CENTRAL BANKING

FOCUS REPORT

Fixed income in a new era

In association with

Invesco

A new era for reserve managers

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The era of zero interest rates has come to an end. Since late 2021, central banks have been hiking rates to rein in above-target inflation: developing economy policy-makers by an average of around 650 basis points, and 400bp in advanced economies. This also marked a shift in the effect of monetary policy on reserve management.

Bonds became more appealing as yields rose. But they also came with the risk of devaluation as inflation persisted and rates rose higher. Meanwhile, fixed income returns are eroded by inflation.

Reserve managers discuss how their fixed income asset allocations have changed since 2021 (pages 63–74). They reveal whether they reconfigured their currency distributions and durations, and how they are thinking about the effect of inflation on reserves.

Banxico's Gerardo García speaks in-depth on reserve risks "after a series of unprecedented events". As well as inflation, he offers insights on investment policy at a time of heightened market volatility and war (pages 76–91). This period "calls for humility around how much we think we know and understand about potential future developments". García also talks about fixed income investments outside of US Treasuries and use of derivatives to manage rate differentials.

Should reserve managers diversify when rates are high? Panellists agreed there are opportunities in emerging market economies, particularly larger, more liquid ones (pages 92–93). Officials talked about strategic asset allocation governance and how different risk tolerance levels can be set for working capital, liquidity and investment tranches. Tactical asset allocation can be used as a "laboratory for new asset classes".

In *Fixed income factor portfolios for institutional investors* (pages 94–98), reserve managers are presented with metrics to evaluate this quant strategy for entry into the corporate bond market.

Investment policies pivot on whether we have reached terminal rates. In *A turning point for reserve managers?* (pages 99–103) the World Bank's Marco Ruiz highlights that the cost of carry for some countries is higher than usual. After global reserves declined in 2022, some central banks may be hesitant to increase their levels of reserves, though in some cases they may need to, says Ruiz.

This report highlights decision-making frameworks and investment policies used by reserve managers worldwide. It focuses on fixed income allocations and contextualises them in the events shaping the global financial landscape. We endeavour to equip reserve managers with the benefits of knowledge-sharing to position themselves to meet the demands of the new era. As the past few years have shown us, uncertainty is the only certainty. ❑

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Fixed income in reserves

Central Banking speaks to four officials about their fixed income investments and how monetary policy and inflation interact with reserve management.

The era of zero interest rates has come to an end. Since 2021, central banks have been hiking rates to rein in above-target inflation. This has also marked a shift in the effect of monetary policy on reserve management. As many central banks raised their interest rates, bonds became, on the one hand, more appealing as a source of returns. But they also came with the risk of devaluation as inflation persisted. Meanwhile, fixed income returns are also eroded by inflation.

Here, reserve managers discuss with *Central Banking* how their fixed income asset allocation has changed since 2021, whether they reconfigured their currency distributions and durations, and how they are thinking about the effect of inflation on reserves looking forward.

How has inflation behaved in your jurisdiction since 2021?

Andrés Cabrales, Central Bank of Colombia (CBC): Since 2021, inflation in Colombia has increased because of strong internal and external pressures. Global costs and disruptions in supply chains have led to price increases – and the Russian invasion of Ukraine in 2022 has exacerbated the situation – resulting in higher prices for food and oil. The depreciation of the Colombian peso has driven up internal costs of raw materials and imported goods. Strong economic recovery – particularly in 2021 and 2022, when growth in Colombia was among the highest worldwide – roadblocks and fuel price hikes have also contributed. Automatic price and wage adjustment mechanisms have amplified these effects. Annual inflation steadily rose from mid-2021, reaching 13.3% by March 2023. In the second quarter of 2023, inflation decreased, reaching 11.78% in July because of monetary policy tightening and the adjustment of the economy – but it has remained well above the 3% target.

Amit Friedman, Bank of Israel (BoI): After years of low inflation in Israel – below the 1–3% target – it returned to the band (2.8%) in 2021. Inflation continued to increase throughout 2022 and peaked in January 2023, when it reached 5.3% – a rate we haven't experienced since late 2008. In recent months, inflation is moderating; the last print (September) came in at 3.8%, so the fight is not over yet. It is important to note that – although actual inflation breached the target – expected (breakeven) inflation hovered around the upper bar of the inflation targeting band – 3%. This highlights the credibility of the BoI and the inflation tageting regime.

Emilio Rodriguez, Bank of Spain (BoS): Headline inflation in the eurozone peaked at 10.6% in October 2022, initiating a downtrend since then, and reaching

The panel

Andrés Cabrales, Head, international investments department, Central Bank of Colombia

Amit Friedman, Adviser, markets department, Bank of Israel

Jonas Kanapeckas, Former director, market operations department, Bank of Lithuania*

Emilio Rodriguez, Head, asset management department, Bank of Spain

* Jonas Kanapeckas was director of market operations at Bank of Lithuania at the time of interview in September 2023.

4.3% in September (flash). Despite fuel prices increasing in September, year-on-year energy prices dropped by -4.7%. Core inflation has shown more signs of persistence, hitting its highest level in March this year at 5.7%, but still falling to 4.5% in September (according to preliminary data). Food inflation dropped to 8.8% from 9.7% the previous month. Mid-term inflation expectations have been trading at around 2.6% recently.

What factors are driving inflationary trends in your jurisdiction?

Amit Friedman: As in other jurisdictions, inflation in Israel was driven by some supply-side bottlenecks and a surge in aggregate demand, also due to expansionary monetary and fiscal policies, against the backdrop of a tight labour market. As an open economy, we naturally 'import' global inflation – the increase in oil prices, and so on. On top of these usual suspects – which are common to other jurisdictions – an additional factor in Israel is the exchange rate. The USD/ILS depreciated by more than 10% (year-on-year). The exchange rate pass-through to inflation is estimated at 0.1–0.2%, so exchange rate depreciation is a significant driver of inflation today.

Emilio Rodriguez: The service sector has been the primary driver of domestic price pressures. Rising corporate profits account for a large proportion of the inflation trend in the eurozone, along with import costs – increasing labour costs.

What monetary policy decisions has your central bank made in response to inflation?

Andrés Cabrales: Since 2021, CBC has raised rates to contain inflation and anchor inflation expectations. In the first half of 2023, CBC continued to implement a contractionary monetary policy – with 125 basis points of interest rate increases – due to persistently high inflation above 3%, influenced by supply shocks, slow reduction in core inflation and strong internal demand. The actions aimed to counteract upward price pressures and achieve the 3% target for the end of 2024. Despite a gradual decline in inflation, big challenges remain, including price indexation and the effects of external shocks. Future actions depend on emerging data and uncertainties such as the effects of El Niño. Colombia has high levels of public debt and current account deficits that affect monetary policy decisions.

Andrés Cabrales, Central Bank of Colombia

Amit Friedman: BoI increased the interest rate, which was very close to the zero lower bound (0.1%) in 10 consecutive Monetary Policy Committee (MPC) meetings to the current rate of 4.75%. Most interest rate hikes in the early phase of the hiking cycle were larger – also known as front-loading. In the last meeting, which took place before the war, the MPC decided to keep the rate unchanged as the assessment was that monetary tightening was sufficient for reducing inflation back to the target.

Emilio Rodriguez: The European Central Bank (ECB) has tightened its monetary policy by increasing interest rates 450bp since mid-2022. As risks to medium-term price stability increased sharply, the eurosystem decided in June 2022 to end net asset purchases under the asset purchase programmes (APPs) as of July, and on June 15, 2023, the ECB's Governing Council confirmed that reinvestments under the APPs would be discontinued as of July 2023. Isabel Schnabel, a member of the ECB's executive board, said: "Reducing the size of our balance sheet is warranted for three reasons: first, to regain valuable policy space in an environment in which the current large volume of excess liquidity is not needed for steering short-term market interest rates; second, to mitigate the negative side effects associated with a large central bank balance sheet and footprint in financial markets; and third, to withdraw policy accommodation to support our intended monetary policy stance." As part of this intention to reduce the balance sheet, the third round of the targeted long-term refinancing operations programme is continuing to fall in 2023 both due to new early repayments and mechanically due to the loan maturities.

What effect did inflation and interest rate hikes have on sovereign bonds purchased by your central bank before 2021?

Andrés Cabrales: Interest rate hikes in advanced economies had a negative effect on CBC's sovereign bond holdings. Despite our low risk tolerance and relatively short duration because reserves are invested with the objective of avoiding losses with a high degree of certainty, our returns were impacted by the substantial increase in rates from historically low levels. Despite this, it is important to highlight that higher interest rates led to reserve portfolios that earned a higher yield, which compensated and helped overall return.

Amit Friedman: BoI hasn't sold bonds purchased under various quantative easing programmes. We still even have long-term bonds purchased during the global financial crisis that began in 2007–08 on our balance sheet. The impact of monetary policy on the value of our local assets is a non-issue.

Jonas Kanapeckas, Bank of Lithuania (BoL): As inflation rose and central banks hiked interest rates, the sovereign bonds in our portfolios unrelated to monetary policy operations suffered marked-to-market losses. However, at the same time, they started accumulating higher yields and providing a cushion against possible further hikes of interest rates. Moreover, during the prolonged period of accommodative monetary policy and declining yields, BoL could add substantially to its financial buffers due to highly positive returns on its bond holdings. Previously accumulated financial buffers allowed us to greatly amortise recent accounting losses.

Emilio Rodriguez: The duration of our portfolios was quite short so the negative impact has been relatively moderate.

How have your central bank's fixed income holdings changed since 2021 in terms of duration, revaluation, buying and selling, and moving into other currencies?

Andrés Cabrales: During the global tightening cycle, our portfolio maintained a very low duration. Currently, considering prevailing yields and market expectations, we can construct a portfolio with higher expected returns and associated risks. Consequently, duration has been raised recently, and we have increased our allocation in other currencies. The recent performance of the portfolio has been favourable, and the anticipated returns for year-end are relatively promising.

Jonas Kanapeckas: Regarding duration and trading policies, BoL did not change its investment and asset allocation framework because of recent devaluation of its bond holdings. We continued efforts to diversify our portfolios by adding new asset classes and currencies, and focusing on medium-horizon expected returns and risks. We also put additional effort into comprehensive communication on interpreting our recent performance, strategies employed, goals we pursue and the horizons we focus on.

Jonas Kanapeckas, Bank of Lithuania

Amit Friedman: After holding a relatively short fixed income portfolio in 2021 – with an average duration of two years – BoI started to extend duration gradually in 2022. The duration of the US dollar portfolio was 2.3 years, and the euro portfolio was shorter, 1.5 years. We started 2023 with duration of 2.5 years in the US dollar portfolio and, in July 2023, the duration was extended to three years.

In addition, our currency benchmark has significantly changed. Previously, it included only three currencies: US dollars, euros and sterling (the breakdown was around 67%/30%/3%, respectively). In early 2022 we moved to a broad currency benchmark that includes seven currencies. The US dollar and euro weights were reduced to 61% and 20 %, respectively, the sterling weight increased to 5%, and four new currencies – Japanese yen, Australian and Canadian dollars, and Chinese renminbi – were added (with the respective weights 5%/3.5%/3.5%/2%). The purpose of the increase in diversification was to better match new foreign exchange reserves investment guidelines, which require measuring return not only in numéraire terms but also in local currency.

Emilio Rodriguez: BoS has made no material changes to its currency composition. Recently, we have gradually increased the average duration.

Have additional gold purchases come at the expense of additional asset classes?
Andrés Cabrales: Gold allocation has not increased in CBC's case.

