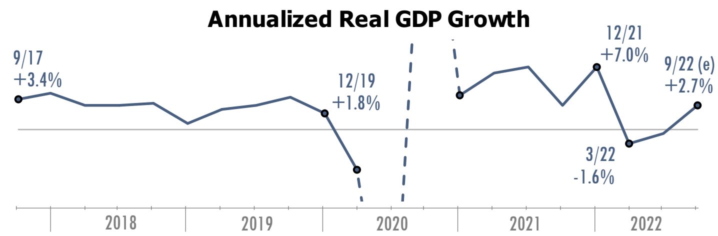
Bellwether CONSULTING

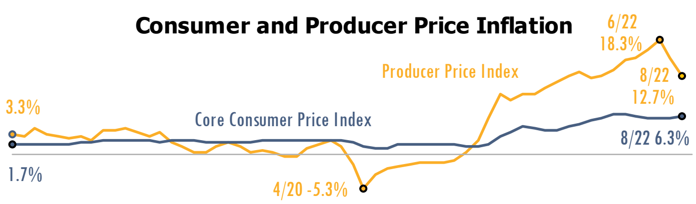
Your Quarterly Update on the Financial Markets
September 30, 2022

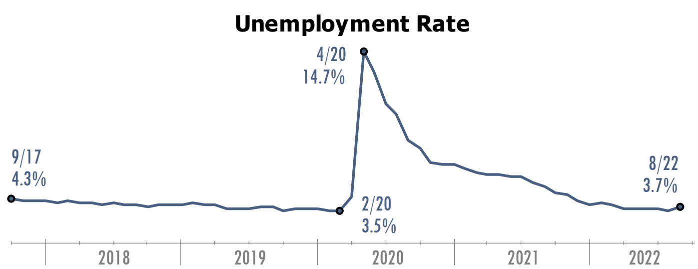
MARKET Recap

The US Economy: "Sovereign Stress"

Real economic growth for Q2 was negative for a second quarter running, coming in at a -0.6% pace. The components showed relatively healthy consumer and business conditions, while businesses and the government continue to struggle with supply chain disruptions, energy prices, and rising interest rates. The construction and durable goods industries were impacted by rates, and federal spending decreased due to the release of crude oil from the Strategic Petroleum Reserve.



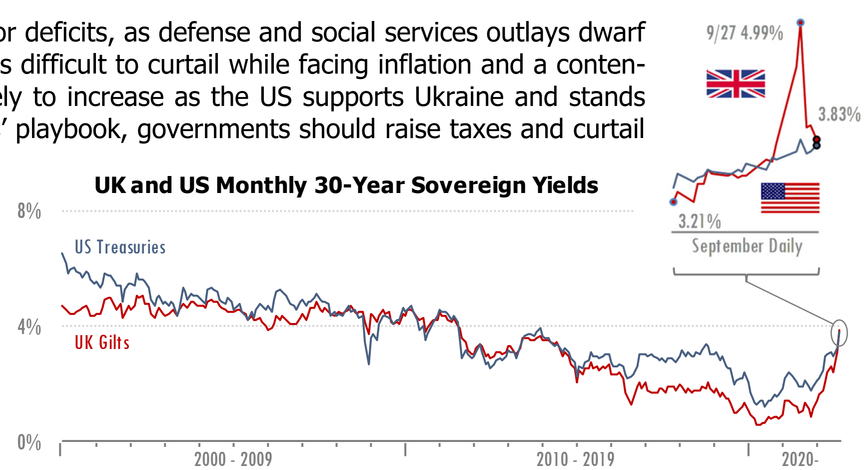




While current forecasts of GDP growth call for a positive Q3 print, investors anticipate a recession in the next 12 months with high certainty. The concern is understandable, as most central banks outside of Asia are tightening sharply. Incremental data reported in Q3 indicates that monetary pressure is beginning to work, but not as fast as policymakers would like. For example, the Producer Price Index contracted sharply in July and August after peaking in June. Input prices are eventually passed along to end consumers, but the process is complex, and manufacturers in particular are still struggling to manage inventories in the post-COVID environment. Following their September meeting, the Federal Open Market Committee affirmed its commitment to raise rates for as long as it takes to quell this inflationary surge. The stock and bond markets did not welcome the news.

Europe faces greater challenges due to the specter of an energy embargo and strained social support systems. In the UK, a mini-crisis emerged following the September release of the new government's mini-budget, which emphasized increased borrowing and lower taxes. The proposed fiscal policy was at cross-purposes to the Bank of England's inflation-fighting strategy and resulted in sharp upward pressure on long-term bond yields. Rates for the 30-year Gilt shot up more than 150 basis points in a week, generating collateral calls for pension plans investing in derivatives on long Gilts to hedge their liabilities. As institutional investors faced the possibility of asset sales under distress to meet their obligations, the BoE was forced to intervene. We are reminded of the 1976 Sterling Crisis, which drove the UK government to request a then-record $3.9 billion bailout loan from the International Monetary Fund. Many conditions are similar: high deficit spending, political upheaval, geopolitical conflict, volatile energy markets, and a declining currency.

