



The Global Edge

Financial Insights from WisdomTree

Navigating the Uncharted
Waters Between Growth
and Inflation

September 2022



An empowering blend of global financial research and analysis, insights and macro-commentary on a breadth of today's most compelling economic and investing developments, from an international team of WisdomTree thought leaders.

Authors



Kevin Flanagan
Head of Fixed Income Strategy, U.S.



Aneeka Gupta
Director, Macroeconomic Research, Europe



Nitesh Shah
Head of Commodities & Macroeconomic Research, Europe



Jeff Weniger, CFA
Head of Equity Strategy, U.S.

Without a doubt, one of the most noteworthy developments for global financial markets in 2022 has been the dramatic shift in monetary policy by just about every central bank in the developed world. With inflation raging across the globe, developed market (DM) central banks have been confronted by a force not seen in decades. Indeed, prior to the once-in-a-generation COVID-19 pandemic, it seemed as if the challenge facing central banks was skewed more toward the perplexing lack of demand pressures that was prevalent, a complete 180-degree shift from where we currently stand.

In order to combat this present bout of inflation, unprecedented monetary policy tightening measures—or, at least, ones that have not been witnessed for quite some time—are being deployed and appear poised to remain an integral part of the investment landscape for the rest of this year, and perhaps into 2023.

The Federal Reserve's (Fed) response tends to capture the lion's share of attention, but rate hikes, and in some cases, quantitative tightening (QT), are now prevalent throughout the DM universe. Some of the more headline-making moves are being implemented by the European Central Bank (ECB), the Bank of England, the Bank of Canada and the non-G5 member, the Swiss National Bank. Notably absent from this distinguished group has been the Bank of Japan (BoJ).

Global investors are arguably attempting to navigate uncharted 'central bank waters' as policy makers attempt to tamp down inflation, while at the same time avoiding an economic 'hard landing'.

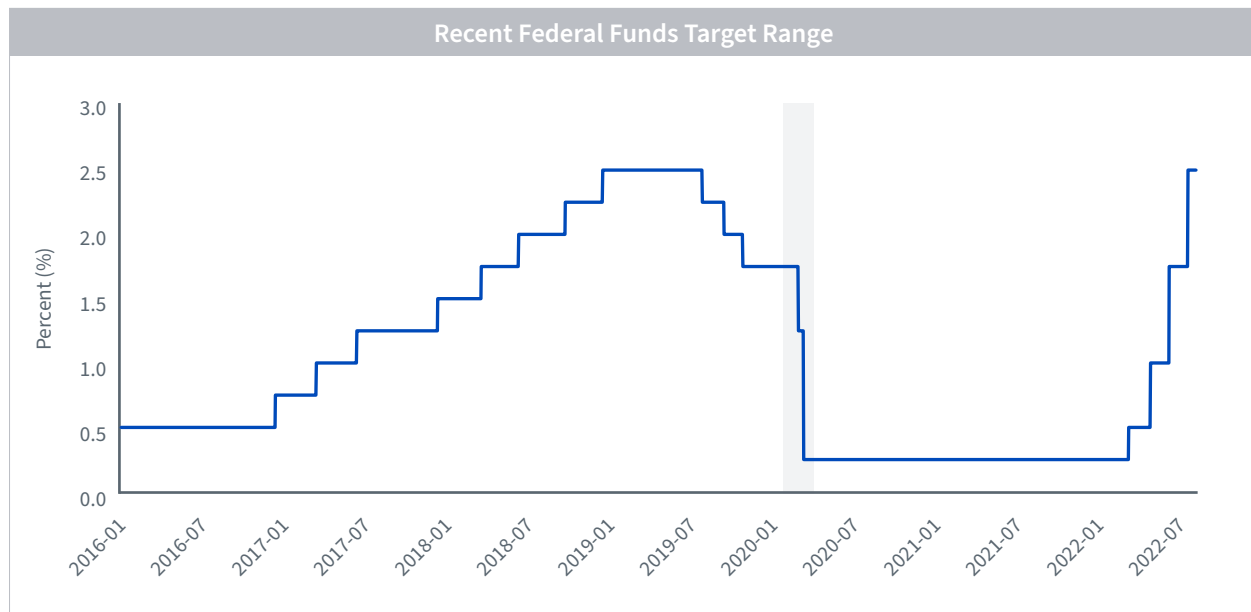
FED WATCH

The Fed has been leading the charge on the tightening front within the DM universe and has implemented a rate hike cycle that investors haven't witnessed since the Volcker years of the 1980s. With a second consecutive rate hike of 75 basis points (bps) at the July Federal Open Market Committee (FOMC) meeting, the target range for Fed Funds was pushed up to 2.25%–2.50%.

With this latest move, the current Fed Funds target now matches the peak range that was implemented during the last rate hike cycle that ended in late 2018. However, there's one big difference: the speed at which this target range was established. During the last rate hike cycle, it took three years to get to this point, while the present scenario took only four months. After implementing unprecedented policy measures to combat the adverse effects of the COVID-19 lockdown, the Fed has now arguably utilized equally unprecedented steps to bring down inflation. Since the March FOMC meeting, there has been a total of 225-bps worth of rate increases in just a four-month period. As recently as 15 March this year, Fed Funds were still at zero! In other words, the Fed has taken 'front-loading' rate hikes to another level.

However, Fed officials do not appear close to ending this rate hike cycle any time soon. According to Chair Jerome Powell, the Fed may "offer less guidance on rate moves" in the future and will make decisions on a "meeting by meeting basis." It is not a question of whether the voting members will lift rates, but rather by how much.