Jonas Kanapeckas: BoL kept the amount of gold it holds unchanged for a very long time – measured in decades. If we reconsider our approach to gold holdings, we would determine our optimal size of the gold position in the whole portfolio context, not in isolation with a subset of asset classes – in effect, evaluating its impact on a general level of diversification, risk and return characteristics over appropriate horizons.

Emilio Rodriguez: BoS's gold holdings have undergone no change in recent years.

Amit Friedman: BoI has not held gold since the early 1990s.

How are the inflation and interest rate decisions (of your central bank and others) driving your investment decisions in assets other than sovereign bonds?
Andrés Cabrales: We continue to analyse new asset classes (and increase allocations in others) to enhance diversification and achieve improved risk/return metrics. For instance, interest rate policies are influencing significant decisions even within fixed income, as monetary policy cycles may be synchronised in certain countries, while others – particularly in Asia – might follow a distinct trajectory, providing diversification advantages,

Emilio Rodriguez, Bank of Spain

even in sovereign bonds. Furthermore, we have observed that other asset classes could benefit if markets perform as anticipated, enabling us to position portfolios for better expected returns. New asset classes may act as diversifiers for fixed income instruments, generating comprehensive diversification benefits.

Jonas Kanapeckas: Decisions to include additional assets in our investment portfolio are influenced mainly by their impact on portfolio diversification, medium-horizon expected returns and inherent active management possibilities. At the same time, we tend to hold a more significant investment portfolio in times of high inflation and interest rates, and vice versa in times of accommodative monetary policy stances and low interest rates. However, it is not sufficient to go for longer bonds and a larger portfolio when interest rates are higher – we must be aware that by this, we expose ourselves to the risk of missing the point when we experience rate hikes from low levels again. In other words, if we justify asset allocation decisions based on the general level of yields, we can appropriately evaluate our strategy only after an entire economic cycle.

Amit Friedman: Our main asset class other than fixed income is equities. We increased our allocation of equities for a decade to 20% in 2022 – which is very high in the reserve management business. This move was motivated by our view on the optimal long-run allocation, but also because we realised that, in an inflationary world, equities provide a hedge while fixed income nominal assets do not. We increased the allocation to equities even after years in which equities had a negative return. We also started to invest in high-yield bonds in 2022, and allocated 2% of our portfolio to this asset class.

Emilio Rodriguez: There has been no relevant impact because our main exposures continue to be on government and quasi-government bonds.

How are the monetary policy decisions of your and other central banks affecting the duration and currency composition of sovereign bonds you are investing in or considering investing in?

Andrés Cabrales: Given current yield levels and market expectations, we have cautiously increased duration (from very low levels) to increase expected returns.

Jonas Kanapeckas: As globally higher interest rates make longer-dated bonds and a broader set of currencies attractive for reserve managers, we use this opportunity to diversify our portfolio further. However, at a strategic level, we focus more on longer-term, more stable portfolio risk/return factors and general diversification goals, limiting our exposure to interest rate timing risk.

Emilio Rodriguez: As a central bank within the eurosystem, we have not undertaken any active management of the euro-denominated portfolios so as not to interfere with the objectives and implementation of monetary policy portfolios. However, the distribution of reserves by currency follows a strategic distribution that takes into account other factors beyond monetary policy decisions, including credit, feasibility and sustainability considerations, among others.

Amit Friedman: Generally, we think the approach for this issue is to take limited positions based on expected monetary policy versus a ‘natural’ duration anchor. However, the question of the natural duration level is something we plan to reassess in the near future.

Do you expect inflation and interest rates to normalise in your jurisdiction in the next 12 months?

Andrés Cabrales: The cumulative effects of monetary policy – along with decreasing external and internal supply shocks – are expected to guide inflation towards the target rate. Throughout 2023, international prices and costs are projected to decrease, supported by a lower exchange rate and a strong supply of perishable foods, which will help alleviate cost pressures. The focus of monetary policy will continue to be on reducing excess demand and promoting sustainable production levels. Despite fuel price increases, consumer inflation is expected to decrease, with the aim of converging to the target by late 2024. Market expectations are aligned, and current policy rates are expected to be lowered during H2 2023. However, Colombia’s twin deficits remain a factor and are an important consideration for our interest rate risk premia.

Emilio Rodriguez: Inflation continues to decline, but is still expected to remain high over the next 12 months. The ECB’s macroeconomic projections published at the governing council meeting on September 14 see average inflation at 5.6% for 2023, 3.2% for 2024 and 2.1% for 2025 – which is still slightly above the 2% inflation target. The forecasts for 2023 and 2024 were revised slightly upwards from the June projections (by 0.2%) because of higher energy prices. Core inflation is expected to average 5.1% in 2023, 2.9% in 2024 and 2.2% in 2025.

Higher energy prices are moderating the deceleration trend of headline inflation; food price inflation has come down from its peak in March, but remains high, while base effects will have a positive impact on inflation figures in the coming months. The annual growth rate of compensation per employee remained constant at 5.5% in Q2 of the year. Most measures of underlying inflation are starting to fall as demand and supply are more aligned and the contribution of past energy price increases fades out, but domestic price pressures remain strong.

Upside risks to inflation include potential renewed upward pressure on energy and food costs. On food prices, adverse weather or climate change risks could push prices up by more than expected. Additionally, a lasting rise in inflation expectations above the target (longer-term expectations currently stand at around 2%), higher wages or profit margins could push inflation higher over the medium term. Downside risk to inflation could be driven by weaker domestic or international demand, because of the worsening of the economic environment. ❑

This is a summary of a forum convened by Central Banking*. The commentary and responses to this forum are personal and do not necessarily reflect the views and opinions of the panellists’ respective organisations.*

The long and short of it: *Central Banking* case studies in point

Invesco comments on the case study interviews conducted by *Central Banking* for this report, and key reserve challenges such as global high inflation and balance sheet dynamics in emerging and advanced economies.

Central Banking's case studies around current challenges for developed and emerging market central banks – high inflation, monetary policy responses and central bank balance sheets – cover all bases. Responses span diverging macro/financial experiences and policy responses to shared economic shocks. Diversity within a wide confluence of higher inflation, tighter monetary policies and shrinking balance sheets is critical for policy-makers, market participants, reserve managers and private market participants.

From lowflation to highflation amid differentiation

Supply-side inflation

Within a near-global inflation surge lies a gamut of inflation experiences. This 'highflation' is not yet for the history books – it is still unfolding. The economic experience of recent years suggests supply-side inflation has made a comeback via repeated, unprecedented and unexpected commodity and terms-of-trade shocks, spurred by the Covid-19 pandemic and the Russia-Ukraine war.

Supply-side highflation probably originated in spending shifts from services to goods during lockdowns, and back to services on reopening, plus shifts in labour markets. Initially, goods supply chains were disrupted before firms and countries – notably China – found ways to enforce lockdowns while keeping factories running.

Professional services – such as law, finance, many aspects of business and even medicine – also continued in a virtual or hybrid manner. But face-to-face services – including tourism, leisure, hospitality and many household services – could not, and bore the brunt of lockdown policies.

Reopening substantially reversed this, with demand for services and experiences surging and switching from an oversaturated demand for goods. Yet supply factors aggravated these outsized shifts in demand and spending patterns. Labour markets became very tight because of pandemic-related early exits through retirement, changes in preferences for types of work, fatalitities and cases of long Covid.

Then along came another type of 'imported inflation' – a terms-of-trade shock triggered by Russia's invasion of Ukraine. The two countries normally together account for vanishingly small shares of global growth, activity or price formation. Yet they have disproportionate effects on many crucial components of global supply chains. From basic primary commodities – oil, gas and soft commodities such as food grain – to specific components in the auto supply chain for which there were few immediate alternatives.

The result has been a massive relative-price shock, driven by shifts in spending patterns and global prices. This is not the sort of general rise or fall in domestic/demand-driven inflation that central banks normally manage or mete out via macro-stabilisation monetary policy.

Fiscal push and demand-driven inflation

However, demand-side boosts to growth and inflation – due to joint fiscal/monetary policy responses to the pandemic and war – have also made a substantial difference. The US, more than other major economies, produced a wartime level of fiscal support – $5 trillion in two years, over 20% of GDP cumulatively – substantially financed by Federal Reserve quantitative easing. As a result, US household disposable income, savings and wealth were turbocharged after an initial lockdown-driven collapse in jobs. Europe experienced similar, if smaller, effects. At this point, fiscal and monetary policy were working hand in hand to support households and the economy to different degrees throughout the West.

Once the war began and drove up commodity prices, the US, being nearly self-sufficient, did not suffer as much as Europe, which experienced a massive surge in food and especially energy prices. Fiscal policy came into play once again, as energy price controls were imposed, funded by fiscal subsidies, supporting discretionary spending and pushing headline inflation into core inflation amid the post-pandemic resurgence in demand for services.

Developed market versus emerging market central banks

Diversity amid widespread policy tightening

The reaction to highflation diverged across developed and emerging market central banks. Many emerging market central banks saw the inflation shock as more persistent and threatening – requiring a sharper, stronger policy response – than most developed markets.

Why? In hindsight, it's ironic: emerging market central banks worried more than their developed market counterparts about terms-of-trade or supply-side inflation shocks becoming persistent because inflation expectations have long been less anchored in emerging market economies. In other words, emerging market central banks were probably quicker to act because they had to be – their inflation expectations were more adaptive and less inertial. Developed market central banks were in a more comfortable place – some might say complacent. As a result, many emerging market central banks switched quickly from historically aggressive easing with even more aggressive rate hikes than major western central banks, which raised rates more rapidly than in the past several decades of secularly falling inflation.

Views that inflation would prove transitory – and therefore it would be best to look through supply shocks – have proved incomplete at best and downright incorrect at worst. Policy had to be tightened aggressively, yet headline and core inflation are now both starting to fall, and the global economy has proven remarkably resilient.

Exceptions to the rule: China and Japan

Throughout the resurrection of inflation in the West and many emerging markets, China and Japan have stood out – in different ways. China has the biggest differences, as reflected in being the major economy that stands out for easing policy after reopening, in contrast to hawkishness almost everywhere else. Chinese households experienced more frequent, and arguably more intensive, lockdowns than other countries, with less monetary or fiscal support. Plus, pressures in equity and real estate markets translated into wealth losses, rather than gains. This is probably why excess savings continue to be held rather than spent, unlike in other major economies. This is why China is easing rather than tightening after reopening.

Japan is the only large economy maintaining a dovish/neutral, gradualist approach to normalising – perhaps not even tightening – though for very different reasons than China. China is easing to boost growth and inflation – which are below potential and bordering on deflation, respectively. But the Bank of Japan's concern is that premature normalisation – and restrictive policy – could cause another false dawn. Decades of deflationary pressures have left expectations anchored too low, unlike in the West and emerging markets. Japan is going to go slow.

Central bank assets and reserves

Monetary policy portfolios versus reserves portfolios

The combination of high inflation, rapid rate rises and quantitative tightening has inevitably created large losses for major fixed income holders, central banks and private investors alike – in particular where much of the buying was across the yield curve, especially long-term bonds. Indeed, losses at the long end have been accentuated at ultra-low or negative yields by convexity – the curvature of a bond's curved price-yield relationship. The bond trader's cliché says that "convexity is your friend", to some extent insulating a bond's price from modest moves in yields. But large moves from low yields mean large moves along the price-yield relationship and enlarged losses.