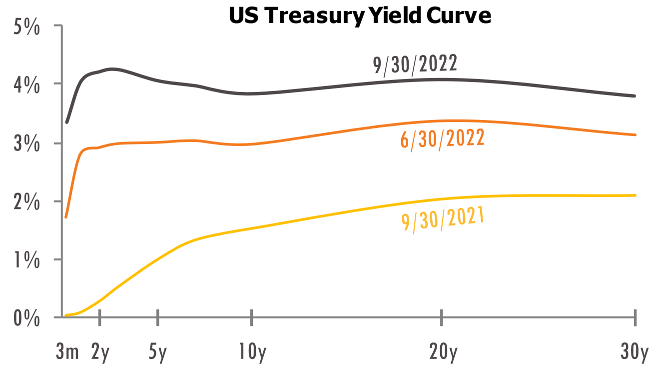
While less dramatic, conditions in the US also favor deficits, as defense and social services outlays dwarf all other categories of spending. Social spending is difficult to curtail while facing inflation and a contentious election cycle; defense spending seems likely to increase as the US supports Ukraine and stands prepared for a wider conflict. In Professor Keynes' playbook, governments should raise taxes and curtail spending in the face of inflation. To the extent that is not politically or practically possible, monetary policy must work harder, and financial markets are likely to experience extremes of volatility.



Historically, recessions accompanied by financial distress (e.g., 2008) tend to be difficult to recover from, and the typical toolset for those recessions is massive monetary expansion, which is inflationary. Last week's market action should serve as a warning against hasty, uncoordinated policy.

The US Bond Market

Interest rate volatility ran rampant as the bond market appeared to rotate out of a 40-year period of falling rates and into a bond bear market. For almost 10 years (May 2010 to January 2020), the 10-year Treasury key rate kept to a reliable range between 1.5% and 3.5%. The decade before (November 2000 to October 2008), it was bound to a range of 3.4% to 5.4%. In the past 2 years, the yield jumped from 0.67% to 3.97%. Volatility picks up during economic turmoil, especially when driven by inflation.



A soft landing now seems unlikely in the face of stubborn inflation and probable recession. The yield curve conforms to a new narrative in which the Fed quickly hikes up near 5%, defeats inflation with a mild recession, then carefully scales down from the peak.

US Bond Index Returns	
Bloomberg Idx	**3Q22**
Aggregate	-4.75%
Short Gov't	-0.57%
Interm. Gov't	-3.05%
Long Gov't	-9.60%
TIPS	-5.14%
Municipal	-3.46%
Interm. Credit	-3.08%
Long Credit	-8.57%
High Yield	-0.65%
(CS) Lev. Loan	1.19%
MBS	-5.35%

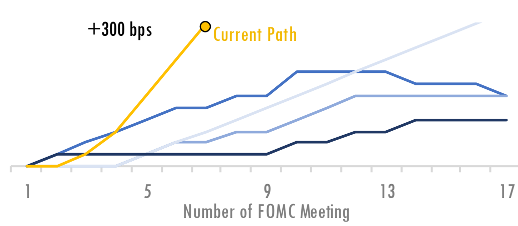
Credit spreads have also moved, at times, violently this year. Action continued in Q3 as high yield spreads contracted. Starting wide at 5.87% and topping out at 5.99% a week later, spreads bottomed at 4.21% mid-August before retracing partway to 5.43%. While this level does indicate stress, it is below the 25-year historical average of 5.50%. Oddly, spread narrowing was isolated to BB and B-rated paper. AA spreads were unchanged for the quarter and single-A, BBB, and CCC spreads widened modestly. This behavior is partly attributable to a dearth of high yield issuance. In July, just $1.8 billion in new paper came to market. The previous low was double that in March 2020 as markets seized up in the wake of COVID.

The high yield sector also benefitted from lower average duration compared to investment grade. The other bond sectors that performed relatively well in Q3 were short-term government debt and leveraged loans. Year to date, short-term government bonds are mostly unscathed, down 2%. Intermediate government and leveraged loans have also avoided double-digit losses, unlike the broader aggregate.

Financial markets remain defined by uncertainty. We expect small surprises in inflation data to keep churning rates, spreads, and investors' stomachs. Meanwhile, big surprises in fiscal policy, monetary policy, and geopolitics may also continue to unfold. September's hawkish post-FOMC-meeting speech ratcheted yields higher but was overshadowed shortly after by the UK government's announcement of bewilderingly expansionary tax cuts. The Bank of England intervened in the ensuing fire sale as the 30-year Gilt cheapened 50 basis points in one day [NY Times].

Rapidly rising rates triggered margin calls for UK pensions using derivatives to hedge their liabilities. This prompted selling of various debt instruments, including US investment grade corporates, and is partly to blame for the unusual behavior in credit spreads. The central bank's prompt market intervention and support at "whatever scale necessary" coupled with a hasty about face on the matter of tax cuts may not have restored faith in the UK's government, but it has quelled rates.

