FRANKLIN TEMPLETON

December 2024

Franklin Templeton Investment Solutions

2025 Capital Market Expectations

Slowing but not sinking

Contents

About capital market expectations (CMEs)

Every year we review the data that drive capital markets—current valuation measures, historical risk premia, economic growth and inflation prospects—to provide the foundation for our forecasts. We update the models that we use and review their continued appropriateness. Crucially, our models are based on first-principle economic relationships and reflect seasoned practitioner judgment.

We continue to include as part of every capital market forecast a measure of the expected volatility of that asset class, informed by long-term observed standard deviation of returns. Given that changes to global central banks' quantitative easing policies may have repressed both equity and bond market volatility over past years, but increased turbulence more recently, our approach to modeling volatility reduces recency bias and is particularly appropriate at a time when many leading central banks have moved to normalized policy.

Our CMEs are designed to provide annualized return expectations over a longer-term horizon, typically viewed as 10 years. Specifically, we calculate geometric mean return expectations over a 10-year period, which both fully captures the average length of a US business cycle and aligns with the strategic planning horizon of many institutional investors.[1]

Our modeling approach is based on a blend of objective inputs, quantitative analysis and fundamental research, consistent with the skill set of our Franklin Templeton Investment Solutions (FTIS) business. Underpinning these inputs are assumptions on the sustained growth rates that developed and emerging economies can expect to achieve and the level of price inflation they will likely experience. This approach is forward-looking, rather than being based on historical average returns. This is especially important in an evolving macroeconomic environment.

1. Since 1945, the National Bureau of Economic Research has defined 12 US business cycles, with an average duration of 75 months.

Summary

We believe riskier assets, such as global stocks and corporate bonds, have greater performance potential than global government bonds, given our expectation of moderate global growth and a continued normalization in global inflation expectations.

- We believe that maintaining a diversified multi-asset portfolio, in addition to the traditional benefits of a balanced portfolio between stocks and bonds, is the most likely path toward stable potential returns.
- Global interest rates have moved lower over the year but remain elevated relative to the previous decade. Overall return expectations from fixed income assets are slightly reduced from those anticipated in our 2024 CME forecasts, but remain higher than foreseen during most of the past decade.
- The risk premium within corporate bond yields appears to be broadly adequate compensation for the likely level of default risk across the business cycle, but the low starting spread level makes it more likely that prospects will be challenged in the near term.
- Earnings growth and yield will likely drive equity returns, however, with the twin headwinds of valuations reverting to their long-run means and significant recent gains our 10-year horizon expectations have moderated since last year.
- Over the 10-year horizon used for our CMEs, we see a constructive environment for asset returns and a relatively healthy alternative risk premia.
- We expect the US dollar to depreciate versus most developed market currencies as our valuation metrics suggest it is overvalued.

Our 2025 capital market expectations

Our 2025 CMEs are that the prospective returns of global equities and corporate bonds will be more attractive than the anticipated returns of global government debt.

Our geometric mean return expectation over a 10-year period for global equities is comparable with last year and broadly in line with the historical annualized return. Overall, we expect global equities to return 7.6% annualized over the 10-year period, with developed markets returning 7.5%.[2]

By comparison, we expect global developed government bonds to return 4.4% in US-dollar terms.[3]

10-Year Annualized Capital Market Expectations (USD)

Equity Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL EQUITY	**7.6%**	**16.6%**	**25.9%**	**8.9%**
Developed-Market Equity	**7.5%**	**16.5%**	**25.7%**	**9.2%**
US	7.2%	16.5%	23.7%	10.8%
Canada	7.4%	20.5%	20.2%	8.0%
EAFE	8.6%	17.4%	30.6%	6.5%
EMU	9.1%	21.6%	26.6%	6.5%
UK	9.0%	17.7%	32.3%	5.2%
Pacific ex Japan	7.3%	20.7%	19.1%	9.1%
Japan	8.8%	15.4%	35.6%	5.3%
Australia	7.6%	23.3%	18.6%	8.7%
Emerging Market Equity	**8.4%**	**20.6%**	**24.8%**	**7.7%**
China	7.6%	27.2%	15.7%	8.2%
Specialty Equity				
US Infrastructure	7.2%	14.1%	27.5%	8.4%
US REITs*	7.6%	23.3%	18.5%	6.1%
Global Listed Infrastructure	7.8%	17.3%	25.7%	8.2%
Global REITs	7.8%	20.5%	22.0%	6.8%
Multiverse	4.7%	6.7%	20.2%	2.6%

Fixed Income Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL FIXED INCOME				
Global Governments	**4.4%**	**7.4%**	**15.0%**	**1.9%**
US Government	4.3%	5.1%	20.6%	2.8%
Euro Government	4.5%	10.7%	11.5%	2.2%
UK Government	5.4%	12.2%	16.9%	1.5%
Japan Government	4.3%	10.6%	9.7%	-0.3%
Australia Government*	5.1%	12.1%	14.9%	1.3%
Canada Government	3.9%	9.2%	6.4%	2.8%
China Government	3.2%	4.7%	-2.8%	5.1%
Global Inflation Linked Bonds	**4.4%**	**9.1%**	**12.2%**	**2.9%**
US Inflation Linked Bond	4.4%	6.0%	18.1%	3.6%
Global Investment Grade	**4.9%**	**7.9%**	**20.4%**	**3.4%**
US Investment Grade	5.4%	7.1%	28.9%	4.2%
Euro Investment Grade	4.4%	11.0%	9.9%	2.3%
UK Investment Grade	6.3%	13.8%	22.0%	2.5%
Global High Yield	**6.5%**	**10.2%**	**32.0%**	**6.4%**
US High Yield	6.2%	9.4%	31.4%	6.7%
Euro High Yield	5.2%	15.2%	27.7%	5.5%
UK High Yield	6.9%	15.7%	22.6%	8.3%
US High Yield Loans	6.8%	9.0%	39.0%	4.9%
US Fixed Income Sectors				
US MBS	5.0%	5.0%	33.6%	3.0%
US Munis	4.0%	5.4%	12.5%	3.6%
Emerging Market Debt				
Emerging Market Debt – Gov (Hard)	5.8%	10.1%	25.2%	5.8%
Emerging Market Debt – Corp (Hard)	5.8%	9.9%	24.7%	5.3%
Emerging Market Debt – Gov (Local Fx)	6.9%	12.0%	29.9%	4.6%

*Denotes where shorter average is used (20-yr unavailable), periods range from 152 to 222 months.
Source: Franklin Templeton Investment Solutions.

2. There is no assurance any estimate, forecast or projection will be realized.
3. There is no assurance that any estimate, forecast or projection should be realized.

Other Expectations
As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
ALTERNATIVES				
US Private Real Estate	7.8%	14.5%	31.3%	6.6%
US Private Credit	8.0%	15.0%	31.1%	7.7%
US Private Equity	9.0%	22.4%	25.7%	15.0%
Commodities	3.3%	16.5%	0.0%	-2.1%
Global Hedge Funds	5.1%	6.8%	26.7%	5.4%
FX vs. USD				
AUD	0.4%	12.1%	-24.1%	-0.3%
CAD	0.7%	8.4%	-30.8%	-0.3%
CNY	0.8%	4.3%	-58.0%	0.8%
EUR	1.2%	8.8%	-24.2%	-0.6%
GBP	0.5%	8.8%	-32.5%	-1.5%
JPY	2.6%	9.8%	-7.5%	-1.3%

Asset Class Name	Expected Return (Geometric)
LOCAL 3-MONTH CASH RATES	
USD Cash	3.3%
AUD Cash	3.4%
CAD Cash	2.6%
CNY Cash	2.2%
EUR Cash	1.9%
GBP Cash	2.8%
JPY Cash	0.9%

Source: Franklin Templeton Investment Solutions.

Themes driving long-term global growth

In creating these CMEs, we incorporate FTIS's views on longer-term investment themes that impact the global economy. This process attempts to lift our thinking above shorter-term cyclical concerns. We debate these themes at our Annual Investment Symposium, in collaboration with senior leaders from across Franklin Templeton's wide range of specialist investment managers.

At our sixth annual Investment Symposium in November 2024, we discussed a range of secular themes that ultimately feed into two foundational components of our CMEs: the outlook for growth and inflation. Perhaps inevitably, we also found the dialogue return repeatedly to the policies of the incoming Trump administration in the United States, and the impact that these might have on global economies and markets. The Symposium focused on the extent to which the United States might extend its period of exceptional outperformance and the role that artificial intelligence (AI) might play. We put this in the context of elevated geopolitical tensions and rising temperatures due to man-made climate change and explored the sustainability of corporate borrowing in a world of higher interest rates. We incorporate our views of these trends in the analysis below, specifically how they impact our gross domestic product (GDP) forecast—slightly lower over the next decade—and our expectation that consumer price inflation (CPI) will remain slightly elevated. These views are key drivers of our CMEs. For a more detailed review of the symposium discussions, please see our ***Investment Symposium Paper.***

1. Growth

Our long-term approach to estimating growth combines two fundamental components: the number of hours worked in an economy and how productive each hour worked is. This formula sits at the heart of our approach to projecting how economies will perform. Demographics drive the number of hours worked for most economies, and the trend for most of the world's major economies is clear—populations are getting older.

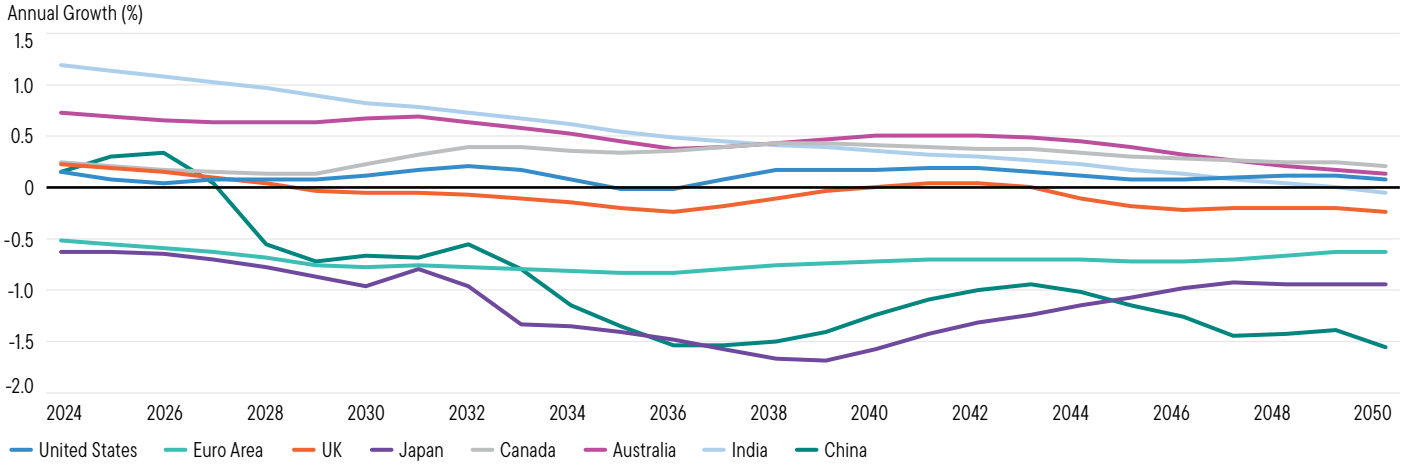
Working-age population growth rates have already turned negative in the Euro Area and Japan, and China is expected to follow a similar path over the next decade. More broadly, working-age population growth rates are expected to slow (see Exhibit 1). Immigration policy is unlikely to be sufficient to solve this. Our symposium focused specifically on developments in the United States, where attempts to reverse this flow are politically pivotal. In 2023 alone, Customs and Border Protection (CBP) personnel encountered 2.54 million migrants at the southwest border. This is about the same as the 2.58 million migrants in 2022, a record year. This compares with the pre-pandemic annual average of 500,000 migrants.[4] However, as deglobalization and nationalism has increased across most regions, we see a broader headwind to prospective immigration. **Our view is that demographics will likely be a small headwind to growth over the next decade.**

Productivity is the other key driver of growth and the counterpart that might offset a weaker demographic outlook. Recent history is not especially encouraging globally but was a central observation supporting past and ongoing US exceptionalism. The business cycle that followed the global financial crisis was marred by weak productivity growth across OECD economies (see Exhibit 2). Among our symposium panel of AI experts, there was a consensus that the pace of change within AI is rapid, and that AI is likely to materially boost knowledge worker productivity at some point over the next decade. AI is transforming certain roles across knowledge industries,

The Working-Age Population Will Shrink Over the Coming Decades

Exhibit 1: World Bank—Working-Age Population Projections

January 2024-January 2050E

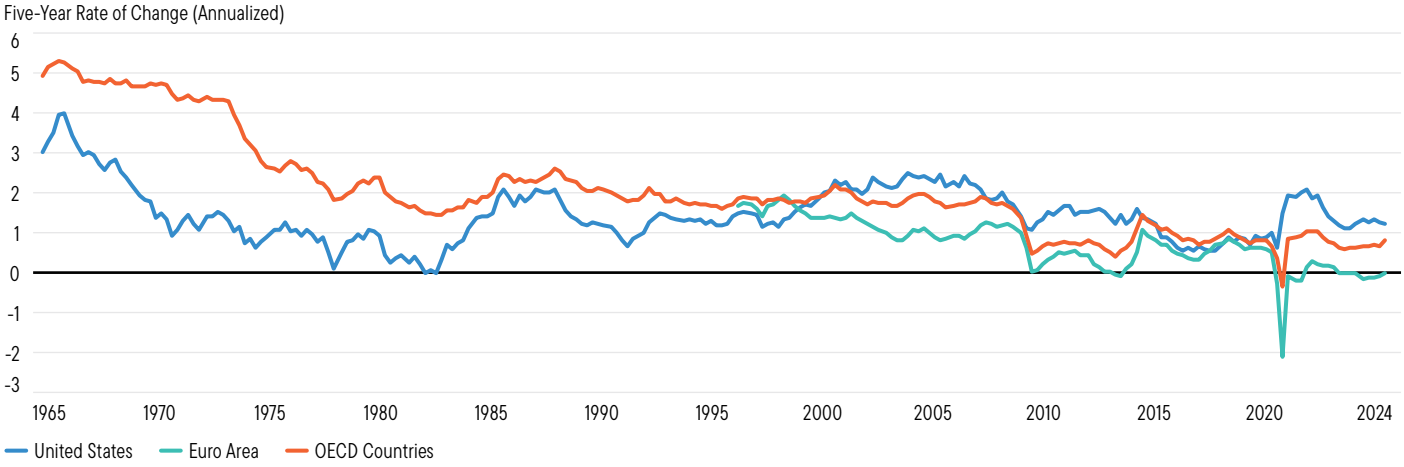


Sources: World Bank, Macrobond. E = estimate. Working-age considers ages between 15 and 64 years old. There is no assurance that any estimate, forecast or projection will be realized. Important data provider notices and terms available at www.franklintempletondatasources.com.

