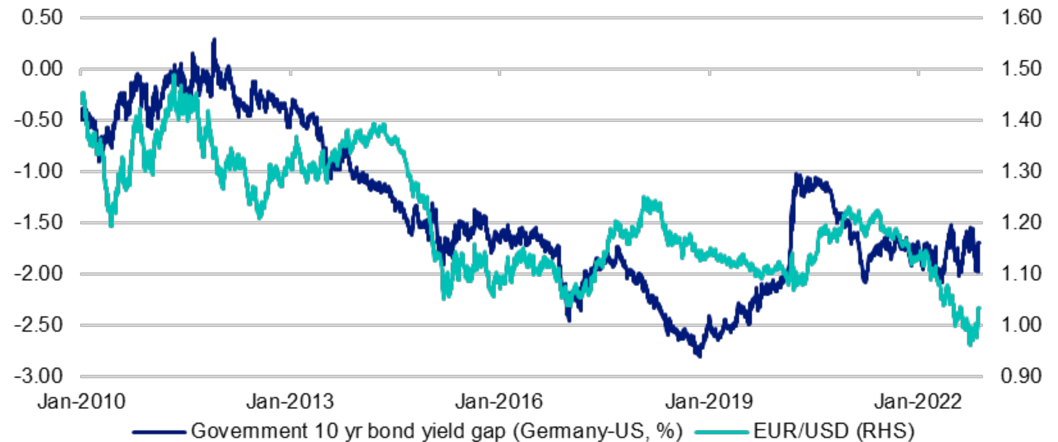
Note: optimisations are based on the 10-year projected returns published by Invesco Investment Solutions in Long-Term Capital Market Assumptions (November 2022), as shown in **Figure 5** above. Optimisations are performed by the Asset Allocation Research team using our historical 10-year covariance matrices (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 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

Politics in 2023: Hopefully less dramatic

One big surprise dominated geopolitics

2022 turned out be more “exciting” than anticipated. The results of Australian, Brazilian and French elections were as expected but US mid-term elections were not and UK politics shook global markets in September. The big event of the year (Russia’s invasion of Ukraine) was largely unexpected and may have contributed to the weakening of the euro versus the dollar despite yield spreads being largely unchanged (see **Figure 7**).

Figure 7 – Is extreme euro weakness a sign of a geopolitical risk premium?



Notes: **Past performance is no guarantee of future results.** Daily data from 1 January 2010 to November 2022
Source: Refinitiv Datastream and Invesco

Welcome back to Washington gridlock

Looking ahead, stalemates between Democrats and Republicans in Washington and between Russia and Ukraine may be the dominant themes of 2023, in our opinion, with Sino-US tensions never far away. Now that the US House of Representatives is under Republican control, it is likely that debt ceiling stand-offs will again become a regular feature of the legislative process, which could unsettle markets from time to time.

Possible changes in Spain and Turkey

Though scheduled 2023 elections are unlikely to be of consequence for global markets, a number could be interesting (see **Figure 8**). UK local elections could show whether Rishi Sunak has repaired the damage done to the Conservative Party’s standing over recent years. Spain’s elections appear likely to provide a swing from left to centre-right, though forming a government could again be difficult. Finally, opinion polls suggest that Turkey’s presidential election could see defeat for President Erdogan, no matter who stands form the Republican People’s Party (assuming a free and fair election).

Figure 8: Selected elections and political events during 2023

13/01/2023	Tunisia	Legislative election
14/01/2023	Czech Republic	Presidential election
25/02/2023	Nigeria	General election
02/04/2023	Finland	Parliamentary election
04/05/2023	United Kingdom	Local elections
07/05/2023	Thailand	General election
28/05/2023	Spain	Local and EU elections
18/06/2023	Turkey	General election
Jun-2023	Greece	Parliamentary election (date to be decided)
Jul-2023	Malaysia	General election (date to be decided)
Oct-2023	Pakistan	General election (to be held by October)
29/10/2023	Ukraine	Parliamentary election (if they are held)
29/10/2023	Argentina	Presidential and Parliamentary elections
Nov-2023	Poland	Parliamentary elections (no later than Nov)
10/12/2023	Spain	Parliamentary elections (by this date)

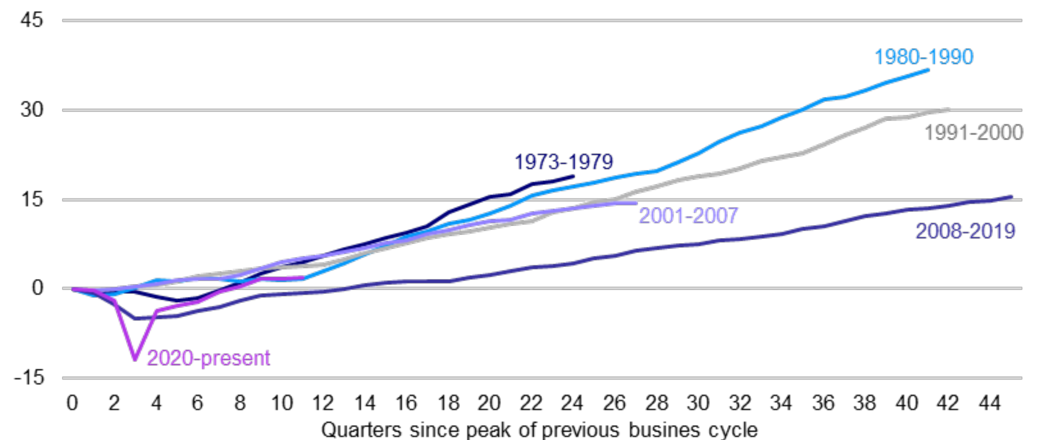
Source: International Foundation for Electoral Systems, National Democratic Institute, Wikipedia, Invesco

A decelerating global economy

The global economic cycle: deceleration and disinflation

After a sharp rebound from the deep global recession of 2020, there appears to have been a loss of momentum (see **Figure 9**). This may be biased by the weak US GDP data reported during 2022 H1, with two successive quarters of negative GDP growth. This would normally be classed as a recession but there were special factors at work (net export drag in Q1 and destocking in Q2). Indeed, **Figure 9** suggests the current G7 upswing is not that unusual compared to historical norms. Encouragingly, those earlier expansions lasted for at least five or six years.

Figure 9 – G7 GDP upswings (% change from previous peak)



Note: quarterly data, with quarter zero being the peak of the previous cycle. As of 31 October 2022
Source: Refinitiv Datastream and Invesco.

With a risk of recession

However, the squeeze on real incomes (due to high inflation), aggressive removal of central bank support, the loss of trade due to sanctions on Russia and energy shortages in Europe, suggest to us that recession risks are growing. **Figure 10** shows that manufacturing surveys in Germany and the US are deteriorating rapidly.

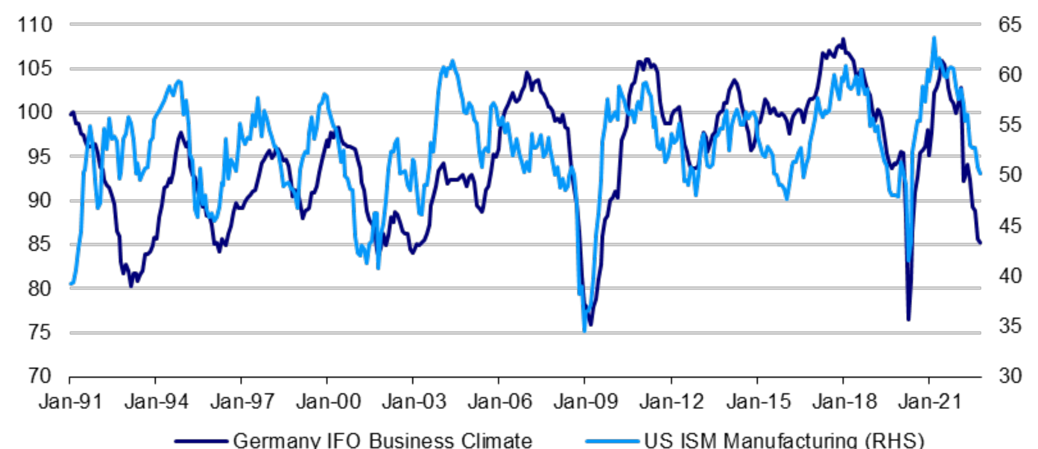
And financial system disruption

Even worse, we are concerned that such a rapid change in policy and financial conditions increases the risk of an accident within the financial system (as illustrated by UK pension industry problems after a proposed change to UK government finances). Such problems are difficult to foresee and can truly be categorised as tail risks.

But transition to a recovery mentality may come in Q1

Such economic disruption (financial system problems and/or recession) could raise financial market volatility, which tends to be a cyclical phenomenon. However, it could also speed the transition away from aggressive central bank tightening, which we think could help markets anticipate the transition to the recovery phase (as early as Q1).

Figure 10 – Manufacturing surveys point to weakening economies

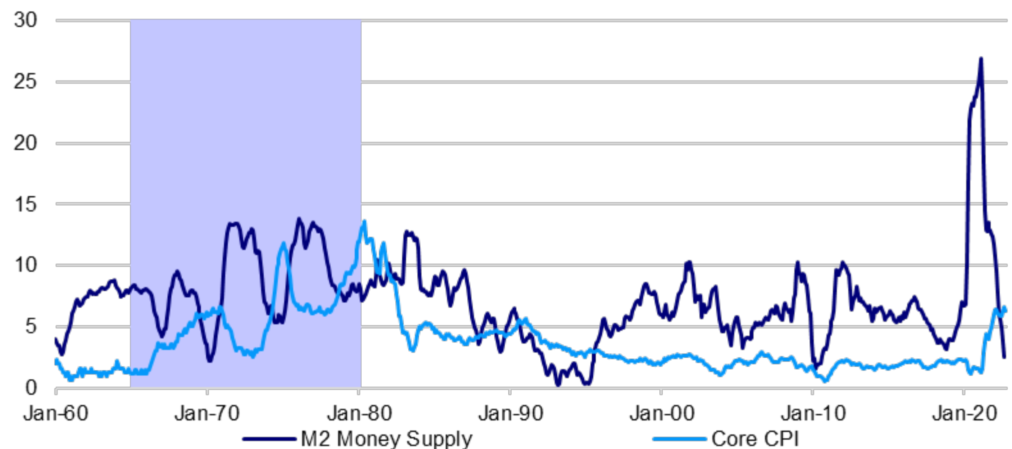


Note: monthly data from January 1991 to October 2022. As of 31 October 2022.
Source: Refinitiv Datastream and Invesco.

The US monetary impulse is now over, so inflation could fall

Perhaps the most important issue for 2023 will be the path of inflation, given that the rise in inflation and interest rates seemed to have such a bearing on asset outcomes in 2022. Though the invasion of Ukraine added a further layer, we think the upward trend in inflation was already well established and was due to the policy boost unleashed during and after the Covid recession. **Figure 11** is a reminder of the monetary impulse that occurred in the US, along with the subsequent uptick in inflation. If this bout of inflation is a purely monetary phenomenon, **Figure 11** suggests the worst is behind us with monetary growth in the US falling well below 3% (and well below the rate of nominal GDP growth). On this basis, inflation could fall over the coming years.

