The Davis Center For Portfolio Management

University of Dayton

U.S. Equity Outlook

Fall 2022 Outlook: Maneuvering in Continued Unprecedented and Volatile Markets

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The opinions expressed herein are those of the student-managers of the Flyer Investments Fund and do not necessarily represent the views and opinions of the University of Dayton.

Living with COVID-19

While COVID-19's impact on the global economy persists, people are continuing to revert to their pre-pandemic lifestyles, especially in the United Sates. It has now been over two and a half years since the COVID-19 virus was discovered in Wuhan, China. While President Biden declared that the pandemic was "over" in his *60 Minutes* interview in mid-September, the World Health Organization continues to caution that the pandemic is here to stay for some time longer. Biden's remarks came as his own administration was seeking an additional $22.4 billion in COVID relief in anticipation of a full case surge. While January saw a spike of over 5,650,000 new weekly cases, this number has sharply declined to just 255,598 as of the week ending October 30. The weekly death toll is at 2,649, another drop month over month. Vaccine requirements continue to be lifted in areas across the United States as major cities such as New York and California start to ease restrictions.

Our spring Equity Outlook reported total active cases at 482,881,946 worldwide; this number has since risen to 627,104,342 total cases. The confirmed death count worldwide in our previous Outlook was 6,151,003. This number has only risen to 6,567,552. These numbers are positive, indicating that even though transmission is still a problem, it is not proportionally related to the number of deaths. Increased global access to vaccines is most likely the key driver for this. The total number of vaccines administered worldwide is nearing 13 billion, an achievement mainly attributable to increased efforts to make vaccine and booster shots widely accessible to the public at hospitals, pharmacies, universities, and vaccine centers.

Although most of the globe has successfully curved the pandemic, China scrambles to implement its zero-COVID policy. China recorded 2,076 new weekly cases for the week ending October 30. The struggle in China continues to affect the global economy as factory shutdowns halt the supply of goods, thus causing American companies to initiate efforts in moving production back to the United States. Semiconductor chip makers have taken the lead on this front as Intel has continued plans to build two new domestic production plants. Industries in the U.S. that have been negatively affected by the COVID lockdowns in China are consumer goods, metals, food, chemicals, and commodities. Chinese COVID-19 policies negatively impact inflation as well.

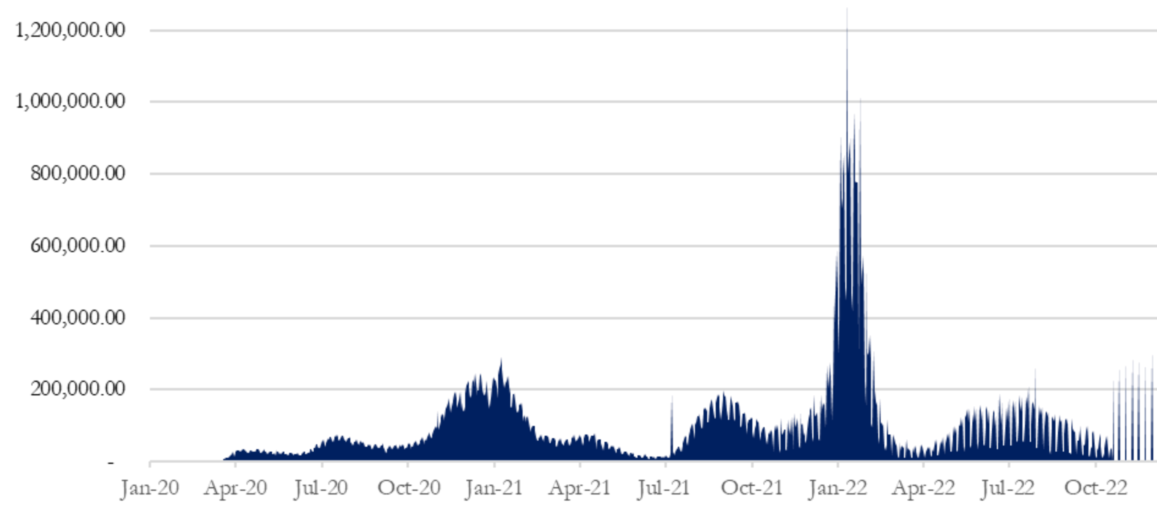

Figure 1: New Cases of COVID-19 in the U.S.
Source: WHO | Data as of December 9, 2022

The Russia and Ukraine Conflict

Russia's attack on Ukraine has been named the biggest threat to the peace and security of millions of Europeans since the end of the Cold War in 1991. As of October, this war has taken the lives of over 6,000 civilians, displaced millions of innocent people, and has destroyed entire cities since Russia first launched its full-scale invasion of Ukraine on February 14, 2022, when Putin declared his decision to launch a "special military operation" to capture Kyiv. However, after many failed attempts, Russia has now set the goal of conquering Ukraine's east and south. This invasion began only days after recognizing the breakaway territories as sovereign. In response to the invasion, Ukraine's president, Volodymyr Zelenskyy, declared martial law and general mobilization. Months prior to the launch, Putin had amassed over 100,000 troops along Ukraine's borders, initially promising that they were simply there for training purposes.

Arising conflict erupted in eastern Ukraine back in early 2014, following Russia's annexation of the Crimean peninsula. In the previous year, many protests had occurred in the capital city of Kyiv. These protests were against the Ukrainian President at the time, Viktor Yanukovych, and his decisions to reject pending European Union (EU) association agreement. The rejection of this prelude to EU membership by Yanukovych resulted in a violent crackdown by state security forces on protestors. Regardless, demonstrations continued, the conflict widened, and President Yanukovych fled the country in February of 2014. With many conflicts arising, France, Germany, Russia, and Ukraine attempted to bring negotiations to the table to end all of the destructive violence. In January 2018, the U.S. announced sanctions against many individuals, including Russian officials and various companies that were linked to the conflict in eastern Ukraine. The US Department of State signed off on the sale of anti-tank weapons to Ukraine, which happened to be the first sale of lethal weaponry since the conflict began in 2014.

The U.S. vigorously interceded in the defense of Ukraine after the February 2022 invasion, largely through heavy sanctions placed on the Russian economy, military, financial system, and technological imports. Some of these sanctions included: freezing assets held in the U.S. by Russia's big banks and many of its largest oligarchs, cutting off Russia's supply of various technological goods, placing sanctions on countries that are in support of Russia, and limiting Russia's military growth through various measures including restrictions on U.S. exports.