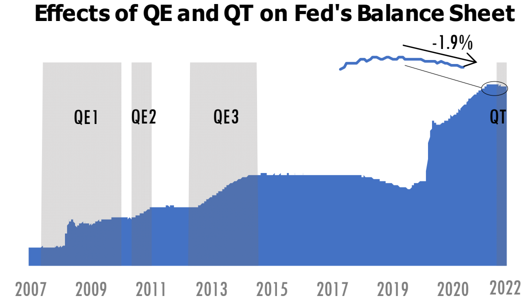
Historical Rate Hike Paths
(past 30 years)



In 2008, the Fed started quantitative easing (QE). These large-scale purchases of bonds reduced rates and increased the money supply. Now, the Fed has switched to quantitative tightening (QT), reducing the size of its balance sheet by letting the bonds mature without refinancing. This began in June, capped then at $47.5 billion per month, and raised to $95 billion in September. QT does not have equal and opposite effects from QE.

If the Fed started actively selling its bonds this would reduce market liquidity prompting a potential fire sale situation. Before June, when bonds held by the Fed matured, the central bank returned the money back into the market. As this winds down, investment banks (dealers) must mop up any excess paper in the system on top of any new bonds that the US Treasury issues. Dealers will inevitably be holding more Treasury inventory, which must be financed. This will put upward pressure on repo rates, aggravating volatility and drying up Treasury liquidity.

Effects of QE and QT on Fed's Balance Sheet



The US Stock Market

The US stock market continued its losing streak in Q3, but the magnitude decreased from Q2 due to a July rally. Traditionally, September is a bad month for the US equity market, but 2022 marked the worst September since 2002 for the S&P 500 and Dow Jones Industrial Average, which joined the S&P 500 in bear market territory. This year has also marked the worst Q3 YTD stretch for the Dow, the S&P 500 and the Nasdaq since 2002 [Dow Jones Market Data].

US Stock Indices - Total Returns

Largecap Stocks	3Q22	Midcap Stocks	3Q22
S&P 500	-4.88%	S&P Midcap 400	-2.46%
Russell 1000	-4.61%	Russell Midcap	-3.44%
Growth	-3.60%	Growth	-0.65%
Value	-5.62%	Value	-4.93%
Broad Markets		**Smallcap Stocks**	
S&P 1500	-4.76%	S&P Smallcap 600	-5.20%
Russell 3000	-4.46%	Russell 2000	-2.19%
Growth	-3.37%	Growth	0.24%
Value	-5.56%	Value	-4.61%

The quarter began on a decisively different note. July saw positive returns across the major indices, some venturing into double-digits for the month alone, on optimism that the Fed might not have to raise rates as much or as quickly as previously indicated. Investors rediscovered their appetite for risk, and growth dramatically outperformed value – by 2x in the large cap space. Mid caps edged out large caps, and small caps mostly beat both.

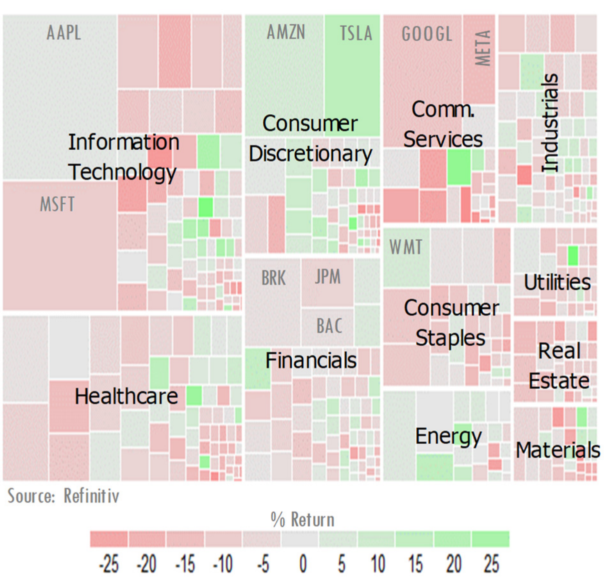
However, a series of statements over the last half of the quarter by Fed chair Powell confirming that, despite the near-term cost to workers and economic growth, they must and would continue to increase rates drove plunges in the market in the wake of each comment as well as after any report indicating an increase in inflation. For August and September, value outperformed growth in the large cap space, but it was not enough to overcome July's experience. Interestingly, growth held on to its lead in the small cap space throughout the quarter. Small cap growth has been the hardest hit in the almost 2-year growth-to-value rotation, and investors seemed to have concluded that valuations there now adequately price in potential Fed rate hikes and any recession that may follow.

The consumer discretionary sector was the top performer in Q3, largely on above-market performance by sector dominators Tesla and Amazon, which returned 18.2% and 6.4%, respectively. Despite periodic price volatility driven by its founder's quest to purchase Twitter, a late August stock split helped drive Tesla's Q3 return. Amazon beat expectations for its Q2 earnings supported by revenue from Amazon Web Services, its cloud business. Other names in the sector that outperformed included resorts and cruise lines (e.g., Marriott International, Hilton Worldwide, Las Vegas Sands, Wynn Resorts, MGM Resorts, Royal Caribbean Cruises, and Norwegian Cruise Line), perhaps signaling that a desire to return to pre-pandemic travel presently overcomes consumer inflation concerns. A confluence of problematic events with the potential to drive up demand – and prices – for oil and natural gas, along with attractive dividend yields across its constituents, drove the energy sector to post a positive return.