Productivity Is Difficult to Predict

Exhibit 2: Labor Productivity: Five-Year % Rate of Change (Annualized)

First Quarter 1965–Fourth Quarter 2024



Sources: Organisation for Economic Co-operation and Development (OECD), Macrobond. Important data provider notices and terms available at www.franklintempletondatasources.com.

4. Source: Federal Reserve Bank of Dallas, "Unprecedented U.S. immigration surge boosts job growth, output", July 2, 2024.

creating new labor capacity and changing the way work gets done. However, the timing of any productivity gains was uncertain as it was not clear that the "killer app" has yet been identified that will deliver the greatest benefits of AI to boost productivity more broadly. The Federal Reserve Bank of Dallas has highlighted the "productivity paradox"—the idea that there can be a significant lag between investment and resulting productivity gains. We find this research compelling, which supports our modest expectations of productivity over the upcoming decade.

As a result, our forecast growth rate falls in the region of 1.5%,[5] as **we expect productivity growth to rise to their long-run average, which is higher than the level seen in the most recent cycle but may fall short of what some AI optimists would hope for.**

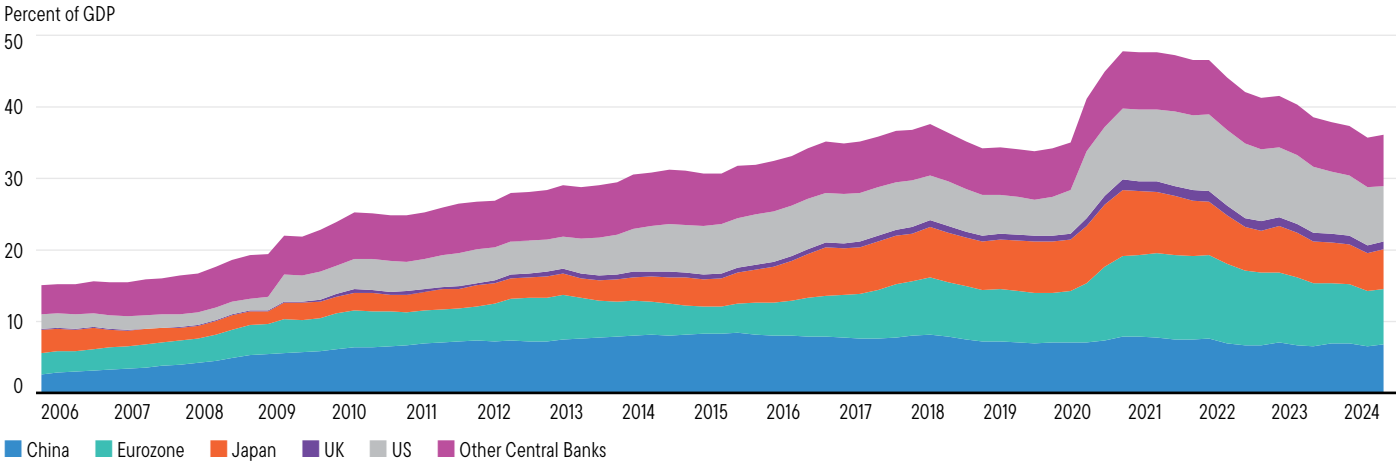
Capital investment is also a major driver of productivity. There are a few structural trends that may facilitate increased capital investment over the upcoming decade. Massive capital investment in AI will be required in order to generate productivity gains. Some estimates forecast that AI investment will reach $200 billion globally by 2025.[6] Another source of capital investment is the ongoing geopolitical conflict that reshapes globalization, and the desire to ensure security of supply. Even with the potential repeal of the US CHIPS and Science Act of 2022 in the United States, this will not reverse the completion of facilities that are already being built. The reorientation of **global supply chains will likely drive additional capital investment and support growth, which may be more desynchronized by region, and prove to be somewhat inflationary in the short to medium term.**

Other structural trends include energy security and progress toward a renewable energy transition. A corporate focus on energy sustainability will necessarily require significant investment, which likely boosts activity overall. Even if the Trump administration again leaves The Paris Agreement, its goal of "net zero" by 2050 will continue to be felt and spending will remain elevated over the next 10–15 years. Like the fate of the CHIPS Act, The Inflation Reduction Act (IRA) in the United States may be overturned, but both the United States and eurozone will continue toward decarbonization. However, political tensions may complicate this transition, even as they provide a vivid example of the need for capital investment. The mix may include more nuclear as well as renewables, as the breakdown of global trade openness colors the choices for energy independence. Government support for this transition, more evident in Europe perhaps, will likely balance concerns that it may diminish the available capital for other more immediately productive ventures. **These types of changes seem to suggest that energy investment will support the resilience of global growth over the upcoming decade.**

Increased capital investment will face a few structural headwinds. Accommodative policy has been a consistent theme. More categorically, we have seen an acceleration in the past decade, but current debt levels and government deficits will make this more challenging. Global debt has risen to US$313 trillion, which is US$100 trillion more than it was a decade ago.[7]

Quantitative Tightening Not Yet Complete

Exhibit 3: Central-Bank Assets
As of September 30, 2024



Sources: Reserve Bank of Australia, BCB Community Bank, Statistics Canada, People's Bank of China, Central Bank of Denmark, European Central Bank, Central Bank of Ireland, Reserve Bank of India, Bank of Japan, Bank Negara Indonesia.

5. There is no assurance that any estimate, forecast or projection will be realized. Productivity growth rate refers to OECD countries.
6. Source: Goldman Sachs, "AI investment forecast to approach $200 billion globally by 2025", August 1, 2023.
7. Source: Institute of International Finance Global Debt Monitor. As of first quarter 2024.

This corresponds to a global debt-to-GDP ratio of 330%, which has risen over the past decade by a less staggering amount than the nominal figure. Despite rising debt levels, fiscal policy has remained accommodative. In the European Union (EU), the Draghi Report highlights a significant annual investment gap of around €800 billion, which is about 5% of the EU's GDP.[8] This is also an area of US exceptionalism. The prospect for fiscal consolidation sits in conflict with the Trump administration's policy plans, but rising interest rates are naturally leading to questions about fiscal sustainability. US total public debt outstanding has almost doubled since the last time President Trump was first elected in 2016.[9] Over the long term, it broadly appears more likely policymakers will accept slightly higher inflation versus lower spending. **We expect fiscal spending, particularly in areas such as green infrastructure and defense spending, to be supportive.**

Policy considerations also extend to monetary policymakers. Still-elevated interest rates are making monetary policy more challenging, even as the process of normalization has begun. The extent to which global central banks are willing to halt the process of quantitative tightening (the normalization of their balance sheets; see Exhibit 3), and perhaps again act as a shock-absorber to debt markets, remains to be seen. However, signs of economic weakness have accelerated the pace of rate cuts over the past year and are indicative of our expectations for monetary policy over the upcoming decade. **Even though we expect policy to remain restrictive in the near-term, policymakers will remain responsive to negative growth shocks, especially if long-term inflation expectations remain anchored. However, monetary policy may be slightly less responsive compared to the past decade.**

Taking all of this into account, we expect **most developed markets to experience trend growth over the upcoming decade. One key exception is our outlook for Chinese growth.** While many economies will benefit from increased investment and a slight rise in productivity, China is less likely to benefit from deglobalization. It also faces sharper headwinds from demographics and a debt overhang. Our expectation for lower Chinese growth contributes to slightly slower global growth expectations in the decade ahead. We see global GDP expanding at a 2.5% annual rate. (See Exhibit 5 for a chart of growth expectations across key regions and countries.)

2. Inflation

In the post-pandemic period, inflation was the most pressing issue in policy discussions and for markets. This has eased somewhat in the last few years and no longer dominated the discussion at our Investment Symposium this year, despite the potential inflationary impact of trade tariffs. Although it has had an ongoing impact on consumers and the voting patterns of key electorates, it was a little less prominent this year. However, inflation has a direct impact on consumer behavior, and people's expectations for future price rises are a big driver of central bank actions.

Broad measures of inflation expectations have remained well-anchored, as current reported inflation has retreated from decades-high levels over the past years. We believe that global inflation will continue to moderate from current levels, but its pace will remain uncertain even if we are increasingly confident that the endpoint corresponds with the broad objective for price stability.

The key observation about central-bank policy objectives is that their resolve to keep inflation expectations anchored appears to have been maintained even in the face of cyclical pressures. Previous discussions about targeting average levels of inflation, or incorporating medium-term forecasts into the process, have been downplayed. This has been accompanied by a willingness to accept collateral damage caused by higher-than-anticipated interest rates—in the form of slower growth and potentially higher unemployment—in the years ahead. This clarification of objectives has been rewarded with a near complete reversal of 2022's rises in market observed levels of inflation expectations. **We believe that medium-term inflation expectations remain well-anchored and broadly compatible with central banks' established definitions of price stability.**

While we do not doubt the desire of central banks to see inflation return to more normal levels in a timely manner, we view some of the elements of current inflation as somewhat sticky. Notably, wage inflation will likely remain elevated until labor markets return more fully into balance. Housing supply has created increased shelter inflation in many developed markets; most markets have housing prices well above typical income ratios. Housing supply is unlikely to improve in the

8. Source: "Draghi's Plan to Rescue the European Economy: Will EU Leaders Do Whatever it Takes? Centre for European Reform. September 17, 2024.
9. Sources: Bloomberg, US Treasury. US total public debt is now US$35.9 trillion, up from US$19.9 trillion in Q4 2016.

near term. Medical care also remains an area that may experience slightly higher inflationary pressures, as aging demographics keep demand strong. **All these considerations feed into a likelihood of slightly elevated levels of services inflation over the medium term.**

On the goods side, investment needed to complete a full transition to clean energy may boost demand for certain commodities, such as copper, as well as squeezing out other private sector investment that may have boosted productivity and held back inflation. Similarly, the reorientation of supply chains may again contribute to increased pressures in the medium term. **Investment in energy transition and a reorientation of supply chains may increase goods price volatility in the medium term.**

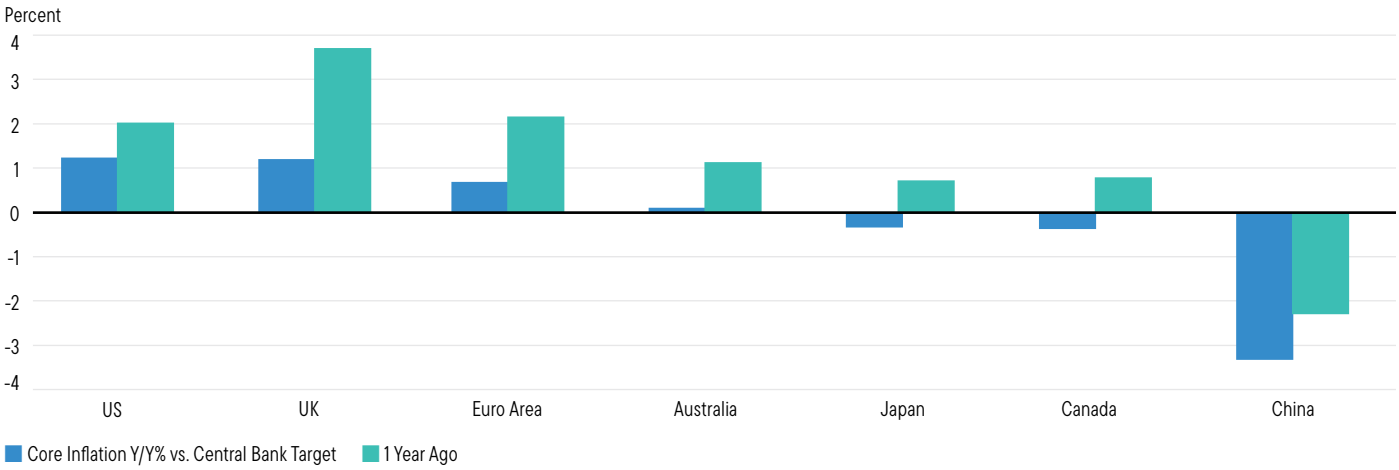
Aging demographics are a structural force with less clear implications for inflation. Some believe aging demographics will lead to higher inflation, arguing the weaker supply-side effects outweigh lower demand. The Bureau of Labor Statistics projects US employment growth will be 0.4% per annum through 2033, slower than the 1.3% rate of the past decade.[10] On balance, we lean toward the other side of this argument but recognize that it is not a clear-cut point. Additionally, structural changes (some a hangover from COVID-19, others due to the changed perspective on security of energy supply due to the war in Ukraine) could result in more persistent inflation and continued elevated levels of volatility in this measure. **Overall, we see the impact of aging demographics to be less clear on inflation.**

Monetary policy is the key governor of the relationship between growth and inflation, and with anticipated inflation over the next year converging on central-bank targets in most economies (see Exhibit 4), we expect a further normalization of policy in the near term. The imposition of trade tariffs is likely to produce an inflationary impulse in the near term, but should be reversed in the medium term as demand volumes are curtailed. **While we continue to see some reasons for *marginally* higher levels of inflation in the years ahead, it seems unlikely that inflation will run far above central-bank targets on a sustained basis.** Ultimately, in the long term, inflation is a policy choice. Governments and central banks have the tools to combat inflation, but it may be more broadly acceptable to tolerate slightly higher inflation to avoid deeper hits to growth and higher unemployment. This may bias policy rates lower in economies most exposed to the impact of tariffs, such as the eurozone. The powerful tool of interest-rate hikes has been used, and can be taken out again as needed, with the potential consequence of increased growth volatility. **Our forecasts reflect policymakers' limited but nuanced tolerance of inflation above central bank target levels.**

As we look ahead, we anticipate a diminished fear of longer-lasting impacts on trend levels of inflation. These effects are likely to be stronger in economies such as the United States. However, with a more modest starting point than last year, if still elevated compared with the last two decades, inflation across the key developed and emerging economies is expected to fall in the medium term. Over the 10-year horizon used in our CMEs, **we expect global inflation to average 2.9%, in line with last year's assumption** (see Exhibit 5, chart of inflation expectations).