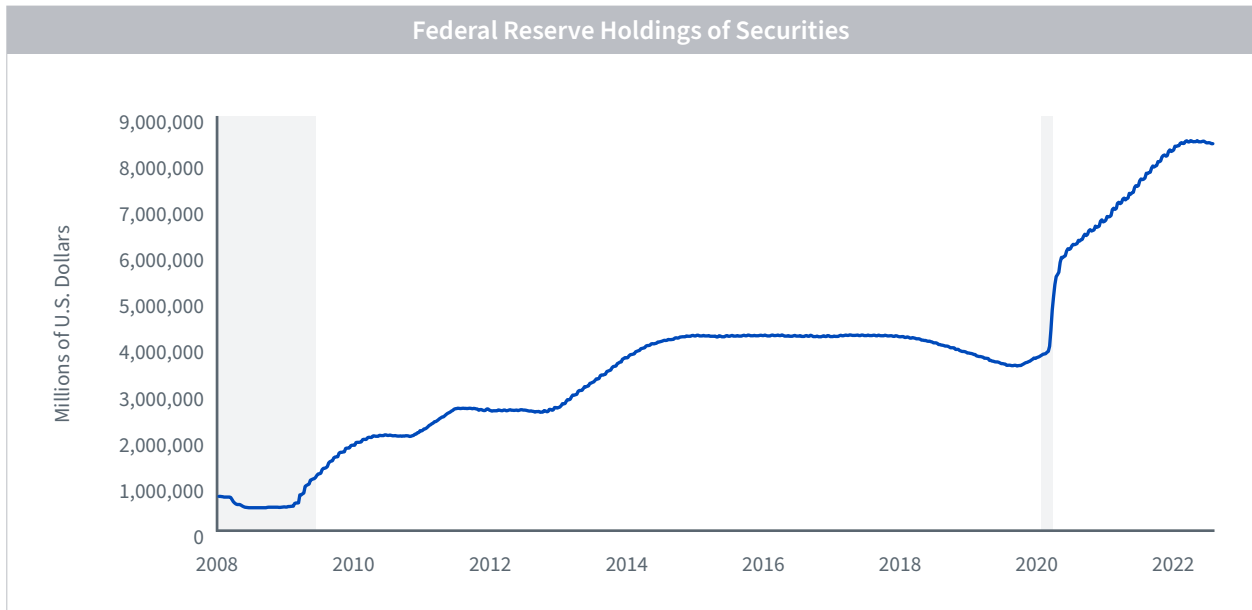
Although U.S. real GDP for Q1 and Q2 places the economy in a technical recession, the voting members have been pushing back on this narrative. In fact, the recent strong showings for U.S. labor market data over the summer have more than likely given the Fed confidence to continue raising rates at each of the three remaining FOMC meetings this year. In our opinion, unless upcoming U.S. economic data reverses course dramatically and point toward a 'deep' recession, a reasonable case can be made for a scenario of at least an additional 100 bps in rate hikes by year-end. This would bring the Fed Funds trading target range up to 3.25%-3.50%, if not higher, a level that can be considered no longer 'neutral,' but rather 'restrictive.'



Source: St. Louis Fed, as of 15 August 2022. Shaded areas indicate U.S. recessions.

ON THE ‘QT’

Fed rate hikes certainly take the spotlight, and rightfully so. But the policy makers’ plans to reduce the balance sheet is rather important for the rate outlook as well. In fact, QT is now underway.

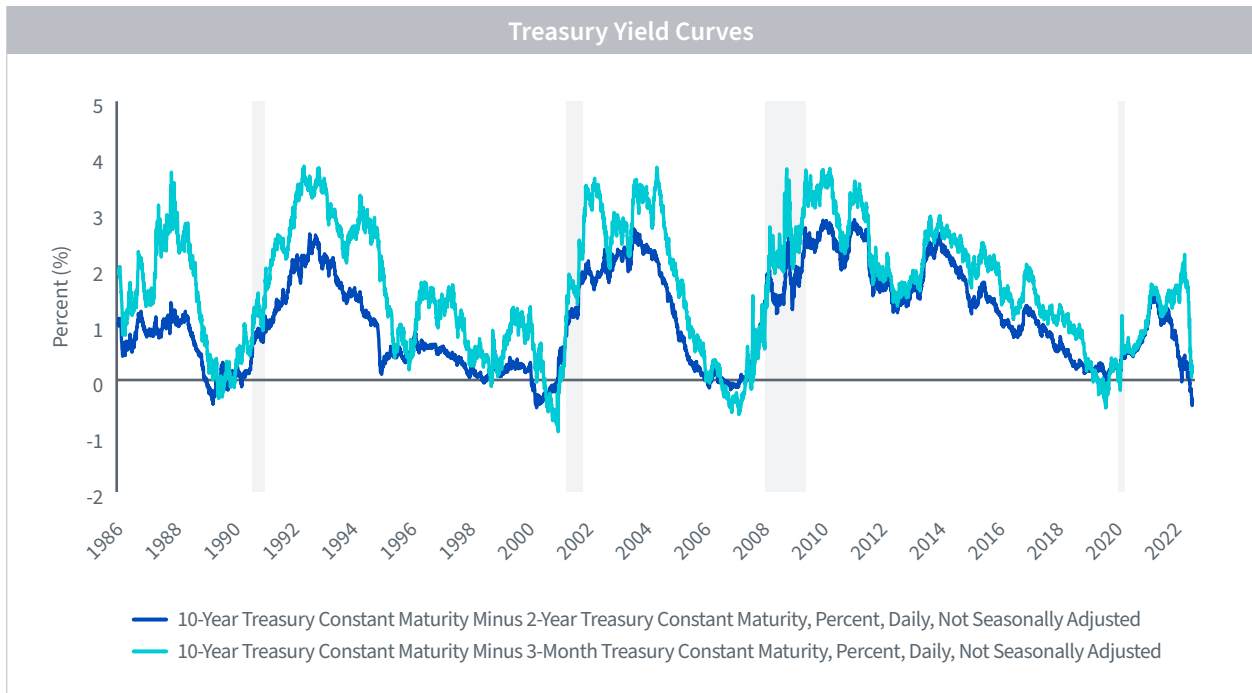


Source: St. Louis Fed, as of 15 August 2022. Shaded areas indicate U.S. recessions.

The Fed wrapped up its latest quantitative easing (QE4) programme in March, when the policy makers bought an incredible \$4.8 trillion in U.S. Treasury (UST) and mortgage-backed securities (MBS). To put this into perspective, QE1, QE2 and QE3 purchases all added up to bring total securities holdings to about \$4.25 trillion over a six-year period (2008–2014). The just-completed QE4 surpassed that total in just two years, which more than doubled the Fed’s total holdings to roughly \$8.5 trillion.

For the record, Treasuries made up 72% of the overall increase, or \$3.4 trillion, while MBS purchases made up the remainder with an increase of \$1.3 trillion. Within the UST component, 42% of the Fed’s buying occurred in maturities that are five years or greater. Against this backdrop, it is reasonable to assume that this sector of the UST curve, which includes the 10-year maturity, will see a noticeable drawdown once the Fed begins this part of its exit strategy.

Thus far, this shrinkage of the Fed’s balance sheet has flown under the radar, much like Powell & Co. had hoped. As of this writing, the decline in securities holdings has been minimal in size. In other words, QT has not yet really begun in any visible fashion. According to the Fed’s own ‘Plan for Reducing the Size of the Federal Reserve’s Balance Sheet,’ the pace of QT is expected to pick up speed and reach maximum monthly drawdown levels beginning in September.



Source: St. Louis Fed, as of 15 August 2022. Shaded areas indicate U.S. recessions.

