December 2022

Global Investment Outlook

Finding opportunities in 2023 after a (un)forgettable market year

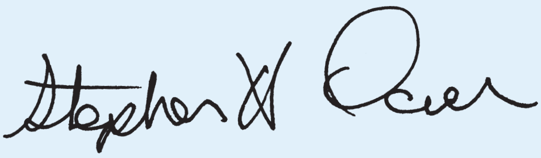
Introduction

Stephen Dover, CFA
Chief Market Strategist
Franklin Templeton Institute

Most investors are probably happy to see 2022 in the rearview mirror. Looking ahead to 2023, inflation and the possibility of recession remain the global market's focal point. Our base case is inflation will further recede as supply chain pressures ease and central banks will remain committed to tighter policy. However, the result of this policy is likely to be a slowing of the economy. This could create opportunities for investors:

- Europe is likely already in a recession and the United States is likely to fall into one—hopefully a mild one. Risk/reward profiles seem to favor fixed income over global equities, particularly for the first half of 2023. Any recession and subsequent recovery may well be rapid and create market volatility. We believe it will be as important as ever to be diversified and actively select investments, particularly when tilting toward risk assets.
- As we discussed in our most recent *Macro Perspectives*,[1] expensive equity prices and the potential for a peak in interest rates have been driving a preference toward fixed income. We expect investors to search for quality and perhaps increase duration in 2023, with some ideas to consider:
    - Extending duration may provide compelling income opportunities, and US Treasuries could be the core for building duration.
    - Investment-grade (IG) corporates look like an attractive place to us for investors seeking relatively safe income.
    - High-yield (HY) credit looks attractive for investors with a multi-year time horizon, in our view, as current yields and active selection provide a cushion for potentially near-term higher defaults in the sector.
- The key takeaway: "Don't fight the Fed." Bonds will likely rally as the US Federal Reserve (Fed) achieves its goals, whether the US economy's landing is soft or hard. Equities are less likely to perform as well—unless the landing is soft. Otherwise, falling profits will offset falling bond yields and equities are unlikely to advance. That outcome is also a recipe for elevated equity volatility.
- Some investments can act as a hedge against inflation and potential downgrades in earnings. The impact of inflation on listed infrastructure in 2023 should be muted, particularly for regulated assets, which often have inflation adjustment clauses. Infrastructure earnings look better protected in general than global equity earnings, in our view.
- Historically, US commercial real estate investment has performed favorably in periods of rising interest rates and inflation. Current macro risks and market dislocations may create attractive buying opportunities over the next 12–18 months in some sectors of commercial real estate.

For more detailed insights and outlooks from our investment teams, please read our full *Global Investment Outlook*. On behalf of Franklin Templeton Institute, we look forward to a more prosperous new year!



Don’t stand on the sidelines in 2023

For investors, 2022 is a year to forget. Surging inflation and central bank interest-rate hikes have conspired to undermine stocks, bonds, real estate, cryptocurrencies, and many commodities. Little wonder that investors are peering into 2023 with trepidation, concerned that more of the same could be in store.

While we see risk of further downside in some market segments during the first half of 2023, most notably in global equity markets, we also envision a year of select opportunities. Crucially, in our view, investors who remain committed to disciplined diversification and prudent risk allocations should be rewarded, as the typically negative correlations between asset classes seen historically will likely return in 2023.

Storm before the calm

Given the resolute commitment of central banks—above all the Fed—to force inflation down, our base case is that inflation has peaked and will further recede in 2023. But the cost of achieving lower inflation will be high. Every US tightening cycle since 1979—the year then-Fed Chair Paul Volcker took the reins of monetary policy—precipitated an episode of considerable financial stress. Whether cause or effect, the Latin American sovereign defaults in the 1980s, the 1987 stock market crash, the savings and loan crisis of the early 1990s, the Mexican debt crisis of 1995, the Asian financial crisis and Russia/Long-Term Capital Management defaults of 1997–98, the collapse of the “dotcom” bubble in the early 2000s, and the global financial crisis (GFC) of 2008 all followed periods of Fed tightening.

All those tightening episodes produced strong returns for US Treasuries once inflation began to decline. But most of them also produced sharp declines in global equity markets—some brief and others longer-lasting—as monetary policy tightening took its toll on the financial system and corporate profitability.

The key takeaway, in short, is “don’t fight the Fed.” Bonds will likely rally as the Fed achieves its goals, whether the economic landing is soft or hard. Equities are less likely to perform as well as fixed income unless the landing is soft. Otherwise, falling profits will offset falling bond yields and equities are unlikely to advance. That outcome is also a recipe for elevated equity volatility.

As wretched as 2022 was for both stocks and bonds, we believe 2023 holds out the promise of renewed potential for benefiting from diversification. 2022 was one of only five instances since 1948 where both US stocks and US bonds were down simultaneously in a calendar year. Suppose, for instance, that our preceding assessment is correct. Tighter monetary policy brings down inflation but produces increased financial risk and a profits recession. In that case, bond market strength will cushion stock weakness.

The implication is that the risk/reward profile favors fixed income over global equities at the outset of 2023. That assessment need not prevail for **all** of 2023, but may be decisive in the first half of the year.

Again, at the risk of repetition, the critical insight is that for bonds to perform well, only interest rates must fall. For equities to perform well, everything else—risk premiums and profits—must also line up. Yet, when central banks firmly apply the brakes, the wheels often come off, with unpleasant consequences for equity investors.

It’s back! Less correlation

As wretched as 2022 was for both stocks and bonds, we believe 2023 holds out the promise of renewed potential for benefiting from diversification. 2022 was one of only five instances since 1948 where both US stocks and US bonds were down simultaneously in a calendar year.[2] Suppose, for instance, that our preceding assessment is correct. Tighter monetary policy brings down inflation but produces increased financial risk and a profits recession. In that case, bond market strength will cushion stock weakness.

Alternatively, if the Fed miraculously pulls off a soft landing of lower inflation without a financial stress or an earnings recession, then both stocks and bonds can rally. It is difficult to overstate the conclusion—now is not the time to jettison diversification. Rather, we think investors ought to consider extending back toward less-liquid investments and diversifying not only stocks and bonds, but seek to find more ways to diversify for potential longer-term benefits.[3]

Fixed income: Selecting how bumpy the road

Following a year in which the entire yield curve has shifted upwards, lower prices for bonds across the quality and duration spectrum are creating opportunities in fixed income.

For example, the HY segment is providing near 10% yields with shorter durations, while IG debt is yielding over 5% with longer durations. Going into a recession, the default rate tends to increase, which can cause some price volatility for HY as a category. However, taking a longer-term view and relying on quality credit research can provide opportunities. The question for an investor is whether the relative safety of the higher credit quality inherent in IG is being priced appropriately relative to the lower-quality HY—and providing a smoother ride. While history suggests that default rates will rise as the economy slows, the reality is that last year's price declines create opportunity for security selection and sub-asset class rotation. This is in marked contrast to most of 2022, when the directional move in bond yields (beta) swamped active returns (alpha). In the fixed income section, you will find insights into opportunities from our investment teams, which generally reinforce our views about being selective and tilting back toward bonds for income.