Inflation Has Been Normalizing

Exhibit 4: Fourth Quarter 2021 CPI Forecasts Minus Central-Bank Inflation Targets
As of September 30, 2024



Sources: Bloomberg, Macrobond. Important data provider notices and terms available at www.franklintempletondatasources.com.

10. Source: US Bureau of Labor Statistics. As of August 29, 2024. There is no assurance that any estimate, forecast or projection will be realized.

Conclusion

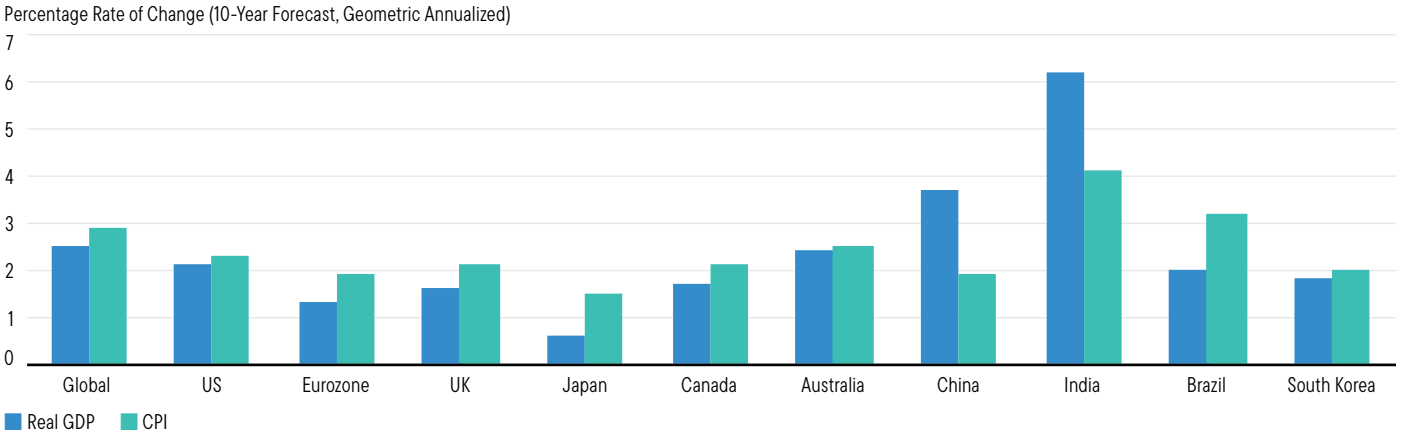
We tackle numerous questions around the longer-term asset implications regarding growth and inflation. Our macroeconomic outlook is broadly comparable to last year. Outside of China, we see productivity supporting trend growth. Moderate global inflation expectations help make the policy environment less of a headwind. As usual, there is some variation across regions, as shown below (see Exhibit 5).

These longer-term expectations are point forecasts that attempt to capture a broader range of different outcomes. We can encapsulate them in the four-quadrant matrix below (see Exhibit 6). Our bias toward any particular regime has been reduced over the past year—we do not place a higher level of confidence in any one particular outcome. At the same time, **we retain a preference toward inflation ultimately being driven by the level of demand, rather than supply constraints, leading us to favor outcomes on the minor diagonal (bottom left to top right). Over the course of a 10-year horizon, each of these regimes will likely have moments where they are more dominant.**

Trend-Level Global Growth and Inflation

Exhibit 5: Growth and Inflation Forecasts

As of October 31, 2024



Source: Franklin Templeton Investment Solutions. There is no assurance that any estimate, forecast or projection will be realized.

Global Growth and Inflation Scenarios

Exhibit 6: Describing Each Scenario

Goldilocks
High Growth / Low Inflation

- 4th industrial revolution increases productivity as businesses embrace AI and digitization
- Central banks effectively anchor inflation expectations near target levels
- Corporate profit motive helps suppress geopolitical conflict

Reflation
High Growth / High Inflation

- Globalization evolves, rather than retracts, as businesses invest in supply chain durability
- Structural growth in artificial intelligence capabilities creates durable investment impulse
- Fiscal policy remains proactive and monetary policy uses financial repression to anchor debt service costs

Stagnation
Low Growth / Low Inflation

- Global indebtedness weighs on growth; increased debt service ratios limit demand and limit policy support
- Aging demographics and income inequality increase savings relative to investment
- Increased macro volatility increases asset risk premiums, significantly reducing the value of households' balance sheets

Stagflation
Low Growth / High Inflation

- Geopolitical uncertainty rises, driven by US trade policy, leading to a reduction in globalization and increased business uncertainty
- Heightened nationalism leads to reduced immigration and weakens supply-side
- Aging demographics reduces economic growth and raises real interest rates as savings rates fall

Source: Franklin Templeton Investment Solutions.

Asset class return considerations

Fixed income—government bonds

We view the starting level for government bond yields as the primary driver of the prospective return from low-risk assets. Anticipated policy rates, including the current still relatively elevated starting level and assuming a convergence on equilibrium rates over the next few years, have supported government bond yields. However, the shape of the yield curve is still remarkably flat (bond yields are not meaningfully higher than the yield available on cash instruments), both today and over the medium term. This limits the excess return available from bonds and lessens their appeal in a risk-adjusted comparison to cash.

The starting yield for high quality bonds explains a large portion of the expected return forecast, because any initial movement higher (or lower) in a bond's price is offset by an ensuing lower (or higher) yield in the following years of our time period. This yield base provides the first building block of portfolio return potential. On top of this, we layer additional elements for asset-class risk premia (which we discuss in the next section) and risk premia for illiquidity or complexity. Having seen policy rates remain somewhat elevated over the past two years, the base level for all our asset forecasts remain higher than seen during most of the past decade. **The total prospective return from a broadly diversified multi-asset portfolio has decreased modestly due to this lower base yield,** in our opinion.

We believe that most developed market central banks, and many in emerging economies, maintain policy rates that are somewhat restrictive. **Our near-term macroeconomic assumptions call for trend-like growth and a gradual normalization in slightly elevated inflation. We will likely see official interest rates continue to be cut in 2025 and normalize in the early part of our 10-year forecast horizon** (see Exhibit 8). However, a continuing desire to support a full economic recovery, and the sustained maintenance of targeted inflation, has seen policy diverge in certain large economies, notably Japan. The continued provision of plentiful liquidity may persist for a while, but rates are now clearly rising and will likely converge on equilibrium levels before the middle of our forecast horizon.

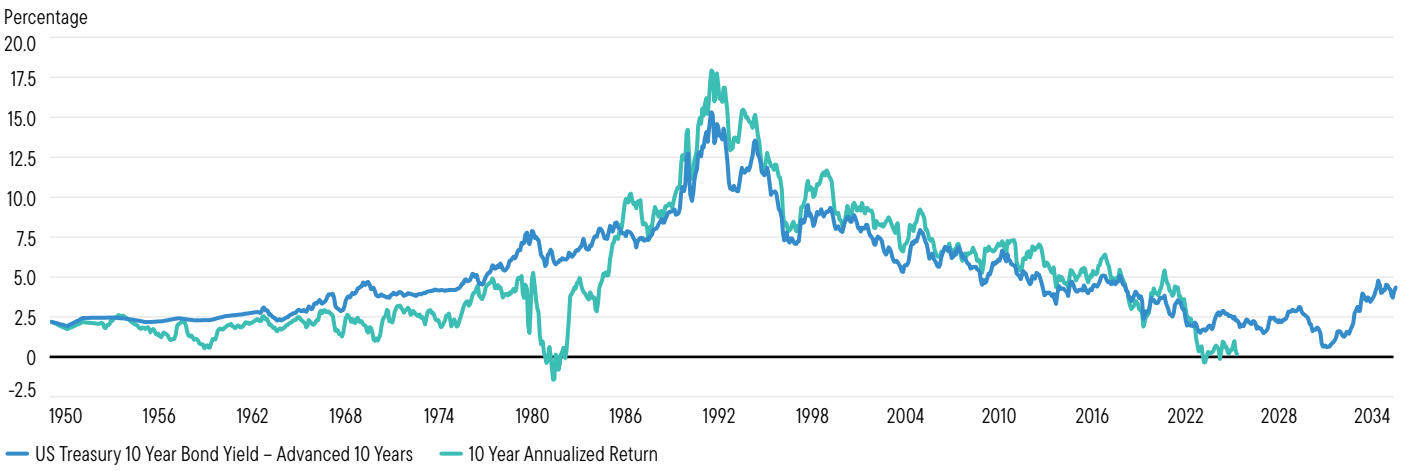
Real short-term interest rates remain at elevated levels in most markets and although they have moderated, in a longer-term comparison they remain somewhat elevated. We anticipate inflation falling toward central banks' targets in the coming years, and without lower nominal rates, a further increase in real rates would occur. This suggests average cash rates will generally be lower than current levels.

With global interest rates starting from still elevated levels and expected to normalize, overall return expectations from all fixed income assets remain more attractive than foreseen during most of the past decade, in our analysis, but slightly reduced from those anticipated in our 2024 CME forecasts.

Initial US Government Bond Yields Help Estimate Long-Term Returns

Exhibit 7: US Bond Yields and Long-Term Returns

As of October 31, 2024



Sources: US Treasury, Macrobond. Important data provider notices and terms available at www.franklintempletondatasources.com.

The term premium is a measure of the extra yield that owners of bonds demand, in excess of the anticipated average level of short-term interest rates for the life of the bond, to compensate for making a longer-term investment. This premium reflects supply and demand factors, including central banks' quantitative tightening policies, which have now replaced quantitative easing. The term premium has oscillated over recent years, but it has risen noticeably more recently, reflecting high levels of bond issuance and uncertainty around economies' neutral rates. **Current estimates of the term premium across various economies are relatively closely aligned with our forecasts, which generally reflect a modestly positive term premium for most developed markets.**

Within the fixed income asset class, the additional yield or spread that developed market corporate bonds provide typically offers adequate compensation for anticipated defaults. Taken together with constructive global growth, the desire of many investors to enhance portfolio return potential saw them added to holdings of higher-yielding securities in recent years, boosting demand for riskier fixed income assets. As a result, compared with lower-risk government bonds, the additional spread appears less attractive and generally below their historic average (see Exhibit 9). Given our macroeconomic outlook, **the risk premium contained within corporate bond yields remains broadly adequate compensation for the likely level of default risk over a full business cycle. However, even as the longer-term return potential is appealing, the low starting spread level makes it more likely that returns may be challenging in the near term.**

Long-Term Interest-Rate Assumptions

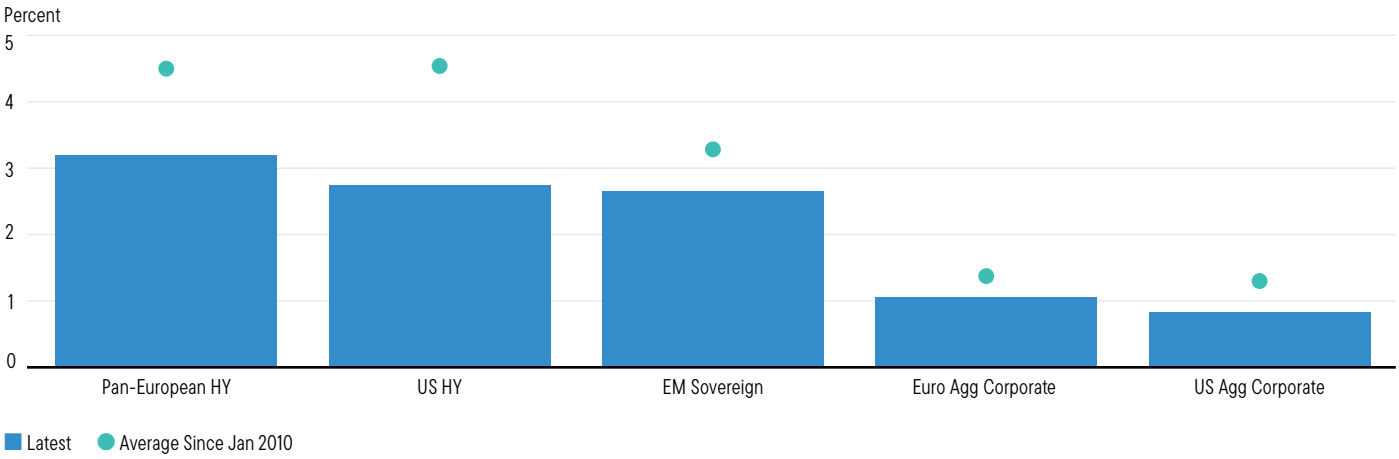
Exhibit 8: Regional Interest-Rate Assumptions
As of October 31, 2024

Interest Rate Long-Term Assumptions	US	Canada	Germany	UK	Japan	Australia	China
Real 3M	1.00	0.50	0.00	0.60	-0.50	0.85	0.25
Inflation	2.30	2.10	1.90	2.10	1.50	2.50	1.90
Nominal 3M Rate	3.30	2.60	1.90	2.70	1.00	3.35	2.15
Term Premium	0.85	0.65	0.15	0.80	0.60	0.75	1.00
Nominal 10Y Rate	4.15	3.25	2.05	3.50	1.60	4.10	3.15

Sources: Bloomberg, Franklin Templeton Investment Solutions forecasts. There is no assurance that any estimate, forecast or projection will be realized. Important data provider notices and terms available at www.franklintempletondatasources.com.

Credit Spreads Are Tight Relative to History

Exhibit 9: Current Option Adjusted Spread (OAS) vs. Long-Run Average
As of October 31, 2024



Sources: Bloomberg, Macrobond. Important data provider notices and terms available at www.franklintempletondatasources.com.

Equity

Equity markets continued to rally sharply over the past year, extending gains from pandemic-induced lows in 2020. They diverged from periods of weakness seen in government bonds, which were driven by the ebbs and flows of policy easing cycles from many developed-market central banks, as moderation in the levels of inflation remained bumpy. Developed market valuations, based on price-to-earnings (P/E) ratios, have risen above their historical averages, notably so in the United States, where tech leadership facilitated ongoing exceptionalism. We prefer to smooth out the effect of recent volatility in earnings by using longer-term, cyclically adjusted metrics. Using cyclically adjusted price/earnings (CAPE) ratios, global stocks are expensive, in general. However, they look inexpensive in the United Kingdom and China, for example, and in the longer term, the valuation factor may support these markets.