UST YIELD CURVE INVERTS

The other noteworthy development in the U.S. money and bond markets has centered on the yield curve, specifically the inversion of the UST 2-year/10-year spread. This differential has clearly moved into the negative column and the attention has now turned to the UST 3-month/10-year measure, which, as of this writing, was still in the plus column. However, if the Fed lifts the Fed Funds target to the 3.25%–3.50% level we discussed earlier, this spread could also be headed to inverted territory as well.

Against this backdrop, we would not be looking to extend duration quite yet, as the UST 10-year note yield leaves little, if any, cushion for potential ‘mistakes’ that could result in another move to the upside. Instead, U.S. dollar-based investors could look to a strategy based on Treasury floating rate notes for both rate flexibility and income.

ECB’S MISSION IMPOSSIBLE

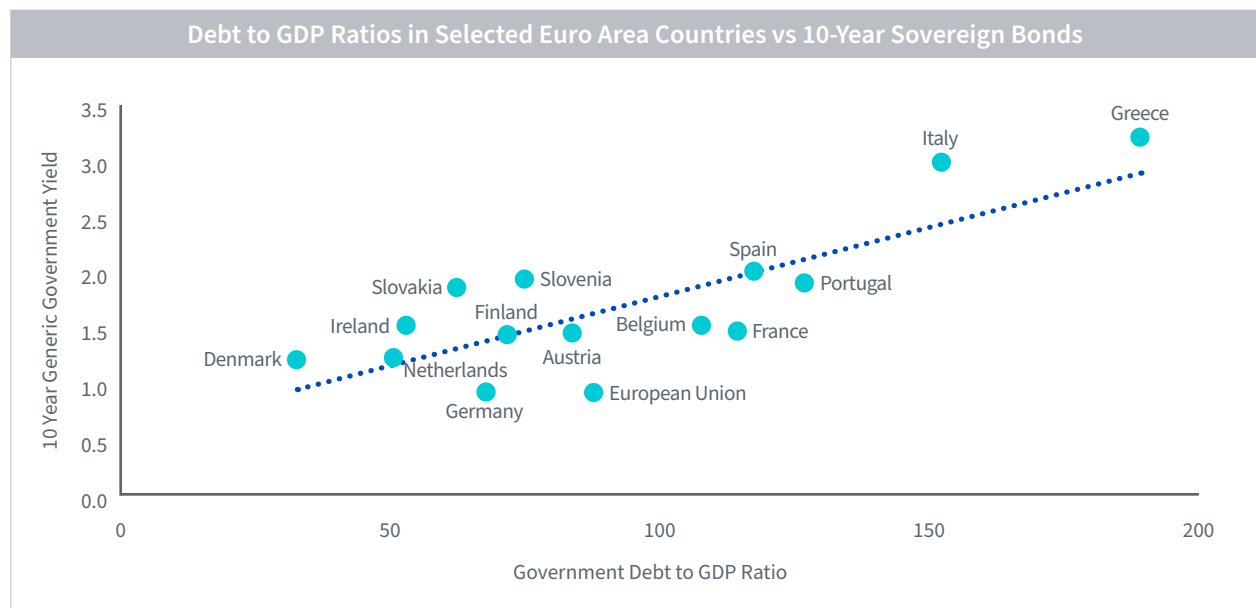
However innovative the central bank may be in developing new tools, it is almost beyond the ECB’s reach to batten down supply shocks with monetary instruments. Add to that the policy maker’s reluctance to use the tools it develops to tackle fragmentation, and we are likely to see the eurozone (EZ) grind into another messy recession that will be as difficult to climb out of as the last one.

WHY IS THE EZ'S PROBLEM DIFFERENT TO THE U.S.?

Europe's growth trajectory has been weak in comparison to that of the U.S. In many ways the EZ economy was hit harder by the global financial crisis in 2008 and its subsequent recovery has been fragile and uneven. Back then there were 27 different regulatory systems for banks, largely based on national rules and national rescue measures. Many European banks and economies suffered.

The financial crisis was also partly to blame for the divide between Northern and Southern European economies. Manufacturing expertise dominated the Northern European economies leading to an export-based surplus. Agriculture and service-based conditions in Southern European economies led to an import-based economy. Because of different economic conditions, bond yield spreads widened. Northern European banks deposited money in higher rate environments in the Southern countries without batting an eyelid on currency concerns. When the crisis exploded in 2010, countries that relied on foreign capital to cover their savings-investment gap were affected, particularly those with substantial current account deficits. Aided by a modest bailout by the International Monetary Fund (IMF), EZ leaders agreed on a €750 billion rescue package. They also established the European Financial Stability Facility (EFSF) in May 2010. Countries receiving EFSF bailout funds were required to undergo harsh austerity measures. The poorer nations blame the harsh austerity measures for hindering their economic growth prospects. Fast forward to today, and the austerity playbook of the 2010s has been discarded in favour of solidarity.

The highest ratios of government debt to GDP at the end of the first quarter of 2022 were recorded in Southern European economies, led by Greece (189.3%), Italy (152.6%), Portugal (127.0%) and Spain (117.7%). There is an almost linear relationship between the debt-to-GDP ratio and the level of yields. Countries that have more debt must pay higher interest rates as investors require extra compensation for buying debt of highly indebted countries. The key challenge is that fiscal policy positions of each euro area member state make it harder for common monetary policies to be effective. The Maastricht Treaty debt-to-GDP limit is 60%. Yet the number of euro area countries that satisfy this criterion is only 8 of the 20 (~40%).