Figure 11 – US money supply and core inflation (% yoy)

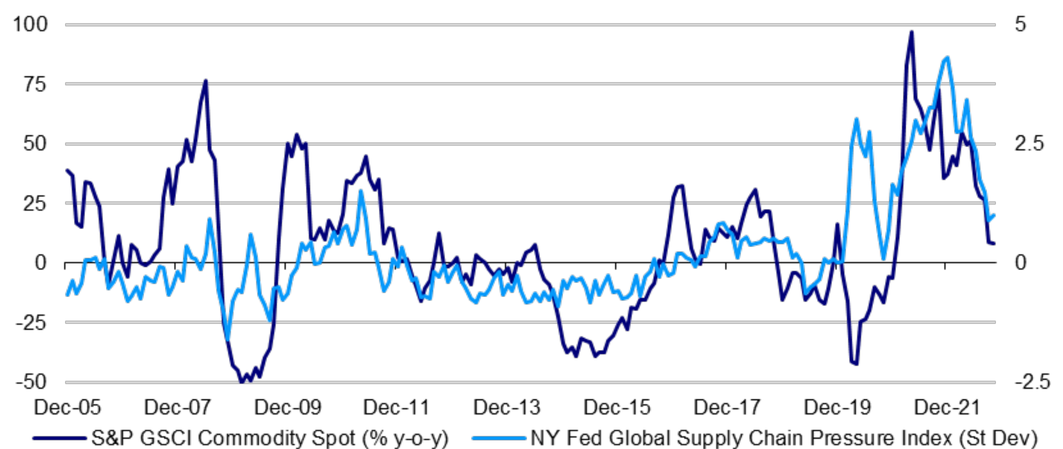


Based on monthly data from January 1960 to October 2022. The shaded area is from January 1965 to January 1980. Source: Refinitiv Datastream and Invesco

Some exceptional elements of inflation are also easing

However, we believe this bout of inflation has had some non-monetary elements. The peak in commodity price inflation may have come before Russia's invasion of Ukraine (see **Figure 12**) but that invasion did disrupt the supply of many commodities and pushed prices higher than they might otherwise have been (if only temporarily). Also, Covid and the consequent lockdowns brought a range of supply chain issues that no doubt contributed to global inflation, the obvious example being the shortage of new cars and the knock-on effect on used vehicle prices. **Figure 12** shows the Federal Reserve Bank of New York's Global Supply Chain Pressure Index, along with commodity price inflation, and both those factors seem to be easing. On this basis we would expect inflation to behave in a more traditional fashion once again, with slowing economic activity leading to lower inflation.

Figure 12 – Global commodity inflation and supply chain issues are easing

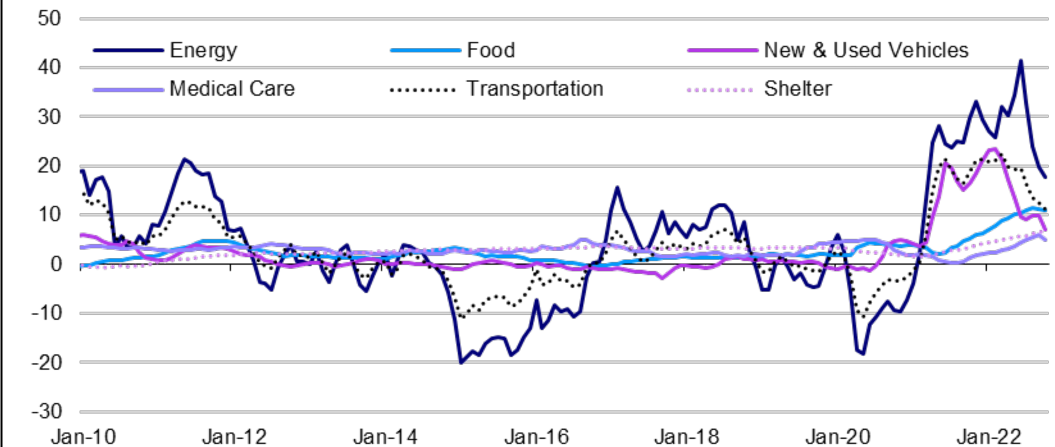


Note: monthly data from December 2005 to October 2022 (as of 11 November 2022). NY Fed Global Supply Chain Pressure Index tracks the state of global supply chains using data from the transportation and manufacturing sectors, as constructed by the Federal Reserve Bank of New York. It is shown as standard deviations from the historical mean. Source: Federal Reserve Bank of New York, Global Supply Chain Pressure Index, S&P GSCI, Refinitiv Datastream and Invesco.

But what about core inflation?

Of course, there is a concern that core inflation will prove much stickier than headline inflation. Labour markets are tight in many large economies and this has put upward pressure on wages. There also appears to be an increase in strike activity for higher wages. However, we note that the unionisation rate for OECD countries has fallen from 37.9% in 1970 to 15.8% in 2019 (the latest available data). This may suggest less risk of a 1970s type wage-price spiral but central banks may want to see a deterioration in labour markets before bringing a halt to tightening (we note the continued deceleration in US wages despite decent payroll gains, as shown in the October employment report).

Figure 13 – US inflation by major consumer price component (% yoy)



Based on monthly data from January 2010 to October 2022.
Source: Refinitiv Datastream and Invesco

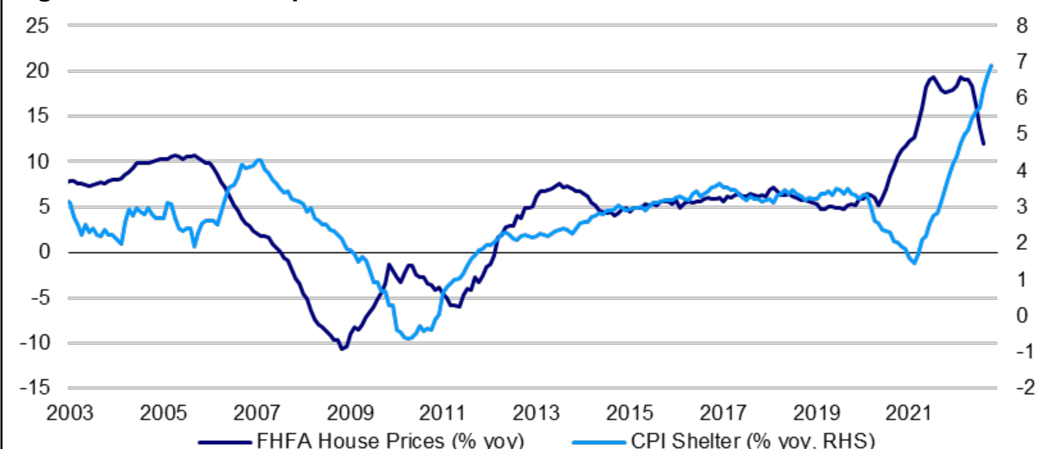
Cyclical elements of inflation are easing, while more stable components are rising

Figure 13 shows the stark comparison across six US CPI components that have a total CPI weighting of 75.1%. Those deemed cyclical or susceptible to COVID supply chain issues (energy, transportation, new & used vehicles) displayed the most extreme inflation but are now fading (energy and transportation indices have fallen from their peaks so could soon shift to negative y-o-y readings but vehicle prices are still rising).

Shelter is the most worrying component but is likely to ease as house prices fall

However, some of the more stable components are now accelerating. Global agricultural prices are now falling (see **Appendix 2**), so the food component (13.6% CPI weighting) may become less problematic over the coming months (though it is not part of core inflation). Medical care costs (6.9% CPI weight) could have been pushed higher by the demands emanating from the pandemic and those pressures could remain. However, the real concern is shelter (32.5% CPI weighting), which has been creeping higher. The good news is that the shelter component of inflation seems to lag house price inflation, which is now falling, under the pressure of higher mortgage rates (see **Figure 14**).

Figure 14 – US house prices and shelter inflation



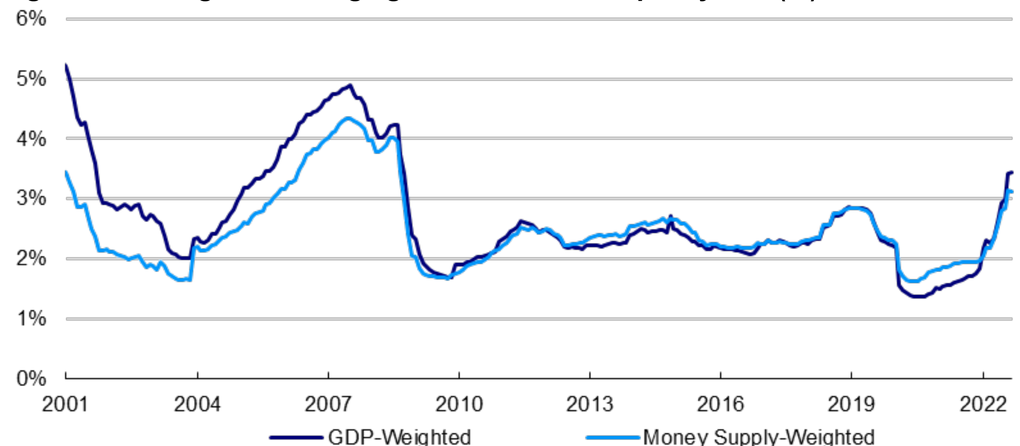
Note: monthly data from January 2003 to October 2022. FHFA is the US Federal Housing Finance Agency. CPI Shelter is a component of the US consumer price index. Source: Refinitiv Datastream and Invesco.

Most central banks are tightening

When will central banks pivot?

Nearly all central banks have tightened during 2022, with 75 of the 82 surveyed by CentralBankRates raising rates (notable exceptions are China, Japan, Russia and Turkey). Interestingly, our weighted average global central bank rate bottomed in August 2020 and climbed gradually to the end of 2021 (see **Figure 15**). The increase to that point was on the back of rate hikes in a limited number of countries (principally Brazil, Turkey and Russia). However, the sharp rise during 2022 was due to rate increases across the majority of the 20 countries covered in that weighted average (note that the chart is as of October 31, so doesn't capture the latest rate hikes by the Fed and BOE).

Figure 15 – Weighted average global central bank policy rate (%)



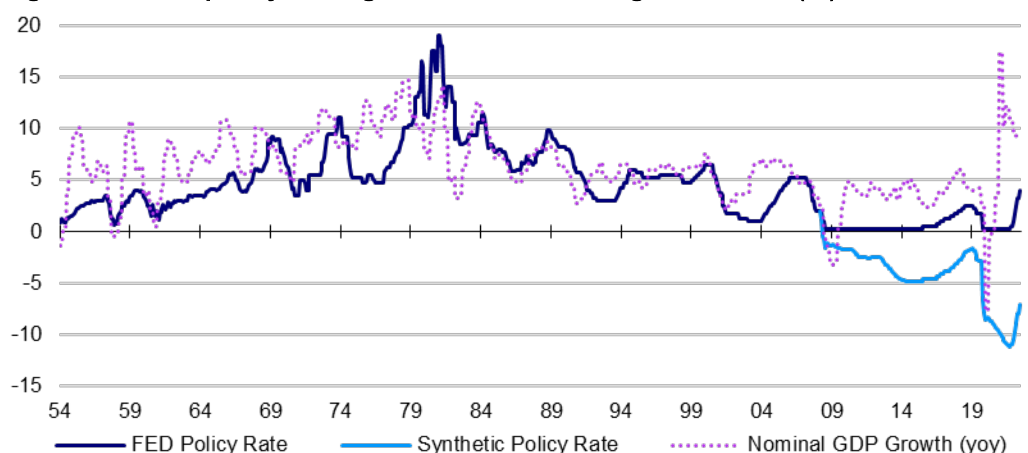
Based on monthly data from February 2001 to October 2022 (as of 31 October 2022). Based on the 20 largest economies during each calendar year, according to nominal GDP in US dollars (based on data from the IMF World Economic Outlook October 2022). Source: IMF, Refinitiv Datastream and Invesco

Central bank rates are normalising but are they high enough?

On some measures, the Fed remains very accommodative

On the basis of **Figure 15**, global policy rates are now higher than at any time since October 2008 and in the middle of the range seen since 2001. The question is then whether central banks consider that rates are now high enough to control inflation and, if not, how much higher they need to go and over what timeframe? Inflation at multi-decade highs may argue for further substantial rate increases, while the fragile nature of the global economy (high debt ratios, cost of living crisis etc.) could argue the opposite. Of course, each central bank faces a different set of circumstances, so the answer will be different for each (for example, dollar strength is worsening inflation in Europe versus that in the US). **Figure 16** suggests the Fed remains very accommodative given the rate of nominal GDP growth, especially if we allow for quantitative easing (synthetic rate).