Earnings growth, which is aided by ongoing cyclical developments, is the main driver of equity return potential. However, corporate margins have expanded since the economic low point in 2020 and stand at somewhat elevated levels. We believe that margins may moderate throughout our forecast horizon. As a result, a decline in margins may act as a marginal headwind to earnings per share (EPS) growth and overall equity return.

Embedded within our regional equity expectations is a prospective return component for currency translation effects. As discussed below, we anticipate a period of broad US dollar weakness in the decade ahead. As a result, this factor boosts the return potential of developed markets outside of the United States. However, the near-term uncertainty over trade policies and tariffs may see this effect offset or its timing delayed. We would place lower confidence on return components driven by exchange-rate valuation effects than we do on other elements of the potential equity return build-up.

We break down the return potential of various stock markets into their key drivers of return: EPS growth, carving out margin adjustments; dividend yield and net share issuance; valuation normalization (CAPE); and anticipated foreign exchange movements. This is shown graphically (see Exhibit 10). This highlights that over 10 years, the key driver of returns is the level and growth of earnings and total shareholder yield. **Changes in valuation metrics are a drag on most equity return potential, and margins similarly reduce our expected returns in certain regions.**

When we analyze equities relative to lower-risk assets, we believe global stocks have greater risk-adjusted return potential than global bonds in an environment of continued global expansion, thereby earning their equity risk premium. When calculated using several approaches, we arrive at an **equity risk premium for global stocks in the region of 3%–3.5% over government bonds.**

Alternatives—private assets

Private assets may be a beneficial addition to multi-asset portfolios from several perspectives. They can offer a higher return potential, many include an illiquidity premium, and they provide access to a broad array of heterogenous investments. We focus on the three primary private asset classes in the US market: US private real estate, US private credit and US private equity. Private asset expected returns and risk expectations

Elevated Valuations and Margins Are Headwinds to Equities

Exhibit 10: Building-Blocks Model: Equity Return Decomposition

As of October 31, 2024

Sources: Franklin Templeton Investment Solutions, Bloomberg, Macrobond. Performance as represented by individual/respective MCSI country indexes. Indexes are unmanaged and one cannot directly invest in them. They do not include fees, expenses or sales charges. Important data provider notices and terms available at www.franklintempletondatasources.com.

are reflective of broad-based, core, institutional allocations to these asset classes. For instance, our US private real estate expectations are based on the typical exposure profile of an institutional core real estate fund in The National Council of Real Estate Investment Fiduciaries (NCREIF) Open-End Diversified Core Equity (ODCE) Index. Importantly, our estimates include assumptions for leverage and typical fund fees.

We generally estimate private asset return expectations by using both bottom-up and top-down modeling approaches. Bottom-up models use a build-up approach to estimating market implied discount rates based on prevailing fundamental data and forward-looking assumptions. Top-down models identify public asset proxies with common economic risks and growth sensitivities, with necessary adjustments to account for the idiosyncrasies that these private assets may have over their respective proxies, including the impact of their cost of financing.

Our private asset expected returns reflect the impact of asset pricing trends in public markets, most notably a convergence to public market revaluation and subsequent recovery in 2024. For example, our US private real estate expected return reflects a reset in appraisal-based valuations to healthier levels. We capture this dynamic by assuming a higher implied discount rate for core real estate.

Our assumptions for private credit and private equity continue to show a meaningful return premium over public markets under the assumption that these exposures model go-forward deal activity. We capture several fundamental advantages to direct-lending strategies based on attractive yield spreads and modest expected credit losses. Secular tailwinds of bank retrenchment and increasing private loan volume offset cyclical spread compression.

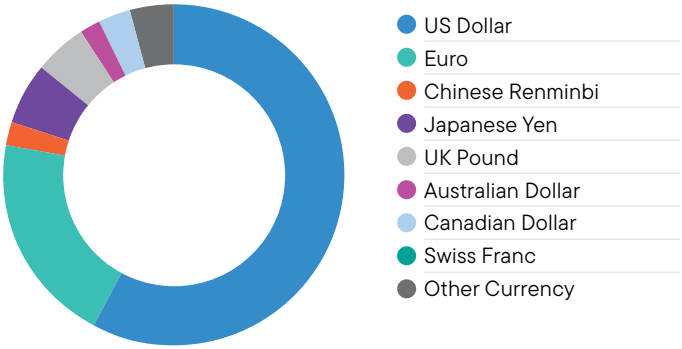
Private equity continues to offer returns at least proportional to its higher risk profile relative to public equities.

Improvement in transaction environment and valuation alignment between buyers and sellers supports outlook for new vintages. We maintain caution that increasing competition and "dry powder" in the form of an overhang of uninvested capital can be expected to compress the future illiquidity premia in private markets relative to historical norms.

Importantly, our private asset expected returns capture broad-based exposures and are heavily dependent on our assumptions for strategy mix, valuations, leverage, cost of leverage, fees, etc. Investors should consider the exposure profile of their target managers and acknowledge any differences relative to our assumptions. We believe manager selection is critically important in the private asset space as investors cannot simply "buy the index" to capture unconditional beta returns. In selecting and deciding the size of potential allocations to underlying private asset managers, investors should further assess the potential for managers to add value (alpha) in addition to assessing whether managers can adequately capture the returns we expect at the asset-class level.

US Dollar Remains the Preeminent Reserve Currency

Exhibit 11: Reserve Currency
As of June 30, 2024



Sources: International Monetary Fund, Macrobond. Important data provider notices and terms available at www.franklintempletondatasources.com.

Foreign exchange effects

At the end of a period of unusually easy fiscal and tight monetary policy, the US dollar's preeminent position remains intact, but its current relative overvaluation has remained extreme in the past year. We believe that the US dollar is likely to weaken over our 10-year horizon. This is not likely to occur in response to President-elect Trump's negotiating tactics over trade policy, though they may help at the margin. We use purchasing power parity (PPP) approaches for developed market currencies, which support this correction of the US dollar's overvaluation, enhancing the return potential for assets denominated in other currencies. **We continue to view the US dollar as the world's reserve currency and see low probability of that changing over even a 10-year horizon. Given its preeminent position in the holdings of other central banks (see Exhibit 11), the US dollar is likely to continue to trade with an appropriate valuation premium embedded within it.**

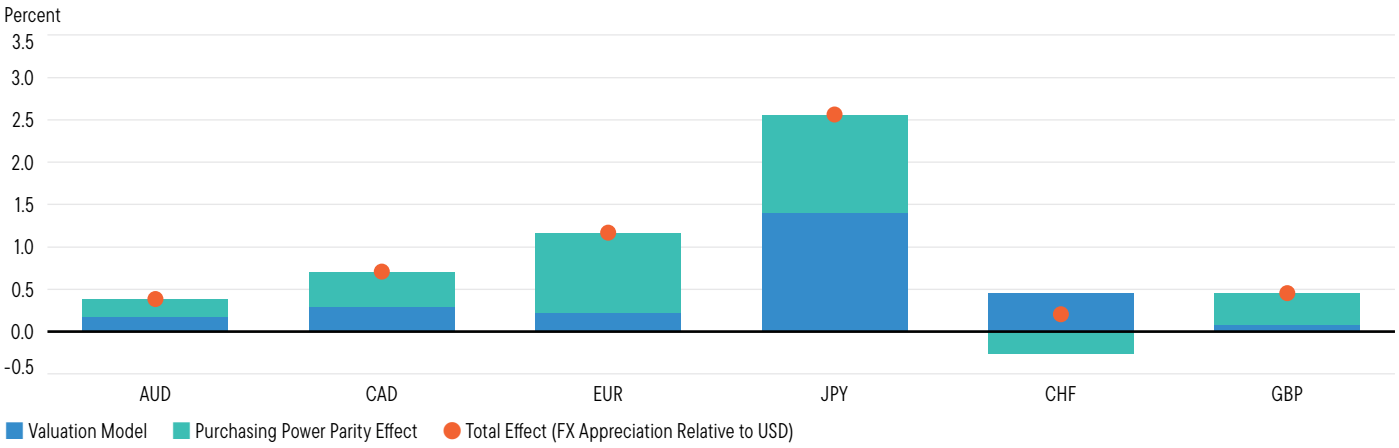
We also consider our relative inflation forecasts. Higher inflation can erode the purchasing power of a currency. Our view of marginally higher inflation in the United States generally acts as a headwind for US dollar returns (see Exhibit 12). **The combination of high valuations and higher anticipated inflation results in our expectation that most developed market currencies will appreciate against the dollar over the next decade.**

For emerging market currencies, we include a real effective exchange rate (REER) approach. REER compares a nation's currency value against an index of the currencies of its major trading partners, adjusted for inflation. Improved valuations generally offset higher expectations of inflation for many emerging markets. In general, emerging market countries that have suffered the worst economic recoveries, usually with accompanying currency weakness, now appear to have the brightest prospects. **We generally see mixed prospects for currency appreciation across many emerging markets, alongside the risk of persistent volatility. The outlook for emerging market currencies will be more mixed, even against the backdrop of generalized US dollar weakness.**

US Dollar Is Expected to Depreciate vs. All Major Currencies

Exhibit 12: Developed Market Foreign Exchange Decomposition

As of October 31, 2024



Sources: Bloomberg, OECD, Macrobond. There is no assurance that any estimate, forecast or projection will be realized. Important data provider notices and terms available at www.franklintempletondatasources.com.

Multi-asset perspective

The expected return for multi-asset portfolios has diminished slightly as projected equity returns move lower due to elevated valuations and margins. Government bond yields provide a modestly higher return than cash. Valuations for corporate credit are somewhat stretched and will likely act as a limitation to near-term return potential. Private assets offer healthy prospective return premiums and have the potential to improve multi-asset portfolios. Overall, forecasted risk premiums are near average, with our projected equity risk premium estimated to be in the range of 3% to 3.5% above global government bonds.

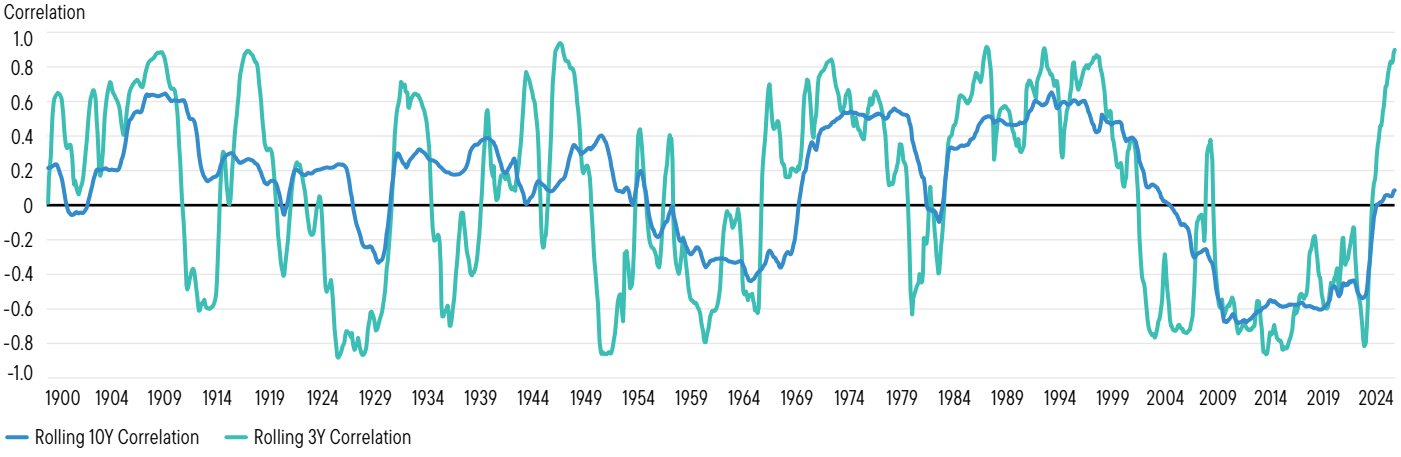
Government bonds have more appeal for multi-asset portfolios than simply what they can provide from a return perspective. Stock/bond correlations have generally been modestly negative for the last 20 years, led by lower-risk government bonds and risky equities. The average 20-year correlation hides the fluctuations experienced throughout, which were most acutely felt during the "sell everything" market of 2022, as shown in Exhibit 13. High inflation represents the primary reason for rising correlations and has dominated growth fluctuations in dictating the performance of both stocks and bonds, and thus the related correlations.

Going forward, we expect growth to be the key macro driver over the next decade, especially as inflation normalization has continued over the past year, even in countries like the United States where growth has remained strong. This means the high correlations of 2022 are less likely to persist, and rather the low to negative correlations of the past two decades are a better reflection of our expectations over the upcoming decade (Exhibit 13). Many commentators are arguing that the role of lower-risk government bonds can play in a balanced portfolio could be reduced, which lowers their attractiveness in a multi-asset portfolio. However, we believe the combination of higher expected returns alongside portfolio diversification benefits make these assets appealing in a portfolio context.

More broadly, **we believe that maintaining a diversified portfolio of risk premia in addition to the traditional benefits of a balanced portfolio between stocks and bonds is the most likely path toward stable potential returns.** We also believe active management of this asset mix can enhance potential return and manage the level of total portfolio risk that is taken.