S&P 500 Sector Components - Total Returns

Sector	3Q22	Sector	3Q22
Consumer Discr.	3.61%	Utilities	-6.31%
Energy	2.39%	Consumer Stpls	-6.48%
Financials	-2.81%	Materials	-6.87%
Industrials	-3.99%	Real Estate	-11.05%
Health Care	-5.16%	Comm. Services	-12.61%
Info Tech.	-6.08%		

Source: Morningstar



Source: Refinitiv

In contrast, communication services was the worst-performing sector. While Alphabet and Meta created a headwind for the space, wireless names (e.g., AT&T and Verizon) and cable names (e.g., Comcast and Charter Communications) posted their worst returns in over a decade. Growth has been a challenge for these firms, and lately, they have sought to remedy that by expanding into each other's territories.

Netflix was the notable standout in the sector, posting a return of 34.6%. A beneficiary of the pandemic lockdown, the stock had been in freefall in the first half of 2022 on a contraction in subscriber growth. However, expense reductions and plans to launch an ad-supported membership tier helped convince investors that it was now a bargain with potential.

Bright spots in US equities have been few and far between this year, and the SPAC market is no exception. Special Purpose Acquisition Companies were all the rage in 2021, as a record number came to market and raised $163 billion. However, 2022 has seen only 76 SPACs launch, a decline of almost 90% from last year. Moreover, the average IPO size has fallen to levels last seen in 2014. As many of the associated business projections have proven unrealistically optimistic, the S&P SPAC index posted a return of -16.7% for 2022 YTD. For more on SPACs, see our 4Q 2020 Focus article.

International Markets

The war in Ukraine continued to exact a high price from global markets, continuing to exert upward pressure on prices, especially for food and energy, and curtailing growth. Global central banks generally continued their tightening stances (except China!) to counter rising inflation. Global growth is expected to remain subdued for the remainder of 2022 but is expected to drop to 2.2% in 2023, down from a projection of 2.8% earlier this year.

Europe

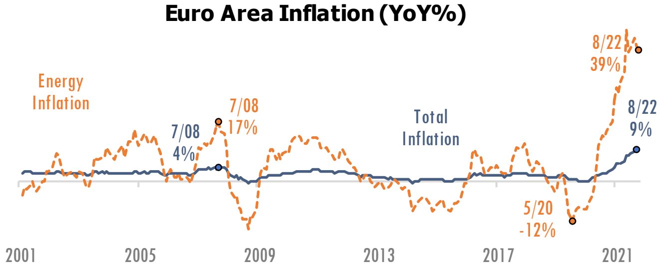
The continent faces a challenging winter. Surging energy costs are expected to impact consumer spending and manufacturing across the region. Rising energy, food, clothing, cars, household appliances and services prices led the ECB to raise rates by 0.75% in September with the expectation that the bank will continue to tighten. GDP growth forecasts for several eurozone economies, including Germany and Italy, were revised downward. The eurozone is now predicted to grow by 2.5% in 2022 and 1.9% in 2023, significant drops compared to 5.4% growth experienced in 2021.

Unhedged Foreign Markets Indices - Total Returns

Stocks	3Q22	Bonds	3Q22
MSCI ACWI ex-US	-9.91%	Global Aggregate	-6.94%
EAFE (Developed)	-9.36%	Pan-Euro	-11.90%
Emerging Markets	-11.57%	Asian-Pacific	-5.95%
Europe	-10.15%	Eurodollar	-2.92%
Japan	-7.67%	Euro-Yen	-6.22%
China	-22.50%	Other Currencies	-4.07%
Latin America	3.61%		

In July, Russia announced further cuts in energy supplied to Europe. The EU countered with a plan for 10% in energy savings and an EU-wide price cap that will be partly funded by a $25 billion windfall tax on energy producers. Nearly €400 billion in government support measures have been launched in response to the energy crisis, and it is likely that more packages will be forthcoming. Member countries have committed to reducing gas demand by 15% by March as part of bloc-wide rationing measures. The stakes are comparatively higher in some countries. In Germany and Italy, a shut-off of Russian gas would hit industry hard and affect people's ability to heat their homes. In Sweden and Finland, where gas makes up a smaller part of the overall energy mix, the impact would be felt less.

Euro Area Inflation (YoY%)



Source: Federal Reserve Bank of St. Louis

The European Commission reported consumer prices rose at an annual rate of 10% in September, the highest level since the creation of the euro over 20 years ago, and a solid jump above August's 9.1% reading. Energy rose at an annual rate of 40.8% in September and was the main driver of accelerating inflation. Food prices rose nearly 12% in September, up from 10.6% in August. Ten of 19 eurozone countries recorded double-digit inflation readings, including Germany with a 10.9% print.