Predictably, the liquidity/safety/capital preservation/return hierarchy for foreign exchange reserves – especially liquidity portfolios – helped weather the storm to some degree better than private investors or domestic assets acquired through quantitative easing. Mark-to-market losses have been hit by rate rises but, thanks to their short-term nature, have been smaller than longer-term policy portfolios and better offset by rising interest income from higher policy rates and market yields.

Of course, both the larger losses on long-duration bond portfolios and the greater income benefits of higher yields reflect offsetting monetary policy decisions. During the descent, amid lowflation, towards the lower bound in policy interest rates and the adoption of quantitative easing, investors reaped capital gains in bonds and most other financial assets – at the cost of interest income. During the ascent, amid highflation, capital gains were reversed but interest income is back.

Ultimately, both policy and reserve portfolios were functioning as intended. That may be small comfort given the losses involved, but this has to be accepted when macro regimes switch from far-below to far-above target inflation.

Gold

None of the central banks in the case studies have been active in gold recently – which is consistent with most central banks, especially in developed markets. The data, however, is clear: the key trend is that central banks have been among the most important and active gold buyers in global markets, for different reasons.

Some have been buying gold because of geopolitics, perhaps none more significant than the Bank of Russia (BoR), given financial sanctions and the freezing of half of its FX reserves in retaliation for the invasion of Ukraine. Indeed, the BoR seems to be buying and holding gold onshore, since Russia is a major producer. Russia is reportedly buying imports, including sanctioned items, in exchange for physical gold, in its de-dollarisation drive. China is another major buyer of gold, probably to diversify away from the US dollar and US treasuries.

India, Turkey, Brazil and other emerging market central banks have also added gold reserves since the global financial crisis that began in 2007–08 and the eurozone crisis – long before the Russia-Ukraine war and current rising geopolitical tensions. This may be partly about trust and confidence in western financial systems and fiat currencies, but also for domestic macro reasons. Turkey has used gold to shore up the lira during high-inflation episodes, and Indian citizens tend to save with gold jewellery and have tended to buy gold amid high inflation. But, for these and most other countries, FX intervention with reserves is likely to remain an important part of the macro/financial stability toolkit.

The macro and geopolitical backdrop suggests emerging market central banks will probably continue to buy gold. Many are overweight with dollars and treasuries, and underweight relative to advanced economy peers, which, in many cases, retain large holdings from the gold standard era.

Diversification

One clear message from the case studies is consistent with Invesco's macro-strategy views and client conversations: the world is ripe for selective diversification by asset class and region. With the US, Europe and emerging markets at or near the end of tightening phases, adding duration for long-term portfolios is now much more in vogue and at higher yields than when inflation was high, rising and surprising to the upside.

China is at the opposite end of the scale: near the start of its easing cycle at a time when its large economy is experiencing a structural and natural deceleration in trend growth driven by demographic transition, and gradual rebalancing from trade, investment and catch-up-led growth to domestic demand, consumption and services. This points to a more structurally bond-friendly environment, with opportunities to rebalance across duration and risk assets.

Japan is arguably somewhere in the middle, with further pressure likely in Japanese government bonds as yield curve controls continue to be relaxed. With a gradualist, dovish approach to policy normalisation, risk assets including equities could continue to do well, narrowing the valuation gap with the rest of the world.

Conclusion: a challenging world for central bank policy and reserve management

Invesco does not expect deglobalisation, but ‘reglobalisation’ – a restructuring of global trade, investment and financial relationships. Integration has progressed so far that it would be extremely costly and disruptive to decouple – except in the extreme scenario of a future direct or proxy conflict, as between Russia and Europe.

However, the world economy is undergoing accelerating structural economic change. Supply chains are being reorganised for resilience, national security, climate change, inequality and ideology. Governments are intervening in economies and financial markets with industrial, trade, regulatory and fiscal policies. Physical investment is being stepped up in many regions for all these reasons – and at a time of labour shortages due to demographic transitions in most large economies.

All of these changes add up to a more supply-driven and constrained world, rather than the demand-led world that prevailed in the decades of globalisation and secularly falling inflation, when central banks often had to push inflation up towards targets. In the world that lies ahead, the policy challenge may well be to drive inflation back down towards targets.

“For reserve managers and investors alike, we are likely to see a world with more interesting possibilities for diversification, both by country/region and asset class”

This is likely to mean loose, active fiscal policy often at odds with monetary policy, requiring higher interest rates than in the world of private-sector deleveraging and fiscal austerity that prevailed between the financial crisis and the pandemic.

Furthermore, government intervention in economies is likely to be very between countries – instead of similar policies converging on a free-market model as in the heyday of globalisation.

For central banks as for policy-makers, this is likely to be a tougher world to manage, since inflation is more likely to be led by supply than demand, and arise through changes in relative prices or headline inflation more often than domestically generated core services or wage inflation. Yet, for reserve managers and investors alike, we are likely to see a world with more interesting possibilities for diversification, both by country/region and asset class. ❑

Banxico's García on reserve risks: inflation, market volatility and war

Gerardo García, director general of central banking operations at Bank of Mexico, discusses fixed income, including US Treasury and mortgage-backed securities dynamics, currency diversification, the value of external managers and his extensive use of derivatives, including USD/JPY basis trades.

What is your view of the current financial landscape?
Gerardo García: We are currently getting over a series of unprecedented events, starting with the Covid-19 pandemic, the massive fiscal and monetary stimulus to deal with it, very high inflation and – over the past two years – the rapid withdrawal of monetary stimuli.

At the same time, the world is moving away from a multi-decade trend towards economic integration and financial globalisation, which began after the Second World War. This can have long-lasting and unforeseen geopolitical implications.

All of this implies that the range of possible outcomes for the global economy and financial markets has become much broader. In effect, we are going through a very uncertain period, which calls not only for flexibility and agility as investors, but for humility around how much we think we know and understand about potential future developments.

What are Bank of Mexico's (Banxico's) most pressing reserve management objectives, and how have you prioritised liquidity, safety and returns in your reserve management strategy?
Gerardo García: For the past several years, Banxico has prioritised capital preservation – or safety – over return, always against a backdrop of a highly liquid portfolio. This has been especially important during the past couple of years, where most central banks have turned to highly restrictive monetary policy stances, increasing interest rates across the board, which has led to a reduction in financial asset prices.

This has also been relevant as the level of international reserves hasn't increased significantly.

Gerardo García is director general of central banking operations at Bank of Mexico (Banxico), where he is responsible for the implementation of monetary and exchange rate policy, and the investment of international reserves. Banxico is the financial agent of and adviser to the Mexican federal government, meaning García is responsible for conducting local debt issuance, executing foreign exchange transactions and implementing hedging programmes on its behalf. His former responsibilities include directing Banxico's international operations division. García holds a master of business administration degree from Yale University and a bachelor of arts degree in economics from the Monterrey Institute of Technology and Higher Education.

There was pressure on the Mexican peso a few years ago, leading Banxico to introduce a derivatives hedging programme to stabilise volatility. How well did the programme perform versus selling reserves? Why are you now unwinding the hedging programme and how is that being carried out?

Gerardo García: Since 2012, the process of accumulating international reserves has experienced a noticeable slowdown. This has primarily been due to a reduction in US dollar inflows from Mexico's national oil company, Pemex, which used to be the most important source of reserve accumulation.

Starting in 2014, oil prices dropped significantly while, simultaneously, production from Pemex declined. We were producing around 2.6 million barrels per day at that time, and are now producing around 1.7 million barrels per day. Pemex is required by law to sell the dollars it obtains from oil income to Banxico. Pemex is also importing more gasoline, meaning its trade balance is in a deficit. Because it is not selling any more dollars to us, our main source of reserve accumulation came to a halt.

In response, we have adopted a more cautious approach to maintaining our reserve levels in line with internationally recognised reserve adequacy standards. At the same time, we aim to have the tools necessary to ensure the orderly functioning of our foreign exchange market.

Through detailed analysis, we determined that a derivatives hedging programme would positively complement the policy toolkit for FX interventions. A key factor in the programme's success is the well-developed and liquid nature of the Mexican peso derivatives market, enabling it to affect the spot market effectively. Furthermore, this programme allows us to intervene in our FX market to maintain or re-establish its orderly functioning without, in general, reducing the stock of international reserves.

We are currently unwinding the programme, as operating conditions have reverted to appropriate levels of liquidity and depth. The market is operating in an orderly fashion against a backdrop of strong fundamentals in the Mexican economy. The Mexican peso is the third-most-traded emerging market currency after the Chinese renminbi and Indian rupee. Consequently, financial institutions and other economic agents now have the means to hedge FX risks directly in the FX market. In short, we are reducing the size of the programme gradually, ensuring the market continues to function in an orderly fashion.

Alfonso21 via Wikimedia Commons

It is worth emphasising that the hedging programme is part of a broader policy toolkit that includes potential interventions in the spot market, and the use of other derivatives, including swaps and options. It is important to highlight that the characteristics of the intervention, including the instruments to be used, depend on the specific dynamics and needs of FX markets at the time. If deemed necessary, we could use the non-deliverable forwards hedging programme, but we could use other instruments as well.

How do you view the current economic outlook for the US? Are interest rates close to their terminal rates? Will rates remain higher for longer? And what is your base case for rates over the next two to five years – do you expect a ‘soft landing’?

Gerardo García: I have been positively surprised by the resilience of the US economy, particularly the labour market. Nevertheless, the most likely scenario is for the US economy to slow down gradually as the effects of tighter financial conditions work through it, as consumers deplete their savings from the pandemic policy responses, and as households’ and companies’ balance sheets feel the higher costs of refinancing debts. Labour strikes and the possibility of a government shutdown also add to short-term risks. Even in this scenario, the US Federal Reserve will likely keep its rates high for the next few months – as inflation is still far from its objective of 2% and upside risks prevail, such as higher oil prices and wage pressures. Even this scenario calls for higher-for-longer interest rates.

Recession is a less likely scenario because of the strength of the labour market, which will continue to support consumption. I also think the manufacturing sector could benefit from a new structure of supply chains. So, if recession materialises, it would probably be mild. Finally, a left-tail scenario is one of persistent inflation and above central banks' targets for a longer period than expected. I believe, in most advanced economies – including that of the US – central banks' reaction functions are the ones that would push forward the dates that interest rates would be cut, but not increase interest rates much further as *ex ante* real rates are already high.

In any case, I think short-term interest rates will remain high as long as needed to get inflation under control. Long-term rates may also remain high, largely as there are a few factors pointing towards a higher 'term premium' – including debt stress and quantitative tightening – and the expectation of higher interest rates in the medium term.

What is driving the rise in long-term interest rates?

Gerardo García: While it is challenging to pinpoint a definite set of factors, I will underscore the following.

First, the expectation of higher-for-longer interest rates is based on the economic resilience of many advanced and emerging market economies, and inflation being stickier than anticipated.

On the one hand, the significant increase in US Treasury issuance is putting pressure on long-term interest rates. On the other, demand has not compensated for the prominent shift in supply. Demand for US Treasury bonds also seems more elastic, which adversely affects demand for duration. In other words, demand for longer-term bonds is falling relative to shorter-term bonds, putting upwards pressure on the yield slope.

If the medium- and long-term outlooks of growth and inflation are more uncertain, one would expect higher interest rate volatility. Investors might therefore require greater compensation for bearing long-term interest rate risk.

Quantitative tightening programmes continue their paths in advanced economies, adding to the pressure on longer-term rates. Before, we had quantitative easing programmes and central banks buying bonds significantly, which compressed term premia. Now that they are unwinding such programmes – that is, implementing quantitative tightening – the term premium will probably increase again. I think this is also affecting long-term yields.