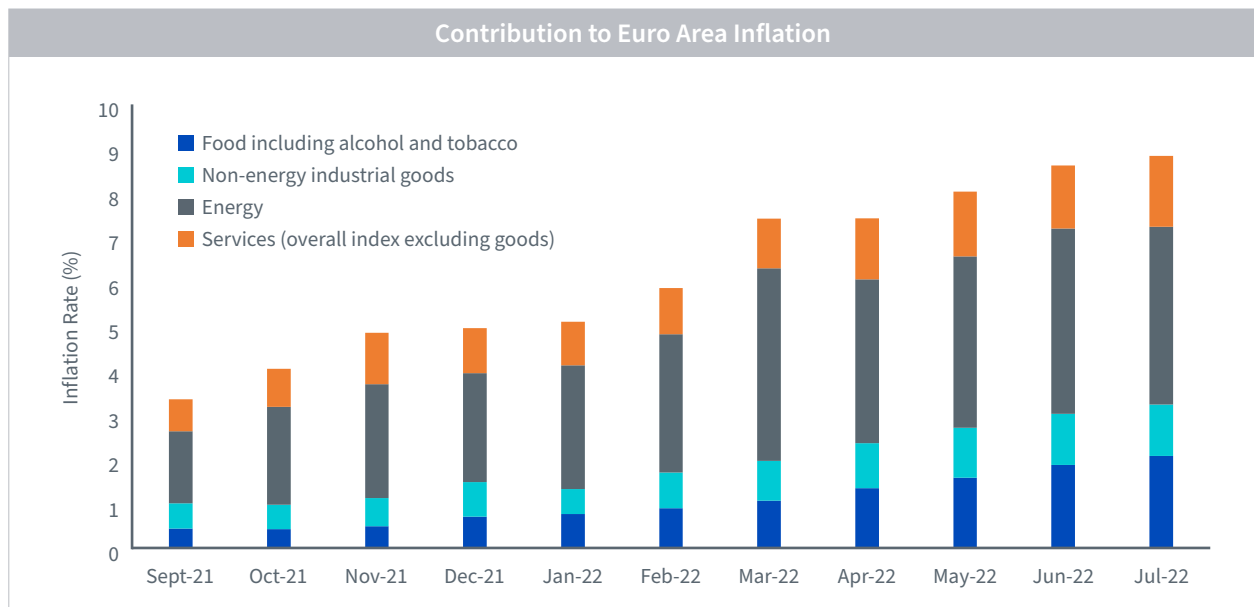


Sources: Eurostat, WisdomTree, as of 31 July 2022.

PROXIMITY TO RUSSIA

One key complication for the EZ is its proximity to Russia and dependency on that country for energy, food and critical metals. On proximity, there is the constant threat of Russia’s aggression expanding to Baltic states and Finland. Acts of solidarity with NATO nations could raise risks of more sanctions or outright increase in military spending, both with significant economic consequence.

Russia has clearly weaponised energy and food dependency (see appendix). Even before the war in Ukraine started, Russia had been restricting the flow of natural gas to the EU, leaving the bloc with low levels of gas storage. Currently, flows of gas moving through the Nord Stream 1 pipeline are hampered by maintenance delays that Russia blames on sanctions stopping the movement of key parts. It’s more likely that Russia is dragging its feet to inflict pain on the EU. The euro area is contending with energy-shock inflation far greater than in the U.S. With energy prices up 40% year over year (YOY) in July 2022, energy contributed to just under half of the 8.9% YOY inflation reading in July.¹



Source: Eurostat, July 2022.

While central banks may be focused on core measures of inflation when deciding on policy, they need to be mindful of the economic pain being felt by households and companies as they raise the risk of recessionary outcomes and thus price volatility. Central banks are painfully aware that interest rate increases do not plant more crops or assist in energy production and could in fact deter progress on domestic production here.

¹ Source: Eurostat.

WHAT'S HAPPENED SO FAR?

The ECB raised rates for the first time in 11 years on 21 July 2022. With further rate increases in the pipeline, it will end an era of negative interest rates that has lasted for eight years. The central bank had already ended its quantitative easing programme, firstly by halting purchases under its Pandemic Emergency Purchase Programme (PEPP) in December 2021 and then its Asset Purchase Programme (APP) in July 2022. The APP had been around since mid-2014 and cumulative assets under the programme stood at €3.4 trillion at the end of June 2022. The ECB will continue to reinvest proceeds from maturing debts, in what it estimates to be an extended period after the rate increases.

In recognition of the fact that countries across the EZ are moving at different speeds and some countries' bond markets will be more vulnerable to monetary tightening, the central bank has developed a new tool, the Transmission Protection Instrument (TPI, see appendix). Fragmentation of the currency bloc is something the ECB cannot afford, and we believe the central bank needs to prove this experimental tool is a success.

Like the Fed, the ECB has disposed of forward guidance, a once-valuable instrument in its tool kit. In fact, running up to the last meeting, the ECB was largely telegraphing a 25-bps move and then delivered a 50-bps hike. In its communications, it is stressing the need for "flexibility" and emphasised its next moves will be dependent on incoming data. In other words, it will not remain a hostage to its current policy direction.

STRATEGY GOING FORWARD

While the ECB is not to blame for the price shocks of the last year, it is to blame for its slow response. The pass through of higher natural gas prices raises upside risks for inflation in the near term. At the same time, a more robust tourist season following two COVID-19 impaired summers will delay the start of recession until Q4 2022. For this reason, the ECB will likely focus more on current inflation than on recession risks. We expect at least an additional 50 bps rate hike by year end after this week's ECB rate moves.

The macro environment by December is likely to be vastly different with inflation falling in late 2022, owing to base effects. We believe a recession is likely to take hold in late 2022 and early 2023. However, at that point the ECB may have less headroom to cut than the Fed.

RISKS

The TPI appears to meet the concerns of the Bundesbank President Joachim Nagel, who had demanded that the use of the new instrument be temporary, confined to exceptional circumstances and tied to conditions. According to Christine Lagarde, the ECB would rather not use the TPI, but at the same time, she made clear that they would not hesitate to put it to use. Clearly the ECB is hoping that this new tool, like the Outright Monetary Transactions, will never be used. But tools designed never to be used have questionable credibility.

SOWING THE SEEDS FOR AMPLIFYING THE COMMODITY SUPER CYCLE

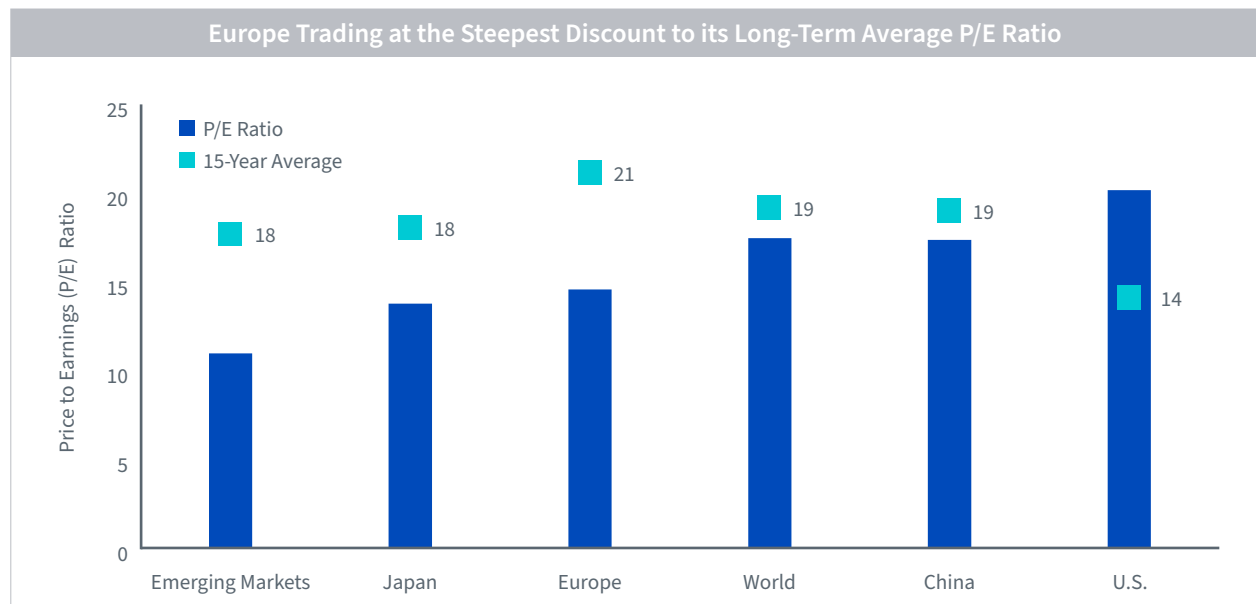
Commodity supply often faces challenges catching up with demand. While demand can rise quite abruptly, supply can often take years of investment before dialing higher. With both the Fed and ECB likely to front-load their monetary tightening, we believe the incentive to raise investment in commodity supply is lacking. Focus on demand destruction right now may be myopic. By the time both central banks hit the easing button again we may find commodity markets are even more undersupplied than they are right now.