Figure 16 – Fed policy settings and nominal GDP growth rates (%)

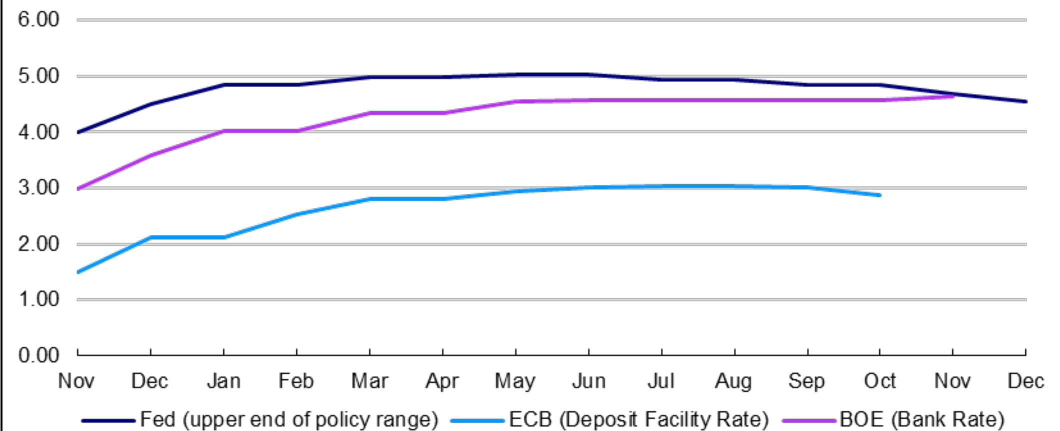


Monthly data from June 1954 to November 2022 (as of 3 November 2022). "Fed Policy Rate" is the effective Fed Funds rate. "Synthetic Policy Rate" is the policy rate adjusted to take account of Fed asset purchases (using the rule of thumb that each $150bn-$200bn of asset purchases is equivalent to a 25bp cut in the policy rate, as explained by ex-Fed Chairman Bernanke to Congress in March 2011). Source: Refinitiv Datastream and Invesco

Markets expect policy rates to peak in Q2 or Q3 of 2023

Fed Funds futures suggest the upper end of the Fed Funds target range (now 4.00%) will peak at 5.04% at the May 2023 policy meeting, with 50 bps of rate cuts by the end of 2023 (calculations by Bloomberg). Similarly, the ECB's Deposit Facility Rate is forecast to rise from the current 1.50% to a peak of 3.03% in July 2023 (before falling later in the year). As for the Bank of England, its Bank Rate is expected to peak at around 4.60% (again in 2023 H2), versus the current 3.00% (the BOE's suggestion that markets are being too aggressive in their rate hike expectations made little difference to the predicted peak rate). All readings were as of 11 November 2022 and are shown in **Figure 17**.

Figure 17 – The market implied path of central bank policy rates (%)

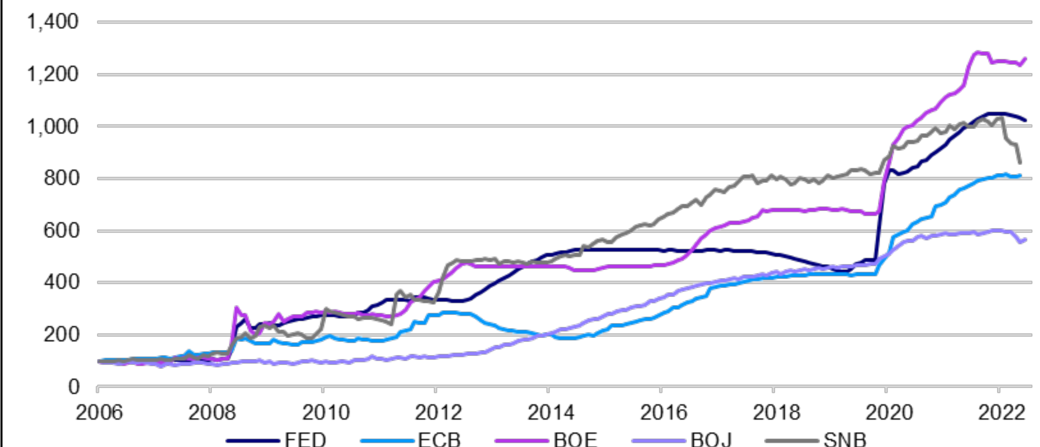


From November 2022 to December 2023 (data only available to Oct 2023 for ECB and Nov 2023 for BOE). Based on Fed Funds Futures (for the Fed) and Overnight Index Swaps (for the BOE and ECB) as calculated by Bloomberg. Rates are calculated for central bank policy meeting dates. For months where there is no meeting, we show the same rate as the month before. As of 11 November 2022. Source: Bloomberg and Invesco

Quantitative tightening reinforces rate hikes

On the basis of **Figure 17**, the peak in major central bank policy rates is expected in the second or third quarters of 2023, with the ECB and especially the BOE expected to be more aggressive than the Fed. It should also be remembered that major central banks that employed quantitative easing (QE) now have the ability to reverse that policy by engaging in quantitative tightening (QT). At the moment, the Fed and the BOE are actively trying to reduce the size of their balance sheets either by not replacing maturing securities (Fed) or by actively selling balance sheet holdings (BOE). **Figure 18** suggests that balance sheets have also shrunk at the Swiss National Bank (SNB), the ECB and the BOJ, though we suspect that is because asset values have fallen. For example, the SNB is invested in many of the US technology companies that have fallen a lot this year (and, of course, bond values have fallen). A recent analysis from the Fed suggests a $2.5trn reduction in the balance sheet will have the same effect as 50bps worth of rate hikes (the Fed's balance sheet peaked just below $9trn in mid-April of 2022).

Figure 18 – Central bank balance sheets (rebased to 100 as of 31/5/2006)



Monthly data from May 2006 to October 2022 (as of 7 November 2022). Based on local currency data. Source: Refinitiv Datastream and Invesco

From economic to market cycles

We think we are in a contraction phase

That we anticipate further deceleration in the global economy leads us to conclude that we will remain in a contraction regime over at least the coming months, meaning that growth is below trend and falling, with a risk of recession (as defined by Alessio de Longis of Invesco's Investment Solutions Team).

Which usually favours defensive assets…

…but this cycle has been odd, so we are wary about historical templates

Figure 19 shows how a selection of US assets has typically performed during each phase of the cycle (based on data from 1970 to 2021). Contractions stand out from other phases of the cycle because equities have tended to generate negative returns, while government bonds have tended to be the best performing asset, followed by IG. On this basis we would normally favour defensive assets but **Figure 4** and **Appendix 2** show that in recent months and year-to-date, government bonds have underperformed equities (at the global level). Hence, selecting our favoured assets may require more subtlety than simply applying historical templates. On the other hand, the recent poor performance of bonds may simply reflect the fact that bond yields started from unusually low levels, an adjustment that may now be ending, suggesting the historical template shown in **Figure 19** may be valid. We err towards this interpretation but remain wary.

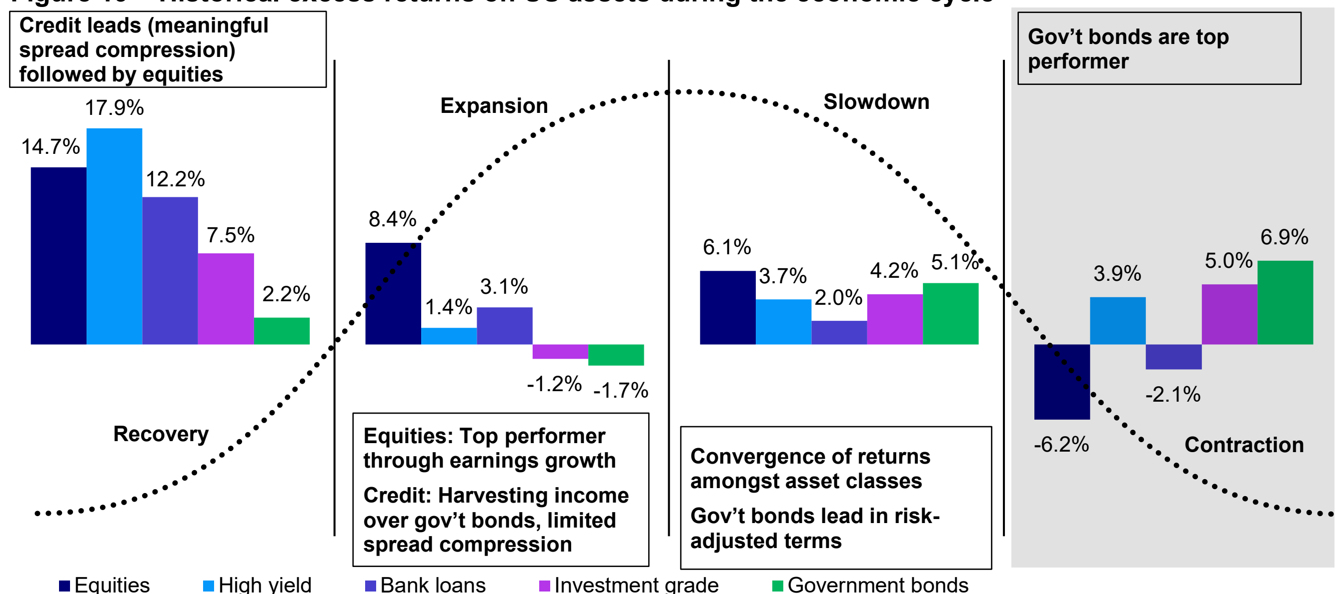
Also, we will eventually transition to the recovery phase, which typically favours cyclical assets

Of course, the other reason for caution about the interpretation of **Figure 19** is that at some stage we expect to transition from contraction to recovery, at which point the asset return profiles would normally look very different. In the recovery phase, cyclical assets such as equities, HY and bank loans have typically provided the best returns. Being too defensive in our allocations would prevent us taking advantage of that transition.

Our base case assumes markets transition to a recovery regime by the end of Q1 but we also consider an alternative

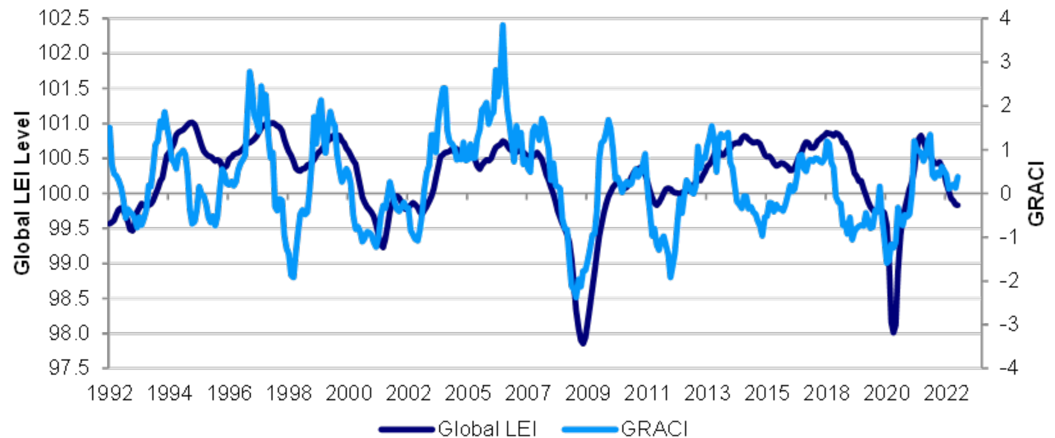
Hence, the critical question is how long we expect financial markets to remain in the contraction regime. This is not the same as asking how long the global economy will take to bottom, as we would expect markets to anticipate that event. Our **base case** assumes that the transition to a recovery regime occurs before the end of 2023 Q1 (as the Fed's tightening cycle nears its end). The downside surprise to US October CPI data encourages us to believe the transition will occur sooner rather than later. We also consider an **alternative** scenario whereby inflation remains higher for longer, with markets remaining in a contraction regime throughout 2023. We focus on the **base case** throughout this document but will consider the alternative scenario at the end.