One other significant restriction that President Joe Biden has placed on Russia is prohibiting the U.S. from importing oil, refined petroleum products, natural gas and coal from Russia. This has caused higher gas prices and exacerbated inflation in the U.S. as Russia is one of the biggest suppliers of petroleum products to the U.S. In 2021, Russia represented 5% of U.S. crude oil imports and 20% of U.S. petroleum product imports. The Russia/Ukraine conflict drove the price of crude oil to well over $100 a barrel when oil was previously around $75 per barrel at the start of January 2022. This significant spike worried markets, which feared a shortage of Russian oil all over the world. The price for crude oil was previously inflated even before the conflict due to increased demand resulting from the recovery of global economies bouncing back from COVID-19 and low investments in the oil and gas industry overall. The U.S., however, is not the only country facing rising gas prices as a result of the war. The EU also makes up a large portion of the market for Russia's oil, and is facing similar consequences.

The U.S. continues to show support of Ukraine by sending millions of dollars in weapons and other aid in response to the unjustified and premeditated actions of Russia against the country. For the U.S., it remains an urgent security issue to assist Ukraine and provide it with the equipment necessary for defense. Since January 2021, the U.S. has spent approximately $19.3 billion in military assistance to display its commitment towards Ukraine.

Russia has had control over Crimea, Donetsk and Luhansk since 2014. Now, Russia has added to that territory with Kherson and Zaporizhzhia. These areas, especially Zaporizhzhia, are faced with extreme censorship by Putin, with phone checks being only one example of that censorship. Should Ukraine come out of this war with its independence intact and restored in the areas currently under Russia's control, rebuilding the infrastructure will be one of the biggest challenges it faces. Not only will funding be difficult to find, but the scrutiny and policies related to building permits as well as the inefficient real estate market will need to be seriously addressed. This would not be the only change the Ukrainian civilians have to face however. Zelenskyy lightly touched on the subject, stating that armed troops will patrol supermarkets and movie theaters. He said that since the country has been invaded twice in ten years, security will be his number one priority. Civilian life in Ukraine won't return to what it was before for years to come.

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Real GDP Growth

Real Gross Domestic Product (GDP) is a crucial data point compiled by the U.S. Bureau of Economic Analysis when examining the strength or weaknesses of the U.S. economy. Nominal GDP tells us the sum of a nation's consumption, investment, government purchases, and net exports, whereas Real GDP adjusts these nominal figures back to 2012 prices to account for price inflation. Real GDP had been quite volatile following the COVID-19 pandemic, but in recent quarters, we have seen calmer releases, as noted below:

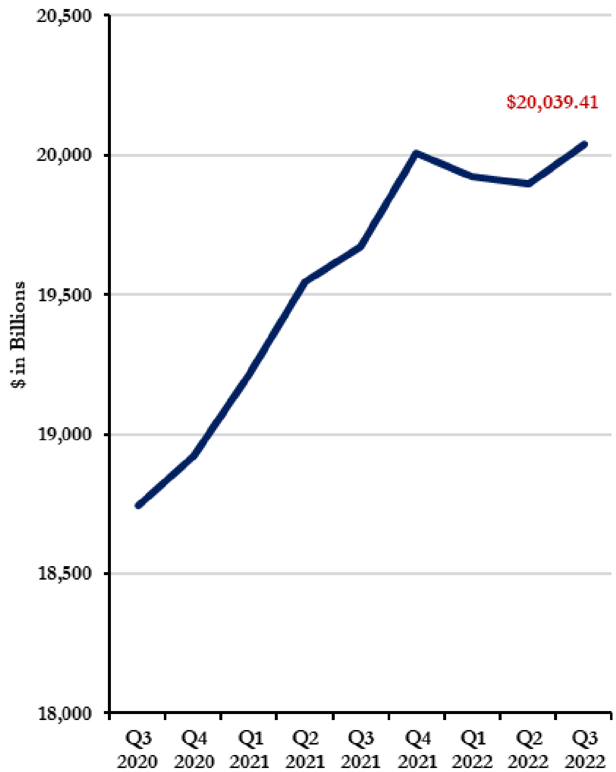

Figure 2: U.S. GDP; seasonally and inflation adjusted
Source: FRED. St. Louis Economic Data

The U.S. witnessed a strong resurgence in Real GDP growth after the pandemic, but has started to see a small pullback. There was a slight decrease from 1Q22 to 2Q22 in growth, at -160bps and -60bps, respectively. Throughout these quarterly declines, however, we have seen resilience in consumer spending data, with those figures never dropping below a 100bps quarterly gain. The big detractors in 1Q22 and 2Q22 came from -460bps of net exports and -1410bps of private domestic investment in each quarter, respectively. Additionally, government expenditures fell by over 150 bps in both quarters, further contributing to the overall decline in Real GDP. On the positive side, in 3Q22, Real GDP shot back up 260bps. This turnaround can be attributed primarily to a 240bps increase in government expenditures, as well as a 1440bps increase in net exports. We have seen considerable volatility in the net exports category in recent quarters, which has been a result of massive supply chain disruptions and the Ukraine-Russia conflict. Consumer spending once again increased, by 140 bps, showing signs that the average American isn't spending like he's in a nation suffering from an impending recession.

Another interesting data point is the GDP Deflator, which is the ratio between nominal GDP and Real GDP and reflects the changes in prices in an economy, an alternative to the Consumer Price Index. In the last four quarters, we have seen year-over-year price increases in the GDP Deflator of 680bps, 840bps, 910bps, and 410bps. Another measure of inflation, arguably the most accurate, is the Personal Consumption Expenditure Price Index, which showed increases in consumer prices in the last four quarters, on a quarter-over-quarter comparison, of 200bps, 150bps, 120bps, and

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570bps. These are very significant increases on a quarterly basis that will contribute to large year-over-year inflation numbers.

The overall outlook for GDP seems to be quite bearish considering the Federal Reserves' contractionary monetary policies. Declines in investment leading to declines in GDP in the past quarters, will most likely continue as the cost of investment rapidly increases due to rising interest rates. Furthermore, many consider the natural rate of unemployment to be between 4% and 5%, yet the current unemployment rate was still below this benchmark at 3.5% in September. As the Fed's contractionary policies will likely eventually lead to an increase in unemployment, it is fair to assume that GDP will decline or stagnate in the upcoming quarterly releases. Investors, and analysts in the Davis Center for Portfolio Management, will be watching the GDP data closely in the months ahead and using it to make important investment decisions.