There is also some uncertainty around and concern about the marginal buyer of US Treasuries. Previously, countries such as China and Russia bought a significant amount of US Treasuries, which helped keep long-term rates down.

Today's outlook is different. Going forward, other factors – such as increasing interest rates in some financial markets, such as Japan – could attract bond flows towards those markets and away from the US bond market. This would contribute to lower demand for US bonds, putting more pressure on interest rates.

Except for the first point, the combination of these elements is reflected in an increase in the term premium, which can be understood as the compensation that holders of long-term bonds demand. Thus, it includes all risks that are priced in for such bondholders, including inflation risk and liquidity risk.

Have there been structural changes that might lead to higher interest rates?
Gerardo García: The current economic scenario calls for short-term interest rates to be higher than they used to be. Think of how well the US economy is doing and how the labour market is performing, despite the Fed having increased interest rates significantly since 2022. This suggests interest rates in the US could be higher than before, but how much higher is a very difficult question to answer. There are a few reasons interest rates could be higher. One is cyclical in nature and has to do with the US economy growing above its potential, with a positive output gap that reflects the unprecedented fiscal stimulus that has been prevalent since the pandemic.

A second point that is more structural in nature and relates to higher debt burdens in the US and other economies: the expectation of larger fiscal deficits and higher debt issuance point towards higher interest rates going forward.

There are other structural factors that could result in higher rates. For instance, labour force participation rates remain lower than pre-pandemic levels in many countries, which might result in tight labour markets; or the ageing of populations in some advanced economies will probably reverse a long-term trend of savings – the savings glut – into consumption, pushing interest rates up. The restructuring of global supply chains might result in many investment opportunities in several countries. More generally, technological innovations – such as artificial intelligence – could positively impact productivity. These factors have called the secular stagnation hypothesis into question.

Finally, from a financial markets perspective, many market indicators are already suggesting interest rates will remain high for a long time. For instance, long-term forward rates that have moved away from the lower-for-longer thesis – which has prevailed since the global financial crisis that begain in 2007–08 – and are now pricing a higher-for-longer scenario.

> ***"The way we think of tactical asset allocation is that we want to generate consistent returns above the benchmark – and that comes from many, small systematic trades"***

Given generalised market losses on equities and fixed income in 2022, and a shift in geopolitics, interest rates and inflation dynamics, has Banxico reassessed the diversity of its investments?
Gerardo García: Central bank portfolios are not that balanced in the sense that most of our portfolios benefit from low-growth and low-inflation scenarios, but suffer in higher-inflation and higher-growth environments. Therefore, in recent years, it has become more important to increase the flexibility of investments to adjust to market conditions.

We are constantly trying to enhance the diversification of our portfolio by adding new asset classes such as floating-rate notes and inflation-protected bonds in different currencies. We are also active in derivatives that can help us hedge interest rate risk. We constantly enhance the diversification of the portfolio by incorporating currencies of countries whose economic cycles and monetary policies are negatively correlated to those of the US. We are also developing approaches that benefit from rising interest rates, such as total return strategies.

Evidently, portfolio management becomes more challenging in periods such as the one seen in 2022, where historical correlations break down and most asset classes' prices move down in tandem.

Which countries offer this kind of diversification?
Gerardo García: There aren't many. I think the most important one, considering reserve currencies, is the renminbi. Some other Asian currencies also exhibit low correlations to the rest of our reserve portfolio – thus, it is mostly Asia. Traditional reserve currencies – such as the euro, sterling and Swiss franc – tend to exhibit higher correlations with the most important asset in our portfolio: US Treasuries.

When might most of the world return to lower interest rate environments?
Gerardo García: That's a very tough question. It's like trying to forecast the length of business cycles. Today we are in a phase of the cycle that is still expanding, and have been pushing forward the expectation for a slowdown. Why? Think of the US economy: it has proven very resilient. In this case, monetary policy has taken longer to affect it. This time around, the monetary policy lag has been larger because households and corporations emerged from the pandemic with healthy balance sheets.

> ***"We are constantly trying to enhance the diversification of our portfolio by adding new asset classes such as floating-rate notes and inflation-protected bonds in different currencies. We are also active in derivatives that can help us hedge interest rate risk"***

However, I'm certain that, at some point, we will experience a slowdown, and today's expectation of having higher interest rates for longer does not mean higher forever. So, eventually, I think interest rates will come down. When we start to see a slowdown and have more clarity into what advanced economies will do with regard to monetary policy, fixed income assets will offer some value for global investors.

How is Banxico preparing for future shocks?
Gerardo García: This requires a diversified portfolio. When you think of diversification, most people only think of asset classes, which is a narrow view of diversification. We focus on asset classes, but also on risk factors. When I say risk factors, I mean focusing on interest rate risk, but also currency risk, credit risk and liquidity risk, for example.

We also try to have a portfolio that performs relatively well under different economic regimes. Because most central bank portfolios are heavily skewed towards fixed income assets, when you have higher economic growth and higher inflation, interest rates go up and the value of bonds goes down. So, if you mark-to-market your portfolio, you will have losses. In 2022, even the more diversified portfolios, such as those that combined fixed income with equity, because equity has become more important for some central banks – is that interest rates went up and equity prices came down. Correlations broke down. That was a very different – and very difficult – scenario for investment portfolios.

What is the current status of the review of Banxico's strategic asset allocation (SAA) and its customised benchmarking?

Gerardo García: Our SAA is a continuous process. Its core principle relies on extracting expected returns using market-based information, meaning we derive expected returns, for example, in fixed income assets based on the current structure of the yield curve, and currency returns from option prices.

Our investment horizon is one year, but we constantly review our SAA methodology to ensure it remains fit for purpose. For example, we constantly analyse new asset classes to enhance the diversification for our portfolio, and evaluate whether our optimisation algorithm results are consistent with our investment objectives – be they enhancing return or preserving capital. In other words, we ask ourselves whether the results really make sense. We assess whether the performance of the portfolio is in line with the forecasted return or if fine-tunings in the methodology are warranted.

How did Banxico build the optimisation algorithm and what factors go into it?

Gerardo García: We started a few years ago. Prior to this, the inputs for our SAA were based on historical data. And then there was the point at which we reached very low levels of interest rates and the questions were: 'Should we rely on history, which is telling us interest rates have gone down significantly?' and 'Are we saying interest rates can go even lower?' We thought this was probably not the way to go.

> ***"We have identified that diversification benefits can be enhanced by investing directly in the fixed income markets of each currency, rather than exclusively focusing on the currency itself. This has proven effective – primarily due to the relation between FX and interest rates"***

So, how could we build a forward-looking portfolio? At first, we used analyst expectations and our own forecasts. The board was asking: 'Why should we believe you or an analyst?' We then came up with the idea that you can believe markets are in some way efficient and you can derive what the expected returns are from market prices. That's the whole idea and concept behind our SAA.

We derive the expected return on bonds from yield curves, and we derive from FX options the expected distribution of returns of currencies. We then merge those expected outcomes from currencies and fixed income and come up with a joint distribution of the expected return for each asset. Then we work with the correlations and come up with a portfolio built from inputs that are coming directly from the market.

The way we build the portfolio is very objective. You can argue that markets are not always right and we are building our portfolio from market prices, which is correct, but it's an objective way to build an SAA, long-term portfolio. If we think the market is not right, we can use tactical asset allocation (TAA) or tactical deviations to adjust the portfolio to the scenario that, as portfolio managers, we believe will more likely materialise.

How has the composition of Banxico's fixed income holdings changed since 2021 in terms of share, type, currency and duration?

Gerardo García: Our SAA is revised on an annual basis. Since 2021, the most relevant adjustments to our SAA have been a decrease in exposure to US Treasury nominal bonds, US agencies and European sovereign bonds, and an increase in allocation to Treasury inflation-protected securities and money-market instruments. These changes reflected the expectation of higher inflation and higher interest rates.

The currency composition of our portfolio has not changed noticeably. Most is invested in US dollars, as it is the reserve currency. Our non-US dollar exposure actually has decreased marginally, and we prefer to allocate to non-traditional reserve currencies, such as renminbi or Singapore dollar, as diversification benefits are larger.

In terms of risk factors, the portfolio's duration has remained largely unchanged for around a year and a half since 2021. Its duration was two years before the pandemic. Our duration is very conservative – some central banks have much longer durations. Our duration has pretty much always been between a year and a quarter and two and a half years. The longer duration in place, the more interest rate risk you bear. Central banks are very conservative and most of them have a duration of around two years or so in their portfolios.

Finally, overall, exposure to spread products has decreased slightly because of a reduced issuance of eligible instruments in the US agencies market. Going forward, it is expected that a potential slowdown in economic activity and a decrease in inflation should have a positive impact on reserves' returns, absent other market shocks. In this regard, we expect mild adjustments in our SAA. My expectation is that we will slightly increase the duration of the portfolio, but will maintain a conservative risk profile.

Mexico City financial centre and business district

How do you assess the interplay between increased government debt, quantitative tightening and bouts of illiquidity in key reserve currency bond markets – particularly the US?

Gerardo García: The combination of increased government debt issuance and quantitative tightening add to the possibility of having higher long-term rates going forward. Most asset purchase programmes compressed term premia, so it is natural to expect a decompression as central banks' balance sheet reduction continues to run its course.

Fixed income markets have seen bouts of illiquidity but I don't think it's a new phenomenon. In effect, the intermediation capacity of banks, dealers and market-makers has shrunk since the financial crisis, which is largely attributed to regulatory changes implemented in its aftermath. They reduced operations in some markets – one of which has been the US Treasury market – and, as such, liquidity has been shrinking for years. This is visible in some of the flash crashes. The first one was in 2015 in the US Treasury market, which was very significant. But liquidity also dried up at the beginning of the pandemic, and this type of abrupt movement has been seen in some currencies.

I think this speaks about the lower intermediation capacity of market-makers and some new participants. When you need liquidity, they basically withdraw from the market. Moreover, when you think of high-frequency trading or proprietary trading firms, they are not liquidity providers at the precise time you need them to be.

This means that, previously, you could probably do larger trades and nowadays you have to do smaller trades, most likely with a larger number of counterparties, which are more specialised in a particular market, currency or asset class.

The problem today is that such lower intermediation capacity is at odds with the larger needs of issuance and the refinancing of various governments, including the US. When you consider all risks the global economy faces, you realise markets can turn more volatile going forward. Some implied volatility indicators are clearly pointing in that direction.

Bond markets are currently experiencing volatility – what significance does that have for Banxico and for reserve managers in your region?

Gerardo García: We will experience high volatility going forward because we are facing a very uncertain scenario – starting with inflation. Are we certain inflation is going to be around central bank targets a year from now, in most cases? I'm not sure.

Possible risks are oil prices, which have increased significantly over the past three months. If there is uncertainty around inflation, there will be uncertainty around how central banks will move forward. The expectation is for most advanced economies' central banks to stop at these levels and reduce interest rates in the next few months, but that will be subject to potential changes with inflation.

That uncertainty around inflation and central banks' policy movements is reflected in uncertainty in financial markets and higher volatility. Current geopolitical situations – wars in eastern Europe and the Middle East – add to this scenario of higher volatility going forward.

What are the pros and cons of inflation-protected bond products, their derivatives and how Banxico has used them? Is there a role for gold?

Gerardo García: I believe inflation-protected bonds offer value in higher-inflation scenarios – particularly when you think of them in relative terms against nominal bonds. But these instruments also have interest rate risk so, in an environment where real interest rates have increased, investors are likely to incur significant losses.