Germany's economy is signaling recession. The most recent IFO survey of business confidence was down for the fourth straight month, driven lower by rising natural gas prices that have crimped consumer spending and hit businesses with rising costs. The index dropped from 88.5 in August to 84.3 in September, its lowest level in over a decade. Germany, which is heavily dependent on natural gas from Russia, has been searching for new sources after Russia significantly cut back supplies in the face of ongoing sanctions. The government announced subsidies of €200 billion to cushion against rising energy prices for households and businesses, including a cap on natural gas prices.

In the UK, an economic downturn is already underway. GDP growth was negative in Q2 and is expected to contract again in Q3. Inflation rose 9.9% in August, near the fastest pace in over 40 years. The BoE's strict 2% inflation target portends more rate hikes despite the slowing economy. The new prime minister, Liz Truss, announced a spending plan to boost economic growth. The plan requires adding £45 billion in new debt and included unfunded tax cuts aimed at top earners. The announcement caused yields on the gilt to jump to their highest levels in over a decade with the 10-year yield hitting 4.21%. Investors rejected the UK government's plan to borrow money to pay for tax cuts while continuing to spend to insulate consumers from rising energy bills. The BoE was forced to intervene to calm the bond market, announcing it would temporarily buy an unlimited amount of government bonds to prevent destabilization of the British economy.

The US dollar continued to show strength versus a basket of world currencies. The greenback hit a two-decade high against the sterling near the end of the quarter. The once dominant sterling plunged around 5% against the dollar in the days following the news of Truss' spending plan and is down over 20% versus the world's reserve currency for the year. The yen is down around 20% versus the dollar, and the euro is down more than 15% on the year. The euro's weakness raises the costs of imports that are priced in dollars, such as oil, and exacerbates Europe's inflation issues.

Currency exchange rates are influenced by a number of factors including interest rates, inflation and investor perceptions. Typically, countries with lower inflation rates have rising currency values and increased purchasing power relative to other currencies and vice versa. In countries with weaker currencies, rising import costs threaten to cool domestic consumption. By manipulating interest rates, central banks are able to influence inflation and currency values, often with unintended consequences. Currently, there are concerns that aggressive monetary policy actions to counter inflation may have a spill-over effect, exporting inflation to trading partners. We are starting to see this play out with the dollar's strength driving up prices of imported food, fuel and medicine in Africa while pushing countries like Argentina and Egypt closer to default.

Asia

China's GDP expanded at a 0.4% annual rate in Q2, the worst performance since the first quarter of 2020, when the pandemic first erupted and the economy shrank by 6.9%. The scale of the slowdown highlights the damage caused by China's extensive lockdowns. Signs of weakness in the economy appeared in 3Q as well.

World Inflation Projections

	2022	2023		2022	2023
G20	8.2	6.6			
Australia	6.1	4.4	Argentina	92.0	83.0
Canada	6.9	4.5	Brazil	10.8	6.6
Euro area	8.1	6.2	China	2.2	3.1
Germany	8.4	7.5	India	6.7	5.9
France	5.9	5.8	Indonesia	4.1	3.9
Italy	7.8	4.7	Mexico	7.9	4.9
Spain	9.1	5.0	Russia	13.9	6.8
Japan	2.2	2.0	Saudi Arabia	2.5	3.2
United Kingdom	8.8	5.9	South Africa	6.7	5.9
United States	6.2	3.4	Turkey	71.0	40.8

Source: OECD Economic Outlook Database

Consumer prices rose 2.5% in August YoY, down from July's 2.7%, driven primarily by increasing prices for food. The government took steps to boost the supply of pork by releasing stocks from its reserves, easing a sharp run-up in prices. Producer-price inflation slowed to 2.3% in August, the weakest reading since February 2021 and the 10th straight month of slowing price growth. The slowdown reflected a pull-back in global prices for oil and metals, which soared after Russia invaded Ukraine, and reflected weaker demand for steel along with higher domestic coal production.

Slowing inflation added to signs of weakness in the economy, as the country continues to suffer from strict Covid policies, a downturn in the property market, and fading demand for its exports. Average new-home prices in 70 major cities dropped 2.1% in August from the previous month, accelerating from a 1.7% decline in July. The decline was the steepest in year-over-year terms since September 2015, despite rate cuts and a loosening of real-estate regulations in July.

The export boom that has powered the economy through the pandemic decelerated in August, reflecting the impact of rising inflation and slowing growth elsewhere in the world. Slowing exports partly reflect disruptions in factory production due to temporary power shortages as a severe drought and heat wave swept through central China. Imports weakened as well, increasing only 0.3% from a year earlier. The reading was the lowest since April when ports and factories were shuttered due to lockdowns.