Labor Market Conditions

The labor market has been booming for the past two years as it recovered from a devastating loss of 20 million jobs during the pandemic. U.S. companies added an average of 562,000 jobs per month last year and 420,000 jobs per month this year. Pre-pandemic, the average monthly number of jobs added was less than 200,000. The progression of the job market remains uncertain because hiring in industries most affected by the pandemic, such as health care and food services, is still increasing; however, industries more sensitive to the Federal Reserve interest rate hikes, like finance, are starting to show declines. In July, hiring came in much better than expected, with non-farm payrolls rising 528,000, far above the Dow Jones estimate of 258,000. Leisure and hospitality led the way, adding 96,000 new jobs. Heading into the fall, job creation has declined since the boom in July. August added 315,000 jobs and September added 263,000, which tied for the lowest monthly increase since April 2021.

In the most recent jobs report, results were mixed. Unemployment declined 0.2% to 3.5% compared to projections of 3.7%, but hiring growth was lower than expected. The labor participation rate declined from 62.4% to 62.3%, with the size of the labor force decreasing by 57,000. In terms of added jobs, the industries that have seen the highest increases are leisure and hospitality (83,000), health care (60,000), professional and business services (46,000), manufacturing (22,000), construction (19,000) and wholesale (11,000). The following industries experienced declines in September: government jobs (-25,000), financial activities (-8,000), and transportation (-8,000).

Generally, job growth has remained strong, and the high number of openings has caused wages to rise. The employment-cost index, which measures worker wages and benefits, rose 5% compared to a year ago as companies struggle to attract and retain workers who now have many employment options. The increase was slightly less than the second quarter gains, which marked the fastest growing rise in wages and benefits since 2001. In quarter three, service workers experienced the highest increase in wages at 7.7% and retail, leisure and hospitality, and nursing occupations also

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saw sharp increases. Workers in financial, management, and professional services saw the smallest increase in wages. Although wages are still increasing faster than before the pandemic, there has been a slowdown in some industries where wages were increasing the quickest. In leisure and hospitality, average hourly earnings increased 7.9% in September, down from their highest point of 13.3% in December 2021. Additionally, retailers increased wages by 4.1% in September, down from 6.3% in February 2022. Ongoing growth in wages will further drive up inflation and put pressure on the Federal Reserve to again raise rates. Although there has been a slight cooling in wage growth, the Fed is wary of a "wage-price spiral", a self-fulfilling cycle of inflation wherein rising wages create rising prices and vice versa.

While employment still shows signs of strength compared to other parts of the economy, the Federal Reserve expects the unemployment rate to rise from its current 3.5% to 4.4% in 2023 as the market starts to feel the effects of higher interest rates. The current environment is unusual compared to other downturns because unemployment is still low. The lowest level of unemployment at the beginning of any recession in the last 50 years was 4.7%. Considering the Fed will likely continue to raise rates until inflation falls, higher unemployment rates are likely inevitable.

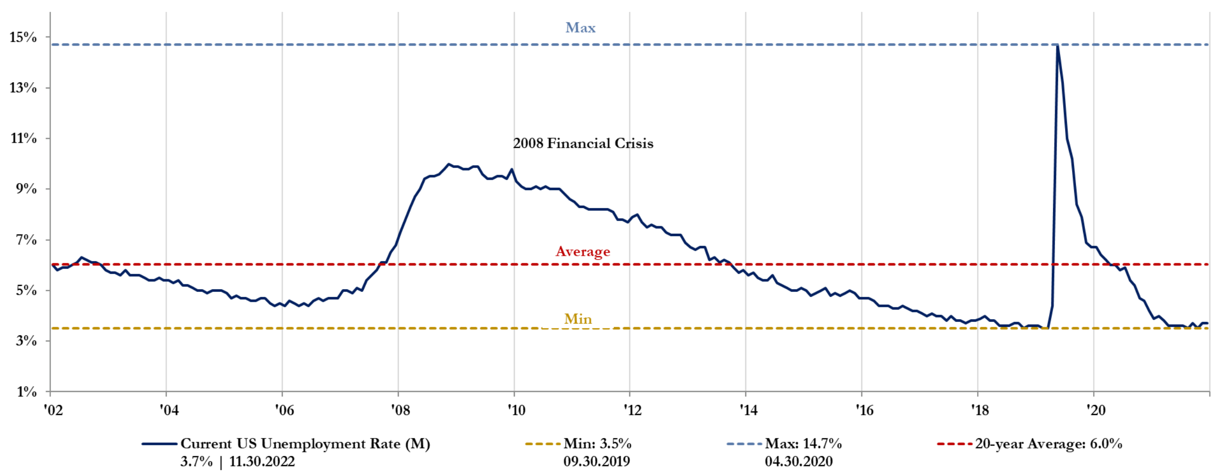

Figure 3: U.S. Unemployment Rate
Source: Bureau of Labor Statistics

Inflation Woes

Inflation has been the most distressful economic factor across the American population this year. Headline CPI numbers peaked in June with a reported print of 9.1%, the highest yearly increase since 1981. Higher prices can be attributed primarily to supply chain bottlenecks, surging energy and commodity prices, and strong consumer demand. What has been more concerning is that this year's run-up in prices has been more broad-based then initially anticipated, with price gains seep-

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ing into nearly every corner of the economy. The elevated inflation figures reaffirm that price pressures are rampant and widespread throughout the economy and are taking a huge toll on real wages, which have seen the greatest decline since 2007. This high, wide-ranging inflation runs in stark contrast to the predictions made by Fed officials for much of last year when "transitory" was still in their vocabulary.