Furthermore, investors must recognise these instruments are less liquid, so building or unwinding a position can take longer. We don't use derivatives on inflation, so I don't have anything to add in this regard.

Shifting our focus to gold, we have observed that its appeal for hedging against inflation has waned. High interest rates are negatively correlated to gold prices. Gold plays a more significant role as a safe-haven asset, and becomes particularly vital during episodes of financial stress, such as those seen in today's difficult geopolitical context.

You have previously discussed the 'cost of carry' many central banks face. What are the most important issues reserve managers should consider in this area in the current environment?

Gerardo García: We have addressed this problem by enhancing the return profile of our portfolio while safeguarding liquidity and capital preservation in our decision-making processes. One way to achieve this is by finding additional sources of diversification to reduce the gap in interest rate differentials.

In Mexico, the nominal interest rate is currently 11.25%. In the US, our most important market, where the two-year note, for example – which most closely resembles the duration of our portfolio – the interest rate is around 5.25%.

Hence, there is a differential of 6% that we are paying on our liability side, and less than 5.25% that we are earning on our asset side. So that 6% interest rate differential basically reflects the cost of carry. To reduce that cost of carry you can try to enhance the yield of your portfolio by, for example, switching a little bit away from Treasuries into, for example, agencies or supranationals or corporates, whcih will give you a higher yield than the 5.25% of the two-year note. There are credit components you can use to try to reduce that gap, obviously, within our risk parameters and risk tolerance.

> ***"There is some uncertainty around and concern about the marginal buyer of US Treasuries. Previously, countries such as China and Russia bought a significant amount of US Treasuries, which helped keep long-term rates down"***

We have also tried some systematic yield enhancers, such as our synthetic investments in US dollars, which take advantage of the FX basis in FX derivatives markets. Instead of having US Treasury bills, which could be a large part of our portfolio, we could sell those US Treasury bills and receive dollars, lend those dollars out into the swaps market and hedge that back. For example, we lend those dollars out, exchanging them from dollars to Japanese yen, which is the typical strategy we use. We then invest those yen in short-term bonds in Japan.

To avoid FX risk, we hedge that FX risk back to the US dollar. So we end up with a higher US dollar rate than the one we began with in US Treasury bills. You can do that with a large proportion of the portfolio. and then you will have some yield enhancement without FX risk and you vary the credit risk component by switching from US Treasury bills into Japanese bills.

That's a very common strategy many are taking advantage of because the uncovered interest rate parity theory is not holding at this point. So, basically, lending dollars out into the swap market allows you to build strategies that are yield enhancers.

It's important to emphasise that, while we seek to minimise the cost of carry, our primary objective remains maintaining reserves at adequate levels. In this regard, closing the gap is not necessarily the highest priority.

How are these kinds of tactical trades executed?

Gerardo García: The money-market desk is continuously seeking to allocate the most liquid part of the international reserves portfolio in the highest-yielding alternative, subject to our risk constraints. In this regard, they compare, among cash accounts: time deposits in US dollars, other money-market instruments in US dollars and the synthetic investments in US dollars previously described. For some years now we have found one of our best alternatives to be in the Japanese markets. The process involves all three desks in our organisational setup. The US dollar fixed income desk will most likely compare all US dollar domestic rates against US dollar synthetic rates. If synthetic rates are higher, they will co-ordinate with the FX desk to engage in a swap transaction to lend US dollars in the swaps market, and invest in a non-US dollar short-term money-market instrument, most often in yen.

In what other ways has Banxico engaged in tactical trading, and what opportunities are you currently considering?

Gerardo García: We implement different strategies to establish our tactical positions. We have tried to make these strategies more systematic and analytics based. For example, we use a dynamic optimisation process that consists of using a similar methodology that we use for our SAA, but with a shorter timeframe. Every three months, we look at what market prices might be telling us about the future and invest accordingly. In a way, we reposition our portfolio based on the most current information and market conditions. The results so far have been positive.

We also trade the futures' bases, which means we sometimes use derivatives to adjust the duration of the portfolio and use the cash proceeds to invest in shorter-term securities that offer higher yields. Our carry strategies in FX markets imply we short currencies with the lowest carry and go long in those with the highest. We use this strategy only under low FX volatility regimes.

Other strategies are informed by market views that are a result of our macroeconomic analysis. We use short-duration positions to capture the higher-for-longer nature of central bank decisions, and economic growth differential strategies to increase the exposure in currencies with the highest growth expectations and short those with projected weaker growth. Assessing economic growth differentials, we look at the juncture of what's happening with the global economy right now, as opposed to a long-term view or an optimal portfolio.

The way we think of TAA is that we want to generate consistent returns above the benchmark – and that comes from many small systematic trades. Our TAA is often compared to that of our external asset managers. The way I think of this competition is that we are often the steady tortoise that beats the hare. You have to do tens – perhaps hundreds – of small trades in which you will pick up a little bit of extra alpha as opposed to having these very big trades that will earn you a lot of money and that some asset managers are taking in terms of large deviations in duration or in currencies. Sometimes they do it right, but sometimes the strategy can go wrong. We are very conservative in deviating in duration or FX, but are making small tweaks that will earn a little bit in a very consistent way.

You mentioned Banxico had added exposure to Asian currencies as you believed Asian economies offered the greatest diversification benefits – are you continuing to increase exposures to these currencies and, if so, how?

Gerardo García: We have increased exposure to Asian currencies since 2019, and has not changed much since then. We did so because of the low correlation these currencies hold with other traditional reserve assets. Our SAA model tends to allocate more resources to Asian currencies, so we have to impose some exogenous restrictions on our optimal allocation.

It is also important to mention we have identified that diversification benefits can be enhanced by investing directly in the fixed income markets of each currency, rather than exclusively focusing on the currency itself. This has proven effective – primarily due to the relation between FX and interest rates, which serves to amplify the diversification benefits when investing in other currencies. As such, we've chosen to implement these investments in the Asian fixed income markets rather than solely in short-term instruments.

> ***“I believe inflation-protected bonds offer value in higher-inflation scenarios – particularly when you think of them in relative terms against nominal bonds. But these instruments also have interest rate risk”***

Many central banks consider Latin American investments attractive because of the perception that the inflation cycle has peaked. Many also now consider Indian rupee investments more attractive than renminbi, despite the latter's reserve currency status. What is your view?

Gerardo García: In our ongoing pursuit of portfolio diversification and improvements to the risk/return profile of our investments, we continuously evaluate new currencies and assets. However, our exploration is somewhat constrained by limitations related to credit ratings. In particular, India's credit rating currently falls below our established minimum credit rating threshold, preventing us from considering investments in this particular currency. This situation also applies to other assets in Latin America, as they typically do not meet our minimum credit rating requirements.

However, some central banks have more leeway to invest in lower credit-rated instruments. For those, Latin American fixed income markets, including Mexico's, might present attractive investment opportunities, as interest rate differentials are wide, inflation has peaked in most cases and central banks are starting to cut interest rates. Moreover, many of these countries have done their homework and have strong economic fundamentals. So I believe the outlook is favourable.

Having said that, capital inflows to emerging economies will materialise when investors receive more clarity on whether advanced economies' central banks are finished with their tightening cycles, and when they observe lower volatility in financial markets and there is more certainty around long-term rates. Investors will also seek relief in terms of the various risk factors that currently affect the global economy – geopolitical conflicts being the most obvious.

"The uncovered interest rate parity theory is not holding at this point"

What climate-related investments does Banxico's reserve management department engage in and how is this likely to change over the next five years? If you engage in green investments, what are the best approaches to ensuring sufficient liquidity while avoiding the risk of greenwashing?

Gerardo García: Our journey towards sustainable and responsible investments began with the acquisition of bonds issued by supranational organisations aligned with these principles. In 2016, we took the first step in this direction by entering the green bond market. Since then, the list of eligible issuers of sustainable/green bonds has grown significantly.

Another strategy we have implemented is negative screening to exclude securities that do not align with our fundamental values. Such values promote development, prosperity and ethical conduct. Additionally, we promote highly responsible investment standards with our external asset managers.

Throughout this journey, we've come across several challenges, including the limited secondary market liquidity of green, sustainable or social impact bonds. There is also the constraint of limited environmental, social and governance (ESG) government debt issuance; heterogeneity of ESG criteria; an absence of ESG ratings for a broad spectrum of securities; and disparities in reporting standards and performance metrics, among other complexities. Furthermore, investing in green bonds might sometimes be at odds with other reserve management objectives, such as liquidity and return.

Consequently, we have refrained from establishing an explicit ESG threshold or specific sustainability objective for our investment portfolio – our exposure has not grown much, to be honest. But we are very aware of the urgent need to promote an energy transition, and sustainable and responsible investments, and are working with the Network for Greening the Financial System and other supervisory and regulatory bodies to address some of these issues, and possibly have a larger impact going forward.

We hope that, in the years ahead, these markets will continue to expand, and an increasing number of entities and companies will align with sustainable and responsible investment practices. As this alignment grows, we anticipate the challenges we've encountered previously may be gradually resolved. This will possibly enable us to further enhance our involvement in these markets.

How does Banxico use external asset managers and data providers to support reserve management at strategic, tactical and other levels?

Gerardo García: Since its inception in 2001, our external asset management programme has grown significantly. This has been not only in terms of assets under management, but also in investment in new financial markets, and expansion of high-level discussions and knowledge transfer. The programme represents an integral aspect of our reserve management strategy and plays a crucial role in meeting our needs through our partnerships with external professional managers.

The programme began with the objective to build up credibility on our investment decisions by comparing the performance between internal staff and managers. In other words, to serve as a live benchmark. Moreover, another relevant goal of the programme has been to enhance the performance of the investment portfolio, as external managers are expected to outperform the benchmark portfolios.

Simultaneously, we have aimed to leverage the knowledge and technology transfer from external managers. We have successfully achieved this through various strategic initiatives that have bolstered our investment process through regular calls and meetings to discuss market outlooks and portfolio positioning, research and investment idea sharing, seminars on specific topics with other clients and tailor-made training in-house and externally. This has provided us with a constant flow of ideas that is used to complement our decision-making process with additional viewpoints. These providers are also useful when we want to delve into a particular topic in which we don't have much experience.

As our FX reserve portfolio experienced a pronounced increase in size from 2007–15, the external asset management programme was and continues to be a source of relevant ideas for diversification in new asset classes and investment strategies, whether in fixed income, currencies or derivatives. Since 2015, the programme has been used to gain exposure to asset classes, such as mortgage-backed securities (MBS) and corporate debt, which are operationally complex and would require significant human and capital investment. The incorporation of these asset classes as part of our investable universe has further strengthened the diversification process.

What results have you seen investing in MBS and corporate debt?

Gerardo García: The results have been positive because we have been getting the credit risk premium you can get with those types of securities. So we are harvesting that risk premium. When I mentioned the current cost of the reserve portfolio, I said there were some ways to reduce the carry cost, and MBS and corporates both trade at higher yields than US Treasuries.

There are times these portfolios have performed very well, and other times they have underperformed Treasuries. So, at this juncture, for example, there have been some concerns about the housing market in the US, and the Fed has been shrinking its balance sheet and participating less in the MBS market. Some of the spreads of MBS against US Treasuries have widened somewhat. In any case, if you look at this portfolio from a long-term perspective, it has been a very good addition to the portfolio. The same can be said about our corporate debt exposure.