Stock/Bond Correlation Has Risen Alongside Higher Inflation

Exhibit 13: Rolling Correlation of S&P 500 TR and US Treasury 10Y Constant Duration TR
As of October 31, 2024

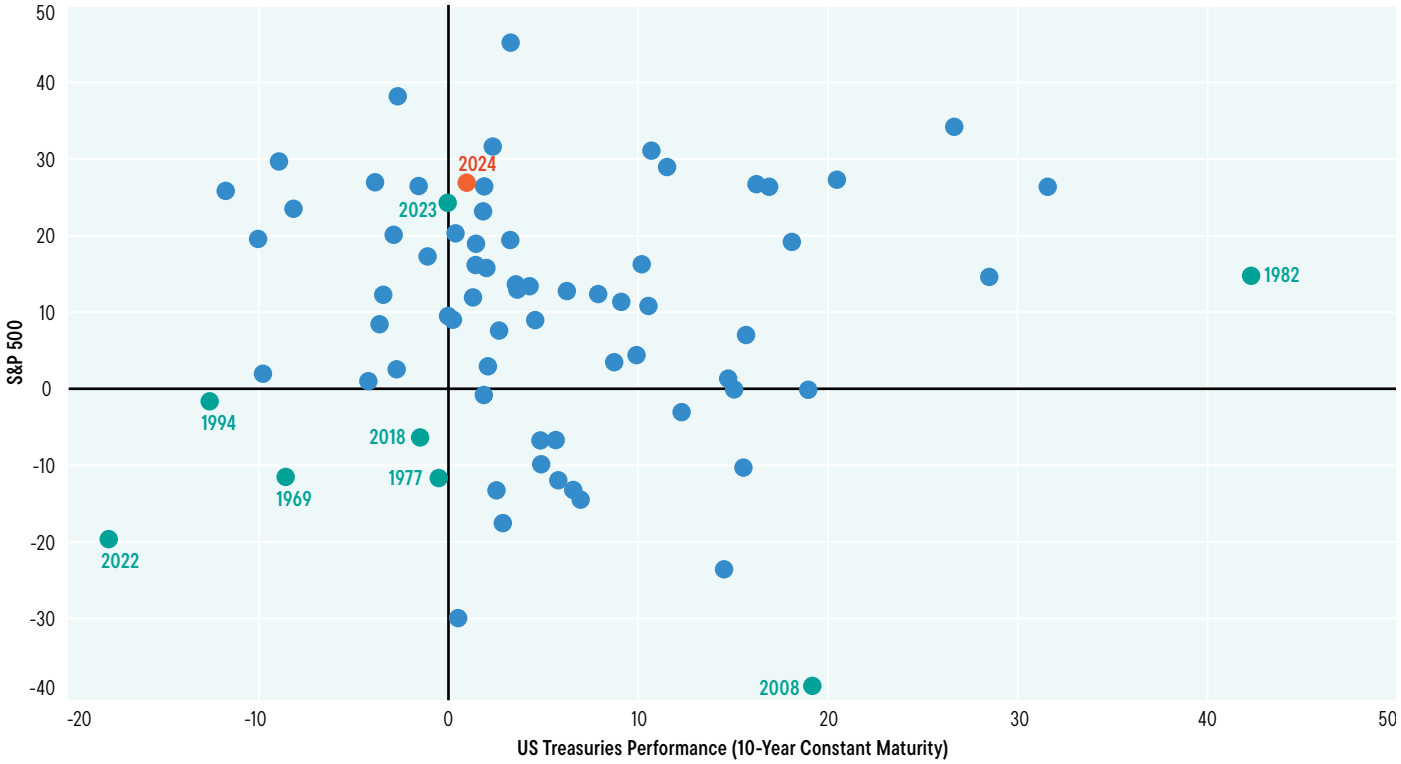


Sources: S&P Global, US Treasury, TCB, BLS, Macrobond. Indexes are unmanaged and one cannot directly invest in them. They do not include fees, expenses or sales charges. **Past performance is not an indicator or a guarantee of future results.** Important data provider notices and terms available at www.franklintempletondatasources.com.

Stock and Bond Correlations Are More Volatile Than They Seem

Exhibit 14: US Equities vs. Treasuries, Annual Returns Since 1948

As of December 3, 2024



Sources: Standard and Poor's, US Department of Treasury, Macrobond. Indexes are unmanaged and one cannot directly invest in them. They do not include fees, expenses or sales charges. **Past performance is not an indicator or a guarantee of future results.** Important data provider notices and terms available at www.franklintempletondatasources.com.

Appendix

Historical Correlation

Long-term correlations between major asset classes, estimated using 20-year historical data. Expected correlations help quantify the relationships among asset classes. Expected correlation is as important as expected return and risk estimates when constructing portfolios.

	Asset Classes	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	**Global Equities**	1.00																						
2	**Developed Mkt Eq**	0.95	1.00																					
3	US Large Cap Eq	0.92	0.93	1.00																				
4	Canada Equity	0.85	0.84	0.80	1.00																			
5	EAFE Equity	0.91	0.91	0.84	0.82	1.00																		
6	EMU Equity	0.89	0.88	0.81	0.79	0.93	1.00																	
7	UK Equity	0.85	0.84	0.76	0.82	0.90	0.87	1.00																
8	Japan Equities	0.77	0.77	0.71	0.65	0.81	0.73	0.69	1.00															
9	Pacific ex Japan Eq	0.85	0.82	0.76	0.82	0.86	0.80	0.81	0.68	1.00														
10	Australia Equities	0.85	0.83	0.78	0.82	0.84	0.79	0.79	0.67	0.92	1.00													
11	**Emerging Mkt Eq**	0.80	0.76	0.69	0.76	0.79	0.75	0.73	0.65	0.85	0.79	1.00												
12	China Equities	0.51	0.45	0.39	0.46	0.52	0.49	0.47	0.41	0.64	0.51	0.77	1.00											
13	US Infrastructure	0.66	0.67	0.66	0.63	0.63	0.60	0.62	0.49	0.62	0.63	0.52	0.32	1.00										
14	US REITs	0.74	0.75	0.75	0.68	0.70	0.68	0.65	0.55	0.68	0.70	0.58	0.28	0.60	1.00									
15	Global Listed Infra	0.84	0.83	0.77	0.82	0.85	0.82	0.83	0.68	0.82	0.83	0.73	0.46	0.79	0.73	1.00								
16	Global REITs	0.81	0.81	0.79	0.74	0.78	0.75	0.73	0.61	0.77	0.78	0.65	0.35	0.66	0.93	0.80	1.00							
17	**Gov Dev**	0.42	0.41	0.36	0.36	0.45	0.44	0.35	0.38	0.44	0.42	0.43	0.33	0.38	0.39	0.46	0.46	1.00						
18	US Gov Bond	0.07	0.07	0.07	0.02	0.07	0.06	-0.04	0.11	0.07	0.06	0.06	0.09	0.15	0.16	0.09	0.17	0.72	1.00					
19	Euro Gov Bond	0.57	0.56	0.49	0.49	0.61	0.62	0.51	0.47	0.56	0.54	0.55	0.42	0.45	0.44	0.56	0.52	0.84	0.51	1.00				
20	UK Gov Bond	0.55	0.55	0.52	0.47	0.54	0.51	0.50	0.43	0.48	0.48	0.45	0.31	0.46	0.47	0.51	0.54	0.73	0.55	0.71	1.00			
21	Japan Gov Bond	0.11	0.09	0.07	0.11	0.14	0.11	0.08	0.16	0.17	0.14	0.16	0.11	0.18	0.17	0.20	0.21	0.78	0.63	0.49	0.44	1.00		
22	Canada Gov Bond	0.69	0.67	0.62	0.73	0.68	0.64	0.62	0.55	0.69	0.68	0.66	0.44	0.53	0.58	0.67	0.64	0.67	0.40	0.69	0.64	0.40	1.00	
23	Australia Gov Bond	0.70	0.68	0.64	0.66	0.68	0.62	0.61	0.56	0.75	0.74	0.71	0.48	0.56	0.62	0.66	0.69	0.70	0.40	0.68	0.65	0.48	0.81	1.00
24	China Gov Bond	0.23	0.21	0.20	0.22	0.24	0.21	0.21	0.23	0.28	0.22	0.29	0.28	0.20	0.23	0.23	0.26	0.48	0.39	0.39	0.39	0.45	0.37	0.42
25	Gbl Inf Linked Bonds	0.63	0.63	0.59	0.57	0.63	0.61	0.55	0.51	0.60	0.60	0.56	0.36	0.51	0.57	0.63	0.64	0.81	0.55	0.81	0.82	0.51	0.73	0.73
26	US TIPS	0.43	0.43	0.42	0.41	0.41	0.37	0.32	0.36	0.42	0.44	0.38	0.20	0.40	0.45	0.45	0.49	0.69	0.66	0.58	0.67	0.51	0.60	0.63
27	**Global Inv Grade Bond**	0.69	0.68	0.63	0.63	0.70	0.68	0.61	0.58	0.69	0.67	0.65	0.47	0.55	0.60	0.70	0.68	0.80	0.52	0.81	0.74	0.51	0.75	0.76
28	US Inv Grade	0.59	0.58	0.55	0.54	0.58	0.54	0.48	0.52	0.58	0.57	0.54	0.39	0.51	0.57	0.60	0.62	0.70	0.61	0.64	0.64	0.50	0.66	0.67
29	Euro Inv Grade	0.69	0.68	0.60	0.62	0.73	0.73	0.66	0.56	0.70	0.67	0.68	0.49	0.51	0.52	0.68	0.61	0.77	0.35	0.90	0.68	0.43	0.72	0.73
30	UK Inv Grade	0.71	0.71	0.66	0.65	0.72	0.69	0.70	0.58	0.66	0.66	0.61	0.41	0.55	0.58	0.68	0.66	0.63	0.33	0.69	0.86	0.34	0.67	0.69
31	**Global High Yield**	0.81	0.79	0.75	0.76	0.80	0.77	0.74	0.65	0.76	0.76	0.74	0.45	0.57	0.71	0.77	0.76	0.46	0.09	0.57	0.51	0.21	0.66	0.68
32	US High Yield	0.78	0.77	0.74	0.74	0.75	0.72	0.70	0.62	0.72	0.73	0.69	0.38	0.57	0.72	0.74	0.76	0.40	0.09	0.49	0.47	0.18	0.63	0.65
33	Euro High Yield	0.78	0.76	0.68	0.73	0.81	0.81	0.76	0.63	0.77	0.75	0.75	0.51	0.53	0.60	0.75	0.68	0.55	0.09	0.72	0.55	0.24	0.68	0.68
34	UK High Yield	0.73	0.72	0.66	0.71	0.75	0.73	0.75	0.59	0.72	0.70	0.68	0.45	0.48	0.55	0.70	0.64	0.45	0.05	0.58	0.63	0.19	0.59	0.61
35	US High Yield Loans	0.60	0.59	0.57	0.63	0.57	0.54	0.58	0.46	0.58	0.60	0.55	0.29	0.43	0.56	0.61	0.60	0.07	-0.21	0.19	0.23	-0.06	0.37	0.37
36	**US MBS**	0.32	0.32	0.31	0.26	0.32	0.29	0.23	0.35	0.30	0.28	0.27	0.23	0.33	0.33	0.31	0.37	0.73	0.81	0.59	0.64	0.60	0.56	0.56
37	US Munis	0.39	0.38	0.37	0.33	0.39	0.38	0.31	0.36	0.36	0.35	0.36	0.25	0.40	0.41	0.40	0.44	0.61	0.59	0.52	0.52	0.49	0.49	0.53
38	EMD—Govs (Hard)	0.70	0.69	0.65	0.65	0.70	0.68	0.62	0.59	0.69	0.69	0.69	0.46	0.59	0.64	0.71	0.71	0.61	0.37	0.65	0.56	0.35	0.69	0.69
39	EMD—Corps (Hard)	0.65	0.62	0.56	0.62	0.65	0.62	0.58	0.56	0.67	0.64	0.69	0.52	0.48	0.56	0.63	0.62	0.49	0.27	0.54	0.44	0.25	0.61	0.62
40	EMD—Govs (Local)	0.70	0.67	0.60	0.66	0.73	0.71	0.66	0.61	0.74	0.71	0.78	0.56	0.56	0.57	0.72	0.65	0.61	0.24	0.69	0.51	0.35	0.69	0.73
41	US Private Real Estate	0.41	0.41	0.41	0.37	0.38	0.37	0.35	0.30	0.37	0.38	0.32	0.16	0.33	0.52	0.40	0.51	0.22	0.09	0.24	0.26	0.10	0.32	0.34
42	US Private Credit	0.52	0.51	0.50	0.54	0.49	0.47	0.50	0.40	0.50	0.52	0.48	0.25	0.37	0.49	0.53	0.52	0.06	-0.18	0.16	0.20	-0.05	0.32	0.32
43	US Private Equity	0.80	0.81	0.86	0.69	0.72	0.70	0.66	0.61	0.66	0.68	0.59	0.34	0.57	0.64	0.67	0.68	0.31	0.06	0.43	0.45	0.06	0.54	0.55
44	**Commodities**	0.49	0.47	0.41	0.60	0.49	0.45	0.56	0.34	0.55	0.55	0.52	0.34	0.38	0.34	0.53	0.40	0.16	-0.21	0.29	0.20	0.00	0.40	0.41
45	Global Hedge Funds	0.84	0.83	0.78	0.84	0.81	0.78	0.78	0.67	0.81	0.81	0.77	0.49	0.54	0.64	0.78	0.72	0.27	-0.09	0.41	0.39	0.05	0.58	0.57

Source: Franklin Templeton Investment Solutions.