The first half of 2023 is apt to be a challenging one for corporate profits and risk premiums. Many sectors that screen as value, such as financials or industrials, are traditionally cyclical and are likely to be hit by earnings downgrades. The most successful companies of this century are those that invest relatively little in physical capital but enjoy high returns on intangible assets such as brand, technology, economies of scale or first-mover advantage.

Equities: Value, emerging markets or themes?

What equity factors are likely to fare best in 2023? Will it be growth, quality, or value? Or perhaps emerging markets?

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Finally, and perhaps most importantly, as markets digest the implications of the Russia-Ukraine war on inflation in early 2023, uncertainty is likely to remain elevated. Sentiment will be guarded, and investors are likely to favor companies with strong balance sheets and sound business models, at least until a genuine global economic recovery takes shape.

Value and emerging markets may do better later rather than earlier in 2023. Here, too, investors are likely to benefit from active security selection. In the equities section, we highlight the theme of semiconductor chips and provide a small window into how just one theme can provide a multitude of opportunities to consider.

Alternatives: The hunt for diversification

In looking beyond stocks and bonds for diversification, many times access to alternatives limits investors. However, if this limitation can be overcome, investors might consider adding private credit or commercial real estate for greater risk-adjusted returns. Beyond the potential for less correlation to stocks and bonds, there may also be potentially higher returns in exchange for a longer-term commitment of assets.

Why do some options have the potential for less correlation? For private credit, the modern market emerged after the GFC to fill the void banks left as they significantly reduced their lending to small- and medium-sized businesses. We believe emphasis needs to be on selecting top-tier managers, who not only specialize in finding genuine value, but in avoiding accidents—not indexing the category.

After a tough 2022, many investors may feel like standing on the sidelines. That sentiment, however understandable, is best avoided. As inflation declines, bond returns will likely recover, as will the potential diversification benefits of holding bonds alongside stocks and select alternatives. While it may be premature to dive into the equity markets, focusing on select themes may deliver better overall portfolio returns in 2023.

Similarly, a different correlation from commercial real estate can come from some automatic adjustment to inflation, as rental rates often align with price increases. While current levels of inflation and the possibility of recession are challenging for real estate investors, segments including industrial warehouses, life science facilities, and multi-family rental properties can provide strong returns as well as a hedge against inflation. In the alternatives section, we provide outlooks for two areas that may help with diversification: infrastructure and commercial real estate.

Think diversification

After a tough 2022, many investors may feel like standing on the sidelines. That sentiment, however understandable, is best avoided. As inflation declines, bond returns will likely recover, as will the potential diversification benefits of holding bonds alongside stocks and select alternatives. While it may be premature to dive into the equity markets, focusing on select themes may deliver better overall portfolio returns in 2023. For specific thoughts on allocations, we direct you to *Allocation Views,* our quarterly publication from the Franklin Templeton Investment Solutions team, to see how they are approaching 2023. The silver lining from 2022's difficult markets appears to be an improved potential for long-term returns, and the return of diversification within multi-asset portfolios.

In what follows, our investment teams offer their perspectives and, most importantly, their key investment opportunities for 2023.

Fixed income

Fixed income investors have grappled with aggressive central bank actions in light of rising inflation globally, and the question many are asking is when the tightening cycle will turn. Franklin Income Investors Chief Investment Officer (CIO) Ed Perks, Franklin Templeton Fixed Income's Glenn Voyles and Josh Lohmeier, and Western Asset CIO Ken Leech, explore the fixed income landscape from their respective lenses. They agree the move higher for rates and spreads has expanded yield opportunities across fixed income—although some look more compelling than others.

Shifting our focus to fixed income

Ed Perks, CFA
Chief Investment Officer
Franklin Income Investors

How are you shifting allocations between equity, fixed income and alternatives into 2023?

What happens with interest rates and inflation in 2023 will primarily drive our allocation decisions. We believe the move higher in rates is likely almost done, as markets have begun to price in the end of the Fed's hiking cycle. We expect a long pause from the Fed before any pivot, so our attention will be focused on the effect that the rate hikes have on the economy and inflation. The uncertainty lies in whether the lagged effect of tightening financial conditions and a more challenging growth environment results in a real pull-back in fundamentals.

We made a significant shift toward fixed income during the past year. However, profit-taking on equity sectors that outperformed—such as pharmaceuticals, consumer staples and utilities—drove a lot of that shift. If equity prices remain expensive relative to the yield we can achieve in fixed income, then the shift into bonds will continue, albeit at a slower pace as we get closer to a 60/40 allocation tilt in favor of fixed income over equities.

The rate of change will depend upon where markets go. If IG corporate bond yields move back toward 6%, then we may well increase the strategy's sector exposure at a faster pace, taken from either equities, HY bonds or US Treasuries.

What is driving your thinking from an income perspective?

Yield is set to be a much more important component of total return for investors during the next few years as the so-called "Fed put" has less effect on markets. The consequential move higher for rates and spreads has significantly expanded yield opportunities across fixed income.

This is a very different scenario from 12 months ago, when there really was no alternative to equities, and investors were locked into a desperate search for yield across all asset classes. That search appears to be over, and the expansion of yields and spreads is now adequately compensating fixed income investors on a risk/return basis.

Investment-grade credit is our preferred asset class in terms of total return, income and risk management. In a positive economic scenario, we believe these assets could potentially make double-digit returns as rates move lower and spreads narrow. A year ago, yields on high-quality credit did not seem attractive, prospects for total returns were poor, and bonds were not acting as a diversifier. Today, the same assets offer better total return potential than equities, while the positive correlation with stocks is also breaking down, allowing fixed income to offset equity market volatility.

Elsewhere, it has been some time since the yield on US Treasuries was healthy enough to meet our income requirements, but the changing market environment has also created options in this space. When 10-year US Treasury yields were around 2%, they were unattractive in our view, but extending the duration of our investments to lock in yields at 4% is much more compelling from an income perspective. This means US Treasuries will form a core part of our ongoing strategy into 2023.

What opportunities and concerns do you see across the fixed income asset class in 2023?

In our view, the HY bond sector is more resilient than many investors believe, absent a significant negative impact on corporate earnings. Most HY issues won't need to be refinanced in the next few years, therefore a recession in 2023 with a modest pullback doesn't overly concern us. As a result, while the investment community focuses on whether spreads are wide enough to justify a move into credit, we see opportunities at current yields, which have shot up to levels not seen for 15 years.

We don't think spreads are likely to widen significantly, which means we are very comfortable being in the credit space, particularly at such low prices. As a result, we believe it is a relatively straightforward call to add selectively to HY credit at the expense of higher volatility equity holdings which, in a recessionary scenario, should underperform credit.

In a worst-case scenario, investors might experience a difficult economic backdrop in 2023, where inflation remains sticky and leads to a prolonged period of higher rates or further tightening. Those conditions would eventually put pressure on over-levered companies that need to refinance their debt. Under those circumstances, we might engage with the public companies we are already invested in to help them refinance their debt on a private basis. We are less likely to target private middle-market companies because we believe the opportunities for healthy returns in the public markets are currently very attractive, and we wouldn't be adequately compensated for the illiquidity premium associated with such private investments.

Movement toward higher quality in corporate bonds

Glenn Voyles, CFA
Director of Portfolio Management, Corporate Bonds
Franklin Templeton Fixed Income

Josh Lohmeier, CFA
Portfolio Manager, Investment Grade
Franklin Templeton Fixed Income

Over the past few years, there's been a reach for yield. With rates rising, and a possible default cycle in the coming year(s) if the US economy falls into recession—what does this look like for sectors like corporate HY?