Energy and agricultural commodities—both supply-hampered by the Ukrainian war—are unlikely to see supplies rise considerably higher. REPowerEU, the European Commission’s blueprint to wean off Russian energy dependency, while providing incentives to invest in diversifying energy sources, ramp up renewables production and ration energy consumption, falls short of securing the supply chain to bring all the critical materials to deliver on this transition. Industrial metals are essential to realising the energy transition that is needed under this plan. With base metal prices (for example: copper, aluminium, zinc, nickel) having fallen the hardest in the commodity price correction in recent months, miners are facing an uphill struggle to invest in production expansion. Smelters, presented with high and increasing energy bills (and possibly forced energy rationing) are likely to keep production volumes low, contributing to the tightness of finished metal products.

An infrastructure and energy transition-induced commodity super cycle had arguably started earlier in the post-COVID-19 rebuild effort (that is, 2021). Current central bank hawkishness may only pause this super cycle temporarily, simply to find the cycle is amplified as supply is tightened further.

ARE EQUITIES PRICING IN A RECESSION?

A tightening cycle into a slower-growth macro landscape has never been helpful for equities. European equities are faced with an extremely challenging backdrop ranging from high energy prices, growing cost pressures, negative earnings revisions estimates and cooling growth. Amid the sell-off in equity markets in the first half of this year, European equities currently trade at a price-to-earnings ratio (P/E) of 14.6 times, marking the steepest discount versus its long-term average of 21 times compared to other major markets. The risk of a recession to a certain degree is being priced into European equity markets.



Sources: Bloomberg, WisdomTree, as of 29 July 2022.

The second-quarter earnings season in Europe brings to light margin headwinds evident from the widening gap between earnings per share and sales revisions. Selective opportunities may present themselves in the energy, industrials and consumer staples sectors, while margin risks are building for technology, telecoms, food retail, real estate, materials and capital goods sectors. Across factors, the value factor continues to outperform in 2022 despite recent signs of weakness. Broadly in the EZ, there has been no distinctive outperformance in large or small caps. Within large-cap stocks,² the profitability factor has offered positive returns. The dispersion between performance of factors and sectors opens attractive opportunities within European equities. Dividend payout ratios, the lowest in 25 years, provide confidence in the conservative payout policies that European firms have maintained and should provide grounds for resilience even if profits start to contract.

BOJ'S BUCKING THE TREND

In sharp contrast to the series of policy rate hikes witnessed all summer in most other major economies, Japan remains steadfastly committed to “yield curve control” (YCC). One of the core tenets of YCC is BoJ head Haruhiko Kuroda’s firm commitment to keeping 10-year Japanese government bond (JGB) yields under 0.25%. It’s a key chapter in the BoJ’s multi-year experiment with ZIRP, or “zero interest rate policy.”

Earlier this summer—when global rates were really taking off—it looked like the BoJ was backed against the wall, as it had to keep hitting the bid as 0.25% was touched again and again by traders who were keen to send Japanese bond yields chasing the spikes in most other nations.

The BoJ appears to have achieved success. At 0.20%, the 10-year JGB is now a handful of basis points from the explicit 0.25% upper boundary, indicating that the risk of the pot coming to a boil—with yields blowing out—has subsided.

YCC sets up a relative valuation case for Japan, on account of the “TINA” trade that states “There is No Alternative” to owning stocks in a zero-yield bond world. The argument is that maybe TINA is dead in the U.S. now that the Fed has decided to attack inflation by aggressively raising interest rates. If the ECB’s Lagarde keeps raising rates beyond the 50-bps hike implemented a few weeks ago, maybe the TINA case subsides there too.

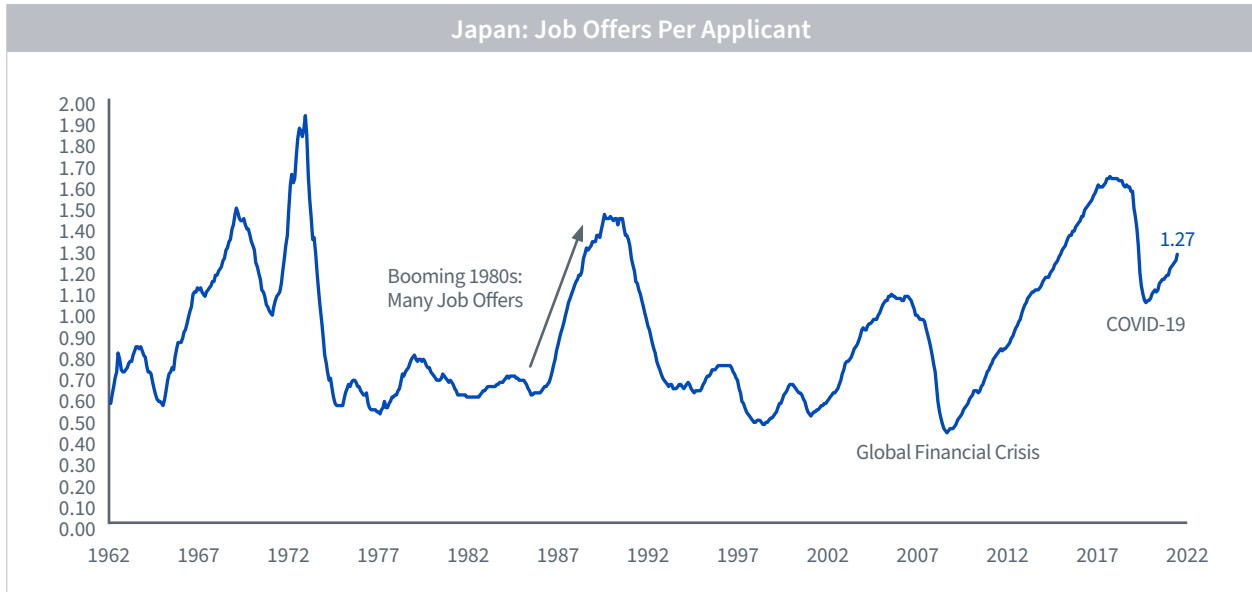
But TINA is alive and well in Japan, because ZIRP is still on the scene, unmoved by the efforts of the Fed and the ECB.