Correlations continued

Asset Classes

Asset Classes	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
24 China Gov Bond	1.00																					
25 Gbl Inf Linked Bonds	0.40	1.00																				
26 US TIPS	0.34	0.81	1.00																			
27 Global Inv Grade Bond	**0.38**	**0.85**	**0.70**	**1.00**																		
28 US Inv Grade	0.35	0.76	0.72	0.89	1.00																	
29 Euro Inv Grade	0.37	0.80	0.56	0.86	0.68	1.00																
30 UK Inv Grade	0.36	0.79	0.60	0.81	0.71	0.76	1.00															
31 Global High Yield	**0.22**	**0.66**	**0.52**	**0.77**	**0.70**	**0.72**	**0.72**	**1.00**														
32 US High Yield	0.17	0.63	0.52	0.72	0.69	0.64	0.67	0.94	1.00													
33 Euro High Yield	0.24	0.69	0.46	0.78	0.62	0.86	0.74	0.87	0.79	1.00												
34 UK High Yield	0.26	0.64	0.44	0.71	0.57	0.72	0.83	0.80	0.74	0.83	1.00											
35 US High Yield Loans	0.03	0.37	0.28	0.46	0.46	0.38	0.50	0.77	0.78	0.63	0.66	1.00										
36 US MBS	**0.44**	**0.64**	**0.66**	**0.65**	**0.70**	**0.49**	**0.51**	**0.34**	**0.33**	**0.30**	**0.30**	**0.02**	**1.00**									
37 US Munis	0.33	0.60	0.60	0.66	0.73	0.48	0.51	0.50	0.50	0.42	0.39	0.29	0.70	1.00								
38 EMD—Govs (Hard)	0.27	0.72	0.62	0.81	0.80	0.71	0.67	0.79	0.77	0.73	0.63	0.57	0.54	0.66	1.00							
39 EMD—Corps (Hard)	0.23	0.63	0.57	0.76	0.75	0.66	0.60	0.79	0.75	0.74	0.64	0.63	0.43	0.51	0.83	1.00						
40 EMD—Govs (Local)	0.35	0.66	0.47	0.75	0.63	0.77	0.63	0.72	0.66	0.76	0.63	0.47	0.39	0.46	0.79	0.71	1.00					
41 US Private Real Estate	0.13	0.31	0.25	0.33	0.31	0.29	0.32	0.39	0.39	0.33	0.30	0.30	0.18	0.22	0.35	0.30	0.31	1.00				
42 US Private Credit	0.03	0.32	0.24	0.40	0.40	0.33	0.43	0.67	0.67	0.55	0.57	0.87	0.02	0.26	0.50	0.54	0.40	0.26	1.00			
43 US Private Equity	0.17	0.51	0.36	0.54	0.48	0.52	0.57	0.65	0.64	0.59	0.57	0.49	0.27	0.32	0.56	0.48	0.52	0.35	0.43	1.00		
44 Commodities	**0.08**	**0.34**	**0.24**	**0.32**	**0.18**	**0.43**	**0.36**	**0.48**	**0.45**	**0.51**	**0.47**	**0.43**	**-0.03**	**0.02**	**0.35**	**0.36**	**0.43**	**0.18**	**0.38**	**0.36**	1.00	
45 Global Hedge Funds	0.20	0.50	0.33	0.60	0.51	0.58	0.61	0.77	0.75	0.72	0.70	0.70	0.16	0.30	0.63	0.62	0.63	0.35	0.61	0.68	0.56	1.00

Source: Franklin Templeton Investment Solutions.

This section provides an overview of the methodology and models we use to develop long-term capital market expectations (CMEs) for various asset classes, including equities, fixed income, commodities and alternatives. In addition, we deliver expectations of three-month cash returns.

Our long-term return expectations are driven by current valuations, analyst expectations, expected growth rates and expected economic environments.

Equities

Our equity CME process generates 10-year forecasts for countries and regions. To develop our CMEs, we use three models: the "building blocks" model, the "residual income" model and the "global beta" model. We average the three models to arrive at expectations for country-level and regional equities.

Building blocks model

Derived from the classical dividend discount model (DDM) approach, the building blocks model is comprised of three components that collectively capture significant drivers of equity returns:

1. Current shareholder yield, which is based on a long-term average of the 12-month trailing dividend yield, adjusted for buybacks and share issuance. This building block represents income return.
2. Earnings growth, which we estimate as a blend of bottom-up and top-down views, adjusted for profit margin change. The bottom-up approach incorporates two-year analyst earnings per share (EPS) growth forecasts and historical average EPS growth. The top-down approach derives growth forecasts from nominal gross domestic product (GDP) forecasts for the next 10 years. This forecast is then adjusted for current operating margin levels.
3. Multiple expansion, which is based on the deviation of current cyclically adjusted price to earnings (CAPE) from its trailing history. CAPE is a valuation method that reduces the volatility of earnings by averaging the previous 10-year earnings growth, adjusted for inflation. We assume that current CAPE levels' convergence to historical median values over the 10-year horizon. Thus, a high relative valuation is indicative of lower future returns and vice versa.

Residual-income model

The residual-income model estimates the value of common stock by discounting the future stream of net income, less all costs of all capital of a company, commonly referred to as residual income. The model analyzes the value of equity as the sum of two components:

1. The current book value of equity
2. The present value of expected future residual income

According to the model, the value of common stock can be inferred from the relation between current book value and projected return on equity (ROE) as follows:

$$V_0 = B_0 + \sum_{t=1}^{\infty} \frac{(RO_t - r)*B_{t-1}}{(1+r)^t}$$

where:

V_0 = current price of a share of stock

B_0 = current per-share book value of equity

B_t = expected per-share book value of equity at time t

ROE_t = return on equity at time t

DPR_t = dividend payout ratio at time t

r = cost of equity or required rate of return

The drivers of growth of residual income and book value are ROE and DPR, because of the relationship:

$$B_t = B_{t-1} + B_{t-1} * ROE_t * (1 - DPR_t)$$

For ROE, we assume convergence over a 10-year horizon to a long-run steady state based on a combination of historical median values and ROEs derived from earnings growth estimates used in the building-blocks model. For DPR, we assume that the current value evolves over time towards a long-run equilibrium based on its historical average. Using the resulting forecasts of future residual income, we derive equity return expectations as the rate of return required to justify current valuations.

Global-beta model

The global-beta model assumes that the long-run expected return of a country equity index in excess of cash (i.e., the country's risk premium) is determined by its covariance with the global equity market portfolio, consistent with the classic definition of "beta." We represent the global equity market portfolio by the MSCI All Country World Index (ACWI). Based on historical monthly US-dollar returns, we estimate regressions for each country's equity index excess return against the MSCI ACWI excess return to derive individual country beta to the global equity portfolio. Based on this approach, each country's equity risk premium is calculated as its beta multiplied by the global equity portfolio risk premium.

The global equity portfolio CME is calculated as an average of the building-block approach and residual income methodology applied at the MSCI ACWI level, expressed in US-dollar terms. To convert resulting CMEs into local currencies, we apply our currency conversion methodology and our 10-year currency forecasts.

Specialty equities

To develop our expectations for real estate investment trusts (REITs) and listed infrastructure, we use a lasso regression[1] approach to help identify relevant factors that drive expected returns of each asset category. As further validation, and to avoid spurious outcomes, we cross-check statistical analyses with a curated approach that leans on the underlying economic rationale in selecting factors for each asset category.

For REITs, our statistical analysis strongly supports the intuition that this asset category has both equity and fixed income components. Bond-like features reflect the importance of rental income in the valuation of REITs. With respect to infrastructure equities, we find equities to be the dominant factor, with fixed income being important as well.

Fixed income

Our core fixed income CMEs are based on projections of key interest rates and the assumption for credit spreads to revert to their historical long-term averages. To improve model accuracy, we split each composite index into subindexes based on time to maturity and forecast the returns of each subindex separately. For composite indexes, we aggregate subindex projections using current market structure weights.

To develop government yield curve projections for an individual country, we start with three-month and 10-year yield forecasts and apply a three-factor yield curve model based on level, slope and curvature factors. Our curvature assumptions are based on long-run historical averages. The statistical yield curve model produces forecasts for one-, three-, five-, seven-, 20- and 30-year government bond yields.

Each composite index is disaggregated into subindexes according to time to maturity. Return forecasts for each subindex are based on projections of matching-maturity government yields and the evolution of the subindex credit spread. The forecast for subindex spread starts from the current spread level and evolves toward its long-term historical average. Based on projected yields, the total return for each subindex is calculated as the sum of price return and the coupon, where price return reflects the evolution of the yield curve, including the roll-down component.

The weighted sum of the subindex returns produces the index total return forecast. For bond indexes with default risk, we make a further adjustment for defaults based on historical averages of losses due to them.

For inflation-linked bonds, we modify our core pricing methodology to account for the difference between our 10-year inflation forecast and the 10-year breakeven inflation rate, an important component of valuation.

Our pricing methodology is extended to US mortgage-backed securities. We make assumptions about prepayments in the context of the interest-rate environment projected by our core government rates process.

Forecasting returns for high-yield loans is based on short rate projections from our core methodology combined with assumptions for average discount margin and credit losses.

Commodities

To estimate commodity returns, we apply the building blocks approach to the commodity futures curve. We identify spot return, roll yield and return on collateral as building blocks. The spot return is determined by the change in the value of an individual commodity and is broken down into the real (inflation- adjusted) spot price return and inflation. Our 10-year estimates of the real spot price return are based on the long-term historical average of real spot monthly returns. We add back our 10-year inflation expectation to arrive at the estimate of spot return. Roll yield arises from rolling the commodity futures forward before the contract expires. Roll yield is projected based on an analysis of its behavior since 1990. To estimate return on collateral, we assume that cash collateral is invested in three-month US Treasury bills and use our 10-year forecast of the three-month rate.

Hedge funds

To estimate hedge fund returns, we use a lasso-regression approach that identifies public asset proxies with common return sensitivities, to form a "replicating portfolio" of these public proxies that best represents hedge funds' return drivers. The composition of these replicating portfolios is guided by returns-based regressions, as well as intuition regarding which drivers are important.

Alternatives: private assets

To forecast returns for private assets, we combine multiple approaches to arrive at transparent and internally consistent expected returns. Our expected returns are a combination of fundamentally driven bottom-up models (supply side) and top-down factor modeling (demand side). Supply-side models use discounted cash flow approaches to estimate market implied discount rates based on prevailing fundamental data and forward-looking assumptions for yields, growth rates and valuations. Demand- side models are based on estimated risk premia that market participants require, and often start with expected returns for public assets with similar factor sensitivities. These models make the necessary adjustments to account for material differences private assets may have relative to their respective proxies, including illiquidity premia and manager alpha. Both approaches capture practicalities of accessing private assets through fund vehicles, such as the use of leverage, cost of financing and manager fees.

Our estimates for private asset volatility and correlations entail both art and science. We endeavor to capture the

1. A regression method that performs variable selection to improve prediction accuracy and interpretability of the resulting model while mitigating overfitting.

economic risk profile for the private assets such that our views are both statistically accurate and fit for use in common approaches to portfolio optimization. We use a combination of "de-smoothing" autoregressive models, sector and/or leverage adjusted public proxies, and fundamental judgment to correct for the challenges associated with lower data quality and high levels of autocorrelation exhibited by stated private asset index returns.

Private direct real estate

Key drivers of private direct real estate (DRE) returns are rental income and price appreciation. Cash flows from contractual rents and leases, which can provide a partial hedge against inflation over time, drive income. Price appreciation, a relatively more volatile component of returns, can be pro-cyclical, like public equities. Our private DRE expected return and risk reflect an exposure profile typical of US core institutional private real estate funds included in the NCREIF ODCE Index. The estimate includes the use of leverage and is net of typical fund fees.

The primary model starts with the prevailing broad market appraisal-based capitalization rate. We reduce this cash yield metric by expected capital expenditures to estimate the free cash flow yield. We include an expected real cash flow growth estimate to which we add our inflation assumption. Lastly, we assume a change in capitalization rates over the course of the next 10 years. Additional features of the bottom-up model include the assumption of a 10% exposure to value-add real estate activities, leverage and cost of leverage assumptions, and estimated fund fees of 100 basis points on average.

Private credit

The US private credit (PC) expected return and risk represent a typical US core direct lending strategy comprised of senior secured loans with 80% first lien and 20% second-lien loans. In effect, we model a typical "unitranche" loan portfolio. We assume all loans are floating rate.

The building-blocks approach starts with our base US-dollar cash rate and adds a blended average expected spread. We further capture extra return in the form of an original issue discount (OID) and estimate average expected unlevered credit losses. To this unlevered expected return, we apply a leverage- and cost-of-leverage assumption. Lastly, we reduce returns by assumptions for typical fund expenses inclusive of assumed incentive fees of 12.5% of the total return. Our replicating public markets portfolio approach yields a proxy portfolio of bank loans. We adjust for leverage, and add an illiquidity premium prior to deducting fund expenses.

Private equity

For private equities (PE), we rely on the top-down approach to derive an estimate of the net, levered expected return and risk for a broad-based US private equity exposure. Based on the prevailing strategy composition of the PE market, data for the buyout sub-strategy heavily influences our PE expected return. Our public market proxy is a leverage-adjusted US equity index. Based on our analysis of the broad PE market, the leverage ratio of PE is close to 1.4x as measured by differences in debt/enterprise value multiples. This implies a notably higher exposure to the equity risk premium compared to public equities. We add an illiquidity premium and make the broad-based assumption that incremental manager alpha and fund fees offset each other. Based on these findings, our net-of-fees 10-year expectation tightly tracks the outlook for US equity, adjusted for a premium and leverage differentials.

Currencies

For developed market (DM) countries, we combine forecasts from two models: purchasing power parity (PPP) and real exchange rate (RER). For DMs, we equally weight each of the models to derive our final currency forecast. For emerging market (EM) countries, we equally weight our forecasts from two models: real effective exchange rate (REER) and real exchange rate (RER).

Real exchange rate (all currencies)

Nominal exchange rate return forecasts can be written as a function of real exchange rate return forecasts and inflation differential forecasts.

In practice, we observe that exchange rates tend to mean-revert in the long run, typically after a shock. We use this concept to first compute a variable that measures the deviation of the current real exchange rate from its historical average; we then regress 10-year forward real exchange rate returns on this variable. The predicted result of this regression is our "deviation from fair value" factor and is a proxy for real exchange rate return forecasts.

The deviation from fair value is then added to our inflation differential forecasts, developed internally, for each country to compute the expected return of the currency (forward 10-year return).

Purchasing power parity (DM only)

PPP states that the nominal exchange rate between two currencies should be equal to the ratio of aggregate price levels between the two countries, so that a unit of currency of one country will have the same purchasing power in a foreign country.

The basis for PPP is based on the "law of one price." In the absence of any frictional costs, competitive markets should equalize the price of an identical good in two countries when the prices are expressed in the same currency.

Real effective exchange rate (EM only)

The REER is a weighted average of a country's currency relative to an index of other currencies. The weights are determined by comparing the relative trade balance of a country's currency against that of each country in the index. An increase in a nation's REER is an indication that its exports are becoming more expensive and/or that its imports are becoming cheaper.

We utilize REER by calculating the deviation of REER from a trailing moving average. The larger the difference between current and trailing values, the larger the impact on expected return.