Figure 19 – 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..

Figure 20 – Global risk appetite and the global business cycle



Note: **past performance does not guarantee future results.** Monthly data from January 1992 to October 2022 (as of 31 October). 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

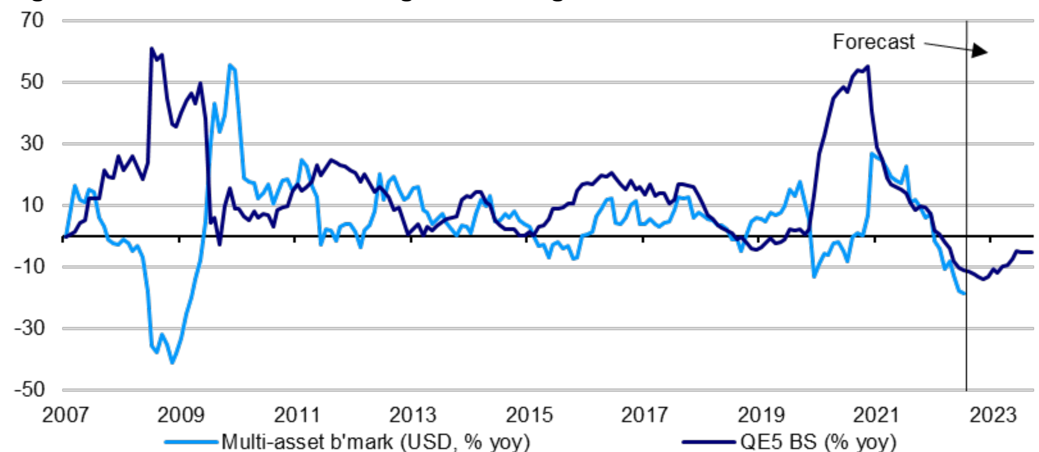
Leading indicators point to contraction and the reward for risk is shrinking

Figure 20 shows why Alessio concludes that we are in a contraction regime. His Global LEI (Leading Economic Indicator) measure continues to fall, suggesting the global economy will continue to weaken. Also, his Global Risk Appetite Cycle Indicator (GRACI) shows that the premium received by investors for taking incremental risk has been trending lower, though it is not a smooth path.

QT may dampen asset returns

In terms of the policy impact on markets, **Figure 21** suggests that central bank QT could dampen asset returns over the period to the end of 2023 (there appears to be some correlation between central bank balance sheet growth and global asset returns). Given the lack of historical precedence for shrinking balance sheets, we need to be cautious in interpreting **Figure 21**, especially as we think QT could become QE if recession occurs.

Figure 21 – QE5 balance sheet growth and global asset returns



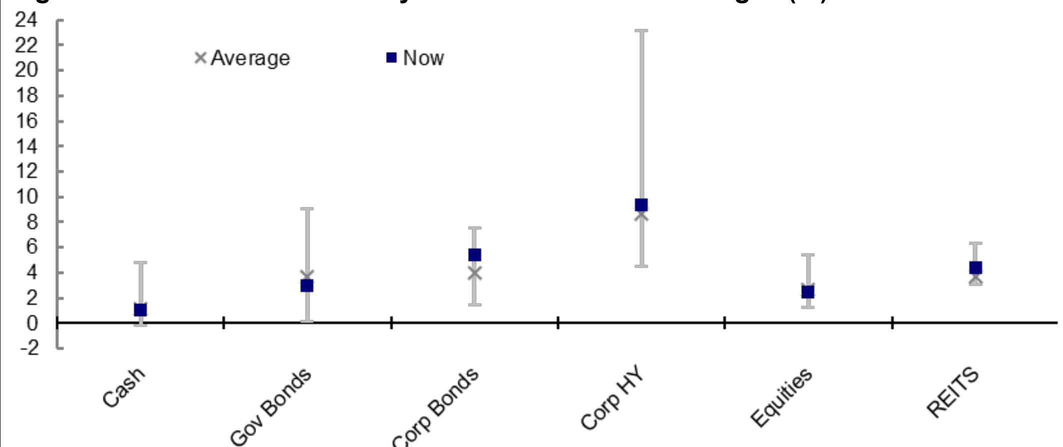
Notes: **Past performance is no guarantee of future results**. QE5 BS is the aggregate balance sheet of Fed, ECB, BOE, BOJ and SNB in USD. Forecast considers asset purchase plans of the central banks but ignores other sources of growth. The Fed has announced an asset holding reduction plan of $95bn per month (we assume it stays at that rate to end-2023). The ECB has ended its asset purchases and we also assume stability in BOJ and SNB balance sheets over the forecast horizon. The BOE has suggested it will reduce its asset holdings by £7bn per month. 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 31 October 2022. Source: BOE, Refinitiv Datastream and Invesco

Valuations are no longer a hindrance

Projections for 2023

With central bank policy and the economic cycle working against us, one piece of good news is that valuation constraints on our projected returns have now been largely removed. **Figure 22** shows that global yields are now more aligned with the norms of recent decades, which suggests less risk of losses due to a further rise in yields, in our opinion. **Appendix 1** shows the regional detail, with EM yields now far higher than both historical norms and those available in other areas (in most cases), though we note the EM data history is shorter than for other regions.

Figure 22 – Global asset class yields within historical ranges (%)



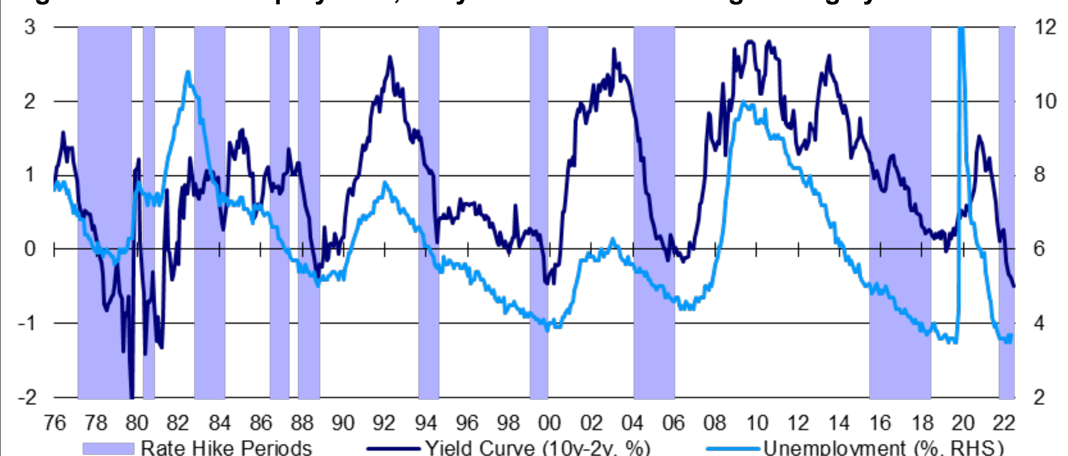
Past performance is no guarantee of future results. Start dates are cash 1/1/01; govt bonds 31/12/85; corp bonds 31/12/96; corp HY 31/12/97; equities 1/1/73; REITs 18/2/05. See appendices for definitions, methodology and disclaimers. As of 31 October 2022. Source: Refinitiv Datastream and Invesco

The Fed typically tightens until unemployment bottoms but may keep going for longer this time

Further inversion of yield curves to come in short term

The evidence in **Figure 17** indicates a market expectation that central bank rates will continue climbing, providing successively higher potential returns on cash and possibly leading to further inversion of yield curves. **Figure 23** shows that the Fed typically keeps tightening until around the time that unemployment bottoms. However, given that unemployment was already extremely low when the Fed started this tightening cycle (and that inflation is consequently high), the Fed may want to make sure that unemployment is rising before it stops hiking. Normally, the yield curve (10y-2y) continues to invert until unemployment bottoms (note the coincidence of turning points in the yield curve and unemployment in **Figure 23**). If unemployment is bottoming (as we believe) then we would normally expect the yield curve to steepen from here. However, with the Fed continuing to raise rates over the next six months or so, we expect further inversion until around mid-2023.

Figure 23 – US unemployment, the yield curve and Fed tightening cycles

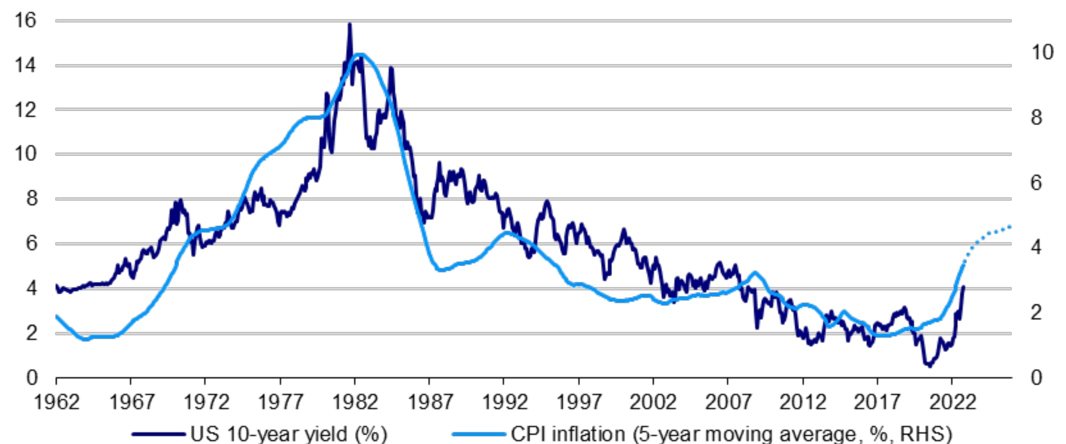


Notes: **past performance is no guarantee of future results.** Based on monthly data from June 1976 to November 2022 (as of 7 November 2022). The shaded areas show periods when the US Federal Reserve was raising interest rates (from first to last rate hike). Source: Refinitiv Datastream and Invesco

We think long bond yields may fall during 2023 but may continue higher after the recession

With economies slowing and inflation peaking, we suspect that long term yields will decline during 2023. However, **Figure 24** gives reason for caution. It shows a reasonable correlation between the 10-year US treasury yield and the five-year moving average of US CPI inflation. The 10-year yield has recently followed that smoothed measure of inflation higher but has so far not integrated an inflation rate above 8% (presumably because market participants believe that inflation will fall back again). However, the bad news is that even if US inflation falls gradually from current levels to 2% by the end of 2024 (and stays there), the five-year moving average will continue rising over the coming years (as very low inflation rates prior to 2021 fall out of the calculation). Hence, we expect a limited drop in long yields in 2023, with further gains after the recession (we may not have seen the peak).