CPI increased 7.7% for the 12 months ending October 31, signaling the smallest 12-month increase since the period ending January 31, 2022. The print shows that inflation is certainly still a significant player in the United States' economy, but suggests that inflationary pressures could be starting to ease. Wall Street and economists believe that inflation numbers have hit their peak and are beginning to roll over as the Federal Reserves' monetary policies and tightening seem to be making a slow but steady impact that should allow for further inflation moderation. Wage growth is expected to slow as the labor market rebalances, and shelter costs will soon stop accelerating as younger households reach their limits on higher rents. These factors, paired with supply chain improvements and declining commodity prices, should serve as catalysts for a decelerating inflationary environment. Meanwhile, Americans continue to struggle with one of the most severe cost-of-living crises of the modern era, and it will take a while for inflation numbers to return to normal levels. Fed officials predict that PCE price inflation will lower to 5.4%, down from its most recent print of 6.2% in September, by the end of the year as a direct result of their rate-hiking actions. This prediction factors in the substantial rate hikes already implemented this year as well as a future hike that is expected in December to wrap up 2022. Federal Reserve Chair Jerome Powell has said that the Fed is closely monitoring the inflationary environment and is convinced of its ability to achieve the long-term inflation goal of 2%. He also stated that he believes over-tightening would be a better option than under-tightening in order to avoid the risk of inflation becoming entrenched. Many economists are worried that slaying inflation might lead to a recession, as it will result in a slowdown in the economy in response to the aggressive tightening implemented by the Fed.

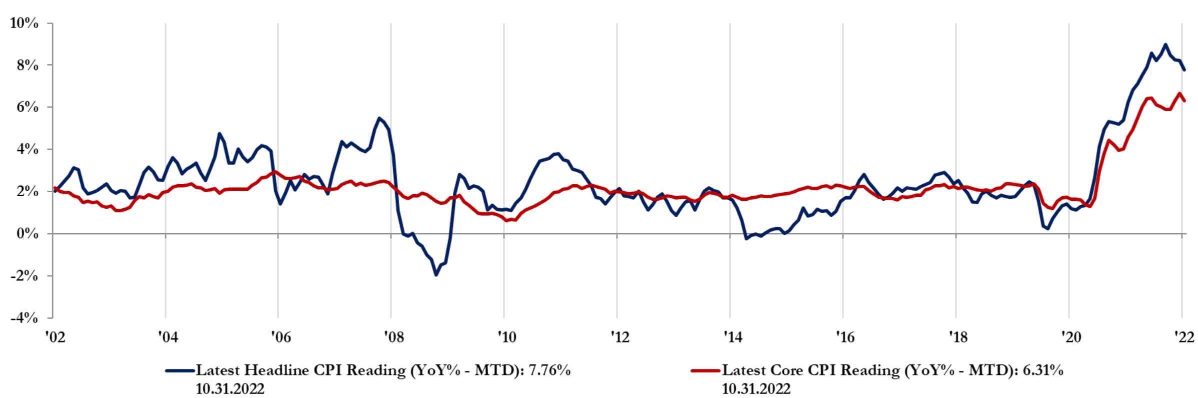

Figure 4: Headline vs. Core Consumer Price Index
Source: FactSet

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Federal Reserve Actions

In February, the Federal Reserve began fighting inflation by increasing the federal funds rate. After the pandemic, there was inefficient supply to meet the demand for goods and services, putting upward pressure on prices. Government stimulus payment made during the pandemic, designed to drive economic activity, had helped drive demand; therefore, there was a lot of money in the economy. Meanwhile, Russia's invasion of Ukraine also created a disruption to the global oil supply. Nations pledged to place sanctions on Russia, which once implemented, exacerbated their supply chain issues, further driving up inflation. In March, the Fed raised the interest rate 25 basis points, which marked the first rate hike in over three years. The March hike has been followed by five additional bumps of 50-75 basis points each, and a sixth is anticipated in December. The June interest rate hike of 75bps, the first of its size since 1994, was duplicated in July, September, and November, leaving the federal funds rate between 3.75% to 4.00%. These aggressive rate hikes are occurring at the fastest pace in a single year since the 1980s, concerning investors and consumers alike with fears the central bank could go too far, too fast. When interest rates are low, it is cheaper to borrow money and invest in projects and expensive items. When interest rates are high, the opposite occurs, discouraging economic activity. Jerome Powell and the Federal Reserve are increasing the federal funds rate to curb inflation. If inflation does not cool off quickly, the economy is at a high risk for a recession. Conventional wisdom is that the Fed will continue to front-load rate hikes and hold them in place longer until inflation substantially recedes closer to the long-term goal of 2%. The latest dot-plot released by the Fed shows a terminal rate of 4.5-5% in 2023, indicating that there will be further hikes in the near future. In addition to raising interest rates, the Fed also began shrinking the size of its massive balance sheet that had swelled to nearly $9 trillion through an immense bond-buying campaign during the pandemic. Since September, the Fed has reduced its balance sheet by $95 billion each month through bond "run-offs", allowing mortgage-backed securities and treasury bonds mature off of the bond portfolio. If the Fed's plan to reduce its balance sheet goes according to plan, more than $522 billion would have been removed from the financial system by the end of 2022 and another $1.1 trillion by the end of 2023.

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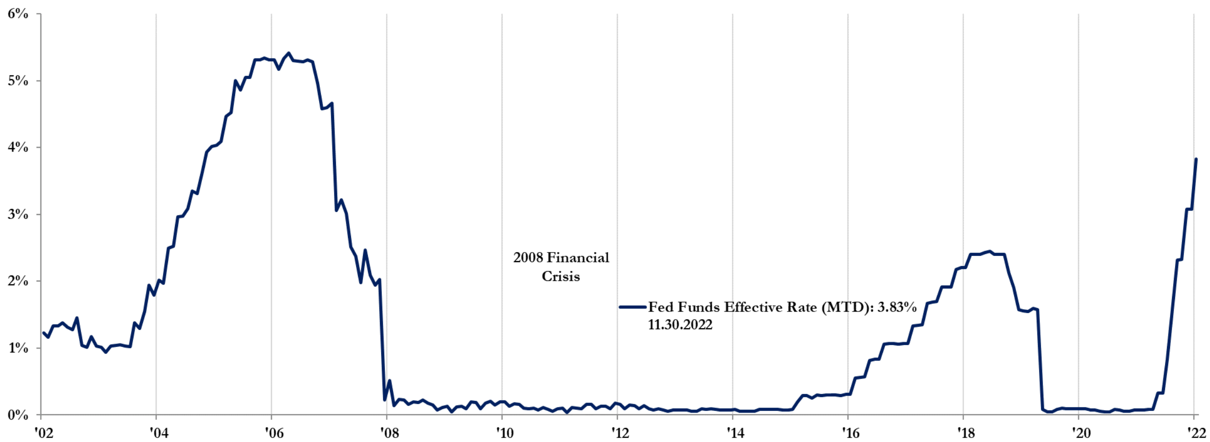

Figure 5: Effective Federal Funds Rate
Source: FactSet

Manufacturing and Services Activities

The Purchasing Managers' Index is the most influential economic metric for future production outlook, based on data from the manufacturing and service sectors. Conducted by the Institute for Supply Management, this index is calculated from a monthly survey of supply chain managers from 400 companies across 19 industries, covering both upstream and downstream production. The survey covers five major topics: new orders, inventory levels, production, supplier deliveries, and employment. Each of these survey areas are equally weighted, and the end result produces a figure between 0 and 100. A PMI score above 50 represents economic expansion while a PMI below 50 indicates contraction. Not only does this metric affect the overall economy, but greatly influences the decisions of manufacturing companies through guidance on annual budget planning, managing staffing levels, and forecasting cash flows.