Because of that yield cap, the MSCI Japan Equal-Weighted Index’s 7.79% earnings yield offers a 759-bps gap over the aforementioned 0.20% yield on 10-year JGBs. In contrast, 10-year U.S. Treasury yields are considerably higher than yields in Japan. Because the T-note is near 3%, the 6.47% earnings yield on the MSCI USA Equal-Weighted Index only offers a 369-bps margin over sovereign debt yields in the U.S.

With the Street hyper-focused on whether the U.S. recession will cause labor market deterioration, some of Japan’s jobs data is heartening. For one, the demographic crisis has a silver lining: when there are “no” young people, the ones who float resumes can take their pick of the jobs on offer.

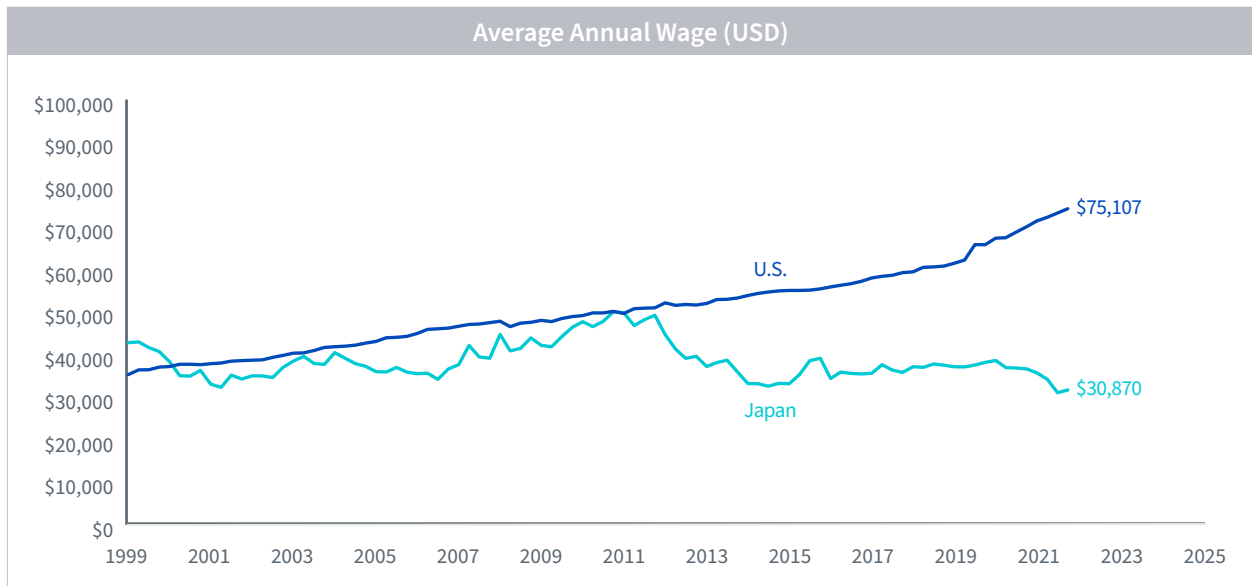
² Source: Bloomberg, using stocks listed on the EuroStoxx 600 Index.

Though we write this in August, we only have data through June for Japan’s job offers-to-applicants ratio. Nevertheless, it’s robust. The series has moved up or sideways every month since October 2020. At 1.27, the offers-to-applicants ratio is at levels seen pre-COVID-19—and, before that, in the booming 1980s.



Sources: Refinitiv, Japan Ministry of Health, Labor and Welfare, Japan Institute for Labor Policy and Trade, as of July 2022.

Maybe one of the reasons that Corporate Japan is willing to extend an abundance of job offers is because Kuroda has created a large wage gap versus the U.S. when calculating compensation in USD terms. In the figure below, years of flat wage growth in Japan manifests as a decline in average annual wages to our USD eyes.



Sources: Refinitiv, OECD, as of Q3 2022, with currency conversion as of 19 July 2022 exchange rate.

The country has also found currency competitiveness relative to its biggest regional and political rival: China. Because that country's currency is so highly constrained by the People's Bank of China (PBoC), the yen has also weakened relative to the Chinese yuan in 2022.³ As recently as 2011, one Chinese yuan fetched less than 12 yen. Now it buys about 20 yen, a new record that exceeds even 2015 levels, when the exchange rate traded in the ¥20 per CNY range.

Though much of Japan's inflation battle may still lie ahead—assuming the yen remains weak—the fact remains that Japan's 2.4% consumer price inflation is still far lower than the 8.5% rate reported in the latest U.S. report.

We are constructive on Japan's stock market in a global recession scenario, especially if the primary issue becomes one of labor market weakness in Europe and North America. In that environment, if the Japanese stock market can maintain prevailing earnings levels, or even have them dip just slightly, it could light up the market from a TINA perspective, as long as Kuroda remains committed to ZIRP.

³ Source: Refinitiv, as of 19 August 2022.

Appendix

Energy, Food and Metal Crisis

Oil and gas: The European Union (EU) imported 2.2 million barrels per day (mbd) of Russian crude in 2021, including 0.7 mbd by pipeline. The EU thus was the largest consumer of Russia's 5 mbd crude export market. The bloc also imported 1.2 mbd of refined oil products from Russia.

The EU is very dependent on Russia for natural gas imported via pipelines. Close to 25% of German energy supplies comes from Russian natural gas. Alternative sources of imports are more complicated to find as non-pipeline natural gas would need liquification and regasification, which requires infrastructure on a scale the EU doesn't currently have in place.

It is entirely possible that Russia could switch off completely its natural gas supplies to the EU. Since the war started in Ukraine, Russia has actually doubled its oil and gas revenues from the EU in the March–July period (relative to the average in past years) according to International Energy Agency calculations. With those revenues banked, Russia can afford to forgo natural gas income to gain political leverage.

The EU has announced plans to wean itself off Russian oil dependency. EU leaders say they will block Russian oil imports arriving by sea by the end of 2022, and has committed to reducing gas imports from Russia by two-thirds within a year. It is also engaging in energy rationing, with the aim to reduce natural gas use by 15% between 1 August, and 31 March 2022.