Figure 24 – US 10-year bond yield and five-year moving average of CPI inflation

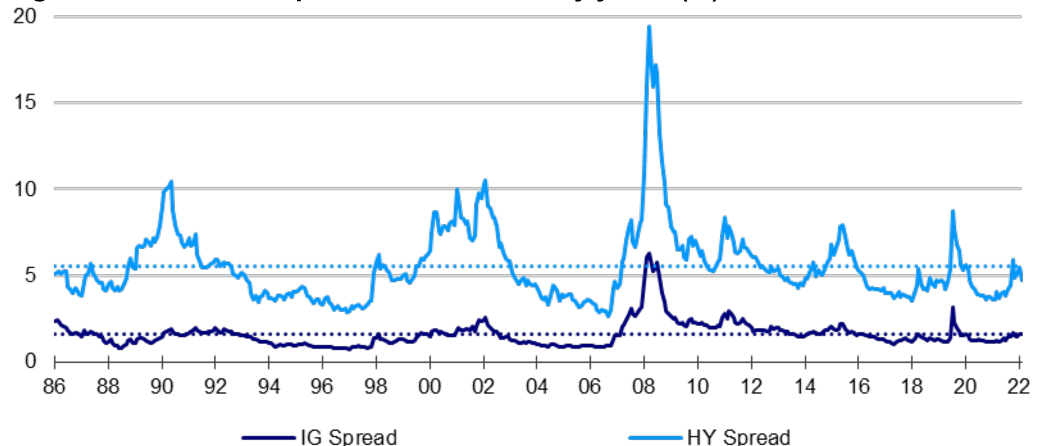


Note: **past performance is no guarantee of future results**. Monthly data from January 1962 to December 2025 (as of 9 November 2022). The dotted extension to the CPI inflation curve is our projection for the path of the five-year moving average, assuming that headline CPI year-on-year increase falls gradually from the October 2022 level to 2.0% in December 2024, at which level it stays throughout the rest of the analysis. Source: Refinitiv Datastream and Invesco

Credit spreads have widened to historical norms but could increase further

Turning to credit, **Figure 25** shows that spreads versus government yields have risen during 2022, taking them close to historical norms. That is a healthier situation than at the start of the year but these spreads are cyclical and we fear they could widen as economies weaken and flirt with recession. Hence, we assume a widening of credit spreads (though not to cyclical wides) and an increase in defaults in the high-yield market to something like historical norms.

Figure 25 – US credit spreads versus treasury yields (%)

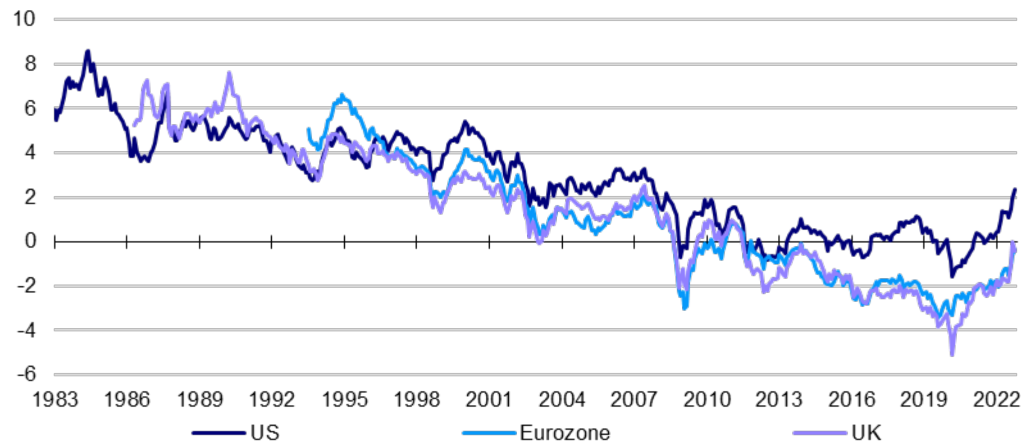


Note: **Past performance is no guarantee of future results**. Monthly data from September 1986 to October 2022 (as of 31 October 2022). IG and HY spreads are calculated by subtracting the redemption yield on the ICE BofA US Treasury Index, from the redemption yields on the ICE BofA US Corporate Index 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 make bonds look more attractive versus equities than for some time but we don't want to get too defensive

Dividend yield gaps have moved in favour of bonds (with bond yields rising faster than equity dividend yields). **Figure 26** shows that the US yield gap is as favourable to bonds (versus equities) as at any time since mid-2007. The last time the yield gap was wider in the UK and Eurozone was in 2011. This suggests that from a valuation perspective, bonds are more attractive versus equities than for some time, which makes it easier to follow our preference for defensive bonds (rather than equities) during this (contraction) phase of the economic cycle. However, once markets start to anticipate the transition to the recovery phase of the cycle, we would prefer equities to govt. bonds. We expect markets to make that shift over the coming months, so do not want to get too defensive.

Figure 26 – Dividend yield gaps moving in favour of bonds (%)

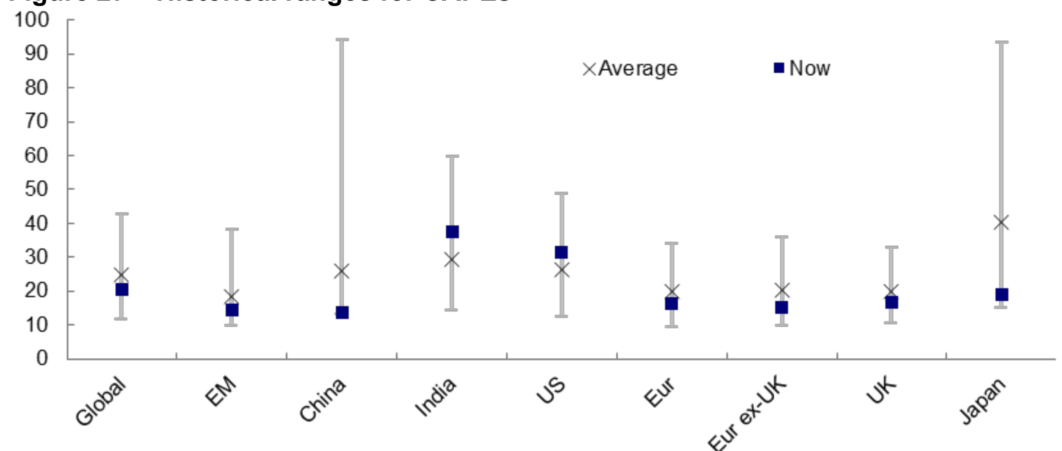


Note: **past performance is no guarantee of future results**. Monthly data from January 1983 to October 2022 (as of 31 October 2022). Yield gap is 10-year government bond yield minus equity dividend yield (based on Datastream equity indices). Source: Refinitiv Datastream and Invesco

We think Chinese stocks look interesting from both a valuation and cyclical perspective

We believe that valuations are an important determinant of long-term returns. On this basis, we believe the Chinese equity market looks interesting. **Figure 27** shows that its cyclically adjusted P/E ratio (CAPE) is approaching historical lows and is less than half that of the US (13.5 versus 31.6). Valuations may provide good long-term signals but we think they are less relevant over the short term. However, we are optimistic that cyclical considerations could also favour Chinese stocks. First, China has effectively already had recession and its economy seems to be improving, with M2 money supply growth accelerating to 12% (in contrast to the deceleration seen in the US – see **Figure 11**). Second, China (and some other countries in Asia) do not have an inflation problem, leaving the central bank and government able to stimulate the economy. Finally, China's zero-Covid policy has handicapped the economy but we expect this to end in 2023.

Figure 27 – Historical ranges for CAPEs

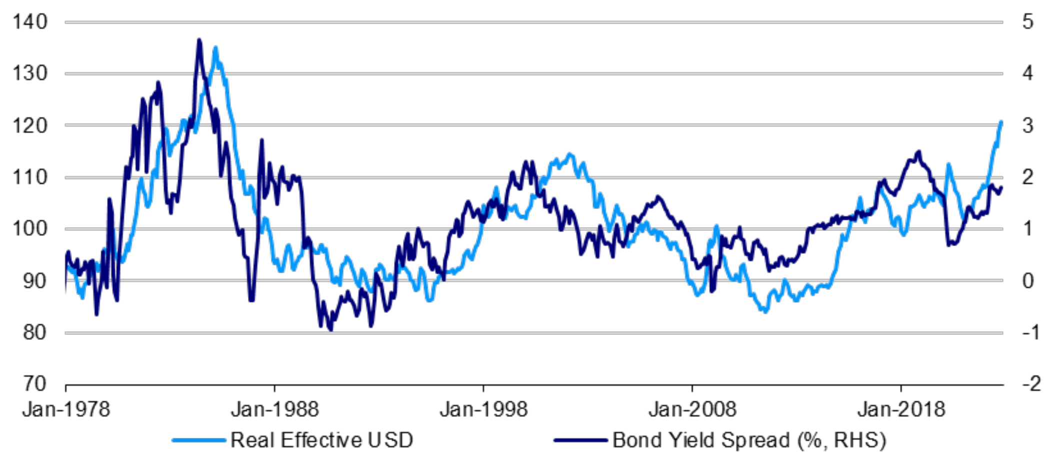


Note: CAPE = Cyclically Adjusted Price/Earnings and uses a 10-year moving average of earnings. Based on daily data from 3 January 1983 (except for China from 1 April 2004, India from 31 December 1999 and EM from 3 January 2005), using Datastream indices. As of 31 October 2022.
Source: Refinitiv Datastream and Invesco

We expect the dollar to weaken in 2023

US dollar strength has been one of the major trends of 2022. We doubt this can continue. First, the dollar is now extremely expensive, with **Figure 28** showing that it is as expensive as at any time since 1985, when expressed on a real trade-weighted basis. When currencies become so expensive, they provoke an economic reaction that causes a deterioration in the current account and an eventual weakening of the currency. Second, we think that short term currency movements are determined by financial flows and **Figure 28** shows that bond yield spreads moved in favour of the dollar during 2022. However, that is no longer the case and we suspect that once the Fed indicates it is approaching the end of its tightening cycle, the yield spread will move against the dollar. Hence, we think the dollar will weaken during 2023.

Figure 28 – Real effective US dollar and bond yield spread

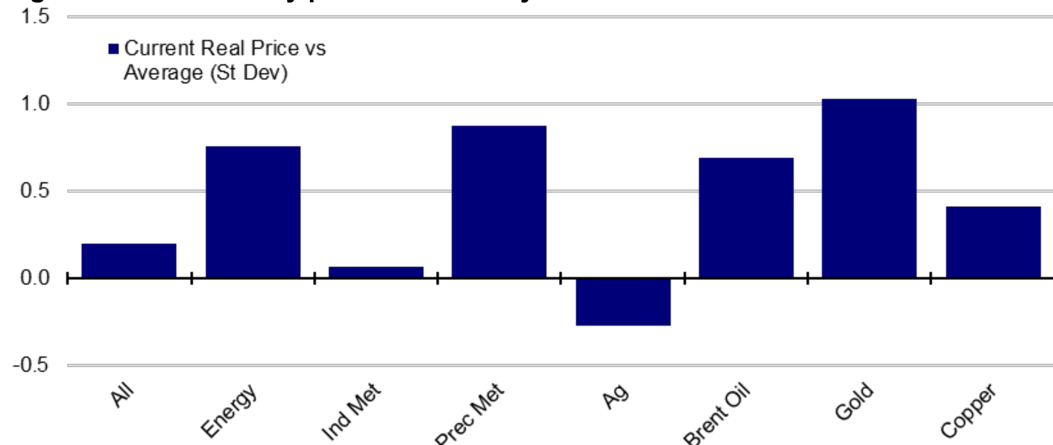


Note: **Past performance is no guarantee of future results**. Monthly data from January 1980 to October 2022. Real effective US dollar is an index calculated by the OECD as the trade weighted value of the US dollar versus a basket of currencies and adjusted for CPI inflation differentials. Bond yield spread is the US 10-year treasury yield minus the average of the 10-year government yields of: Germany, Japan and the UK. As of 31 October 2022. Source: OECD, Refinitiv Datastream and Invesco.

Industrial metals is our pick among commodities for when we transition to the recovery phase and gold may do surprisingly well during 2023

We think a weakening dollar could benefit a number of asset categories: emerging markets, US equities versus those of elsewhere (in local currency terms) and commodities. Focusing on commodities, **Figure 29** suggests that a number remain expensive compared to historical norms (in real terms). However, when it comes to positioning for the transition to a recovery regime and weakening dollar, we think industrial metals could be well placed. Gold looks expensive but we think a combination of falling treasury yields and depreciating dollar could be supportive during 2023.