Indexes and proxies

Asset Class	Market Proxy
EQUITY	
Global Equity	MSCI AC World Daily TR Net
Developed-Market Equity	MSCI Daily TR Net World Local
US Large Cap	MSCI Daily TR Net USA Local
Canada	MSCI Daily TR Net Canada
EAFE	MSCI EAFE Net Total Return USD Index
EMU	MSCI Daily TR Net EMU USD
UK	MSCI Daily TR Net UK USD
Pacific ex Japan	MSCI Pacific ex Japan Net Total Return USD Index
Japan	MSCI Japan Net Total Return USD Index
Australia	MSCI Daily TR Net Australia USD Index
Emerging Markets	MSCI Emerging Net Total Return USD Index
China	MSCI China Net Total Return USD Index
Specialty Equity	
US REITS	FTSE NAREIT US Real Estate Index
Global REITS	S&P Global EIT USD Total Return Index
US Listed Infrastructure	MSCI UAS Infrastructure Net Total Return
Global Listed Infrastructure	S&P Global Infrastructure Total Return Index
FIXED INCOME	
Global Developed-Market Government	Bloomberg Global Agg Treasuries Total Return Index Value Unhedged USD
US Government	Bloomberg Barclays US Treasury Total Return Unhedged USD
Euro Government	Bloomberg Euro-Aggregate: Treasury Index
UK Government	Bloomberg Barclays Sterling Gilts Total Return Index Value Unhedged USD
China Government Bonds	Bloomberg China Aggregate Treasury Index
Japan Government	Bloomberg Barclays Global Japan Total Return Index Value Unhedged USD
Australia Government	Bloomberg Barclays Global: Australia Total Return Index Value Unhedged USD
Canada Government	Bloomberg Barclays Capital Global: Canada Total Return Index Value Unhedged USD
GLOBAL CREDIT	
Global Investment-Grade Credit	Bloomberg Barclays Global Agg Corporate Total Return Index Value Unhedged USD
Investment Grade USD	Bloomberg Barclays US Corporate Total Return Value Unhedged USD

Asset Class	Market Proxy
GLOBAL CREDIT continued	
Investment Grade EUR	Bloomberg Barclays Euro Aggregate Corporate Total Return Index Unhedged USD
Investment Grade GBP	Bloomberg Barclays Sterling Aggregate Corporate TR Value Unhedged USD
Global Corporate High Yield	Bloomberg Barclays Global High Yield Total Return Index Value Unhedge
US High Yield	Bloomberg Barclays US Corporate High Yield Total Return Index Value Unhedged USD
Euro High Yield	Bloomberg Barclays Pan-European High Yield Total Return Index Value Unhedged USD
UK High Yield	Bloomberg Pan-European High Yield: Sterling Total Return Index Unhedged GBP
US High Yield Loans	Credit Suisse Leveraged Loan Total Return
US Securitized	
US MBS	Bloomberg Barclays US MBS Index Total Return Value Unhedged USD
Municipal Bonds	
US Munis	Bloomberg Barclays Municipal Bond Index Total Return Index Value Unhedged USD
Inflation Linked	
Global inflation linked	Bloomberg Barclays Global Inflation-Linked Total Return Index Value Unhedged USD
TIPS USD	Bloomberg Barclays US Govt Inflation-Linked All Maturities Total Return Index
Emerging Markets Governments	
EMD—Hard	Bloomberg Barclays Emerging Markets Sovereign TR Index Value Unhedged USD
EMD—Local	Bloomberg Emerging Markets Local Currency Government Index
EMD—Corporate	Bloomberg Barclays: EM USD Aggregate: Corporate
ALTERNATIVES	
Commodities	
Composite Basket	Bloomberg Commodity Index
Global Hedge Funds	Hedge Fund Research HFRI Fund Weighted Composite Index
Private Assets*	
US Direct Real Estate	NCREIF ODCE
US Private Equity	Burgiss US Private Equity Index
US Private Credit	The Cliffwater Direct Lending Index

*Return assumptions incorporate leverage.

AUD currency | Our capital market expectations

10-Year Annualized Capital Market Expectations (Unhedged AUD)

Equity Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL EQUITY	**7.2%**	**11.7%**	**32.1%**	**9.2%**
Developed-Market Equity	**7.1%**	**12.2%**	**30.5%**	**9.5%**
US	6.8%	13.2%	25.6%	11.1%
Canada	7.0%	14.7%	24.5%	8.3%
EAFE	8.2%	12.2%	39.2%	6.8%
EMU	8.6%	16.4%	31.9%	6.8%
UK	8.6%	13.2%	39.5%	5.5%
Pacific ex Japan	6.9%	13.2%	26.2%	9.3%
Japan	8.4%	13.4%	37.2%	5.6%
Australia	7.2%	15.7%	24.3%	9.0%
Emerging Market Equity	**8.0%**	**13.8%**	**33.2%**	**7.9%**
China	7.2%	22.7%	16.6%	8.5%
Specialty Equity				
US Infrastructure	6.8%	13.3%	25.5%	8.7%
US REITs*	7.2%	19.7%	19.2%	6.3%
Global Listed Infrastructure	7.3%	12.6%	31.4%	8.5%
Global REITs	7.4%	16.2%	24.6%	7.1%
Multiverse	4.3%	9.7%	8.7%	2.9%
ALTERNATIVES				
US Private Real Estate	7.4%	15.9%	25.2%	7.2%
US Private Credit	7.5%	15.6%	26.6%	8.5%
US Private Equity	8.6%	19.0%	27.4%	15.9%
Commodies	2.9%	13.5%	-3.7%	-1.8%
Global Hedge Funds	4.7%	9.3%	14.2%	5.6%
FX vs. AUD				
CAD	0.3%	8.3%	-37.4%	-0.1%
CNY	0.4%	11.2%	-27.0%	1.1%
EUR	0.8%	9.1%	-29.0%	-0.3%
GBP	0.1%	9.8%	-33.9%	-1.3%
JPY	2.2%	13.6%	-9.1%	-1.1%
USD	-0.4%	12.1%	-31.3%	0.3%

Fixed Income Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL FIXED INCOME				
Global Governments	**4.0%**	**10.4%**	**5.7%**	**2.2%**
US Government	3.9%	12.5%	4.3%	3.0%
Euro Government	4.1%	10.1%	7.2%	2.5%
UK Government	5.0%	12.2%	12.8%	1.7%
Japan Government	3.9%	14.1%	3.7%	0.0%
Australia Government*	4.7%	7.3%	17.6%	3.2%
Canada Government	3.5%	8.4%	1.0%	3.1%
China Government	2.8%	11.7%	-5.4%	5.4%
Global Inflation Linked Bonds	**4.0%**	**9.7%**	**6.1%**	**3.2%**
US Inflation Linked Bond*	4.0%	10.9%	5.4%	3.8%
Australia Inflation Linked Bond*	5.0%	9.2%	17.7%	3.2%
Global Investment Grade	**4.5%**	**9.2%**	**12.0%**	**3.7%**
US Investment Grade	5.0%	10.6%	14.7%	4.5%
Euro Investment Grade	4.0%	8.7%	6.8%	2.6%
UK Investment Grade	5.9%	11.6%	21.9%	2.8%
Global High Yield	**6.1%**	**9.5%**	**28.7%**	**6.7%**
US High Yield	5.8%	10.1%	24.1%	6.9%
Euro High Yield	4.8%	10.5%	35.3%	5.8%
UK High Yield	6.4%	12.3%	24.8%	8.6%
US High Yield Loans	6.4%	11.7%	25.5%	5.1%
US Fixed Income Sectors				
US MBS	4.6%	11.6%	9.9%	3.3%
US Munis	3.6%	11.7%	1.5%	3.9%
Emerging Market Debt				
Emerging Market Debt – Gov (Hard)	5.4%	10.0%	20.2%	6.1%
Emerging Market Debt – Corp (Hard)	5.3%	10.2%	19.0%	5.5%
Emerging Market Debt – Gov (Local Fx)	6.5%	8.8%	35.1%	4.9%

LOCAL 3-MONTH CASH RATES	
USD Cash	3.3%
AUD Cash	3.4%
CAD Cash	2.6%
CNY Cash	2.2%
EUR Cash	1.9%
GBP Cash	2.8%
JPY Cash	0.9%

Source: Franklin Templeton Investment Solutions. All returns are unhedged.

*Denotes where shorter average is used (20-yr unavailable), periods range from 152 to 222 months.

CAD currency | Our capital market expectations

10-Year Annualized Capital Market Expectations (Unhedged CAD)

Equity Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL EQUITY	**6.8%**	**12.6%**	**33.7%**	**9.3%**
Developed-Market Equity	**6.8%**	**12.8%**	**32.9%**	**9.6%**
US	6.5%	13.3%	29.0%	11.2%
Canada	6.7%	14.9%	27.3%	8.4%
EAFE	7.9%	13.4%	39.3%	6.9%
EMU	8.3%	17.6%	32.4%	6.8%
UK	8.3%	13.8%	41.1%	5.6%
Pacific ex Japan	6.5%	16.3%	24.1%	9.4%
Japan	8.0%	13.2%	41.2%	5.7%
Australia	6.9%	19.0%	22.5%	9.1%
Emerging Market Equity	**7.6%**	**16.3%**	**31.1%**	**8.0%**
China	6.8%	24.6%	17.2%	8.6%
Specialty Equity				
US Infrastructure	6.4%	12.6%	30.4%	8.8%
US REITs*	6.8%	20.3%	21.0%	6.9%
Global Listed Infrastructure	7.0%	13.6%	32.5%	8.6%
Global REITs	7.1%	17.2%	25.8%	7.2%
Multiverse	3.9%	7.9%	16.8%	3.0%
ALTERNATIVES				
US Private Real Estate	7.1%	14.6%	30.7%	7.3%
US Private Credit	7.2%	14.2%	32.5%	8.4%
US Private Equity	8.3%	19.4%	29.3%	15.8%
Commodities	2.6%	13.6%	-0.1%	-1.8%
Global Hedge Funds	4.4%	6.9%	26.2%	5.7%
FX vs. CAD				
AUD	-0.3%	8.3%	-35.3%	0.1%
CNY	0.1%	8.2%	-30.7%	1.2%
EUR	0.5%	8.2%	-26.1%	-0.2%
GBP	-0.2%	8.0%	-35.6%	-1.2%
JPY	1.8%	11.9%	-6.3%	-1.0%
USD	-0.7%	8.4%	-39.1%	0.3%

Fixed Income Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL FIXED INCOME				
Global Governments	**3.7%**	**8.8%**	**12.2%**	**2.3%**
US Government	3.6%	9.8%	10.4%	3.1%
Euro Government	3.8%	9.7%	12.4%	2.6%
UK Government	4.6%	11.5%	17.6%	1.8%
Japan Government	3.6%	12.5%	8.0%	0.1%
Australia Government*	4.4%	9.0%	19.6%	3.1%
Canada Government	3.2%	5.5%	10.2%	3.1%
China Government	2.4%	8.7%	-1.8%	5.5%
Global Inflation Linked Bonds	**3.7%**	**8.7%**	**12.4%**	**3.3%**
US Inflation Linked Bond	3.7%	8.5%	12.5%	3.9%
Canada Inflation Linked Bond	3.6%	9.9%	10.0%	4.0%
Global Investment Grade	**4.2%**	**8.0%**	**19.9%**	**3.8%**
US Investment Grade	4.6%	8.7%	23.3%	4.6%
Euro Investment Grade	3.7%	9.0%	11.8%	2.7%
UK Investment Grade	5.6%	11.8%	25.6%	2.9%
Global High Yield	**5.8%**	**8.3%**	**38.8%**	**6.8%**
US High Yield	5.5%	8.3%	35.1%	7.0%
Euro High Yield	4.5%	11.5%	36.3%	5.9%
UK High Yield	6.1%	12.6%	27.9%	8.7%
US High Yield Loans	6.1%	9.3%	37.3%	5.2%
US Fixed Income Sectors				
US MBS	4.2%	8.7%	18.7%	3.4%
US Munis	3.3%	8.9%	7.4%	4.0%
Emerging Market Debt				
Emerging Market Debt – Gov (Hard)	5.1%	9.1%	27.6%	6.2%
Emerging Market Debt – Corp (Hard)	5.0%	9.2%	26.4%	5.6%
Emerging Market Debt – Gov (Local Fx)	6.2%	9.4%	37.6%	5.0%
LOCAL 3-MONTH CASH RATES				
USD Cash	3.3%			
AUD Cash	3.4%			
CAD Cash	2.6%			
CNY Cash	2.2%			
EUR Cash	1.9%			
GBP Cash	2.8%			
JPY Cash	0.9%			

Source: Franklin Templeton Investment Solutions. All returns are unhedged.

*Denotes where shorter average is used (20-yr unavailable), periods range from 169 to 222 months.