Grain: Russia and Ukraine are considered the breadbasket of Europe. In May 2022, there were 22 million tonnes of grain sitting in silos in Ukraine that could not be exported. Although a United Nations-brokered deal to allow the safe passage of exports was struck in mid-July, within hours of signing the deal, Russia launched a missile attack on Ukraine's key grain-exporting port of Odessa. It is thus doubtful Ukrainian supplies will make their way to the euro area.

Metals: Russia is the largest producer of palladium and refined nickel and third-largest producer of aluminium. While neither nickel nor Norilsk Nickel (Russia's main nickel producer) are subject to any sanctions directly, Vladimir Potanin, who controls 35% of Norilsk Nickel, is sanctioned by the UK. The London Platinum and Palladium (LPPM) Market suspended two government-owned Russian platinum refiners from its good delivery list, restricting investor access to Russian-produced palladium. However, most palladium used in the auto industry is still accessible. In short, there are complications in the supply chain. Moreover, the energy crisis is driving many EU metal smelters to shutter production, driving localised price spikes.

Energy, food and metal price shocks are likely to continue as a source of inflation for the euro area as a result.

Transmission Protection Instrument (TPI)

The European Central Bank launched a Transmission Protection Instrument to prevent monetary policy fragmentation. The creation of the TPI raises a legitimate question – why would the ECB create the TPI when it has a suitable alternative in place called the Outright Monetary Transactions (OMT) program? The reason is the TPI offers additional financial support with minimal conditionality.

The TPI permits the ECB to use its own discretion (by governing council vote) to engage in unlimited purchases of paper from any member country if it considers the behaviour of its credit spread (relative to German bunds) as having come out of line “with fundamentals.” In determining that outcome, the ECB will check with the European Union (EU) commission concerning the evolution of public finances in the given country. The bond purchases under TPI are not “restricted ex ante,” can range from maturities between 1 and 10 years, and be focussed on public sector securities.

The fiscal conditions attached to the OMT are much broader than those applied to the TPI. The TPI's eligibility requirements do not mention the International Monetary Fund (IMF) or the need for conformity with an appropriate European Financial Stability Facility/European Stability Mechanism (EFSF/ESM) program, unlike the OMT. However, the TPI does require the member state to demonstrate fiscal sustainability based on debt sustainability analysis by the European Commission, the ESM, and the IMF, among others. It also requires the member state government to exhibit an absence of severe macroeconomic imbalances, implying that it is not subject to an excessive-imbalance procedure and has not failed to act on an EU council recommendation. These macro eligibility criteria will serve as an input into the decision by the council. In this respect, the TPI deviates from the OMT programme, as the council has complete discretion over the activation of the tool. This allows the governing council to activate TPI quickly and unilaterally in the event of unwarranted sovereign stress.

Since its creation in September 2012, OMT has not been activated as eurozone governments have been reluctant to adhere to the OMT's stringent eligibility criteria. The ECB would only use OMT if a country had already been granted support from the ESM. Germany, as the major ESM shareholder, could reject any use of the OMT. The TPI will not be open to such a potential veto. Amid the rise of Italian political risk, following the resignation of Prime Minister (and former ECB President) Mario Draghi, Italy is likely to join the already long list of eurozone member states in need of TPI support, including Greece, Portugal, Spain, Belgium and Cyprus.

Glossary

Asset Purchase Program (APP): The European Central Bank's APP is part of a package of non-standard monetary policy measures that also includes targeted, longer-term refinancing operations, and which was initiated in mid-2014 to support the monetary policy transmission mechanism and provide the amount of policy accommodation needed to ensure price stability. **Balance sheet:** Refers to the cash and cash equivalents part of the current assets on a firm's balance sheet and cash available for purchasing new position. **Basis point (bp):** 1/100th of 1%. **Central bank:** A national bank that provides financial and banking services for its country's government and commercial banking system, as well as implementing the government's monetary policy and issuing currency. **Commodity:** A raw material or primary agricultural product that can be bought and sold. **Debt-to-GDP ratio:** The metric comparing a country's public debt to its gross domestic product (GDP). **Developed market (DM):** A country that is most developed in terms of its economy and capital markets. The country must be high income, but this also includes openness to foreign ownership, ease of capital movement and efficiency of market institutions. **Dividend pay-out ratio:** The ratio of the total amount of dividends paid out to shareholders relative to the net income of the company. **Earnings per share:** Total earnings divided by the number of shares outstanding. Measured as a percentage change as of the annual Index screening date compared to the prior 12 months. Higher values indicate greater growth orientation. **European Central Bank (ECB):** The prime component of the euro system and the European System of Central Banks as well as one of seven institutions of the European Union. **European Financial Stability Facility (EFSF):** A special purpose vehicle financed by members of the eurozone to address the European sovereign-debt crisis. **Federal Funds (Fed Funds):** Excess reserves that commercial banks and other financial institutions deposit at regional Federal Reserve banks. **Federal Open Market Committee (FOMC):** The branch of the Federal Reserve Board that determines the direction of monetary policy. **Federal Reserve (Fed):** The Federal Reserve System is the central banking system of the U.S. **Gross domestic product (GDP):** The sum total of all goods and services produced across an economy. **Inflation:** Characterized by rising price levels. **International Monetary Fund (IMF):** An agency of the United Nations, and an international financial institution, that works to achieve sustainable growth and prosperity for all of its 190 member countries. **Inverted yield curve:** An interest rate environment in which long-term debt instruments have a lower yield than short-term debt instruments of the same credit quality. **Maastricht Treaty:** The term refers to the international agreement that was responsible for the creation of the European Union (EU). **Macro environment:** An environment focused on issues impacting the overall economic landscape as opposed to those only impacting individual companies. **Margin risks (risk margin):** Represents the potential costs of transferring insurance obligations to a third party should an insurer fail. **Mortgage-backed securities (MBS):** Fixed income securities that are composed of multiple underlying mortgages. **Monetary policy:** Actions of a central bank or other regulatory committee that determine the size and rate of growth of the money supply, which in turn affects interest rates. **NATO:** The North Atlantic Treaty Organization, also called the North Atlantic Alliance, is an intergovernmental military alliance between 30 member states—28 European and two North American. **Outright Monetary Transactions:** A program of the European Central Bank under which the bank makes purchases in secondary, sovereign bond markets, under certain conditions, of bonds issued by Eurozone member-states. **Price-to-earnings (P/E) ratio:** Share price divided by earnings per share. Lower numbers indicate an ability to access greater amounts of earnings per unit of money invested. **Pandemic Emergency Purchase Program (PEPP):** A non-standard monetary policy measure initiated by the European Central Bank in March 2020 to counter the serious risks to the monetary policy transmission mechanism and the outlook for the euro area posed by the coronavirus (COVID-19) outbreak. **Quantitative easing (QE):** A government monetary policy occasionally used to increase the money supply by buying government securities or other securities from the market. Quantitative easing increases the money supply by flooding financial institutions with capital, in an effort to promote increased lending and liquidity. **Quantitative tightening (QT):** Quantitative easing is a process whereby a central bank targets lowering longer-term interest rates by purchasing bonds and other securities to stimulate the economy. Quantitative tightening is the reverse process whereby securities are either sold or the proceeds of maturing securities are not reinvested with the goal of tightening economic conditions to prevent the economy from overheating. **Recession:** Two consecutive quarters of negative GDP growth, characterized generally by a slowing economy and higher unemployment. **REPowerEU:** A European Commission proposal to end reliance on Russian fossil fuels before 2030 in response to the 2022 Russian invasion of Ukraine. **Size capitalization:** A measure by which a company's size is classified. Large caps are usually classified as companies that have a market cap over \$10 billion. Mid-caps range from \$2 billion to \$10 billion. Small caps are typically new or relatively young companies and have a market cap between \$200 million and \$2 billion. **Sovereign bond:** A government bond or sovereign bond is a debt obligation issued by a national government to support government spending. It generally includes a commitment to pay periodic interest, called coupon payments, and to repay the face value on the maturity date. **Spread:** Typically refers to a difference between a measure of yield for one asset class and a measure of yield for either a different subset of that asset class or a different asset class entirely. **Transmission Protection Instrument (TPI):** A new financial instrument created by the European Central Bank in order to help protect the euro area from future economic shocks like high inflation. **Treasury (UST):** A debt obligation issued by the U.S. government with payments of principal and interest backed by the full faith and credit of the U.S. government. **Treasury note (T-note):** A debt obligation issued by the U.S. government that matures in less than 30 years. **Value:** Characterized by lower price levels relative to fundamentals, such as earnings or dividends. Prices are lower because investors are less certain of the performance of these fundamentals in the future. This term is also related to the Value Factor, which associates these stock characteristics with excess returns vs the market over time. **Yield curve:** The graphical depiction of interest rates on government bonds, with the current yield on the vertical axis and the years to maturity on the horizontal axis. **Zero Interest-Rate Policy (ZIRP):** A macroeconomic concept describing conditions with a very low nominal interest rate.