In view of the limits on FX reserves portfolios – such as the restriction to invest in securities with a high-risk profile – we expanded our external asset management programme by adding a non-benchmark mandate. Its rationale was to provide more flexibility and to increase the benefits of diversification, preserving capital regardless of the prevailing stage of the business cycle. Its results have been successful, yielding valuable insights that have positively influenced the overall investment process and further diversified the portfolio. Since its establishment, the non-benchmark mandate has contributed to the creation of portfolios exhibiting low or even negative correlation with our internal investments. Thus, it has effectively fulfilled its objective of enhancing the entire reserve's investment strategy.

The success of our external asset management programme hinges on continuous evaluation, ensuring all of its aspects align with our objectives. We expect the programme to continue evolving with our asset management process, adapting in ways that seize its added value, not only in terms of returns, but in portfolio diversification, and knowledge and technology transfer.

What risk measures does Banxico employ when implementing strategic and tactical investments, and how have they changed in the past three years?

Gerardo García: In general, for the international reserves portfolio, we have certain risk limits, such as a minimum amount in liquid assets – a universe of eligible assets that is broad but still conservative, and a minimum credit rating.

More specifically, in terms of SAA, we now have a minimum conditional value-at-risk (VAR) objective function, which is aligned with our investment objective of capital preservation. However, in terms of monitoring the benchmark portfolio, we also consider risk measures such as VAR. Additionally, we keep track of the balance of the portfolio's sources and risks such as credit, interest rate and currency.

In terms of TAA for active management, we have a risk tolerance for the positioning in terms of excess VAR versus the benchmark portfolio. When defining the magnitude of deviations, we consider metrics such as DV01 and the options' delta. DV01 assesses the sensibility of an investment by looking at how much it will earn or lose for every basis-point movement in interest rate. The delta of the options offers the sensibility of how the option price will move when the price of the underlying asset moves. We define profit-and-loss levels for TAA decisions. These measures and limits haven't changed much in the past three years, but the deviations have become more conservative, given the liquidity and volatility of financial markets and the uncertainty of geopolitical and macroeconomic dynamics.

Geopolitical risks remain heightened. How do you factor these risks into Banxico's reserve management?

Gerardo García: I wouldn't like to speak lightly about geopolitical risks. First and foremost, some of the geopolitical tensions that have affected markets in the past couple of years are human tragedies. They demonstrate the unwillingness of opposing parties to talk and come to agreements, which I find extremely unfortunate and worrisome, particularly because I believe the move towards deglobalisation, nationalism and populism is a dangerous trend that will prove difficult to contain.

Factoring geopolitical risk into any type of model is difficult. If we learnt anything during the pandemic it is that economic models cannot capture unprecedented events, and geopolitical shocks fall into that category. I think the answer to this more uncertain future lies in having a well-diversified portfolio. When I think of diversification, I'm not only thinking of asset classes, but also risk factors, economic regimes and investment strategies.

One aspect of our SAA methodology that is helpful and that guides our decision-making is market prices. These are the main inputs of our SAA: they already incorporate rising geopolitical risk, mainly by having wider distributions of expected returns, or clear skews on those distributions – think of safe-haven assets having fatter right tails. In these circumstances, incorporating stress-testing and scenario analysis to the analysis of the portfolio might prove relevant and insightful. And being ready to take tactical decisions or active management strategies to adjust and protect the portfolio is of the essence.

> ***"We use short-duration positions to capture the higher-for-longer nature of central bank decisions, and economic growth differential strategies to increase the exposure in currencies with the highest growth expectations and short those with projected weaker growth"***

Do you have any concluding thoughts?

Gerardo García: These are turbulent times. What is happening in financial markets is calling for investors to have the flexibility, adaptability and agility to respond to new and unexpected developments. An uncertain future awaits and, as ongoing processes continue unfolding, investors need to adapt swiftly.

More broadly, what is happening in the world calls for dialogue, openness, tolerance and empathy. The world needs to embrace the values of international co-operation and peace. Of course, these are times in which co-operation is much more challenging to achieve, but in many ways it is more needed. ❑

The opinions expressed in this article are personal and do not necessarily reflect those of Bank of Mexico or its board of governors

From debate to dilemma: should reserve managers diversify when rates are high?

Panellists discuss tranching, tactical diversification and strategic asset allocation governance in current market conditions during a *Central Banking* roundtable in collaboration with Invesco.

"We have just had our strategic asset allocation review," a reserve manager from a central bank in the Americas told a panel at the *Central Banking* Autumn Meetings 2023.

US dollars are prominent in the portfolios of the two central bank speakers who took part in the panel. Now, in a new rate environment, should reserve managers focus on short-term returns or take on more risk precisely because yields are higher? "This question is very timely," the official said.

From debate to dilemma

During discussions at the central bank that had recently reviewed its strategy, there were arguments on both sides as to whether to decrease or increase duration.

Some personnel at the central bank suggested the duration of even a small portion of reserves should be increased to make the most of higher-for-longer rates. In contrast, others proposed that it would make sense to reduce the duration of the portfolio because they expect elevated volatility to continue. "The debate became a dilemma," the reserve manager told the room.

In the end, however, the decision was made not to make any changes. "The decision to stay on hold shows that we are committed to our long-term goals of holding reserves," the reserve manager said.

Together with a floating exchange rate regime, the reserve manager expects this to provide insurance against external shocks.

"If we decided to reduce duration, we would be trading tactically something that should be traded strategically," the reserve manager said.

Any road will get you there

Clear investment policies – such as the long-term goals the central banker outlined – are extremely important, the private investment manager on the panel said. They echoed the sentiments of the central banker, illustrated by the phrase: "If you don't know where you're going, any road will get you there." The panel chair, from a global financial institution, highlighted that the debate on how to develop investment policies has been ongoing for years.

Every year, the chair said, some reserve managers argue that revisiting goals is a long-term exercise and goals should not be changed frequently. But others maintain that, if you do not revisit goals relatively often, you risk being stuck with numbers and assumptions that are no longer relevant. Here the idea of tactical and strategic asset allocation matters, they said.

To this point, the private investment manager outlined the benefits of tranching – specifically of having a working capital tranche, a liquidity tranche and an investment tranche. "Investment policies that are tailored to each of those tranches can be very valuable," they said.

"You have different risk tolerance levels for those different tranches, and you have different investment horizons within investment tranches," the investment manager recommended. For the investment tranche they said the argument could be made for breaking it out into strategic and tactical asset allocations that serve different purposes.

"Tactical asset allocations can be test labs for new investment ideas, as well as the conduit by which there can be an attempt to increase capital returns," the private investment manager said. Again, that should be dictated by an investment policy separate from the strategic asset allocation, they added.

Tactical diversification

The reserve manager from another Americas central bank highlighted that a key consideration for their institution at the moment is whether it should use tactical allocation to expand into new asset classes.

"If we want to get some yield enhancement without compromising our central bank's risk tolerance, which news asset classes should we be looking at?" the reserve manager asked, saying they are looking for finance advice, not an economic response from the asset manager. "Emerging market debt is an attractive space right now," the asset manager responded. "I do think the dollar is going to start to weaken. And that could be an area of a real opportunity."

The central banker agreed, adding that now is not the time to focus solely on domestic US markets. They posited that some larger emerging markets are just as liquid as developed markets.

The panellist the central bank that had decided not to make changes to their strategic asset allocation described how their tactical asset allocation informed their strategic asset allocation.

The tactical asset allocation is principally used to generate excess returns to the strategic asset allocation portfolio, but it has also been a successful way to gather market intelligence and as a "laboratory for new asset classes".

Many of the new asset classes that now make up part of the strategic asset portfolio were initially traded and tested in the tactical portfolio, the central banker said. ❑

This panel discussion was convenued under the Chatham House Rule at the Central Banking *Autumn Meetings 2023. Under these conditions, information can shared but not the identities or affiliations of the speakers. The next meetings will be held in Cape Town, March 5–6, 2024.*

Fixed income factor portfolios for institutional investors

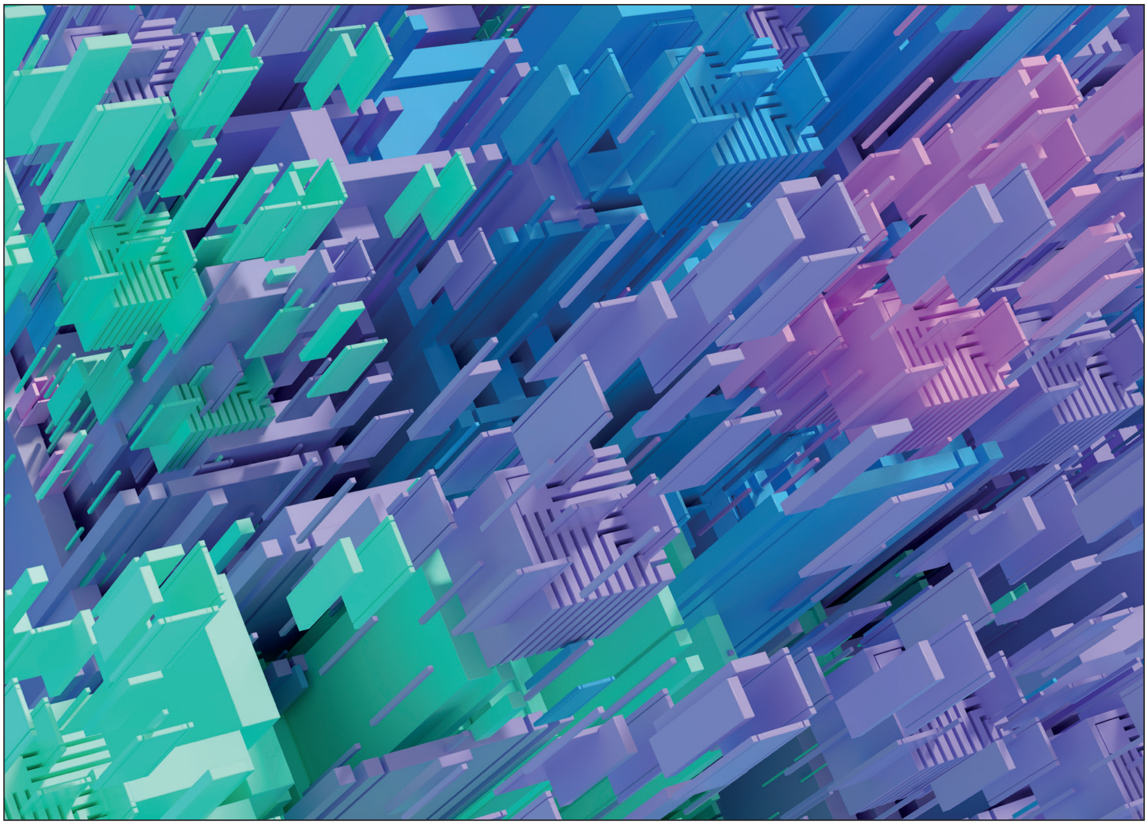
Invesco addresses the concerns of large institutional investors investing in the corporate bond market, covering key metrics when evaluating strategies for inclusion in portfolios, and the strength of fixed income factor investing in the corporate bond market.

The 'Norway model' and the benefits of factors

Chambers, Dimsom and Ilmanen describe the governance and investment objectives of the Norwegian Government Pension Fund Global (GPFG) in their 2012 paper, *The Norway model*.[1] As the authors point out, the fund is one of the largest and best-run funds in the world. They analyse the characteristics of the fund and distil several key principles that have been key to its success.

First, they highlight its emphasis on risk control through diversification using liquid publicly traded securities. Second, the fund relies on a long-term investment horizon with little need for marketability. The long-term horizon makes the fund tolerant of return volatility and short-term loss. Given the fund's size, it only looks to invest in strategies with large capacity. Given the long-term investment horizon with stable risk preferences through time, the fund focuses on serving as an opportunistic liquidity provider through contrarian strategies. Finally, the fund focuses on low-cost strategies with a transparent investment process.