Glenn: Whether or not the US economy experiences a recession, the actions the Fed is taking to combat inflation are likely to slow economic growth. However, we believe HY corporates are positioned to withstand potential headwinds and deliver attractive forward returns to long-term investors. One reason for our relative optimism is that since the beginning of the year, yields within the HY sector have returned to levels benefiting the name of the asset class and are now

Keep in mind that HY has never experienced consecutive years of negative returns, and impressive rebounds have usually followed large drawdowns. Part of the reason for this historical pattern is simple math—with the average HY bond maturing in 5.5 years and with the average price in the mid-80s, there is a strong pull to par for most bonds that will not default.

attractive, in our view. While valuations—measured as the spread over similar maturity US Treasuries—are below levels typically experienced in past recessions, we believe that investors are still more than compensated for default risk.

One reason for this belief is that corporations entered this year in general healthy fundamental shape, with robust interest coverage and little in the way of near-term debt maturities. And so far, at least, companies have been mostly successful in offsetting inflationary cost pressures with price increases of their own, thus maintaining margins. While the default rate will likely increase from the exceptionally low level experienced last year, we believe it will remain below that experienced in past recessions. In addition, with the average HY bond price in the mid-80s,[5] the downside in the event of a default is more limited than it is in times when the market is trading closer to par (100). This combination of moderate default expectations and potentially lower default-driven losses leads us to believe that current spreads should be more than sufficient to compensate investors in the years ahead.

Keep in mind that HY has never experienced consecutive years of negative returns, and impressive rebounds have usually followed large drawdowns. Part of the reason for this historical pattern is simple math—with the average HY bond maturing in 5.5 years and with the average price in the mid-80s, there is a strong pull to par for most bonds that will not default. While volatility is likely to persist, with yields near 9% (8.9% as of 11/17/22 index data)[6] we think that investors with a multi-year time horizon are buying into the asset class at attractive levels and can generate compelling returns.

And what does this look like for corporate IG?

Josh: The 10-year US Treasury yield spent most of the last decade between 0.50% and 2.50% and IG credit spreads traded in a tight range as well.[7] Because of this incredibly low-yield environment, fixed income investors were pushed to look for additional yield in lower-quality asset classes to secure the income they required. Moreover, higher-quality, longer-duration assets had significant total return risk due to the potential for an eventual rise in interest rates. This is exactly what we have seen year-to-date in 2022.

Though there was certainly some weakness in widening credit spreads, rising US Treasury yields drove most total return losses in fixed income year-to-date. We believe that this outcome created a path for longer-term tailwinds for IG credit going forward.

First and foremost, even if there is a recession, the probability of default for IG issuers is very low. Balance sheets remain generally robust, providing most IG corporates with more financial flexibility to navigate a period of slowing economic growth. This is not to say that spreads won't widen; they can widen significantly if we enter a recession. But we have reached a point in time where investors can play both offense and defense through their allocations to US IG corporate bonds. The defensive benefits of higher US Treasury yields can materially offset credit spread weakness going forward. Fixed income is finally delivering *income*!

Overall, we believe that with higher yields in the asset class, the risk-reward balance of current valuations has improved materially compared to the start of the year. In our opinion, this makes IG corporates a more attractive place for investors seeking relatively safe income. However, due to ongoing market uncertainty, slowing growth and deteriorating fundamentals, we acknowledge spreads can go wider and are certainly up in quality today within our US IG allocations to preserve liquidity and take advantage of any potential volatility in markets.

Given an uncertain environment based upon our view of the Fed's future interest-rate hikes, which is higher than widely anticipated, it likely means volatility will remain elevated for the foreseeable future.

If the Fed keeps interest rates higher for longer next year, what near-term opportunities do you see across IG sectors?

Josh: Given an uncertain environment based upon our view of the Fed's future interest-rate hikes, which is higher than widely anticipated, it likely means volatility will remain elevated for the foreseeable future. Additionally, our belief is Fed Chair Jerome Powell appears more concerned with continued tightening and as such, we do believe a shallow recession is likely over the medium term. However, this doesn't appear to be priced into earnings estimates. In times of increased volatility, higher-quality credits with strong fundamentals and less sensitive end-demand are likely to outperform. We are therefore pushing more of our portfolio risk into non-cyclical sectors and still believe the US financial sector has strong risk-adjusted return potential, given elevated spreads and very strong capital levels.

And from an HY sector perspective?

Glenn: Higher rates and inflationary pressures will not impact all companies equally, and while many companies are able to increase prices to offset cost increases, others are suffering pressure on their margins. Monetary policy is driving up the cost of borrowing, which will have a more severe impact on companies with unhedged exposure to floating-rate debt. Given the numerous challenges facing HY issuers, we expect to see increased dispersion of returns among individual HY bonds in the coming years. In our opinion, this environment highlights the importance of active management in the HY asset class, as individual credit selection will be key to driving future performance.

We are currently seeing opportunities in select issuers in cyclical industries, like chemicals, where the market is focused on the potential for an economic slowdown to hurt top-line growth. However, we are focused on each company's cash-generation profile and the ability of its capital structure to withstand economic headwinds. We also like classic defensive industries, like packaging and utilities, where demand is not tied to the level of economic growth and their bonds provide an attractive risk/reward profile. And we continue to like the energy sector, where we see ongoing fundamental tailwinds and the potential for elevated levels of ratings upgrades.

Looking ahead, companies are going to face some challenges. Margins are likely to continue to feel the squeeze from elevated labor, financing and input costs. Corporates are already feeling the effects of significant wage increases, as evidenced by the first layoff announcements from various technology companies.

Which HY sectors give you the most cause for concern looking into 2023?

Glenn: As we enter 2023, we believe that certain companies and industries could start to feel their pricing power fade as consumers struggle with the squeeze on real incomes. At the same time, inflation seems to be stickier than expected and will continue to push up costs, as well as keep the Fed committed to its monetary policy tightening path.

In such a scenario, there are several areas that are cause for concern. Companies with more elastic end-consumer demand and/or exposure to the lower-end consumer are likely to face ongoing pressure. This category includes many retailers and consumer products companies. Separately, companies with limited free cash flow—often due to high debt loads—or reliance on future cost savings to make their capital structures work, will be challenged as financial conditions tighten. Many leveraged buyouts (LBOs) of the past several years fit this profile, and we are highly selective when evaluating such deals. We are also wary of industries facing secular decline, such as wireline telecom, or those undergoing rapid changes to their competitive landscape, such as autos—given the rise of electric vehicles (EVs) and their uncertain impact on the industry—or the broadcasting/pay television ecosystem. While some of these changes will take years or decades to play out, we prefer to be positioned now ahead of any potential acceleration in the pace of change.

And from an IG standpoint?

Josh: Looking ahead, companies are going to face some challenges. Margins are likely to continue to feel the squeeze from elevated labor, financing and input costs. Corporates are already feeling the effects of significant wage increases, as evidenced by the first layoff announcements from various technology companies. While companies are still benefiting from interest costs that hovered near generational lows for more than a decade and frontloaded borrowing, rising rates will certainly bite into the broader economy, affecting both consumers and future corporate borrowing needs. Also, though we have seen improvements in supply chain issues, inflation will most likely stay higher, even if it stabilizes or retreats, and for longer than consumers or markets are accustomed to. This will continue to impact global growth.