Continuous declines in expansion numbers have been the headline for the PMI readings since February 2022. Several catalysts of these declining numbers in early 2022 include the invasion of Ukraine by Russia, supply chain shortages, and higher than normal inflation. Since February 2022, the PMI has declined 14% or almost 8.5 points to October's reading of 50.2, marking the slowest growth since the COVID-19 contraction in 2020. Multiple factors of the PMI ended up in contractionary territory, with new orders at 49.2, backlog of orders at 45.3, and price pressures came in at 46.6. Backlogs are a clear consequence of supply chain disruptions while new order contraction reflects weakened foreign and domestic demand. Tim Fiore, Chair of the ISM, suggested an outlook based on the October report: "With panelists reporting softening new order rates over the previous five months, the October index reading reflects companies preparing for potential future

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lower demand". If manufacturers anticipate a decline in demand, cost cuts can be expected as the PMI index continues to inch closer to the benchmark of 50. Although there was an overall decline in October manufacturing growth, eight industries reported growth: apparel, leather & allied products; nonmetallic mineral products; machinery; petroleum & coal products; transportation equipment; miscellaneous manufacturing; plastics & rubber products; and electrical equipment, appliances & components.

The PMI outlook remains negative as the manufacturing and services sectors continue to suffer from a weak supply chain and potentially dwindling demand. Given the Federal Reserve's policy on slowing the economy to curb inflation, there is a developing worry that the rate hikes will play a role in a continuing bearish economic outlook and have an impact on indicators like PMI. The last eight PMI reports have recorded slowing growth, which could be an indicator that the 29-month expansionary period will dip below the benchmark into contractionary territory. In addition to Fed rate hikes, consumer spending appears to be drastically declining thanks to ongoing inflation. With many looming threats to the economy and production, it is easy to picture a future PMI report below the benchmark.

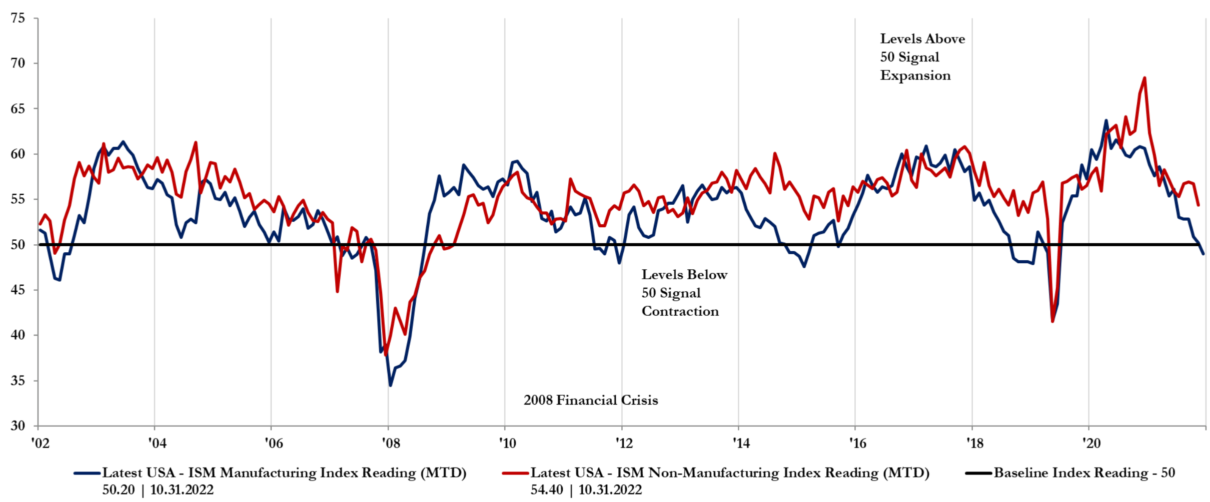

Figure 6: ISM Manufacturing PMI vs. Non-Manufacturing PMI
Source: FactSet

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Energy Outlook

The rise of natural gas prices has calmed down quite a bit since hitting record highs since 2008 in August. Prices have fallen more than 40%, reducing the risk of outlandish heating bills for Americans come winter and easing cost pressures for manufacturers. Surging natural gas prices throughout much of 2022 were driven by post-pandemic excess demand, record levels of hot weather, labor shortages, the closure of coal-driven power plants, pandemic-related supply chain disruptions, and the Russia-Ukraine war, which left European players in the space no choice but to bid up gas prices in an effort to replace Russian exports. The U.S. saw 14-year highs amid the warm summer weather and Russia's plan to shut down the Nord Stream gas pipeline, one of Europe's main fuel access points. Stockpiles were still nearly 13% below normal levels in August and prices approached nearly $10 a gallon in some parts of the country. In September, energy markets turned around with the arrival of milder weather (indicating much less gas burned) and record levels of U.S. production, which reached 100 billion cubic feet of gas per day. From early September until the first couple of weeks in October, 571 billion cubic feet of gas were added to stockpiles, bringing the volume of gas storage within 5.5% of normal levels. While there appears to be ample inventories for the season ahead, below-average winter temperatures could cause a reversal in the energy markets, putting upward pressure on prices as the central bank struggles to fight inflation.