Factor investing has been adopted by GPFG to improve diversification and returns, as stated in its 2020 annual report.[2] The key reason for this is that factor investing fulfils the necessary criteria outlined by Chambers, Dimsom and Ilmanen. Factors have relatively low long-term correlation, which ensures the fund can manage risk through diversification. They are scalable and come at relatively low cost. In its most recent review of the portfolio's risk and return characteristics, Norges Bank (2020) – which administers the GPFG – reported the coefficient betas from multivariate regressions of its external managers' active returns.[2]



The estimated coefficients can be interpreted as exposures to factors over the analysis period while the intercepts can be attributable to manager value creation over and above the exposure of the factors. Norges Bank uses five factors in equities, including the market, and four style factors: size, value, profitability and investment factors from Fama and French (2015).[3] The number of factors used reflects the substantial academic work behind equity factors. In the same report, Norges Bank only uses credit and term in its regression for fixed income managers which is consistent with the two factors for bonds used by Fama and French (1993).[4]

The credit and term factors have more in common with equity market factors than style factors. The term factor is the return of longer-maturity treasuries relative to shorter-maturity treasuries. The credit factor is the return of lower-rated securities over a maturity-matched higher-rated security. A corporate bond's yield and return can be deconstructed into two sources: interest rate and spread. Interest rate risk is directly related to the bond's duration. The spread is the yield of the corporate bond above a maturity-matched treasury and represents the higher returns associated with owning a riskier security than a treasury bond. While term may suffice to describe the interest rate exposure of a bond, the credit factor may not. In a way, it is the 'capital asset pricing model' equivalent in corporate bonds. By only using the credit factor, investors are making an assumption that the spread return of the bond is due to its exposure to systematic credit risk. In diversified portfolios, this single factor suffices to explain the portfolio's risk and return. The concept of a single factor has been rejected in equities; there is no reason multiple factors should not also exist in corporate bonds.

Fixed income can offer similar benefits to equity

This article reviews several factors used in the literature and evaluate whether factor investing can sufficiently fulfil the criteria laid out by Chambers, Dimson and Illmanen. Specifically – do the factors provide strong diversification? Do they have capacity? Can they enable the fund to act as an opportunistic liquidity provider? Can it be implemented at low cost in a transparent way?

We focus on three factors – low volatility, value and carry – to demonstrate the efficacy of a factor-based approach. Our choice of factors is not exhaustive and does not represent a set of orthogonal factors to explain the returns of the credit universe. Our goal is only to show that factors can be applicable to institutional investors. We included those most commonly used in the literature. In addition, these three factors are of significant practical importance. A recent survey of investors found that a majority would consider using value, carry, quality/low volatility and liquidity, with a minority of survey participants willing to consider momentum.[5] Therefore, we concentrate on the three factors that have more broad consensus among investors, with consistent definitions in the literature.

> ***"New market inventions such as portfolio trading can help reduce transaction costs and increase the feasibility of factor-investing strategies in fixed income"***

We will show that the fixed income factors reviewed here do indeed have strong diversification benefits. The factor premiums are persistent in a large diversified cross-section of the corporate bond universe. While all of these historical simulations argue factors should be implementable at low cost, the positive factor exposures of existing managers demonstrate they have positive premiums after transaction costs.

Finally, in the interests of transparency – a key criterion – we use simpler definitions of factors relative to those found in the literature where possible. Given the dominance of investment grade (IG) in institutional portfolios, we confine our discussions of factors to this particular credit sector for the remainder of this article. Factor strategies can easily be extended to other asset classes as high-yield (HY) and emerging-markets hard currency.

Low volatility

The low volatility factor explains the higher risk-adjusted returns associated with holding low-volatility bonds, as is widely observed in the academic literature across several asset classes.[6] Low volatility can be a noisy measure when using monthly realised returns. As a simple proxy, we rank bonds by maturity with a credit quality of BBB+ or better. Our construction is like others that focus on definitions that emphasise short-duration and higher-rated bonds.[7–9]

Value

The value factor explains the high risk-adjusted returns from owning bonds with higher spreads than fair value. There have been several different definitions offered to define value. We have chosen a simple definition that selects bonds with the highest options-adjusted spread within their respective industry and ratings groups. On the surface, this differs from the approaches taken in the existing literature.

Both Houweling and van Zundert (2017) and Israel, Palhares and Richardson (2018) rely on a regression-based approach that uses rating, maturity and other characteristics to predict the spread of every bond in the universe.[7,8] Value bonds are those with high spreads relative to predicted values. We choose our definition for its simplicity and believe it captures the same dynamic as the regression-based approach.

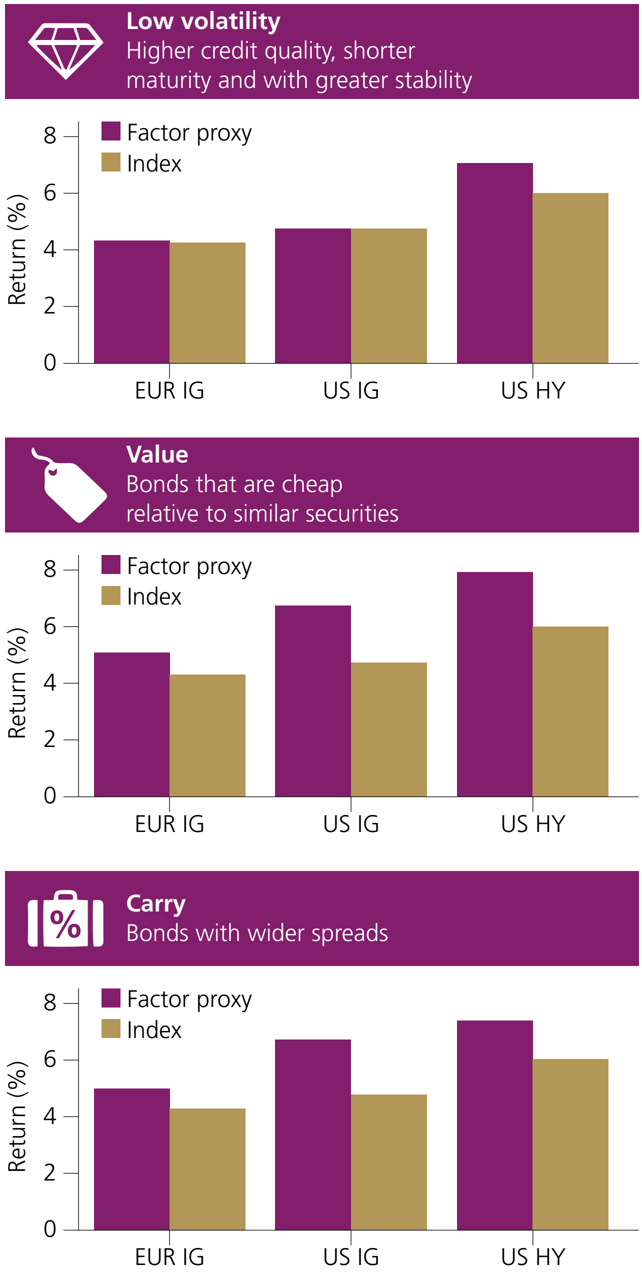
Carry

The carry factor explains the high risk-adjusted returns for investing in bonds with highest option adjusted spread. Relative to value and low volatility, there is less consensus in the literature around carry as a factor. Only Israel, Palhares and Richardson (2018)[7] argue for it, among those who have looked at multi-factor models, including Howeling and van Zundert (2017)[8] and De Carvalho, Dugnolle, Xiao and Moulin (2014)[9]. We have decided to include it in this study since previous work has found carry to be a common factor in many other fixed income markets beyond credit.[10]

Figure 1 highlights the performance of three-factor portfolios in the EUR and USD IG the USD HY markets from February 2000 to September 2023. While the low-volatility factor is only able to generate index-like returns in IG, it leads to a significant risk reduction due to the construction methodology focusing on shorter durations and higher credit qualities. Other factors show higher returns, but come with higher drawdowns and a positive correlation with the value factor.

Factors are also a useful tool to analyse portfolios. Invesco conducted multiple portfolio analyses and found a pronounced bias of active managers towards the carry factor. An allocation to the low-volatility factor as a completion portfolio can help smoothen portfolio returns.

1. Factor portfolios in EUR and USD IG and HY markets



Time period: February 2000–September 2023. The index for EUR IG is the Bloomberg Barclays EUR Aggregate Corporate Bond Index, the index for US IG is the Bloomberg Barclays Corporate Bond Index and the index for US HY is the Bloomberg Barclays High Yield Corporate Bond (2% capped) Index.

Past performance does not predict future returns. The information presented is intended to illustrate the academic research of factors within the fixed income asset class, and is in no way intended to represent fund performance. The performance results shown are hypothetical (not real) and were achieved by means of the retroactive application of the statistical model. It may not be possible to replicate the hypothetical results.
Source: Bloomberg and Invesco

Conclusion Institutional investors should ask hard questions about their fixed income portfolios. Chambers, Dimsom and Ilmanen offer an excellent framework to judge the suitability of any strategy within a large portfolio. We find that factor investing can fulfil these criteria. They represent a fundamental risk/return relationship not explained by term and credit factors within the corporate bond market.

Long horizon investors can take advantage of these factors by taking on the risks associated with the factors. The factors are scalable with efficacy across a large part of the market in different ratings, sector and maturities. Factor diversification can be used to target excess returns while controlling risk. Finally, the factors do not exhibit any exposure to typical liquidity metrics, making their implementation costs similar to passive market value-weighted portfolios. The simple definitions offer transparency of the investment process. Finally, the potential to automate this investment process and bring economies of scale means they should come at extremely low cost. New market inventions such as portfolio trading can help reduce transaction costs and increase the feasibility of factor-investing strategies in fixed income. ❑

Notes

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A turning point for reserve managers?

After many central banks' reserves declined in 2022, how should managers evaluate their fixed income investment policies in an uncertain period following years of unprecedented shocks? By Joasia E. Popowicz.

Global foreign reserves decreased from $12.9 trillion in the fourth quarter of 2021 to $11.5 trillion in Q3 of 2022, according to the International Monetary Fund's (IMF's) *Currency composition of official foreign exchange reserves (Cofer)*.[1]

Foreign exchange interventions – particularly those of emerging economy central banks to dampen volatility caused by sharp portfolio outflows – were one reason reserves declined, but FX reserve revaluations also played an important role. As central banks – notably the US Federal Reserve Board – raised rates to tame above-target inflation, sovereign bond yields rose, meaning the value of short-dated US Treasury bond portfolios declined. The Bloomberg US Treasury bond 1–3-year total return index, which approximates part of a typical FX reserves investment portfolio, decreased by just under 4% in 2022.

"Even the returns of those with a shorter duration suffered," Marco Ruiz, manager at the World Bank's Reserve Advisory and Management Partnership (Ramp) – which offers technical advisory and asset management services – tells *Central Banking*. The *Reserve benchmarks 2023* report indicated that average duration at 55 central banks stood at 25 months during the previous 12 months.[2]

"Almost all the institutions we talked to expressed that losses were a significant concern for the board. These have probably been the worst two years in fixed income history, considering how low interest rates were," he says. "Since the creation of those benchmarks 40 years ago, never have those indexes had a negative return," Ruiz adds. Indeed, some central banks had never seen negative returns before: "That was a significant shock."