Considering our expectations for a potentially challenging market environment over the near to medium term, we believe that cyclical consumer-focused industries and companies with high levels of exposure and sales to weaker markets, such as Europe, will likely underperform. We are also less excited about commodity sectors. We believe that although fundamentals are decent and commodity prices may hold up, valuations are stretched. Weaker economic growth is likely to cause spread volatility in these sectors as aggregate demand slows.

Falling inflation scenario still at play

Ken Leech
Chief Investment Officer
Western Asset

Where are you looking in 2023 to position to best maintain yield averages?

Inflation has proceeded faster and for longer than we anticipated, and the damage to fixed income investments has been commensurate. However, we believe a falling-inflation scenario is still at play—one that would provide some comfort and respite to bond investors. In our analysis, bond yields are also now at very attractive levels—the 10-year US Treasury bond is at its highest rate since 2008. Given these factors and current market pricing, the priority for us over the next 12 months is to position portfolios to best maintain our current yield advantage relative to benchmarks. We see opportunities in specific places across fixed-income sectors.

Can you provide some examples of opportunities?

The combination of higher rates, wider spreads and *de minimis* defaults makes a good case for owning IG credit, despite macro concerns. Fundamentals at the corporate level still appear very good to us, given issuers' conservative approach to balance-sheet management.

Additionally, we believe the quality of the HY market is the best it's been in decades. Fallen angels downgraded from IG ratings during the COVID-19 pandemic put a significant amount of BB rated issues in the HY index. However, we continue to be extremely selective, choosing issues name by name. We also continue to favor IG energy.

In the United States, corporate fundamentals may have peaked, but they are coming off a strong starting point. Concerns abound that earnings will decelerate given tighter financial conditions, rising input costs and the currency impact of a surging US dollar. We see opportunities in banking (where we expect further ratings upgrades), energy, select reopening industries (such as airlines, cruise lines and lodging), and rising-star candidates.

In Europe, utilities face higher funding needs, but with government support we see some opportunities in this space. Yields at multi-year highs look attractive to us. In particular, we like the three- to five-year part of the market. We find the most value in financials and real estate investment trusts (REITs) and are cautious on more cyclical consumer-facing sectors.

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In the United States, we believe HY credit spreads are relatively attractive. In our analysis, default rates are likely to rise from very low levels in the coming quarters, but yields are providing ample cushion for higher defaults. We continue to see opportunity in service-related sectors that are still recovering from the COVID-led recession and potential rising stars.

In Europe, credit fundamentals face challenges including slowing regional growth, elevated energy prices, and tightening financial conditions. We see value in BB and B rated issues—focusing on more defensive industries, including telecommunications/cable and health care.

With your forecast that home prices are poised to have a major pullback, what are the challenges/opportunities in sectors like mortgage-backed securities (MBS) in 2023?

While we expect the homebuilding market is in for a major pullback as well as substantial home price declines, we see selective opportunities. Here are a couple of examples:

For agency MBS, diminishing Fed and bank demand coupled with increased volatility remain headwinds, but we believe the fundamental picture has greatly improved as spreads have widened significantly and look attractive historically, while prepayment risk has subsided.

For non-agency commercial MBS (CMBS), fundamentals vary by sector, with continued strength in multi-family, industrial and lodging, but challenges remain in retail and office. Macro and rates pressures are depressing prices across the market; however, if volatility declines, we believe attractive yields are available across the capital stack for high-quality credits.

Why do you think inflation is likely to decline?

Whether you focus on demand and supply as the driver of prices, on interest rates, or on the money stock as a measure of Fed policy, we believe all of these indicators point to a substantial moderation of inflation in the near future. Furthermore, looking at economic conditions "on the ground," pricing in the goods and housing sectors is already moderating.

Equities

Semiconductors power our cloud-driven world, and are critical components of every electronic device, gadget or tool we use on a daily basis. Franklin Equity Group's JP Scandalios, who has spent over 20 years researching the semiconductor space, offers an overview of the industry and explains why it's not so simple to move production to local shores—even with government incentives to do so. Dina Ting, Head of Global Index Portfolio Management, Franklin Templeton Exchange-Traded Funds, explores opportunities via targeted exposure to Taiwan and South Korea—two important semiconductor hubs.

A mission-critical industry

JP Scandalios
Portfolio Manager
Franklin Equity Group

Why are semiconductors getting so much attention recently?

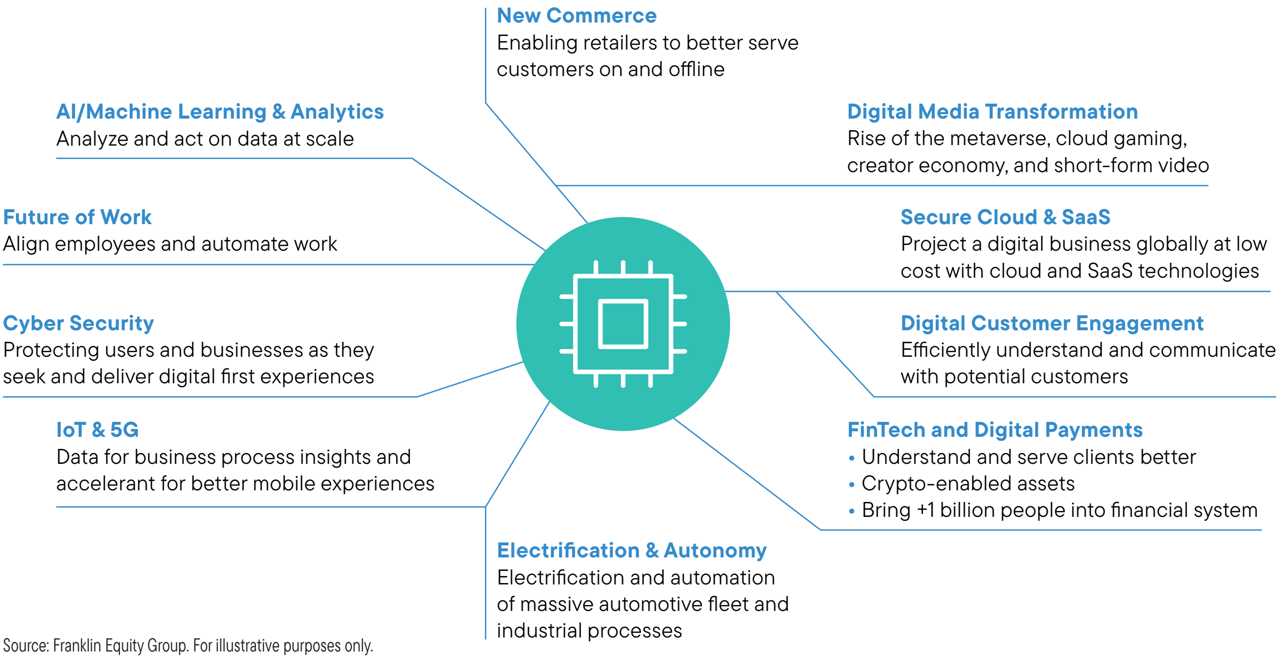
The semiconductor industry is mission-critical, infiltrating and influencing nearly every other segment of the global economy in some fashion. Several decades ago, semiconductor technology was primarily associated with computers, then cell phones. Today it has evolved toward machine learning and artificial intelligence. Semiconductor chips permeate everything from refrigerators to watches to cars—especially as everything becomes a smart and connected device (See Exhibit 1). That said, the semiconductor industry is still cyclical in nature. In 2019, the industry saw a downturn and many thought it would never grow by more than global gross domestic product again. But we've seen tremendous acceleration in recent years, partly due to COVID-19 but also partly due to new market opportunities—for example, electric vehicles.