Globally, the EU has been battling an energy crisis sparked by the invasion of Ukraine, forcing officials to take new steps in curbing prices and preparing for possible emergencies. EU member states are currently engaged in hotly contested debate over a gas price gap proposal amid the volatility. The EU is in hopes of energy companies banding together to achieve price negotiation leverage against overseas exporters, an advantage that should allow it to gain new footing for gas price control in the region and weaken Russia's control on its energy. However, the plans have come under pressure due to OPEC's announcement at the beginning of October that will cut oil production by two million barrels per day, or about 2% of the world's daily oil production. This move is likely to push up already high prices even higher while helping Russia fund its war in Ukraine through oil exports. The decision has drawn significant backlash from both the U.S. and the EU as it prevents a loss of market share for Russia.

The CPI's energy index declined 2.1% in September after falling 5.0% in August. In addition, the gasoline index fell 4.9% over the month, following a 10.6% drop in August. In the last 12 months, however, the energy price index has risen 19.8%. The U.S., Japan, Britain, Canada, and the EU will impose a price cap on Russian seaborne crude oil effective December 5 that will not allow shipping and insurance companies to provide services for tankers carrying Russian crude unless that oil is sold below a set price. The price cap has the goal of limiting Russian profits as much as possible while still allowing the country to participate in global markets.

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Surging oil prices and record major oil producer performances have led the Energy sector to be the best performer across the S&P 500 Index. The sector is up a cumulative 66.70% this year, compared with the S&P 500's loss of 17.70%. Despite a dimming outlook, many on Wall Street believe the Energy sector still has room for growth. Goldman Sachs notes energy stocks have been some of the largest outperformers in the market under higher-than-expected inflation and depressed economic growth. These conditions may very well keep the sector growing into 2023.

Figure 7: U.S. Crude Oil Prices: West Texas Intermediate (WTI)
Source: FRED. St. Louis Economic Data

Rise of the Dollar

The U.S. dollar has been experiencing an intense rally that may put it on track for its best year, as it has dramatically grown in value when compared to other foreign currencies. It is up 18% this year according to the ICE U.S. Dollar Index, which measures the dollar against a basket of key currencies, and it hit a 20-year high in September. The Wall Street Journal Dollar Index, which measures the dollar against a basket of 16 securities, shows it has gained over 16% in 2022, largely prompted by rising U.S. interest rates. The Fed has raised the federal funds rate six times this year, and a seventh increase is expected at the December FOMC meeting. These rate hikes have incentivized global investors to move money from other foreign markets into U.S. assets with high yields. This reflects a different story from that of the inflation-plagued 1970s when the dollar plunged in comparison to foreign currencies. Economists point to current worldwide economic weakness as driving the strength of the U.S. dollar today. The rise in the U.S. dollar is expected to persist along with the Fed's aggressive efforts to curb inflation.

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The dollar's role as the primary currency used in global trade is causing intense ripple effects in foreign currencies and markets, evidenced by food and fuel shortages in Sri Lanka, record inflation and an impending recession in the Eurozone amidst an economic war with Russia, and an escalating trade deficit in Japan. The euro, Japanese yen, and British pound have fallen to their greatest lows in decades. In September, the strength of the dollar surpassed a key historical level against the Chinese yuan, with one dollar purchasing over seven yuan for the first time since 2020. This is a consequence of China's biggest slowdown in years, resulting from COVID-19 economic repercussions and a real estate downturn. Emerging market currencies in Egypt, Hungary, and South Africa are down 18%, 20%, and 9.4%, respectively, against the USD, having not been spared from this steep rise in our greenback. This rally has the price of goods and services skyrocketing internationally as the strong U.S. dollar batters local currencies. Many economists fear that the sharp rise of the dollar increases the likelihood of a looming global recession as many challenges in international markets are compounding. For example, energy is typically priced in dollars in emerging economies. This, coupled with the surge in energy prices, amounts to these countries getting hit twice and paying much more for energy.

Within the U.S. economy, the strong dollar has had mixed impacts. U.S. corporations that sell goods internationally are feeling the negative effects caused by the decreased affordability of their exported products. However, companies distributing goods abroad have enjoyed the benefits of weakened local currencies as well. Many corporations are facing increased foreign exchange complexity and volatility. Despite inflation overwhelming the U.S. consumers, their relative purchasing power is at record highs. An index that takes inflation into account when analyzing the dollar's strength relative to major trading partners' currencies topped its previous 2002 peak in July, reflecting the role of the dollar's strength in combating sharp increases in domestic prices.

Figure 8: U.S Dollar Index Spot Rate

Source: Bloomberg | Data as of October 31, 2022

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Global Economic Outlook

The International Monetary Fund projected a continuation of dire global economic conditions in its October 2022 World Economic Outlook. Numerous factors have dampened economic growth globally. Inflation levels are high across the world, reaching rates not seen in over four decades in some countries. Soaring inflation rates in many economies have caused central banks to tighten monetary policy, further hindering economic growth. The Russian Federation's invasion of Ukraine has greatly diminished economic growth not only in Russia and Ukraine, but across Europe. Global supply chain constraints have continued to persist, with China's "Zero-COVID" policy being a contributing factor in recent months. All of these factors have culminated in the IMF projecting a global economic growth outlook that is the agency's weakest growth prediction in over 20 years, excluding the 2008 financial crisis and the 2020 peak of the COVID-19 pandemic. The IMF projects that the global economy will grow by 3.2% in 2022, and by 2.7% in 2023, both down from the 6% growth rate in 2021.

The IMF projects that global inflation levels will rise to 8.8% in 2022, a 4.1% increase from 2021. But inflation should begin to moderate over the medium term, with the IMF estimating inflation rates of 6.5% in 2023, and 4.1% in 2024. The rise of inflation around the globe has been a primary concern for many major world economies. As a result, the central banks of many countries have begun to tighten monetary policy, primarily by raising interest rates. Not only has this slowed economic growth in many countries, but it has also led to the rapid appreciation of the U.S. dollar. The IMF estimates that the dollar had appreciated in value by 13% by September of this year. Given that the U.S. dollar is the primary currency used in global trade, the IMF anticipates that the appreciation of the U.S. dollar will decrease the volume of global trade. Additionally, considering that many developing and emerging economies have debt that is dollar-denominated, the appreciation of the dollar will swell the debt burden on these countries.

The IMF also acknowledged the potential risk that wage increases resulting from a higher cost of living will raise prices, which will again cause wages to climb, producing a dangerous, looping inflationary cycle. Although the possibility of such a wage-price spiral exists, the IMF considers it unlikely and has therefore projected that inflation will decrease over the medium term. This is because the current global inflation levels resulted from a rapid and unexpected post-pandemic demand spike that was met with insufficient supply. Historically, such a cycle occurs when inflation is primarily the result of rapid wage increases.