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 31 October 2022. See appendices for definitions, methodology and disclaimers. Source: GSCI, Refinitiv Datastream, Invesco

Assumptions include a peaking of major policy rates in mid-2023

Underpinning our projections to end-2023 are the following assumptions:

- Global GDP growth slips to 3% with some economies in recession
- Global inflation will fall but remain above many central bank targets
- The Fed, ECB and BOE continue hiking; rates peak in mid-2023 (PBOC loosens)
- Long-term government bond yields fall; yield curves flatten/invert
- Credit spreads widen (but not to historical peaks) and defaults rise
- Equity dividend growth moderates and yields fall slightly
- Real estate (REIT) dividend growth moderates and yields fall slightly
- Commodities eventually recover once the recovery phase starts
- USD weakens as Fed tightening ends

10-year treasury yield falls to 3.40% and dollar weakens

The assumptions behind our projections are laid out in **Appendix 4**, while **Figure 30** shows how they translate into market targets. Perhaps the single most important forecast is that Fed and other major central bank policy rates will peak in mid-2023 and be moving lower by the end of the year. We expect this to help long-term bond yields edge lower, with the US dollar weakening as the Fed signals that the end of its tightening is in sight. We think this combination could help gold during 2023 and offer support to other commodities (though those sensitive to the economic cycle may remain under pressure in the early part of the year). We also believe that the ending of the Fed's tightening cycle and a weakening of the dollar could help EM assets.

EM assets appear to be relatively cheap

After another difficult year for EM assets (see **Appendix 2**), partly due to well publicised problems in China, we think that valuations have become even more compelling (see **Appendix 1**). As already mentioned, we believe that China may be past the worst of its economic problems and expect the government to provide support to the real estate sector and move away from its zero-Covid policy during 2023. We suspect this will help equities but not bonds in China.

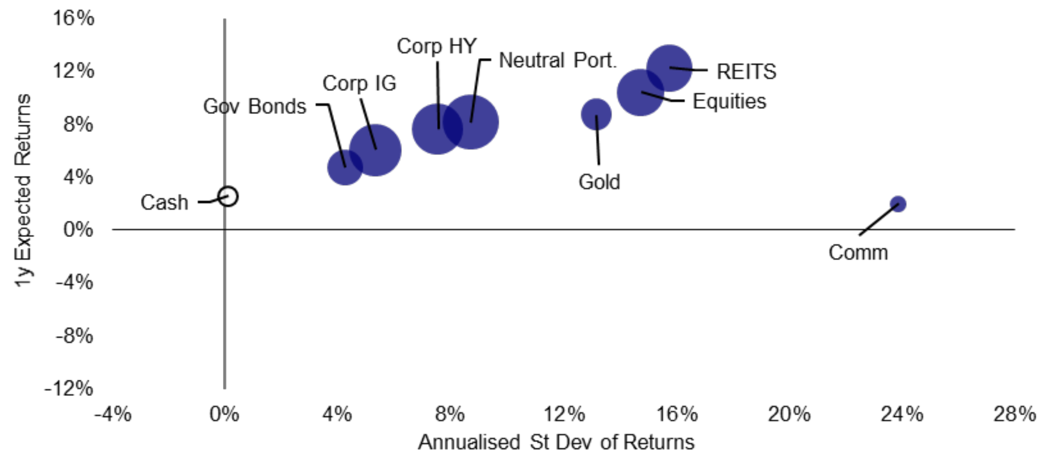
More generally, improved valuations across assets (higher yields, for example) have removed one of the obstacles to returns that existed a year ago. Hence, we are now more comfortable about the potential for asset returns than we were at the start of 2022.

Figure 30 – Market forecasts

		Current (10/11/22)	Forecast End-2023
Central Bank Rates	US	4.00	4.50
	Eurozone	1.50	2.50
	China	3.65	3.75
	Japan	-0.10	0.00
	UK	3.00	4.00
10yr Bond Yields	US	3.84	3.40
	Eurozone	2.00	1.90
	China	2.71	3.00
	Japan	0.25	0.20
	UK	3.29	3.00
Exchange Rates/US$	EUR/USD	1.02	1.10
	USD/CNY	7.19	6.70
	USD/JPY	140.98	130.00
	GBP/USD	1.17	1.25
	USD/CHF	0.99	0.90
Equity Indices	S&P 500	3956	4350
	Euro Stoxx 50	3847	4000
	FTSE A50	11867	14000
	Nikkei 225	27446	32000
	FTSE 100	7375	7800
Commodities (US$)	Brent/barrel	94	90
	Gold/ounce	1747	1900
	Copper/tonne	8283	9000

Notes: **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 31 – Projected return versus risk for global assets to end-2022



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 10 November 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. Forecasts are not reliable indicators of future performance.

Looking ahead to the ending of central bank rate hike cycles, we think the highest returns in 2023 will be on the more volatile assets

Over recent quarters, our forecasts have suggested less return on the more volatile assets but **Figure 31** shows that we have now reverted to the more familiar pattern of positive risk premia (more return on more volatile assets). This is because we believe the Fed and other major central banks will end their tightening cycles in Q2 or Q3 of 2023. Hence, though there may be some further downside in the short term, we expect markets to be in a more positive frame of mind for most of 2023. We also believe that energy prices (especially gas) will weaken over the next 12 months as Europe moves to a longer-term replacement of supply from Russia (hence the limited commodity returns).

But we fear further downside in the short term, which causes us to reduce defensiveness in a measured way

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 do that and **Figure 32** shows the results. The outcome favours IG, HY and gold (now the diversifier of choice). We largely follow the suggestions of the optimiser when they are clear but need to balance the belief that we are currently in a contraction regime (which favours defensive assets), with the idea that markets will transition to a recovery regime (which favours cyclical assets) in the early part of 2023. Hence, we reduce the defensiveness of the Model Asset Allocation without becoming too aggressive. We reduce government bonds to Neutral (while boosting the HY allocation to Overweight) and eliminate the allocation to cash, replacing it with an Overweight allocation to gold.

HY and gold boosted, cash and government bonds reduced

Figure 32 – Optimised allocations for global assets (using local currency returns)

	Neutral Portfolio	Policy Range	Projected Returns	Optimisations: Sharpe Ratio	Optimisations: Max Return	Model Asset Allocation*
Cash & Gold	5%	0-10%	5.7%	10%	10%	↓ 5%
Cash	2.5%	0-10%	2.6%	3%	0%	↓ 0%
Gold	2.5%	0-10%	8.8%	7%	10%	↑ 5%
Govt Bonds	25%	10-40%	4.8%	40%	11%	↓ 25%
Corporate IG	10%	0-20%	6.1%	20%	20%	15%
Corporate HY	5%	0-10%	7.7%	5%	10%	↑ 8%
Equities	45%	25-65%	10.4%	25%	33%	37%
Real Estate	8%	0-16%	12.3%	0%	16%	10%
Commodities	2%	0-4%	2.0%	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. Forecasts are not reliable indicators of future performance.

Model Asset Allocation: from contraction to recovery

We reduce government bonds and cash, while adding to HY and gold

Given our view that 2023 will be a year of transition from a contraction regime to one of recovery, we reduce the defensiveness of our Model Asset Allocation, while keeping some powder dry for when recovery is confirmed. We are reducing the government bond allocation to Neutral, while increasing the allocation to HY (to Overweight). We also reduce the cash allocation to zero, replacing it as diversifier of choice with an Overweight allocation to gold. From a regional perspective we have added to US allocations, while reducing exposure to the Eurozone, UK and EM.

Government bonds reduced to Neutral and cash reduced to zero in anticipation of the transition to a recovery regime during 2023

The only assets to offer refuge so far during 2022 have been commodities and cash. The former partly because of the consequences of Russia's invasion of Ukraine. The latter because of its low volatility. However, we doubt they will top the rankings in 2023 and expect non-commodity cyclical assets to come out on top once we transition to recovery. Hence, we are reducing the **government bond** allocation from 30% to a Neutral 25%, with reductions in eurozone and Japanese allocations, while boosting the UK (after the recent rise in yields). EM remains our favoured government bond market, especially as we expect the dollar to weaken, with **Figure 33** showing that the spread versus US treasuries is as generous as ever (outside of GFC and the pandemic).

HY and gold are boosted

This is balanced by adding to **HY**, taking it from 0% to an Overweight 8% (we note that it usually performs well in the early stages of recovery), with a preference for the US over the eurozone (see **Figure 3** for full regional detail). We also reduce the **cash** allocation from 8% to zero and replace it as a diversifier with **gold**, which goes from 0% to an Overweight 5%, largely in anticipation of the boost we expect from falling bond yields and a weakening dollar. We remain Overweight **IG** (with an allocation of 15% versus Neutral 10%) and within that go more Overweight the US (by reducing the eurozone).

Figure 33 – Emerging market USD government bond yield spread versus US

Note: **Past performance is no guarantee of future results.** Monthly data from February 2003 to November 2022 (as of 14 November 2022). The chart shows the difference between the yield-to-worst on the Bloomberg EM USD 7-10 Year index and the yield to maturity on the US 10-year treasury yield.
Source: Bloomberg, Refinitiv Datastream and Invesco

Real estate is expected to produce the best returns and is still Overweight (EM favoured).

Equities remain Underweight but US allocation boosted

We remain Overweight **real estate** (10% versus Neutral 8%), believing that it will be the best performing asset in 2023. Based on our regional REIT projections we reduce the eurozone allocation (to Underweight) and boost Japan (to Neutral), with EM remaining our favoured region. We expect slightly lower returns on **equities** (believing that earnings weakness will offset some of the benefit from falling bond yields) and stick with an Underweight allocation of 37%. Within that we boost the US but remain Underweight (valuations balancing the benefit from falling bond yields). We also add to the Japanese allocation, while reducing the UK, eurozone and EM (we like China). Finally, we persist with the zero allocation to **commodities**, due to the expectation of falling energy prices.

US and EM favoured

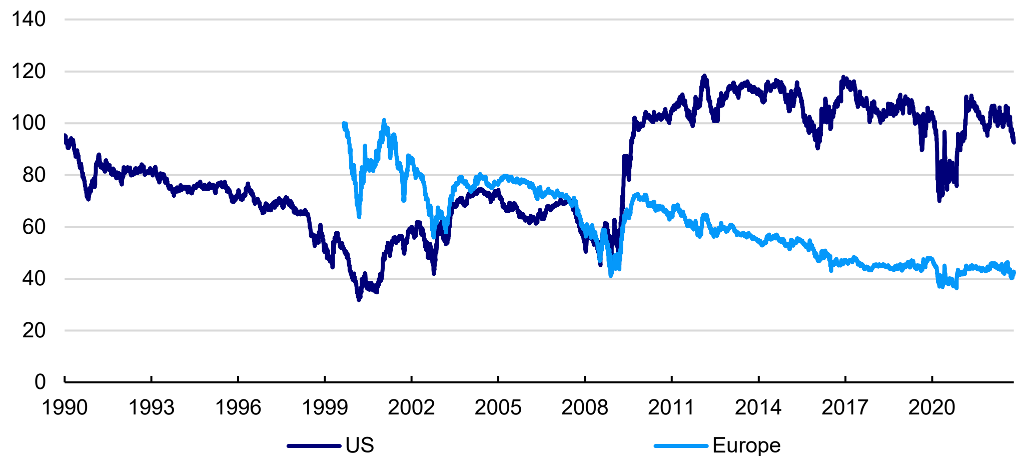
Regionally, we are Overweight US and EM assets but do not hedge the US dollar exposure, despite our view that the dollar will depreciate (the overweighting is minimal).

Factor leadership likely to change during 2023. We like low volatility during the contraction regime but would switch to size as recovery starts

Equity factors and sectors

We will continue to live with the curse (and thrill) of living in interesting times in 2023. We expect more turbulence over the coming months, but also the start of the next market cycle. Hence, we remain alert for changes in factor leadership. We think that price momentum will struggle around turning points such as this. Also, if we are right that policy rates will peak around the middle of the year (and that long-term bond yields will peak even sooner), we believe that growth will outperform value, especially in the US, unless inflation reaccelerates. While we keep some exposure to low volatility as a hedge against market downside, we think size will shine in the early stages of an eventual market recovery (**Figure 34**).