What are potential impacts of US President Joe Biden's CHIPS and Science Act of 2022 on semiconductors?

Many people may not realize that Taiwan—specifically Taiwan Semiconductor Manufacturing Company (TSMC)—manufactures about 90% of the world's most advanced semiconductors. Additionally, 75% of key related materials—silicon wafers, photoresist and other specialty chemicals—originate in China and East Asia.[8] Meanwhile, the United States holds the vast majority of intellectual property and know-how in terms of research, development and design in the

Digital Transformation

Exhibit 1: Semiconductors Are a Core Component Across Segments



Source: Franklin Equity Group. For illustrative purposes only.

semiconductor space, including the equipment and the computer-aided design (CAD) software required for fabrication and device operation.

TSMC is a foundry or "mega fab"—it makes the actual chips. And, given how it dominates the market, that's a risk, particularly given strained relations between Taiwan and China, and China and the United States. The United States has finally woken up to that risk, and part of the CHIPS Act provides incentives or subsidies to build a redundant or parallel supply chain domestically—with more than US$38 billion allotted in manufacturing incentives for companies to build US-based semiconductor production facilities.

Why is the CHIPS Act so important?

For a long time, China has also expressed its desire to be more self-sufficient, specifically within the realm of semiconductors, as it is among the highest global chip consumers. The Trump administration intentionally put in roadblocks to protect the intellectual property of US chip companies. China's Huawei Technologies—the smartphones and consumer electronics manufacturer—faced US sanctions for allegedly pirating US intellectual property and handing it over to the China military complex.[9]

Fast forward to today, and the Biden administration continues to ratchet up restrictions, although not going as far as placing a complete embargo on equipment or software or even semiconductors. The CHIPS Act is an extension of US policy to maintain our lead and reduce our semiconductor manufacturing reliance upon a region where geopolitical tensions run hot. The Act is mainly about lessening our reliance upon Taiwan as a production source, but the administration also essentially said to US companies that if they want to ship goods to China, they must prove their end-users are not in any way associated with China's military, and they can only ship lagging-edge equipment. The goal is to ensure China is always at least several generations behind. The CHIPS Act is a means to that end.

What efforts are you seeing as a result of the CHIPS Act? Is it leading to more investment opportunities?

Well, while we've seen some media attention to some related efforts—including Intel's plans to build a chip factory complex in Ohio—the interesting and ironic thing is that the boom cycle we saw during the peak of COVID-19 has now turned, and supply conditions are gradually starting to improve. This has impacted chip prices and revenues for US chipmakers.

The CHIPS act is a start, but it won't be enough for the United States to become fully self-sufficient—it's going to take a lot more. Plus, the United States and Europe can't match the employee labor costs that companies in parts of Asia benefit from. It's always likely going to be more expensive, so local and federal governments need to come in with incentives.

While the US government is handing out checks to build capacity, most semiconductor companies are actually cutting their capital expenditures.

Companies are acting because of the current cycle, but the US government's outlook is longer term. Its desire is to have a more independent supply chain five or 10 years down the road, regardless of the current industry conditions.

Europe has made similar efforts to develop an independent semiconductor supply chain. So, the industry could have three independent global supply chains if we fast forward five to 10 years, which is both interesting and good news for equipment companies, because they would be selling to a much broader universe. It's interesting because it conflicts with what we've all been taught in the last 20 or 30 years about globalization and low-cost supply chains.

The CHIPS act is a start, but it won't be enough for the United States to become fully self-sufficient—it's going to take a lot more. Plus, the United States and Europe can't match the employee labor costs that companies in parts of Asia benefit from. It's always likely going to be more expensive, so local and federal governments need to come in with incentives.

Also, the building process takes at least two years. Foundries are incredibly complex and expensive buildings. That's one reason why it's a cyclical industry, because capacity can't be brought online quickly. But I think we'll see companies identifying viable locations and start building. They can't build just anywhere though—they require a massive amount of electricity, water supply and other infrastructure, and, of course, human capital. We expect to see a number of companies take advantage of the CHIPS Act to secure funding.

There really are only a handful of very large companies currently that can do the research and development, spend the money, and just keep pushing the technology to smaller and smaller geometries.

Building all this redundancy into the system is great in terms of alleviating some of the political risks. But are we introducing the opportunity for even bigger cyclical boom-and-bust cycles?

Absolutely. In the last few cycles, the boom-bust phenomenon was much reduced partly because of merger activity—not adding capacity. One of the unintended consequences going forward in time is that if you turn the globe into three supply chain districts, we are adding a lot of redundant capacity, which could lead to increased cyclicality and greater price competition.

Hopefully, senior managements of these companies remain disciplined. The industry has evolved over the past 10–20 years to deliver much improved profitability and it would be a shame for that to secularly deteriorate. As investors, we have to consider where we are in the cycle, expectations embedded in the stocks, and valuation considerations.

What are the most attractive areas within the semiconductor industry that you see as an investor today?

High performance analog is a very attractive technology area to us right now. High-performance analog circuits are used in many of the smart, connected devices—for example, digital security cameras—now commonplace in the homes of many consumers.

With the aforementioned move to onshore, what other factors are you considering?

We've focused this conversation on the making of the wafers—all the way from silicon ingot to a die—but not about what happens next. Manufactured wafers are shipped off to places like Malaysia, the Philippines and Vietnam, where a lot of the testing and packaging takes place. So, it's not as simple as building 10 new mega fabs in the United States and expecting that to solve all the problems. We already have a global supply chain if you consider that the average semiconductor chip flies around the world at least once or twice, start to finish, before it is placed in a phone or computer. Asia as a region is still going to matter in terms of the industry. I think what politicians are hoping to do is lessen that direct exposure and aim to reduce any related geopolitical risks.

Opportunities for semiconductor exposure via targeted country selection

Dina Ting, CFA
Head of Global Index Portfolio Management
Franklin Templeton Exchange-Traded Funds

The United States has recently been promoting domestic semiconductor manufacturing. Can you outline for us what's prompted this renewed activity and the importance of it?

President Biden is making the rounds now to support his administration's two major economic policies—the CHIPS and Science Act and the Inflation Reduction Act (IRA). He's recently been touring semiconductor chip plants in the United States, including one in the state of Michigan and TSMC's new plant in Arizona. Both policies were signed into law this summer, with the first aiming to strengthen US domestic semiconductor manufacturing, which, as of last year, held just a 12% share of global capacity—a significant drop from about 37% in 1990.[10]

In terms of importance, the inflation reduction initiative offers broad incentives to encourage investment in clean and renewable energy industries. And semiconductors are the world's most widely traded product after automotives and oil. Globally, there are fewer than about 20 producers that can make chips at scale, with East Asia and China still dominating the vast majority of related manufacturing and production assembly. Chip manufacturing poses immense barriers to entry with enormous capital requirements and technical complexities, so that's kept control of the industry to a few major players in Taiwan, China and South Korea. As such, many investors appreciate having the ability to

With the rapid global transition away from fossil fuels and toward renewables, EV battery demand has soared. Global consulting firm McKinsey forecasts the market for battery cells to grow, on average, by more than 20% per year until 2030.

access the industry through targeted single-country allocations with heavy tech-sector weighting. That way they can tap exposure to the world's top global chip makers, while also gaining the low-cost diversification benefits of exchange-traded funds.