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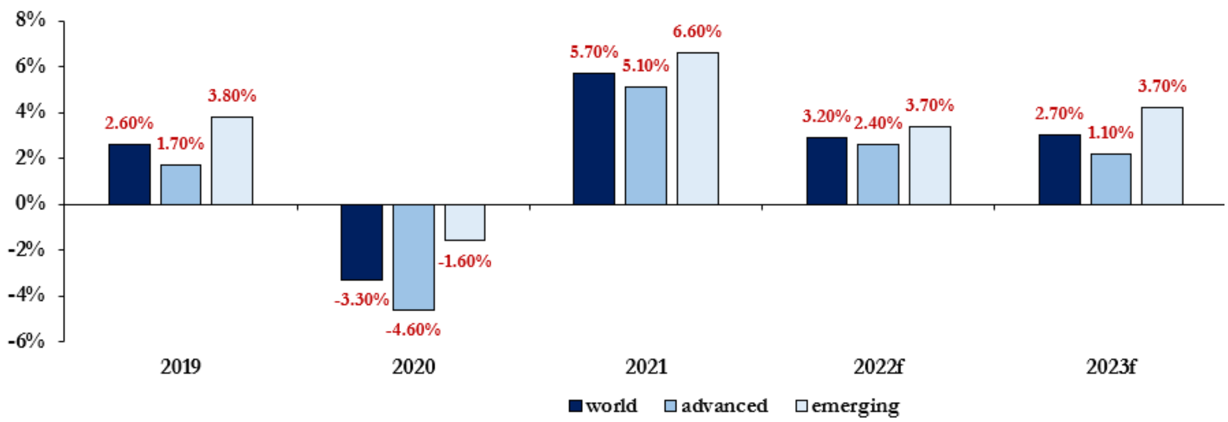

Figure 9: IMF Gross Domestic Product Growth Estimates
Source: International Monetary Fund (IMF)

S&P 500 Outlook & Fundamentals

S&P 500 Outlook

The economy has dealt with a multitude of unprecedented headwinds throughout this year that have dampened investor confidence, as portrayed by the bearish environment in the S&P 500 Index. Whether this apprehension began earlier this year with the geopolitical tensions in Ukraine or stems from dealing with the highest inflationary environment in 40 years, or is a reaction to aggressive levels of tightening by the Federal Reserve, investors are facing a volatile environment. U.S. equity markets dipped into bear territory in the first three quarters of the year and experienced the worst start to a year since 1962. There have been 13 bear markets since 1950, occurring every 5.5 years with an average duration of 12 months. After dropping -16% in Q2, the S&P contracted another -5% in Q3 against a backdrop of increased inflation expectations, the Fed's tightening monetary policy, the Russia/Ukraine war, and a COVID-19 induced shutdowns in China. While pessimism among individual investors concerning the short-term direction of the stock market has decreased slightly coming into the last couple months of the year, the general view continues to lean bearish. The consensus on the Street is that the S&P 500 Index will rise about 13% over the next 12 months, ending at around 4,500. This is founded on the median target price estimates for all companies within the S&P 500 Index as of November 11, 2022. The bottom-up target price for the Index is 4,461.37, based on company-level estimates submitted by industry analysts. The current bottom-up price target runs in stark contrast to what was estimated back in March when analysts were predicting a price target of almost 5,300. This can be explained by higher-than-expected rate hikes, surging inflation, and persistent supply chain constraints. With recessionary fears rising among investors and management teams, it will be interesting to see if the Index can arrive at the current projections. At the sector level, the Communication Services and Consumer Discretionary sectors are estimated to see the largest price increases, returning 26.3% and 24.1%, respectively. These industries are expected to obtain the largest upside differences between their bottom-up targets and their closing prices. Inversely, Industrials and Materials are estimated to see the smallest price increased returning 3.4% and 4.8%, respectively. Out of the overall 10,769 stock ratings in the S&P 500 Index, 55.5% are Buy ratings, 38.7% are Hold ratings, and 5.8% are Sell ratings. The Energy sector contains the highest number of Buy rating at 63% while Consumer Staples has the lowest Buy rat-

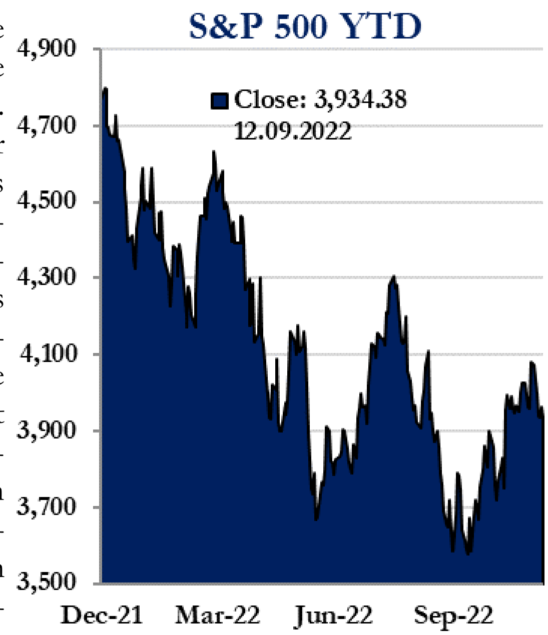

Figure 10: S&P 500 Price Index
Source: FactSet

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ing at 42%. Overall, investor sentiment has been rebounding recently as lower-than-expected inflation numbers have been published, but recessionary fears and uncertainty still loom over investors' heads as they continue to deal with a volatile Fed and a backdrop of macro uncertainties.

Earnings

As of November 11, 91% of the companies in the S&P 500 Index have reported actual results for Q3 of 2022. Of this 91%, the blended earnings growth rate for the S&P 500 Index in Q3 is 2.2%, which is the lowest since Q3 2020 (-5.7%). Of the companies comprising the Index, 69% have reported EPS above estimates, which is below both the five-year average of 77% and the ten-year average of 73%. On average, companies are reporting EPS 1.8% above estimates, below the five-year average of 8.7% and the ten-year average of 6.5%. Four out of the 11 sectors reported year-over-year earnings growth in Q3. The largest year-over-year growth is being seen in the Energy, Industrials, and Real Estate sectors. The largest year-over-year detractors were the Financials, Materials, and Communication Services sectors. In Q3, Energy led the race, having reported the highest positive difference between actual earnings and estimated earnings at +10.2%. Contrarily, Communication Services reported the largest negative difference between actual earnings and estimated earnings at -8.6%. Looking ahead, 52 S&P companies have issued negative EPS guidance and 25 have issued positive EPS guidance for Q4 2022. Out of the 91% of reported companies, 71% have reported actual revenues above estimates, above the five-year average of 69% and the ten-year average of 62%. The blended revenue growth rate is 10.6%. At the sector level, Utilities and Energy have reported the largest positive differences between actual revenues and estimated revenues while Communication Services reported the worst difference.