Figure 34 – Size factor index total returns relative to price momentum

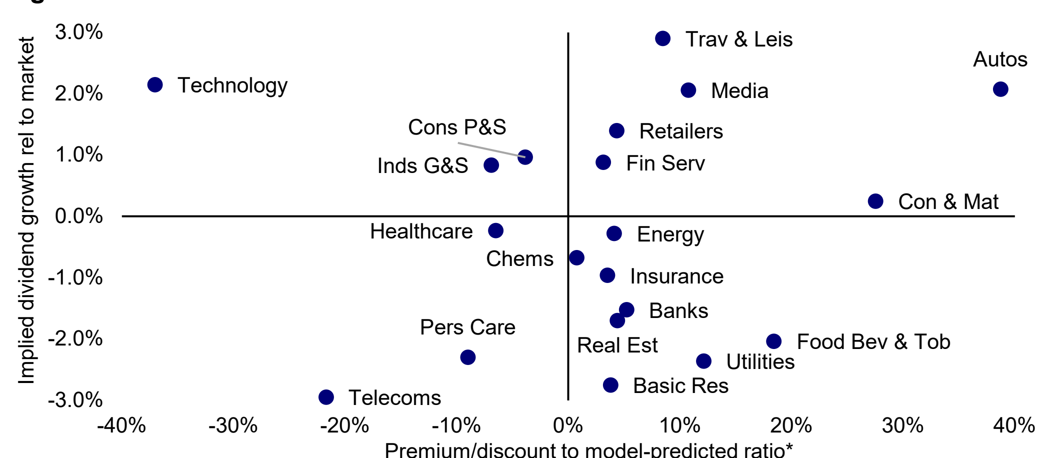


Notes: Data as of 31st October 2022. We show the total returns of our proprietary size factor index relative to price momentum since 2nd January 1990. See appendices for methodology and disclaimers. **Past performance is no guarantee of future returns.** Source: Refinitiv Datastream and Invesco

Our sector preferences are likely to switch from defensive to early cyclical as the regime transition occurs

We think that sector returns in 2023 will be almost a mirror image of those of 2022 and that it will be worth being a contrarian. As we outlined in our latest Strategic Sector Selector as long as markets remain in a contraction regime, we wish to maintain exposure to defensive sectors, such as consumer staples and healthcare, that can provide a stable platform while volatility remains high. At the same time, with an eye on the transition to a recovery regime, we will gradually tilt our allocations towards early cyclicals, such as consumer products & services and technology, where valuations look to have priced in significant economic weakness (Figure 35).

Figure 35 – Global sectors valuation matrix



Notes: On the horizontal axis, we show how far a sector's valuation is above/below that implied by our multiple regression model (dividend yield relative to market). The vertical axis shows the perpetual real growth in dividends required to justify current prices relative to that implied for the market. We consider the sectors in the top right quadrant expensive on both measures, and those in the bottom left are considered cheap. See appendices for methodology and disclaimers. Data as of 30 September 2022.
Source: Refinitiv Datastream and Invesco

Base case assumes inflation falls in 2023…

What could go wrong? Persistent inflation

The critical element of our base case is the belief that inflation is peaking and will decline during 2023, thus allowing central banks to signal an end to the period of aggressive tightening and to eventually bring a halt to policy rate increases. Recent evidence from the US gives hope that inflation is now on a downward path. While in Europe, the recent easing of producer price inflation gives hope that CPI inflation will soon turn lower.

… and that central banks stop tightening in mid-year and markets transition to a recovery regime in Q1

Hence, we expect Fed rates to peak during 2023 Q2, while the peak in BOE and ECB rates may be delayed until 2023 H2, with markets anticipating the change in the policy outlook before the end of 2023 Q1. Though we believe markets are still in a contraction regime, we imagine the switch to a recovery regime will occur over the coming months, signalling a switch in preference from defensive assets to riskier counterparts. One difference to the historical template is our belief that long bond yields could decline slightly during 2023 (they are normally expected to rise in recovery regimes). After all, government bonds performed poorly during the contraction regime that started in 2022. This decline in long yields (and the anticipated depreciation of the US dollar) could support gold, which we would not normally choose during a recovery phase.

However, we need to consider the possibility that we are wrong about the path of inflation and central bank policies. If inflation remains stubbornly high (or goes even higher), then we believe central banks will continue tightening for longer, with terminal rates higher than in our base case. We believe this would increase the risk and depth of recession, keeping markets in a contraction regime throughout 2023.

If inflation persists, we expect more aggressive rate hikes, bigger risk of recession and longer contraction regime

Figure 36 gives a summary description of the two scenarios (disinflation and persistent inflation), along with asset preferences. The table is complicated by the fact that we imagine a transition from one market regime to another in the base case, which also complicates our Model Asset Allocation selections as we prepare for that transition (we can be neither totally defensive nor totally risk-taking).

Figure 36 – Two scenarios for 2023 and our favoured assets

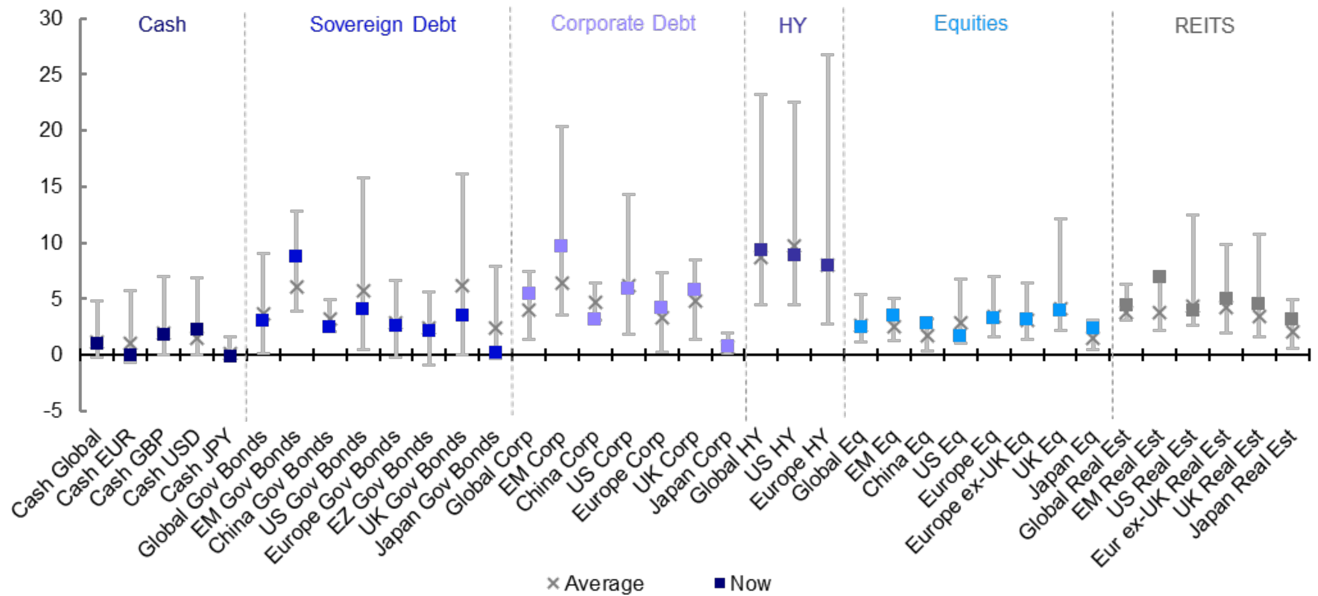
	Base case	Alternative
Inflation trend	Disinflation	Persistent inflation
Central bank policy	Rates peak in mid-2023	Rates rise throughout 2023
Yield curves	Further inversion with pivot (short rates up, long rates down)	Further inversion (yields rise along the curve but more at short-end)
Global growth	Moderate risk of shallow recession	Elevated risk of deep recession
Market regime	Contraction => recovery before end 2023 Q1	Contraction regime persists
Favoured currencies	USD => CAD EUR AUD GBP EM	USD EUR GBP
Favoured assets	Cash => HY credit Government bonds Real estate IG credit Equities Industrial metals Gold	Cash Government bonds IG credit

See appendices for definitions, methodology and disclaimers. Source: Invesco

Appendices

Appendix 1: Global valuations vs history

Regional yields within historical ranges (%)



Notes: As of 31 October 2022. **Past performance is no guarantee of future results.** See appendices for definitions, methodology and disclaimers. Source: Bloomberg, BofAML, FTSE, Refinitiv Datastream and Invesco

Appendix 2: Asset class total returns

Data as at 31/10/2022	Index	Current Level/RY	Total Return (USD, %) 2m	YTD	12m	5y*	Total Return (Local Currency, %) 2m	YTD	12m	5y*
Equities										
World	MSCI	589	-3.6	-20.5	-19.2	5.9	-2.6	-16.4	-14.7	7.1
Emerging Markets	MSCI	846	-14.7	-29.4	-30.9	-2.8	-12.1	-22.9	-24.2	0.1
China	MSCI	48	-27.9	-41.9	-47.1	-9.3	-27.2	-40.2	-45.5	-9.0
US	MSCI	3708	-1.3	-18.2	-15.9	10.5	-1.3	-18.2	-15.9	10.5
Europe	MSCI	1563	-1.8	-23.1	-22.2	0.7	-0.6	-11.9	-9.5	3.5
Europe ex-UK	MSCI	1904	-1.3	-25.7	-24.9	0.9	0.1	-15.5	-13.3	3.7
UK	MSCI	979	-3.3	-13.7	-12.4	0.0	-2.9	0.8	3.6	2.8
Japan	MSCI	2834	-8.4	-24.6	-25.0	-0.8	-2.5	-3.4	-3.0	4.6
Government Bonds										
World	BofA-ML	3.00	-5.3	-21.3	-21.8	-3.1	-3.5	-12.9	-12.7	-1.0
Emerging Markets (USD)	BBloom	8.77	-8.5	-30.8	-30.8	-4.2	-8.5	-30.8	-30.8	-4.2
China	BofA-ML	2.51	-4.7	-8.7	-6.9	3.2	0.3	3.9	5.6	5.1
US (10y)	Datastream	4.01	-6.3	-18.4	-17.6	-0.4	-6.3	-18.4	-17.6	-0.4
Europe	Bofa-ML	2.62	-4.1	-26.6	-27.7	-4.6	-3.0	-16.1	-16.0	-1.6
Europe ex-UK (EMU, 10y)	Datastream	2.09	-5.6	-28.0	-28.6	-5.3	-4.5	-17.7	-17.0	-2.2
UK (10y)	Datastream	3.50	-5.2	-29.8	-30.1	-4.7	-4.9	-17.9	-17.3	-2.1
Japan (10y)	Datastream	0.25	-6.2	-22.6	-23.2	-4.9	-0.2	-0.9	-0.6	0.2
IG Corporate Bonds										
Global	BofA-ML	5.44	-5.6	-20.9	-21.4	-1.6	-5.1	-17.4	-17.3	-0.6
Emerging Markets (USD)	BBloom	9.57	-12.4	-32.3	-33.0	-2.9	-12.4	-32.3	-33.0	-2.9
China	BofA-ML	3.16	-4.6	-9.1	-7.6	2.8	0.4	3.5	4.8	4.6
US	BofA-ML	5.93	-6.1	-19.0	-19.1	-0.2	-6.1	-19.0	-19.1	-0.2
Europe	BofA-ML	4.18	-4.2	-25.5	-26.7	-5.0	-3.2	-14.8	-14.8	-2.0
UK	BofA-ML	5.82	-4.9	-32.3	-33.1	-4.3	-4.6	-20.9	-20.9	-1.7
Japan	BofA-ML	0.71	-6.5	-23.1	-23.8	-4.9	-0.5	-1.5	-1.4	0.1
HY Corporate Bonds										
Global	BofA-ML	9.39	-2.6	-16.9	-17.0	0.1	-2.3	-14.4	-14.0	0.8
US	BofA-ML	8.92	-0.9	-11.8	-11.1	2.0	-0.9	-11.8	-11.1	2.0
Europe	BofA-ML	8.01	-3.9	-25.1	-26.2	-3.7	-2.8	-14.4	-14.2	-0.6
Cash (Overnight LIBOR)										
US		3.06	0.5	1.0	1.0	1.1	0.5	1.0	1.0	1.1
Euro Area		0.70	-1.6	-13.2	-14.8	-3.7	0.1	-0.2	-0.3	-0.5
UK		2.23	-1.0	-14.4	-15.4	-2.4	0.3	0.9	1.0	0.5
Japan		-0.03	-6.6	-22.7	-23.4	-5.3	0.0	-0.1	-0.1	-0.1
Real Estate (REITs)										
Global	FTSE	1496	-9.8	-27.1	-24.4	-0.2	-8.8	-16.7	-12.1	3.0
Emerging Markets	FTSE	1127	-15.6	-27.7	-28.8	-9.4	-14.7	-17.4	-17.2	-6.5
US	FTSE	2849	-7.7	-24.9	-19.0	3.6	-7.7	-24.9	-19.0	3.6
Europe ex-UK	FTSE	1946	-15.1	-46.7	-47.8	-7.4	-14.2	-39.1	-39.2	-4.4
UK	FTSE	689	-14.8	-42.2	-38.8	-4.7	-14.5	-32.4	-27.6	-2.1
Japan	FTSE	2059	-7.8	-19.0	-22.9	-0.2	-1.9	3.8	-0.2	5.1
Commodities										
All	GSCI	3603	-1.7	29.9	24.6	8.3	-	-	-	-
Energy	GSCI	664	-1.2	54.8	41.5	9.5	-	-	-	-
Industrial Metals	GSCI	1495	-4.1	-17.6	-15.2	1.5	-	-	-	-
Precious Metals	GSCI	1850	-3.2	-11.3	-9.7	3.8	-	-	-	-
Agricultural Goods	GSCI	545	-3.5	9.3	11.7	7.4	-	-	-	-
Currencies (vs USD)**										
EUR		1.00	-0.9	-12.4	-13.8	-3.1	-	-	-	-
JPY		147.46	-5.8	-21.9	-22.7	-5.1	-	-	-	-
GBP		1.16	-0.4	-14.4	-15.4	-2.7	-	-	-	-
CHF		1.00	-1.9	-8.4	-8.1	0.0	-	-	-	-
CNY		7.25	-5.0	-12.4	-11.7	-1.8	-	-	-	-