And what are some of the implications you're paying attention to?

With the rapid global transition away from fossil fuels and toward renewables, EV battery demand has soared. Global consulting firm McKinsey forecasts the market for battery cells to grow, on average, by more than 20% per year until 2030.[11] This bodes well for South Korea's petrochemical heavyweights, one of which is investing heavily to accelerate the sustainable expansion of its battery material production lines, including recent plans to construct a manufacturing facility for EV components in the southern United States.

In terms of semiconductors, the industry's aggregate annual growth could average 6%–8% a year, and result in a US$1 trillion-dollar industry by the end of the decade.[12]

Investors pursuing access to the world's top global semiconductor holdings may want to consider the cost-effectiveness and diversification benefits of country-focused ETFs (see Exhibit 2). Such funds can be important tools for capturing exposure to indexes heavily weighted to the information technology sector, which includes the semiconductor industry.

With the heightened volatility in 2022 and so much investor anxiety, where are you finding causes for optimism?

We see a bit of optimism that the bottom of the chips cycle may be near, following almost unprecedented shortages since the onset of the pandemic. This past year has seen the chip squeeze turn into a glut. Over the summer, stockpiles soared and consequently some leading firms have cut planned capital expenditures by as much as 50% for next year.[13] At the same time, we're fairly confident that capacity reductions today can turn into the price hikes of tomorrow—which has often been the case with such a cyclical industry. We believe that if the semiconductor inventory cycle peaks around the turn of the year, then generally speaking, the technology sector may have already reached its lows.

Tapping Asia's Chip-Making Dominance

Exhibit 2: Sector weights: FTSE Taiwan, South Korea and Asia ex-Japan Indexes
As of November 30, 2022

	FTSE Taiwan RIC Capped Index	FTSE Korea RIC Capped Index	FTSE Asia ex Japan RIC Capped Index
Information Technology	57%	35%	22%
Communication Services	3%	8%	8%
Consumer Discretionary	3%	10%	14%
Consumer Staples	2%	4%	6%
Energy	1%	2%	4%
Financials	20%	11%	20%
Health Care	0%	7%	5%
Industrials	6%	13%	8%
Materials	8%	11%	6%
Real Estate	1%	0%	4%
Utilities	0%	1%	3%

Source: Bloomberg. Country and regional allocations may help investors gain access to the world's top global semiconductor (IT sector) holdings. The FTSE Global RIC Capped Indexes are market capitalization-weighted global equity indexes designed to help users meet Regulated Investment Company (RIC) concentration requirements. The indexes provide the market cap-weighted index building blocks for individual countries and regions. Indexes are unmanaged and one cannot invest in an index. They do not include fees, expenses or sales charges.

Why should investors consider an allocation to South Korea and/or Taiwan, in your view?

Besides their substantial tech-sector weights, which offer exposure to the chip industry, the FTSE South Korea and Taiwan benchmark equity indexes are up 15% and 24%, respectively for the quarter-to-date period ending November 30.[14] Broad emerging markets rose 11% over the same period.[15] So they've widely outperformed most of their peers quarter-to-date and we think attractive valuations, strong fundamentals and the positive outlook for the chips and materials industries are all critical to keep in mind. Even considering the current demand slump, we think these markets are worthy of a closer look now. Long-term supply chain realignments could benefit both economies.

Investors have also been bargain hunting amid the general equity market downturn in 2022. TSMC in particular has come into focus recently since the United States placed new restrictions on sales of advanced semiconductors to China. The increasingly popular "China plus one" strategy could allow South Korea and Taiwan to pick up some business over the medium term.

Both markets are export-oriented nations, which tend to benefit from weaker currencies. While US dollar strength has eased, both the South Korean won and Taiwan dollar are still significantly cheaper compared to levels seen at the start of the year.

Both markets also hold appealing allocations to materials and industrials holdings—with weightings currently ranging between 14% and 23%.[16] They're home to leading, highly profitable companies with wide moats, and have built a robust ecosystem around them. Taiwanese companies, for example, command some 11% of the world's liner fleet.[17] This is a crucial advantage in times of disrupted supply chains, especially for export-heavy economies, and also given that the majority of global trade is carried by sea.

South Korea additionally boasts impressive government blockchain initiatives, including plans for blockchain-powered networks to improve transparent food supply chains as well as another potential game-changer—new blockchain-based digital IDs to be implanted in smartphones and replace existing credentials. These IDs could potentially transform business and government efficiencies and vastly benefit South Korea's digital economic foundation and metaverse buildout.[18]

Alternatives

Clarion Partners explores the challenges and opportunities within real estate, noting that commercial real estate has seen favorable performance during past periods of rising interest rates. ClearBridge Investments shares its outlook for infrastructure—which is still facing COVID-19-related impacts—in light of rising inflation and bond yields.

Monetary policy impacting US and European real estate

Tim Wang, Ph.D.
Head of Investment Research
Clarion Partners

Bruno Berretta
Vice President, European Market Research
Clarion Partners

Looking at the macro picture, how do you see the impact of continued monetary policy tightening on the real estate market?

Tim: As the Fed aggressively tightens financial conditions to curb inflation, we believe 2023 will be challenging, given high interest rates and the risk of a recession. There are still significant positive tailwinds, however. Consumer spending, labor markets, business activity, corporate balance sheets, and the banking system have all continued to be relatively healthy, with much lower leverage than before the GFC. Depending on how quickly inflation responds to the Fed's tightening, several possible economic scenarios could play out over the next year or two. Nonetheless, we do not believe that the coming downturn will be as severe as the GFC. Moody's Analytics' baseline forecast for US economic growth is generally positive, with an estimated 6.6 million new jobs from 2022 to 2024.

Historically, US commercial real estate (CRE) investment performance has reacted favorably in periods of rising interest rates. Because of strong job growth and overall demand for commercial space, property cash flows have remained relatively healthy. While some property sectors, such as office and mall, have not fully recovered from the pandemic impacts, other property sectors, like industrial, apartment, life sciences and self-storage, have reported sizable ongoing rent growth. In addition, there is a manageable level of new supply, especially since elevated construction costs and supply chain disruptions present additional headwinds for new development projects. Geographically, high-growth markets with

There is a substantial amount of "dry powder" on the sidelines that seeks to be invested in CRE. At the same time, most property owners are not over-leveraged and are under little pressure to sell right away. For these reasons, we believe that it is likely that the transaction market will remain slow and repricing will not be as severe as during the GFC.

thriving industries, business-friendly policies, and strong demographics have also seen robust investment performance, given the strength of underlying demand fundamentals. Steady migration and corporate relocations have led to outperformance in many "sun belt" metros and select, premier suburban areas. Of course, not all sectors or markets will experience strong performance, so knowledgeable guidance is imperative.

Can you talk about the potential disruptions you see as we look ahead into 2023?