Index Definitions

MSCI Japan Equal-Weighted Index: Designed to measure the performance of the large- and mid-cap segments of the Japanese market. With 238 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Japan.

MSCI USA Equal-Weighted Index: Designed to measure the performance of the large- and mid-cap segments of the U.S. market. With 627 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the U.S.

IMPORTANT INFORMATION (U.S.)

U.S. investors only: Investors should carefully consider the investment objectives, risks, charges and expenses of the Funds before investing. To obtain a prospectus containing this and other important information, please call 866.909.9473, or visit WisdomTree.com to view or download a prospectus. Investors should read the prospectus carefully before investing.

There are risks associated with investing, including the possible loss of principal. Foreign investing involves currency, political and economic risk. Investments focusing on a single country, sector and/or that emphasize investments in smaller companies may experience greater price volatility. Investments in emerging markets, real estate, currency, fixed income and alternative investments include additional risks.

Past performance is not indicative of future results. This material contains the opinions of the authors, which are subject to change, and should not be considered or interpreted as a recommendation to participate in any particular trading strategy or deemed to be an offer or sale of any investment product, and it should not be relied on as such. There is no guarantee that any strategies discussed will work under all market conditions. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast of future events or a guarantee of future results. This material should not be relied upon as research or investment advice regarding any security in particular. The user of this information assumes the entire risk of any use made of the information provided herein. Unless expressly stated otherwise, the opinions, interpretations or findings expressed herein do not necessarily represent the views of WisdomTree or any of its affiliates.

Jeff Weniger and Kevin Flanagan are Registered Representatives of Foreside Fund Services, LLC.

Nitesh Shah and Anneka Gupta are employees of WisdomTree UK Limited, a European subsidiary of WisdomTree Asset Management Inc.'s parent company, WisdomTree Investments, Inc.

WisdomTree Funds are distributed by Foreside Fund Services, LLC, in the U.S.

You cannot invest directly in an index.

IMPORTANT INFORMATION (EU)

Marketing communications issued in the European Economic Area (“EEA”): This document has been issued and approved by WisdomTree Ireland Limited, which is authorised and regulated by the Central Bank of Ireland.

Marketing communications issued in jurisdictions outside of the EEA: This document has been issued and approved by WisdomTree UK Limited, which is authorised and regulated by the United Kingdom Financial Conduct Authority.

WisdomTree Ireland Limited and WisdomTree UK Limited are each referred to as “WisdomTree” (as applicable). Our Conflicts of Interest Policy and Inventory are available on request.

For professional clients only. The information contained in this document is for your general information only and is neither an offer for sale nor a solicitation of an offer to buy securities or shares. This document should not be used as the basis for any investment decision. Investments may go up or down in value and you may lose some or all of the amount invested. Past performance is not necessarily a guide to future performance. Any decision to invest should be based on the information contained in the appropriate prospectus and after seeking independent investment, tax and legal advice.

This document is not, and under no circumstances is to be construed as, an advertisement or any other step in furtherance of a public offering of shares or securities in the United States or any province or territory thereof. Neither this document nor any copy hereof should be taken, transmitted or distributed (directly or indirectly) into the United States.

This document may contain independent market commentary prepared by WisdomTree based on publicly available information. Although WisdomTree endeavours to ensure the accuracy of the content in this document, WisdomTree does not warrant or guarantee its accuracy or correctness. Any third party data providers used to source the information in this document make no warranties or representation of any kind relating to such data. Where WisdomTree has expressed its own opinions related to product or market activity, these views may change. Neither WisdomTree, nor any affiliate, nor any of their respective officers, directors, partners, or employees accepts any liability whatsoever for any direct or consequential loss arising from any use of this document or its contents.

This document may contain forward looking statements including statements regarding current expectations or beliefs with regards to the performance of certain assets classes and/or sectors. Forward looking statements are subject to certain risks, uncertainties and assumptions. There can be no assurance that such statements will be accurate and actual results could differ materially from those anticipated in such statements. WisdomTree strongly recommends that you do not place undue reliance on these forward-looking statements.

Any historical performance included in this document may be based on back testing. Back testing is the process of evaluating an investment strategy by applying it to historical data to simulate what the performance of such strategy would have been. However, back tested performance is purely hypothetical and is provided in this document solely for informational purposes. Back tested data does not represent actual performance and should not be interpreted as an indication of actual or future performance.