Even central banks that had diversified their fixed income portfolios – for instance, into mortgage-backed securities (MBS) – faced significant issues. "The return on MBS for long-duration instruments was actually even worse than it was for short-term Treasuries," says Ruiz. Concerns the Fed would flood the MBS market contributed to double-digit losses for some MBS indexes last year. It was a similar story for those that had invested in equities: their historical inverse price correlation to bonds largely failed – at least in 2022.

Another reason for reduced FX reserves was outflow from reserves in some countries to repay foreign currency government debt, says Freyr Hermannsson, an independent adviser who works with multiple central banks and international institutions.

Many central banks, which are not used to showing losses on financial statements, are now reconsidering their portfolios, given boards and stakeholders were not satisfied with their performance, says Ruiz. Nonetheless, he says, a Ramp survey published in November found that "central banks' investment management policies were resilient considering what happened last year".[3]

A turning point in a new era

Many consider now is a sensible time to reflect on lessons to be learnt and an opportunity to reassess goals. Doubling down on fixed income may be an option, should rates be close to their terminal levels.

"When the Fed raised interest rates, we had some mark-to-market losses – as did many central banks," Timothy Antoine, governor of the Eastern Caribbean Central Bank, which holds reserves in short-dated investments to back its currency peg, says in a wide-ranging interview. "Now we are enjoying the benefit of high interest rates in terms of our investment income. Our reserves are growing."

Indeed, Hermannsson says that, when it comes to the 'holy trinity of reserves management' – security, liquidity, return – "now, for the first time in 15 years, it is legitimate to expect fixed income assets to provide all three". This may come as a surprise to many reserve managers, which have only operated in the years following the financial crisis [that began in 2007–08], when interest rates stood at the lower bound across most jurisdictions due to below-target inflation and so struggled to hit return criteria. "That era has ended and there's a new environment."

Ruiz adds: "If we have reached terminal rates, it's really a moment to reassess the whole investment policy and see how to take advantage of the moment."

In Ruiz's view, the fact that "interest rates are increasing", and that "natural rates are increasing" is a good thing in the long term because "it improves return prospects". The reason for this, he explains, is that "in periods where we saw interest rate increases in the past, we saw negative returns in the very short term, but better returns over a longer time horizon".

But, as discussions at the *Central Banking* Autumn Meetings in November indicate, there is no quorum of reserve manager views – even within institutions – when it comes to a conviction that rates have topped out. At one Group of 20 central bank "the debate became a dilemma" during its recent strategic asset allocation review, an official of that central bank said.[4] Some colleagues had proposed that the duration of a small portion of reserves should be increased to make the most of higher-for-longer rates. By contrast, others proposed that it would make sense to reduce the duration of the portfolio because they expected elevated volatility to continue.

"We've been discussing terminal rates for two years," Ruiz points out. However, even if a reserve manager takes a "relatively conservative" approach in the portfolio and invests in US treasuries, they will secure close to a 5% return, he adds.

This would allow reserve managers to "maintain a core of short-term instruments" in their portfolio while also "diversifying into other products, and still having some carry that would allow them to manage the volatility of these products", says Ruiz.

The official at the G20 central bank said the result of the internal discussion was not to make any changes, for now. The latest Cofer data, however, indicates reserve levels are rising once more, exceeding $12 trillion by Q3 of this year. And some central banks are changing their allocations.

"Given current yield levels and market expectations, we have cautiously increased duration, from very low levels, to increase expected returns," Andrés Cabrales, head of the international investments department at the Central Bank of Colombia, told a fixed income reserves panel.[5]

Cabrales observed that interest rate policies can influence fixed income investments if monetary policy cycles synchronise. "We continue to analyse new asset classes and increase allocations in others to enhance diversification and achieve improved risk/return metrics," he added.

"As globally higher interest rates make longer-dated bonds and a broader set of currencies attractive for reserve managers, we use this opportunity to diversify our portfolio further," Jonas Kanapeckas, director of market operations at the Bank of Lithuania, told the panel.

To limit exposure to interest rate timing risk, "at a strategic level, we focus more on longer-term, more stable portfolio risk/return factors and general diversification goals", Kanapeckas added.

Ruiz stressed that "reserve management" is not about "market timing".

Another complicating factor for central banks is negative carry, given domestic policy rates are often much higher than reserve currency policy rates. "The cost of carry matters because, when central banks intervene in the domestic FX market to accumulate reserves, they buy dollars and they sell their own currency, which often requires sterilisation," says Ruiz. "That's where the negative carry materialises." When the negative carry is too large, it is more costly for central banks to increase reserves.

In some countries the cost of carry is higher than usual, and some central banks may be more hesitant to increase their levels of reserves, though in some cases they may need to, Ruiz says. Notably, in October, the Central Bank of Chile said it would suspend its programme to replenish international reserves because of instability in global financial markets.[6]

Another option is to slow the pace of growth of reserves, making it more gradual than rapid, to mitigate the cost of carry. However, having sufficient baseline reserves is still essential, despite any carry costs concerns.

There are also mechanisms to boost returns for those with high levels of reserves. "We have addressed this problem by enhancing the return profile of our portfolio while safeguarding liquidity and capital preservation," Gerardo García, director general of central banking operations at Bank of Mexico (Banxico), told *Central Banking* in an in-depth interview.[7] "One way to achieve this is by finding additional sources of diversification to reduce the gap in interest rate differentials."

The nominal interest rate in Mexico was 11.25% in November, while the interest rate for two-year notes, which most closely resemble the duration of Banxico's portfolio, was around 5.25%. The 6% interest rate differential paid on the liability side reflects the cost of carry.

Banxico uses systematic yield enhancers and, to reduce the cost of carry, reserve managers can also switch "a little bit away from Treasuries into, for example, agencies or supranationals or corporates", García said. "It's important to emphasise that, while we seek to minimise the cost of carry, our primary objective remains maintaining reserves at adequate levels. In this regard, closing the gap is not necessarily the highest priority," he added.

Banxico also exploits interest rate differentials by engaging in basis swap transactions via derivatives as part of its tactical trading efforts.

Changing market dynamics

Another problem from reserve managers is that expectations around rate paths have been priced differently in markets. "This year there has been an expectation of a slower pace of increasing interest rates. That expectation is seen in the short term of the [yield] curve, but it hasn't happened in the long end," says Ruiz. For institutions that have instruments with longer durations, those instruments have also underperformed in 2023.

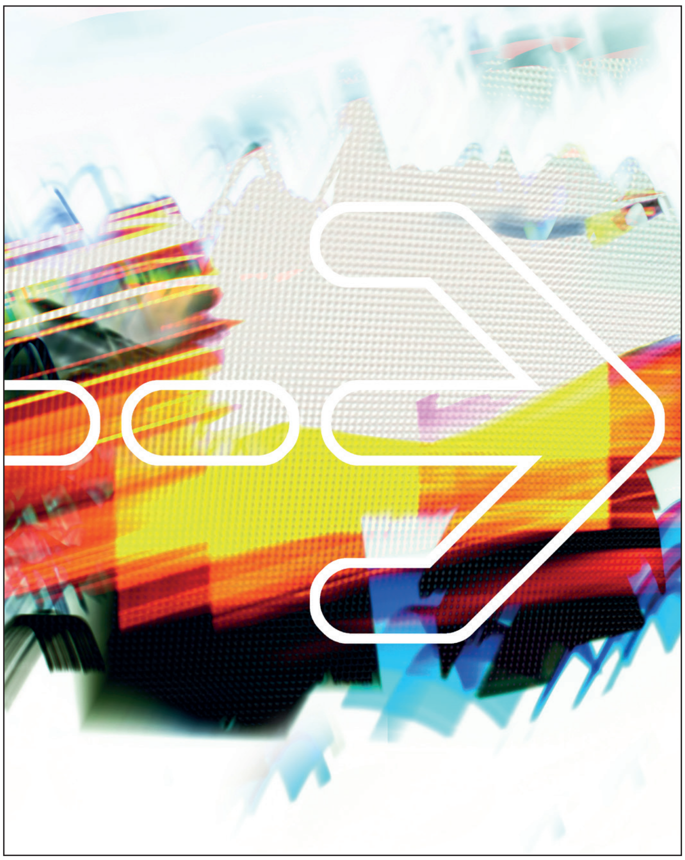
Hermannsson says reserve managers also need to remember that they should not only strive to maintain the real value of the reserves over time, but also aim to achieve appropriate risk-adjusted returns on the public asset they hold.

"Reserve managers that hold reserves that are financed with government borrowing need to be aware that the situation with the government foreign financing may have changed," he says. Debt rollover has become more expensive and, in some cases, challenging. "This will directly impact reserve adequacy."

At the *Central Banking* Autumn Meetings, one official said: "We recognise there is an increasing call on reserves." This official's central bank has a liquidity tranche that is the backstop of the working capital tranche. Earlier this year, the central bank "did a detailed liquidity stress-testing exercise", and adjusted the range for the liquidity tranche so "we do not run into the problem of pulling funds from external managers".

Hermannsson also points to "an ongoing unwind of quantitative easing, which presents uncertainty for government bond markets in reserve currencies".

A liquidity risk that is important for reserve managers to consider is that "it isn't clear what the path is going to be with these unwinds, while the effect will be profound".



Hermannsson cites the UK as an example. "The Bank of England [BoE] has been the dominant buyer of gilts for the past decade, now holding one-third of all gilts." However, as the BoE engages in quantitative tightening, "it has become a seller". There are also indications that one of the largest group of bondholders – pension funds – could turn to selling going forward, especially those running defined-benefit pension funds, he says. "At the same time, the government needs to finance a budget deficit under higher interest costs. Who will be the buyer?" The UK "is far from being the only country that is dealing with this situation", he adds.

More broadly, since the financial crisis, levels of debt have risen, says Hermannsson. Private debt has fallen, but debt has migrated to the public sector.

"As we have already seen with the European Central Bank, central banks will be looking to change monetary operations to improve the efficiency of their monetary policies as a response," he says. "Markets should also be prepared for a public policy rethink given the added cost of financing budget deficits and the roll-over of legacy debt."

Furthermore, "we haven't yet fully seen the impact of higher rates on public debt. The full impact of higher rates is still filtering into the system," Hermannsson adds. As a result, "we're starting to see central banks that have acknowledged there will be substantial cash cost over time".

Now may also be an opportune time to review the proper functioning of reserves governance structures, says Hermannsson, and also a good time to assess how risk management frameworks guided reserve managers through the 2022 transition.

In Hermannsson's view, "reserve managers need to have a smooth decision-making process with appropriate delegation of authority, to reallocate and rebalance through these kinds of transitions".

Long-term sustainable finance

Another significant development Ruiz says is "interest in sustainable development". This is not only in terms of investing in sustainable instruments, he says "but also in terms of how to measure sustainability in the portfolio".

The 2023 *Invesco global sovereign asset management study* shows a steady increase in green bond investment among respondents, from 28% in 2019 to 69% in 2023.[8]

"In the new era, central banks wish to lead with a good example in transitioning markets towards more sustainable finance," agrees Hermannsson.

The transition to green bonds is not easy, however. In efforts to meet environmental, social and governance criteria, greenwashing is viewed as "a considerable challenge" by 45% of sovereign wealth funds and central banks surveyed by Invesco.

Another "challenge often with reserve management is that policy objectives are mostly short term and it can often be difficult to obtain longer-term policy objectives such as those related to climate change", says Hermannsson. "[Nevertheless], central banks that have ample international reserves should have a portfolio with longer-term objectives, and many have already begun that process." ❑

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