Tim: We believe that the combination of higher inflation and rising interest rates will likely have a material yet varied impact on the US CRE market in 2023. There have been some disruptions across real estate debt and equity capital markets. Ten-year financing costs have risen by approximately 200–250 basis points (bps)[19] year-to-date (through mid-November 2022), and higher financing costs, along with tighter lending standards, have added some upward pressure on capitalization (cap) rates and downward pressure on property values. Clarion Partners expects cap rates to expand; the magnitude, however, will depend on various factors. The risk profile of individual assets (sector type, market and lease terms) will matter significantly. High-quality assets with strong net operating income (NOI) growth should fare relatively better.

There is a substantial amount of "dry powder" on the sidelines that seeks to be invested in CRE. At the same time, most property owners are not over-leveraged and are under little pressure to sell right away. For these reasons, we believe that it is likely that the transaction market will remain slow and repricing will not be as severe as during the GFC. The pace of property NOI growth (a positive) and cap-rate expansion (a negative) will determine property value adjustments.

Why should investors consider real estate within their portfolios?

Tim: Looking into 2023, Clarion Partners believes that investors should take a long-term view during this period of uncertainty. The current macro risks and market dislocations may create attractive buying opportunities over the next 12–18 months. In the long run, we believe that, for many investors, an adequate allocation to CRE makes sense, as it has proven to be an effective inflation hedge historically and can offer portfolio diversification benefits.[20] As CRE transitions into the next market cycle, we also think positioning portfolios for better risk-adjusted performance is important, with an overweight to property sectors and markets that have strong pricing power and can grow cash flow over time.

What is the outlook for European commercial real estate in 2023?

Bruno: In 2023, the disruptive social, economic and financial events that dominated 2022 will manifest themselves through various channels and various degrees in the European commercial property market.

The sharp increase in interest rates aimed at tackling rising inflation resulted in a 325–350 bp increase in the cost of debt financing for prime property between the fourth quarter of 2021 and third quarter of 2022, triggering a correction in property yields and values.[21] We expect values to continue to adjust during 2023 until the market finds a new equilibrium. The yield shift is likely to impact low-yielding sectors more proportionally. However, ultimately, the extent of the correction will depend on the risk profile and NOI growth prospects of each individual asset. With inflation expected to remain elevated in 2023, the Consumer Price Index indexation most European commercial leases have written into contracts may partly offset the negative impact of rising cap rates on values.

The increased chances of recession weigh negatively on the European occupational market outlook, but there are reasons to be cautiously optimistic. The European corporate sector is generally in better shape than it was pre-GFC, for example, and most European countries are expected to experience only a mild technical recession during 2023. Sector-wise, property types such as logistics continue to boast excellent market fundamentals and to benefit from numerous structural tailwinds. Across the board, elevated construction costs and rising exit yields are challenging new development projects, curtailing the amount of new supply that will come to market over the next year or two. This may help prevent oversupply even if demand faltered. That said, we believe a weak economic outlook is only likely to exacerbate pressures on sectors like Grade B offices[22] and non-essential retail—adding to the existing challenges of changing shopping and working patterns.

For all the above-mentioned reasons, 2023 is likely to be a challenging year for European commercial property. Yet, we believe the ongoing repricing will present attractive buying opportunities for investors ready to deploy capital.

Infrastructure outlook: Climate legislation, macro drivers create tailwinds

Charles Hamieh
Portfolio Manager
ClearBridge Investments

Shane Hurst
Portfolio Manager
ClearBridge Investments

Nick Langley
Portfolio Manager
ClearBridge Investments

We know the COVID-19 pandemic has had significant impacts on infrastructure. Are these impacts still being felt?

The pandemic continues to create ripple effects in the global economy. From no growth in 2020 to rapid growth in 2021 to slow growth in 2022, we look at 2023 with a base case of recessions in the United States, Europe and the United Kingdom. And growth in China should be below trend for at least a good portion of 2023. Bond yields should push higher heading into 2023 before abating along with inflation later in the year.

For equities, higher bond yields resulting in contracting multiples have characterized the first part of this bear market. The second phase of bear markets is generally an earnings recession, and we expect that to be a force, particularly in early 2023.

Most infrastructure companies have a link to inflation in their revenue or returns. Regulated assets, such as utilities, have their allowed returns adjusted for changes in bond yields over time. As real yields rise, utilities look poised to perform well, and we have currently tilted our infrastructure portfolios to reflect this.

However, we believe the impact on infrastructure should be muted, particularly for regulated assets, where companies generate their cash flows, earnings and dividends from their underlying asset bases. We expect those asset bases to increase over the next several years. As a result, infrastructure earnings look better protected to us when compared with global equities.

How do inflation and rising bond yields typically impact infrastructure companies?

Most infrastructure companies have a link to inflation in their revenue or returns. Regulated assets, such as utilities, have their allowed returns adjusted for changes in bond yields over time. As real yields rise, utilities look poised to perform well (Exhibit 3 on the next page), and we have currently tilted our infrastructure portfolios to reflect this.

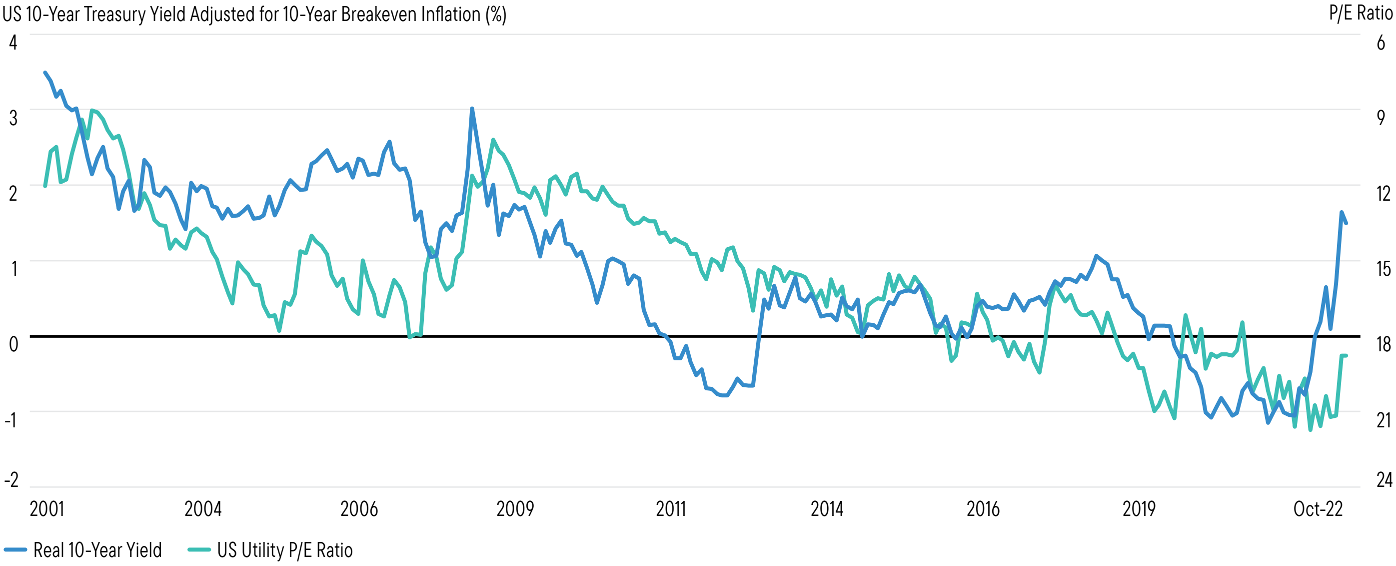
As a result, changes in inflation and bond yields don't generally impact the underlying valuations of infrastructure assets. However, we have seen equity market volatility associated with higher bond yields impact the prices of listed infrastructure securities, making them more compelling when compared with unlisted infrastructure valuations in the private markets.