EUR currency | Our capital market expectations

10-Year Annualized Capital Market Expectations (Unhedged EUR)

Equity Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL EQUITY	**6.3%**	**14.2%**	**31.2%**	**9.5%**
Developed-Market Equity	**6.3%**	**14.4%**	**30.5%**	**9.8%**
US	6.0%	15.2%	26.7%	11.4%
Canada	6.2%	18.3%	23.5%	8.6%
EAFE	7.4%	14.2%	38.6%	7.1%
EMU	7.8%	17.7%	33.2%	7.1%
UK	7.8%	15.2%	38.8%	5.8%
Pacific ex Japan	6.0%	17.6%	23.5%	9.7%
Japan	7.5%	14.3%	39.6%	5.9%
Australia	6.4%	20.4%	22.0%	9.3%
Emerging Market Equity	**7.2%**	**17.3%**	**30.4%**	**8.3%**
China	6.3%	24.4%	18.2%	8.8%
Specialty Equity				
US Infrastructure	6.0%	13.9%	29.3%	9.0%
US REITs*	6.4%	22.1%	20.2%	6.5%
Global Listed Infrastructure	6.5%	15.0%	30.9%	8.8%
Global REITs	6.6%	18.8%	24.8%	7.4%
Multiverse	3.5%	6.6%	23.6%	3.2%
ALTERNATIVES				
US Private Real Estate	6.6%	15.6%	30.1%	7.6%
US Private Credit	6.7%	16.4%	29.4%	9.0%
US Private Equity	7.8%	21.0%	28.0%	16.3%
Commodities	2.1%	15.2%	1.4%	-1.6%
Global Hedge Funds	3.9%	8.8%	22.9%	6.0%
FX vs. EUR				
AUD	-0.8%	9.1%	-29.4%	0.3%
CAD	-0.5%	8.2%	-28.7%	0.2%
CNY	-0.4%	8.2%	-27.7%	1.4%
GBP	-0.7%	7.5%	-34.8%	-1.0%
JPY	1.4%	10.6%	-4.8%	-0.8%
USD	-1.1%	8.8%	-34.5%	0.6%

Fixed Income Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL FIXED INCOME				
Global Governments	**3.2%**	**6.9%**	**18.8%**	**2.5%**
US Government	3.1%	9.2%	13.5%	3.3%
Euro Government	3.3%	6.2%	23.2%	2.8%
UK Government	4.2%	10.9%	20.7%	2.0%
Japan Government	3.1%	11.4%	10.8%	0.3%
Australia Government*	3.9%	10.0%	19.9%	2.3%
Canada Government	2.7%	8.4%	9.5%	3.4%
China Government	2.0%	8.8%	0.9%	5.7%
Global Inflation Linked Bonds	**3.2%**	**7.9%**	**16.6%**	**3.5%**
US Inflation Linked Bond	3.2%	8.8%	14.7%	4.2%
Global Investment Grade	**3.7%**	**7.3%**	**24.6%**	**4.0%**
US Investment Grade	4.2%	9.0%	25.1%	4.8%
Euro Investment Grade	3.2%	6.0%	21.4%	2.9%
UK Investment Grade	5.1%	11.8%	27.4%	3.1%
Global High Yield	5.3%	9.6%	35.6%	7.0%
US High Yield	5.0%	10.1%	30.8%	7.3%
Euro High Yield	4.0%	10.6%	41.5%	6.1%
UK High Yield	5.6%	13.2%	28.2%	8.9%
US High Yield Loans	5.6%	11.6%	31.7%	5.5%
US Fixed Income Sectors				
US MBS	3.8%	8.7%	21.3%	3.6%
US Munis	2.8%	9.1%	9.8%	4.2%
Emerging Market Debt				
Emerging Market Debt – Gov (Hard)	4.6%	9.7%	28.2%	6.4%
Emerging Market Debt – Corp (Hard)	4.5%	9.9%	26.7%	5.8%
Emerging Market Debt – Gov (Local Fx)	5.7%	9.3%	40.7%	5.2%
LOCAL 3-MONTH CASH RATES				
USD Cash	3.3%			
AUD Cash	3.4%			
CAD Cash	2.6%			
CNY Cash	2.2%			
EUR Cash	1.9%			
GBP Cash	2.8%			
JPY Cash	0.9%			

Source: Franklin Templeton Investment Solutions. All returns are unhedged.

*Denotes where shorter average is used (20-yr unavailable), periods range from 169 to 222 months.

GBP currency | Our capital market expectations

10-Year Annualized Capital Market Expectations (Unhedged GBP)

Equity Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL EQUITY	**7.1%**	**13.3%**	**32.0%**	**10.6%**
Developed-Market Equity	**7.1%**	**13.4%**	**31.4%**	**10.8%**
US	6.7%	14.1%	27.6%	12.5%
Canada	6.9%	17.1%	24.1%	9.7%
EAFE	8.1%	13.6%	38.9%	8.1%
EMU	8.6%	17.7%	32.4%	8.1%
UK	8.5%	13.7%	41.6%	6.8%
Pacific ex Japan	6.8%	17.3%	22.8%	10.7%
Japan	8.3%	13.4%	40.9%	7.0%
Australia	7.1%	20.1%	21.4%	10.4%
Emerging Market Equity	**7.9%**	**17.3%**	**29.3%**	**9.3%**
China	7.1%	24.7%	17.2%	9.9%
Specialty Equity				
US Infrastructure	6.7%	13.5%	28.8%	10.1%
US REITs*	7.1%	21.5%	19.9%	7.6%
Global Listed Infrastructure	7.3%	14.4%	30.7%	9.9%
Global REITs	7.3%	18.2%	24.7%	8.5%
Multiverse	4.2%	7.5%	17.9%	4.2%
ALTERNATIVES				
US Private Real Estate	7.4%	15.3%	29.5%	8.5%
US Private Credit	7.5%	14.8%	31.3%	10.0%
US Private Equity	8.5%	20.0%	28.5%	17.4%
Commodities	2.8%	14.9%	0.0%	-0.6%
Global Hedge Funds	4.7%	7.9%	23.0%	7.0%
FX vs. USD				
AUD	-0.1%	9.8%	-29.5%	1.3%
CAD	0.2%	8.0%	-32.4%	1.2%
CNY	0.3%	8.0%	-31.3%	2.4%
EUR	0.7%	7.5%	-28.5%	1.0%
JPY	2.1%	11.5%	-6.4%	0.2%
USD	-0.5%	8.8%	-37.5%	1.5%

Fixed Income Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL FIXED INCOME				
Global Governments	**3.9%**	**8.3%**	**13.2%**	**3.5%**
US Government	3.9%	9.7%	10.7%	4.3%
Euro Government	4.1%	8.8%	14.0%	3.8%
UK Government	4.9%	8.7%	23.6%	3.0%
Japan Government	3.9%	12.3%	8.3%	1.3%
Australia Government*	4.6%	10.3%	17.3%	2.3%
Canada Government	3.4%	8.5%	6.8%	4.4%
China Government	2.7%	8.7%	-1.6%	6.7%
Global Inflation Linked Bonds	**3.9%**	**8.0%**	**13.7%**	**4.5%**
US Inflation Linked Bond	3.9%	8.7%	12.5%	5.2%
Global Investment Grade	**4.4%**	**7.5%**	**21.3%**	**5.0%**
US Investment Grade	4.9%	8.8%	23.5%	5.8%
Euro Investment Grade	3.9%	8.1%	13.4%	3.9%
UK Investment Grade	5.9%	8.8%	34.6%	4.1%
Global High Yield	6.1%	8.8%	36.6%	8.0%
US High Yield	5.8%	9.1%	32.1%	8.3%
Euro High Yield	4.7%	11.3%	37.3%	7.1%
UK High Yield	6.4%	10.1%	35.0%	9.9%
US High Yield Loans	6.3%	10.0%	34.9%	6.5%
US Fixed Income Sectors				
US MBS	4.5%	8.6%	19.1%	4.6%
US Munis	3.5%	9.0%	7.5%	5.2%
Emerging Market Debt				
Emerging Market Debt – Gov (Hard)	5.4%	9.9%	25.4%	7.4%
Emerging Market Debt – Corp (Hard)	5.3%	10.0%	24.4%	6.9%
Emerging Market Debt – Gov (Local Fx)	6.4%	10.3%	34.7%	6.2%
LOCAL 3-MONTH CASH RATES				
USD Cash	3.3%			
AUD Cash	3.4%			
CAD Cash	2.6%			
CNY Cash	2.2%			
EUR Cash	1.9%			
GBP Cash	2.8%			
JPY Cash	0.9%			

Source: Franklin Templeton Investment Solutions. All returns are unhedged.

*Denotes where shorter average is used (20-yr unavailable), periods range from 169 to 222 months.

JPY currency

Our capital market expectations

10-Year Annualized Capital Market Expectations (Unhedged JPY)

Equity Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL EQUITY	**4.9%**	**18.5%**	**21.4%**	**10.3%**
Developed-Market Equity	**4.9%**	**18.6%**	**21.1%**	**10.6%**
US	4.5%	18.9%	19.0%	12.3%
Canada	4.7%	21.9%	17.4%	9.5%
EAFE	5.9%	18.7%	26.5%	7.9%
EMU	6.3%	22.8%	23.7%	7.9%
UK	6.3%	19.5%	27.6%	6.7%
Pacific ex Japan	4.6%	21.5%	17.0%	10.5%
Japan	6.1%	16.8%	30.6%	6.8%
Australia	4.9%	24.2%	16.6%	10.2%
Emerging Market Equity	**5.7%**	**21.3%**	**22.3%**	**9.1%**
China	4.9%	27.4%	14.4%	9.7%
Specialty Equity				
US Infrastructure	4.5%	16.1%	22.3%	9.9%
US REITs*	4.9%	24.2%	16.5%	7.2%
Global Listed Infrastructure	5.1%	18.5%	22.4%	9.7%
Global REITs	5.1%	21.2%	19.7%	8.2%
Multiverse	2.0%	7.3%	15.2%	4.0%
ALTERNATIVES				
US Private Real Estate	5.1%	17.0%	24.8%	8.4%
US Private Credit	5.3%	18.5%	23.4%	10.2%
US Private Equity	6.3%	24.2%	22.3%	17.6%
Commodities	0.7%	19.0%	-1.1%	-0.8%
Global Hedge Funds	2.5%	11.8%	13.3%	6.8%
FX vs. USD				
AUD	-2.1%	13.6%	-22.5%	1.1%
CAD	-1.8%	11.9%	-23.1%	1.0%
CNY	-1.7%	8.8%	-30.3%	2.2%
EUR	-1.4%	10.6%	-21.6%	0.8%
GBP	-2.1%	11.5%	-25.9%	-0.2%
USD	-2.5%	9.8%	-35.1%	1.3%

Fixed Income Expectations

As of October 31, 2024

Asset Class Name	Expected Return (Geometric)	Expected Risk (Std. Dev.)	Sharpe Ratio	Past 20-Yr Annualized Return
GLOBAL FIXED INCOME				
Global Governments	**1.8%**	**6.5%**	**13.3%**	**3.3%**
US Government	1.7%	8.0%	10.1%	4.1%
Euro Government	1.9%	10.5%	9.4%	3.6%
UK Government	2.7%	12.1%	14.9%	2.8%
Japan Government	1.7%	4.2%	19.0%	1.1%
Australia Government*	2.5%	11.6%	13.3%	5.3%
Canada Government	1.3%	10.7%	3.4%	4.2%
China Government	0.6%	8.8%	-3.9%	6.5%
Global Inflation Linked Bonds	**1.8%**	**9.8%**	**8.8%**	**4.3%**
US Inflation Linked Bond	1.8%	8.9%	9.6%	5.0%
Global Investment Grade	**2.3%**	**9.2%**	**14.8%**	**4.8%**
US Investment Grade	2.7%	9.2%	19.6%	5.6%
Euro Investment Grade	1.8%	11.3%	7.6%	3.7%
UK Investment Grade	3.7%	14.2%	19.5%	3.9%
Global High Yield	3.9%	12.7%	23.2%	7.8%
US High Yield	3.6%	12.5%	21.3%	8.1%
Euro High Yield	2.6%	16.0%	24.3%	6.9%
UK High Yield	4.2%	16.9%	19.3%	9.7%
US High Yield Loans	4.1%	13.8%	23.2%	6.3%
US Fixed Income Sectors				
US MBS*	2.3%	8.1%	17.4%	4.4%
US Munis	1.4%	8.8%	5.1%	5.0%
Emerging Market Debt				
Emerging Market Debt – Gov (Hard)	3.2%	11.6%	19.4%	7.2%
Emerging Market Debt – Corp (Hard)	3.1%	12.3%	17.7%	6.7%
Emerging Market Debt – Gov (Local Fx)	4.2%	12.7%	25.9%	6.0%

LOCAL 3-MONTH CASH RATES	
USD Cash	3.3%
AUD Cash	3.4%
CAD Cash	2.6%
CNY Cash	2.2%
EUR Cash	1.9%
GBP Cash	2.8%
JPY Cash	0.9%

Source: Franklin Templeton Investment Solutions. All returns are unhedged.

*Denotes where shorter average is used (20-yr unavailable), periods range from 169 to 222 months.

Methodology

This currency appendix methodology should be read in conjunction with the complete methodology.

The methodology used to convert the unhedged USD return projections into unhedged foreign currency returns is as follows:

We take the expected geometric return of the asset class, represented by an index, in US dollars. We project the amount by which the foreign currency will strengthen or weaken versus the US dollar (noted in the FX vs. USD section of the CMEs). The following equation is then used to create a projected return in the new currency.

Local Currency CME = (US Currency CME – projected strengthening or weakening of the foreign currency)/ (1+ projected strengthening or weakening of the foreign currency)

For projected risk, the key data input is historical USD returns. We apply our **USD risk methodology** to those returns to calculate the USD risk model. For risk in a different currency, we replace the historical USD returns by the historical returns in a different currency. We then apply the **USD risk methodology** to these returns to produce a risk model in the new currency.

For Sharpe Ratio:

The Sharpe Ratio of an index in USD is the ratio of the difference between the CME of the index and the CME of the USD 3-month treasury and the forecast risk of the index:

(Index CME in USD - USD Cash CME)/Index risk forecast in USD.

For a different currency perspective, we simply replace each of the three forecasts appearing in this formula by the corresponding quantity in the new perspective.

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At Franklin Templeton Investment Solutions, we translate a wide variety of investor goals into portfolios powered by Franklin Templeton's best thinking around the globe. We serve a variety of institutional clients, ranging from sovereign wealth funds to public and private pension plans in addition to retail multi-asset clients around the world.

The hallmark of our approach is a central forum—the Investment Strategy & Research Committee—which generates a top-down view across asset classes and regions and connects and synthesizes the bottom-up sector and regional insights of the global investment teams at Franklin Templeton.

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Wylie Tollette, CFA
Chief Investment Officer

Franklin Templeton
Investment Solutions

Thomas Nelson, CFA, CAIA
Head of Investment Research

Franklin Templeton
Investment Solutions

Max Gokhman, CFA
Head of MosaiQ
Investment Strategy

Franklin Templeton
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Miles Sampson, CFA
Head of Asset Allocation
Research

Franklin Templeton
Investment Solutions

Colm O'Cinneide
Head of Quantitative
Asset Allocation Research

Heena Doshani
Senior Research Analyst

Peter Blue
Head of Alternative Solutions

Laurence Linklater
Senior Research Analyst

Ian Westley, CFA
Research Analyst

Melissa Mayorga
Senior Research Analyst

Chris Ratkovsky, CFA
Senior Research Analyst

Spencer Walling, CFA
Research Associate

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All investments involve risks, including possible loss of principal. The value of investments can go down as well as up, and investors may not get back the full amount invested.

Equity securities are subject to price fluctuation and possible loss of principal.

Fixed income securities involve interest rate, credit, inflation and reinvestment risks, and possible loss of principal. As interest rates rise, the value of fixed income securities falls.

To the extent the fund invests in **alternative strategies**, it may be exposed to potentially significant fluctuations in value.

The allocation of assets among different strategies, asset classes and investments may not prove beneficial or produce the desired results. To the extent a strategy invests in companies in a specific country or region, it may experience greater volatility than a strategy that is more broadly diversified geographically.

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Active management does not ensure gains or protect against market declines.

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