The People's Bank of China cut two key interest rates by 0.1% and pumped the equivalent of $59.3 billion into the financial system to rev up lending and wider economic growth. There were modest signs of improvement as stimulus measures kicked in, but retail sales remained soft. While the pace of year-over-year growth accelerated to 5.4% in August, it is a result, in large part, of a lower base for comparison to the year-earlier period. Fixed-asset investment rose 5.8% during the first eight months of the year compared with a year earlier. The pickup was led by robust spending on infrastructure projects, a sign that Beijing's rescue measures are starting to have some effect. The unemployment rate edged down to 5.3% in August from 5.4% the previous month.

However, the rescue measures had no positive impact on the stock market. Since its peak at the end of June, the CSI 300 index has been declining. The index has been negatively impacted by continuous fears of COVID-related testing and lockdowns, disappointing economic data (e.g., weak inflation, profit warnings from major real estate developers, slowdown in the manufacturing sector, and weak trade data), and the US Fed's rate hikes.

CSI 300 Index

Americas

Canada's unemployment rate rose to 5.4% in August; the first increase in the past seven months. This signals a departure from the historically tight job market. A majority of the cuts were in the construction industry, indicating that the recent 75 bp rate hike to 3.25% by the Bank of Canada is starting to impact the economy. It may also signal that, if there is a recession in Canada, it will be very sector-specific. The BoC is widely expected to increase rates by another 25 bps in October and hit 4% by the end of the year to control red-hot inflation.

Mexico's central bank, Banxico, continued its aggressive tightening. In September, it raised interest rates by another 75 bps, mirroring the US Fed. Interest rates in Mexico have now increased by a substantial 525 bps since June 2021. Despite Mexico's efforts to tame inflation, Core CPI rose 8% YoY in August, 40 bps more than the month prior. Likewise, headline CPI increased by 55 bps to 8.7%, compared to 8.2% in July. Aside from raising interest rates, the Mexican government has tried curtailing inflation by offering energy subsidies, controlling the price of food, and offering temporary tariff cuts for imports. Despite its efforts, prices continue to increase at the fastest pace seen in 21 years. This led Mexico's central bank to forecast inflation averaging 8.6% in Q4, with further increases expected.

Brazil continues to see economic recovery from the pandemic. Unemployment fell to 8.9% in August, its lowest level in almost 7 years. CPI also decreased to 8.7% in August, down from 11.9% in Q2, in line with expectations. The economic recovery saw Brazil's GDP grow by 1.2% in Q2, taking the annual increase to 3.2%. While the positive news may help current president Bolsonaro in the election next week, he continues to trail former president Lula da Silva in recent polls by 8%. Despite the uncertainty around the elections, 58% of voters still feel like their standard of living is improving.

Focus On: Comparing Target-Date Funds

Target-date funds ("TDFs") are one of the most popular, useful, and complex investment options for retirement saving. As such, TDF investors and plan sponsors should use every relevant tool at their disposal to evaluate and select the best product for themselves or their participants. Yet, the inputs easiest to observe receive undue emphasis in fund selection despite their poor predictive power. This can harm participants' savings, hamper evolution in products, and fuel litigation.

Easy **Inputs to TDF Selection**

- Brand (reputation, ecosystem, scale)
- Fees (incl. recordkeeping savings)
- Past returns vs. competitors

Brand Reliance

Tony Fadell, one of the lead engineers and designers behind the creation of the iPod and iPhone, believes the key to "making things worth making" is to solve a problem with a seamless end-to-end experience. Building useful and enjoyable products has garnered Apple immense brand loyalty. Another tactic is the walled garden, which increases brand reliance via a closed synergistic ecosystem. Fadell recalls that Steve Jobs was insistent that the iPod only work with Apple's computers in order to boost Mac sales. However, Jobs acquiesced (eventually) to allow future iPods to work with PCs. As iPod sales exploded into hundreds of millions of units, so did the brand power - in turn, fueling interest in Apple's computers.

The most wildly successful companies leverage compelling product design and an engaging ecosystem whether they are building consumer electronics or target-date fund empires. Customers find it difficult to make an informed purchase when the product is sophisticated, novel, or intangible. When people choose what gas station to visit, they consider location and price; that's easy. When plan participants need to elect a target-date vintage for their retirement plan, that's also an easy choice. However, when a plan sponsor or investor needs to compare target-date fund complexes, brand is a major influence.

Building brand reliance is super-effective at steering people to choose your product when the choice is complex. This is why the largest target-date fund managers are also some of the largest recordkeepers or asset managers. These firms have established ecosystems and polished products to help funnel assets. At the end of 2021, target-date assets reached a record $3.27 trillion, up 20% for the year. Most of this was generated from returns, but net flows added $170 billion [Morningstar].

Fighting Yesterday's Battle Tomorrow

Fees and historical absolute returns also receive undue weight in TDF selection and in litigation. These easy inputs fail to constitute prudent due diligence and lack predictive power. Naively, lower fees and higher past returns correlate to higher future returns. Yet fee savings can cost performance and risk-taking is often the causal link between past and future returns.