On top of its relative appeal versus equities, we believe infrastructure should benefit from several macro trends in 2023 and beyond. First, energy security is currently driving policy globally, and a significant amount of infrastructure will need to be built to attain energy security. The Russia-Ukraine war, resulting in high gas prices and supply constraints, has highlighted the importance of energy security and energy investment. This is supportive of energy infrastructure, particularly in Europe, where additional

Utilities Poised to Perform Well

Exhibit 3: US 10-Year Real Yield Vs. Utilities Price-to-Earnings (P/E) Ratio

As of October 31, 2022



Sources: ClearBridge Investments, Bloomberg Finance. **Past performance is not an indicator or a guarantee of future results.**

capacity is needed to supplant Russian oil and gas supply, and in the United States, where new basins are starting up, in part to meet fresh demand from Europe.

In transport, changing trade routes and adjustments to supply chains to bring production closer to home, either through reshoring or near-shoring, are driving demand for new transport infrastructure. Airports are still struggling to return to pre-pandemic passenger levels, and a global recession in 2023 will likely interrupt the bounce-back. In addition, the industry is facing changes in long-term trends like business travel. Communications infrastructure continues to roll out 5G and develop 6G technology. It is also working to reduce network latency, driving significant investments in wireless tower businesses, generally through long-term inflation-linked contracts. However, in the short term, higher interest costs are hitting the bottom line.

In terms of fiscal policy, the US IRA, signed into law in August 2022, is one of the most significant pieces of climate legislation in US history. We believe it will be industry-transformative for utilities and renewables, in particular.

How does the US Inflation Reduction Act (IRA) impact the potential investment opportunities you see?

In terms of fiscal policy, the US IRA, signed into law in August 2022, is one of the most significant pieces of climate legislation in US history. We believe it will be industry-transformative (Exhibit 4 on the next page) for utilities and renewables, in particular. The growing need for electrification—including more EV-charging infrastructure and more residential and smaller commercial rooftop solar—will require new substations, new transformers and upgraded wires along distribution networks. We already see its impact in the 2023 capital expenditures plans of utilities, together with the forward order books of companies involved in the energy transition—such as renewable, storage and components suppliers—increasing their growth profiles.

One major macro takeaway from the IRA: There is no reason to build anything other than renewables from now on. The main reason? Tax credits. Production tax credits for solar/wind are available until 2032 or until a 75% reduction in greenhouse gases is achieved (based off of 2022 numbers). Either way, this is expected to be a tailwind for investment for well over a decade.

IRA Score Card

Exhibit 4: Inflation Reduction Act's Key Impacts

- Tax credits to support wind, solar, storage, hydrogen, and nuclear
- Tax credits to support electric vehicles
- Type, size and length of credits very important
  - Likely available until 2040s
  - Makes renewable more economic than fossil in most cases
  - Green hydrogen parity in some locations

- Requires 15% minimum corporate tax on book income
  - Will impact some larger utilities and pipelines
- Tax credits to support electric vehicles

Source: ClearBridge Investments.

Secular growth drivers for infrastructure should be on full display in 2023. US President Joe Biden wants to reduce emissions by 50% in the United States by 2030, with roughly half of US power coming from solar plants by 2050. It will require nearly US$320 billion to be invested in electricity transmission infrastructure by 2030 to meet net zero by 2050. The dire need for infrastructure spending underpins growth for the next decade and beyond, and the first steps for meeting these long-term goals are being taken now.

Endnotes

1. See Dover, et.al. "Recession risks, stalling growth and timing policy pivots," *Franklin Templeton*, November 4, 2022.
2. Sources: SPDJI, US Department of Treasury, Fed, Macrobond. As of November 30, 2022. Past performance is not an indicator or a guarantee of future results. Indexes are unmanaged and one cannot directly invest in them. They do not include fees, expenses or sales charges. See franklintempletondatasources.com for additional data provider information.
3. Diversification does not guarantee profit or protect against risk of loss.
4. To dig deeper into our views on the role intangibles are playing in markets, including in growth vs. value cycles, see: Dover, et. al. "Growth or Value? For Active Managers It Can Be Both," *Franklin Templeton*, November 10, 2021; and, Cathechis, K. and L. Labedzki. "Deep Waves, The Quiet Undertow of Intangible Assets," *Franklin Templeton*, January 24, 2022.
5. Source: Bank of America US High Yield Constrained Index, as of November 17, 2022. 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.
6. *Ibid.*
7. Source: Bloomberg; Bloomberg US Corporate Bond Investment Grade Index. 9/30/2011–9/30/2022.
8. Source: "Strengthening the Global Semiconductor Supply Chain in an Uncertain Era." Boston Consulting Group. April 1, 2021.
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10. Source: Semiconductor Industry Association, 2020.
11. Source: "Capturing the battery value-chain opportunity." McKinsey & Co. January 7, 2022
12. Source: "The semiconductor decade: A trillion-dollar industry." McKinsey & Co, April 1, 2022. There is no assurance any estimate, forecast or projection will be realized.
13. Source: "In 'unprecedented' global chip slump, SK Hynix to halve investment as recession looms." Reuters. October 26, 2022.
14. Source: Bloomberg, as of November 30, 2022. 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.
15. Source: Bloomberg, as of November 30, 2022. Emerging markets represented by the FTSE Emerging Markets Index. 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.
16. Source: FTSE Russell. November 22, 2022.
17. Source: "Leading ship operator's share of the world liner fleet as of October, 2022." Statista 2022.
18. Source: "RDA shares 'K-agricultural tech' with developing countries." *Korea Post*. 2022.
19. One basis point is equal to 0.01%.
20. Diversification does not guarantee profits or protect against the risk of loss.
21. Source: CBRE European Debt Financing Review. For the United Kingdom, Germany and Italy.
22. Grade or Class B structures typically command average market rent, are typically older than Class A, have less amenities, and are located on the periphery of commercial centers.

Contributors

Ed Perks, CFA
Chief Investment Officer
Franklin Income Investors

Glenn Voyles, CFA
Director of Portfolio Management, Corporate Bonds
Franklin Templeton Fixed Income

Josh Lohmeier, CFA
Portfolio Manager, Investment Grade
Franklin Templeton Fixed Income

Ken Leech
Chief Investment Officer
Western Asset

JP Scandalios
Portfolio Manager
Franklin Equity Group

Dina Ting
Head of Global Index Portfolio Management
Franklin Templeton Exchange-Traded Funds

Tim Wang, Ph.D.
Head of Investment Research
Clarion Partners

Bruno Berretta
Vice President, European Market Research
Clarion Partners

Charles Hamieh
Portfolio Manager
ClearBridge Investments

Shane Hurst
Portfolio Manager
ClearBridge Investments

Nick Langley
Portfolio Manager
ClearBridge Investments

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