Notes: *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). **Past performance is no guarantee of future results**. 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	3.7	3.7	1.5	2.44
	US Treasury Intermediate	BBG BARC US Treasury Intermediate	4.1	4.2	4.6	0.91
	US Treasury Long	BBG BARC US Treasury Long	3.0	3.7	12.1	0.30
	US TIPS	BBG BARC US TIPS	4.4	4.5	5.8	0.78
	US Bank Loans	CSFB Leverage Loan Index	8.9	9.2	8.3	1.11
	US Aggregate	BBG BARC US Aggregate	4.4	4.5	6.1	0.74
	US Inv Grd Corps	BBG BARC US Investment Grade	4.9	5.2	7.8	0.67
	US MBS	BBG BARC US MBS	4.7	4.9	6.7	0.74
	US Preferred Stocks	BOA ML Fixed Rate Pref Securities	5.2	5.9	12.4	0.48
	US High-Yield Corps	BBG BARC US High Yield	7.8	8.3	10.2	0.81
	US Muni	BOA ML US Muni	4.0	4.2	7.0	0.60
	US Muni (Taxable)	ICE BOA US Taxable Muni Securities Plus	4.6	4.9	8.1	0.60
	US HY Muni	BBG US Muni Bond HY	3.9	4.3	8.7	0.49
	Global Aggregate	BBG BARC Global Aggregate	4.3	4.5	7.2	0.63
	Global Aggregate-Ex US	BBG BARC Global Aggregate- Ex US	4.2	4.7	10.5	0.45
	Global Treasury	BBG BARC Global Treasuries	4.2	4.5	8.6	0.52
	Global Sovereign	BBG BARC Global Sovereign	4.5	4.8	8.0	0.59
	Global Corporate	BBG BARC Global Corporate	5.0	5.3	8.0	0.66
	Global Inv Grd	BBG BARC Global Corporate Inv Grd	5.0	5.4	8.2	0.65
	Eurozone Corporate	BBG BARC Euro Aggregate Credit - Corporate	5.2	6.1	13.5	0.45
	Eurozone Treasury	BBG BARC Euro Aggregate Government - Treasury	4.3	5.1	12.8	0.40
	Asian Dollar Inv Grd	BOA Merrill Lynch ACIG	5.1	5.4	8.3	0.65
	EM Aggregate	BBG BARC EM Aggregate	6.8	7.6	13.2	0.57
	EM Agg IG	BBG BARC EM USD Agg IG	4.9	5.2	8.9	0.59
	China Policy Bk & Tsy	BBG BARC China PB Tsy TR	4.2	4.2	4.3	0.98
	China RMB Credit	BBG BARC China Corporate	4.6	4.6	3.8	1.24
Equities	World Equity	MSCI ACWI	7.9	9.2	17.2	0.54
	World Ex-US Equity	MSCI ACWI Ex-US	8.2	9.8	19.0	0.52
	US Broad	Russell 3000	7.9	9.3	17.7	0.53
	US Large Cap	S&P 500	7.7	9.0	16.9	0.53
	US Mid Cap	Russell Midcap	8.5	10.3	19.7	0.52
	US Small Cap	Russell 2000	10.0	12.3	23.0	0.54
	MSCI EAFE	MSCI EAFE	7.6	9.2	18.7	0.49
	MSCI Europe	MSCI Europe	7.8	9.4	18.9	0.50
	Eurozone	MSCI Euro X UK	7.9	9.7	19.9	0.49
	UK Large Cap	FTSE 100	7.3	9.1	20.1	0.45
	UK Small Cap	FTSE Small Cap UK	8.7	11.6	25.9	0.45
	Canada	S&P TSX	7.2	9.1	20.4	0.44
	Japan	MSCI JP	6.5	8.8	22.5	0.39
	Emerging Market	MSCI EM	9.7	12.4	25.1	0.50
	Asia Pacific Ex JP	MSCI APXJ	9.2	11.9	25.2	0.47
	China Large Cap	CSI 300	9.3	14.3	34.7	0.41
Alternatives	Global Infra	DJ Brookfield Global Infra	8.6	9.6	14.8	0.65
	Global REITs	FTSE EPRA/NAREIT Developed Index	6.8	8.5	19.0	0.44
	Hedge Funds	HFRI HF Index	6.4	6.8	8.7	0.78
	Commodities	S&P GSCI	8.4	10.9	23.9	0.46
	Agriculture	S&P GSCI Agriculture	4.0	6.1	21.5	0.28
	Energy	S&P GSCI Energy	11.2	16.7	37.1	0.45
	Industrial Metals	S&P GSCI Industrial Metals	7.5	10.1	24.2	0.42
	Precious Metals	S&P GSCI Precious Metals	5.3	6.9	18.5	0.37

Notes: Estimates as of 30 September 2022, as published in Long-Term Capital Market Assumptions (November 2022). 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 (%)	4.50	2.50	4.00	0.00	-	3.75
Sovereign spreads vs rates (bps)	-60	0	-100	20	-	-
Corporate IG spreads vs sovereign (bps)	180	175	250	40	-	-
Corporate HY spreads vs sovereign (bps)	500	550	-	-	-	-
Corporate HY default rates (%)	4.0	4.0	-	-	-	-
Corporate HY recovery rates (%)	40	40	-	-	-	-
Equities dividend growth (%)*	3.0	-2.0	0.0	7.0	2.0	3.0
Equities dividend yield (%)*	1.6	2.8	3.5	2.3	3.2	2.3
Real estate (REITS) dividend growth (%)*	5.0	3.0	3.0	2.0	-2.0	-
Real estate (REITS) dividend yield (%)*	3.7	4.5	4.0	3.0	5.5	-

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 30**) 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, 22, 30, 31, 32**) 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 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 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, 30, 31, 32**). Equity index valuations (**Figures 22, 27 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 and 26 August 1991 for the China A-Shares 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 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 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

Sector classifications and sector name abbreviations (Figure 35)

We use a sector classification created by merging the two main systems used by Standard & Poor's (S&P) for the US and Stoxx for Europe. We have decided to classify our 10 top level industries using categories that most closely resemble the Global Industry Classification Standard (GICS) and at the level below that (super sectors) we are using the Industry Classification Benchmark (ICB). The former is used for the S&P 500 index and the latter for the Stoxx 600, our benchmark indices for this document. The two systems overlap in most cases and the only material difference seems to be in the consumer sectors. Therefore, we define consumer staples as the aggregate of personal & household goods and food & beverage, while consumer discretionary includes automobiles & parts, media, retail and travel & leisure. For the rest, we assume 100% overlap for the corresponding top-level sectors.

Autos = Automobiles & parts
Basic Res = Basic Resources
Chem = Chemicals
Con & Mat = Construction & Materials
Fin Serv = Financial Services
Food & Bev = Food & Beverage
Ind G&S = Industrial Goods & Services
Pers & Hh Gds = Personal & Household Goods
Real Est = Real Estate
Tech = Technology
Telecoms = Telecommunications
Trav & Leis = Travel & Leisure

Equity factor index definitions (Figure 34)

All indices are subsets of the S&P 500 index for the US and the Stoxx 600 for Europe, they are rebalanced monthly, use data in US dollars and are equal-weighted.

Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio).

Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months.

Price momentum includes stocks in the top quintile based on their performance in the previous 12 months.

Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value).

Size includes stocks in the bottom quintile based on their market value in US dollars.

Value includes stocks in the bottom quintile based on their price to book value ratios.

Appendix 7: IIS Capital Market Assumptions methodology (Figure 5 & 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 heterogenous 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

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Authors

Paul Jackson
Global Head of Asset Allocation Research
Telephone +44(0)20 3370 1172
paul.jackson@invesco.com
London, EMEA

András Vig
Multi-Asset Strategist
Telephone +44(0)20 3370 1152
andras.vig@invesco.com
London, EMEA

Global Market Strategy Office

Kristina Hooper
Chief Global Market Strategist
kristina.hooper@invesco.com
New York, Americas

Brian Levitt
Global Market Strategist, Americas
brian.levitt@invesco.com
New York, Americas

Talley Léger
Investment Strategist, Equities
talley.leger@invesco.com
New York, Americas

Ashley Oerth
Senior Investment Strategy Analyst
ashley.oerth@invesco.com
London, EMEA

Arnab Das
Global Market Strategist
arnab.das@invesco.com
London, EMEA

Adam Burton
Senior Economist
adam.burton@invesco.com
London, EMEA

Paul Jackson
Global Head of Asset Allocation Research
paul.jackson@invesco.com
London, EMEA

András Vig
Multi-Asset Strategist
andras.vig@invesco.com
London, EMEA

David Chao
Global Market Strategist, Asia Pacific
david.chao@invesco.com
Hong Kong, Asia Pacific

Thomas Wu
Market Strategies Analyst, Asia Pacific
thomas.wu@invesco.com
Hong Kong, Asia Pacific

Tomo Kinoshita
Global Market Strategist, Japan
tomo.kinoshita@invesco.com
Tokyo, Asia Pacific

Cyril Birks
Global Thought Leadership Intern
cyril.birks@invesco.com
London, EMEA

Telephone calls may be recorded.

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