A recent lawsuit describes BlackRock's Lifepath Index funds as "significantly worse performing than many of the mutual fund alternatives offered by TDF providers and, throughout the Class Period, could not have supported an expectation by prudent fiduciaries that their retention in the Plan was justifiable." It asserts BlackRock's TDFs were imprudent to retain because they lagged four of the five largest competitors' returns over 3-year and 5-year windows. Yet, every fund in the set underperformed at least four others in multiple 3-year periods rolling quarterly from July 2013 through June 2022.

The plaintiffs also allege that the composite benchmark "simply mirrors the overall strategy of the series and fails to demonstrate how the investment is performing relative to peers" and thus "is an imperfect evaluative tool." This is true. Most TDF managers use custom benchmarks for their funds. These benchmarks aren't meant to represent what peers are doing; they are meant to show the hypothetical performance of the base asset allocations targeted by the manager.

Excess return and tracking error show reward and risk relative to the benchmark. Dividing the former by the latter produces the information ratio – that is, added value adjusted by added risk. It is not a failure of BlackRock that their TDF benchmarks serve as an imperfect evaluative tool. Yet, it does raise an important question: What can a plan sponsor use to evaluate performance relative to peers?

Rock, Paper, Scissor

The most well-founded, popular metric useful for evaluating performance between two dissimilar portfolios is Sharpe ratio. It works across different portfolios, even those with unrelated asset classes, because it adjusts for risk. Evaluating a fund like BlackRock's 2025 LifePath Index against peers using Sharpe ratio is more fundamentally sound. Using this basic risk-adjusted metric instead of absolute performance is a small step in the right direction, but many quantitative and qualitative points of inference are needed to complete a wide mosaic with adequate resolution.

ROBUST Inputs to TDF Selection

- Relative performance vs. benchmark
- Risk-adjusted returns vs. peers
- Risk factor exposures
- Qualitative analysis (team, process)
- Drawdown risk
- Plan fit

Comparing the returns of funds with major underlying differences, even using Sharpe ratio, can say more about the market environment than the funds' themselves. What risks disrupted performance? What style or geographic biases paid off? Attributing performance is one way to understand, in hindsight, why one target-date performed better or worse than another. This starts with understanding the glide slope design and other key differences between competing TDF suites.

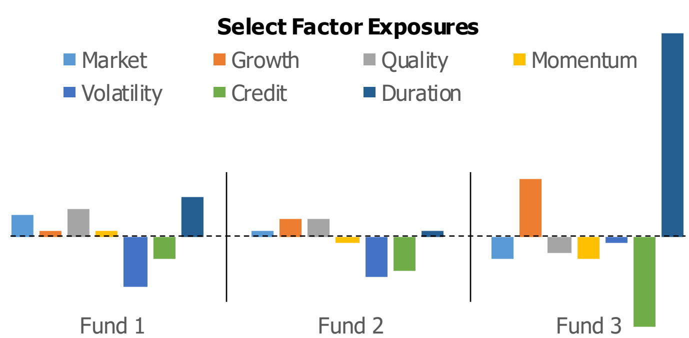
The equity glide slope is the de-risking plan for the suite. What this means exactly depends on whether the target-date suite employs a to-date or through-date approach. A to-date fund optimizes the tradeoff between risk and return up to the planned retirement date, attempting to avoid drawdowns that would be hard to recover from by that date. The through-date approach looks past the retirement date to address longevity risk. Like the standard deviation of returns that forms the denominator for Sharpe ratio, equity allocation is a basic measure that can be a useful proxy for risk but fails to accurately represent risk fully. Reducing equity exposure is also not the only way risk is dialed down over time. The underlying allocations to many TDFs undergo shifts meant to de-lever certain types of risk and increase exposure to others.

When Participants Bail, You Fail

The same type of granular perspective can help assess which target-date strategies might perform better or worse according to what happens in financial markets. Mapping out the risk factor exposures (i.e., sensitivities or betas) shows which strategies are likely to perform better or worse in different situations. Strategies that are likely to perform very well in some environments and very poorly in others should be viewed as riskier even if their volatility has run low historically.

Inflation anxieties have driven stock and bond prices sharply lower from the start of 2022. One target-date 2025 fund seemed particularly well-poised for this with only 30% equity weight and two-thirds of the portfolio allocated to inflation-linked bonds. Yet, the fund was the worst year-to-date performer within the 2025 TDF peer universe, as of 3Q 2022, because the inflation-linked debt carried a lot of interest rate risk (i.e., duration). Funds that relied on a variety of inflation protection sources (e.g., commodities, real estate) tended to fare better.

The chart on the right shows select factor exposures for three funds as measured by 5-year trailing betas. The "market" is represented by the S&P 500, and the market factor is relative to a 50% S&P 500 and 50% US Aggregate Bond portfolio. Funds 1 and 2 have no large factor exposures but Fund 1 is riskier because the higher market beta is a more significant risk due to the volatility of stock market returns. Fund 3 has the lowest market beta and has little credit risk but is likely the most-risky fund due to the high sensitivity to interest rate movements. Fund 3 is the inflation-linked-laden portfolio that lagged all of its peers year to date.

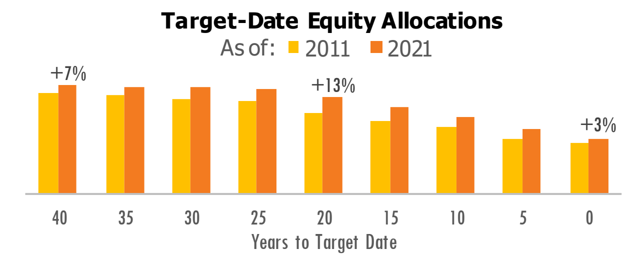


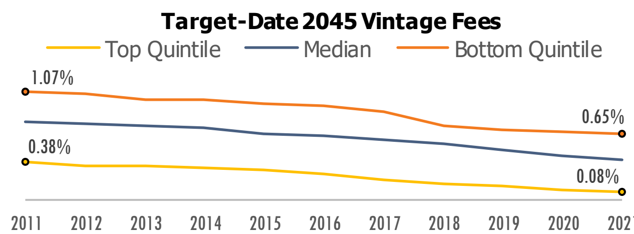
The ability for shorter-dated target-date vintages to withstand a stock market crash was tested in 2008's Global Financial Crisis. Results were disappointing, shattering participants' faith in the product and causing an exodus of assets as 2010 vintages posted losses of 3.5% to 41.3% for the year. Fund 1's circa-25% drawdown this year demonstrates the problem is not solved. As presaged in our timely 2007 *Focus on: Default Investments and Employee Engagement*, large drawdowns may prompt engagement shock where participants bail out of funds with steep losses or even cease making contributions. A deeper discussion of factor risks is available in our 2016 *Focus on: Factors to Consider in Factor Investing* article.

Meeting Your Goals or Theirs?

Target-date fund managers are all trying to accomplish the same pair of business objectives. Their approaches may differ, often slightly, but making money for their investors and themselves is what they all share. By achieving strong performance for investors and growing assets under management, they can accomplish both goals at the same time. The ideal way to do this is to hire talented portfolio managers and analysts for an active TDF or create an efficient, scaled investment machine for a passive TDF. In either case, keeping costs down is also critical.

Cutting fees sounds great for investors, and it can be, all else equal. The question is, how can a manager cut costs to maintain a lower fee without sacrificing something accretive to performance? Diverting more focus and resources to marketing is likely to increase asset flows but may be detrimental to investment capabilities. Investing in less-liquid securities tends to be more costly, especially if those areas are impractical to access without active management. Cutting out emerging markets or small cap international equities removes potentially valuable sources of risk diversification and alpha generation.





And, there are other ways to compete for investors' dollars that can be harmful. From March 2009 to February 2020, equities enjoyed an extended bull market. Passively managed TDFs with high equity allocations, tilts toward the US or growth equity, and those incorporating greater credit risk won out as investors flocked to funds with low fees and high returns. Ramping up complexity, leveraging or concentrating risks, and moving into less liquid niches can lead to better performance, or it can lead to disaster. Returns, even over a 10-year period, may not be long enough to separate the prudent risk takers from the opportune ones.

Judging the glide path fit is complicated by the differences between to-date and through-date design and by allocation choices beyond the glide slope often inflating equity market beta. Nearly all TDFs exhibit a higher beta than their equity allocation would suggest. For most passively managed TDFs, this translates to just 1-3% more sensitivity; yet, actively managed TDFs tend to add 4% to 10% more equity market beta than their equity glide path would suggest [Morningstar].

No one TDF product is the best. People are different, and every plan is made up of participants (a.k.a., people) with different investment needs. Risk tolerance for a sizable group of participants can be difficult to gauge, but plan sponsors can obtain clues. How did participants in your plan react to the last market crisis? Do your participants tend to have other financial resources, or does the pan contain nearly all of their savings? Do participants also earn a pension benefit? The optimal amount of risk for two different retirement plans may be very different.

Any comparison of TDF suites should be tempered by considering these "plan fit" issues. Recordkeepers and asset managers offer tools to assist individuals in estimating how much risk or equity exposure they should have. Plan sponsors can even work with TDF managers to model how well different glide slopes fit their participants' demographics.

The Cure for What Ails TDFs

The next time you find yourself shopping for a target-date fund, remember that a prudent choice is based on more than fees, brand, and absolute returns. Picking the lowest fee, biggest brand, highest return manager may seem like a sure bet, but it's not even a sure way to avoid litigation. There are no shortcuts to good fiduciary care, and the same level of due diligence is required regardless of the brand you choose. The saying "no one ever got fired for buying IBM" is pithy and terrific branding, but it is not an aphorism fiduciaries should take to heart.

Plan fiduciaries should seek to understand the unique value proposition for their participants by viewing each TDF strategy under quantitative and quantitative lenses. It shouldn't surprise anyone that participants, fund managers, or lawsuit plaintiffs sometimes demonstrate a myopic view on fees, brand, or recent absolute returns if plan fiduciaries are making the same missteps. We can only demonstrate sound practices by thoughtfully undertaking and diligently documenting decisions.

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