Valuation

With inflation still looming at around 7.7%, the Economic Outlook Team approached this semester with a more cautious view of valuations as equity markets continue to experience significant volatility. Around the world, many westernized countries face rising inflation, oil supply issues, and weakening consumer spending. The Russia-Ukraine war caused crude oil prices to skyrocket; WTI is now trading at $71 a barrel compared to $66 a year ago. High inflation is not the only cause for concern. Fiscal drag resulting from a budget deficit is creating worry among investors as well. The budget deficit dropped below $1 trillion in fiscal year 2022 compared to $3.2 trillion in 2020. The reduced flow of government money will have a serious effect on low-middle income families within the U.S. Furthermore, mortgage rates have doubled since the beginning of the year. Looking specifically at valuation, the forward 12-month P/E ratio for the S&P is 17.1, which is below the five-year average of 18.5 but in line with its ten-year average. Valuation analysis will continue to help the Economic Outlook Team generate ideas on how to react to the uncertainty in the market throughout the coming semester.

Valuation Matrix	November 30, 2022	3 Month Median	5-Year Median	10-Year Median	20-Year Median	Current vs 10-Year Median Difference	Premium (Discount) vs 10-Year Median
S&P 500 (LTM)							
P/E	**19.0x**	18.2x	20.5x	18.8x	17.3x	0.2x	1.3%
P/B	**4.1x**	3.8x	3.6x	3.2x	2.9x	0.9x	27.7%
EV/Sales	**2.8x**	2.7x	2.7x	2.5x	1.9x	0.3x	11.0%
EV/EBITDA	**13.3x**	12.8x	13.7x	12.8x	10.7x	0.5x	4.0%
S&P 500 Sectors (Forward P/E)							
Energy	**9.7x**	9.3x	15.7x	16.8x	12.8x	(7.0x)	(41.9%)
Materials	**16.7x**	14.3x	16.7x	16.1x	15.1x	0.6x	3.9%
Industrials	**19.0x**	17.3x	17.8x	16.3x	15.7x	2.7x	16.5%
Consumer Discretionary	**24.4x**	24.1x	24.6x	21.7x	17.6x	2.6x	12.1%
Consumer Staples	**21.7x**	20.1x	20.1x	19.6x	17.4x	2.1x	10.8%
Healthcare	**17.8x**	16.4x	16.3x	16.1x	15.9x	1.7x	10.6%
Financials	**12.6x**	11.7x	13.0x	12.5x	12.2x	0.1x	0.8%
Technology	**21.8x**	20.0x	21.0x	17.2x	17.0x	4.7x	27.2%
Communication Services	**15.6x**	14.5x	18.7x	18.5x	17.9x	(2.9x)	(15.6%)
Utilities	**19.0x**	18.2x	18.3x	17.3x	15.1x	1.8x	10.2%
Real Estate	**17.3x**	16.2x	19.6x	18.3x	18.2x	(1.0x)	(5.3%)
Macroeconomic Enviroment							
10-Year US Treasury Yield (Nominal)	**3.69%**	3.77%	1.84%	2.27%	2.76%	1.4%	62.6%
Effective Federal Funds Rate	**3.83%**	3.08%	1.42%	0.17%	0.40%	3.7%	2152.9%
Core CPI (YoY)*	**6.31%**	6.31%	2.23%	2.00%	2.00%	4.3%	214.7%

Data as of 11.30.2022 | Source: FactSet
** CPI Data as of 10.31.2022*

Figure 11: S&P 500 Price Valuation Matrix
Source: FactSet

Valuation

Figure 12: S&P 500 Forward EV/EBITDA
Source: FactSet

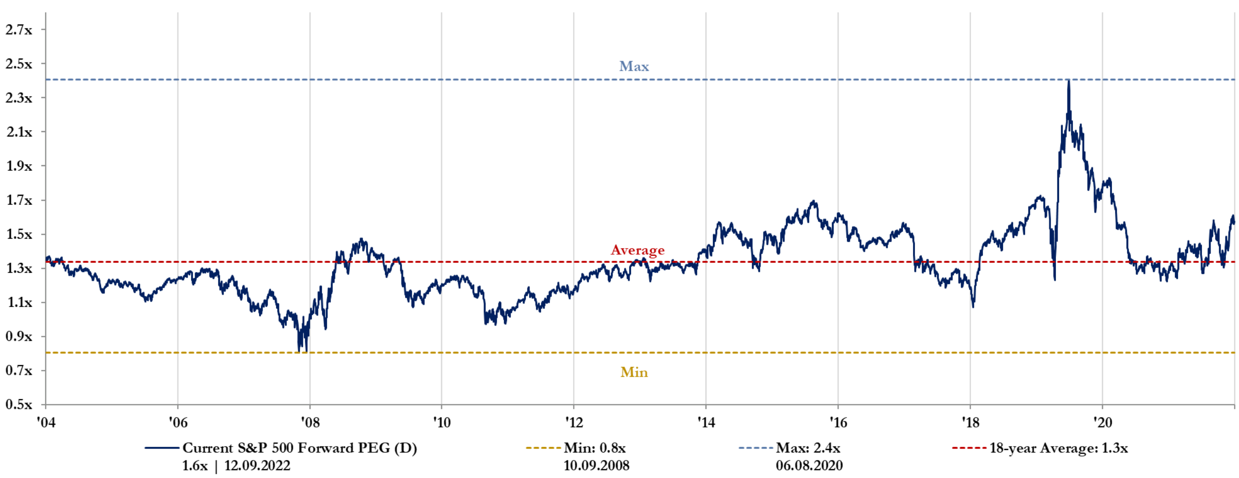

Figure 13: S&P 500 Forward P/E
Source: FactSet

Sector Positioning

Information Technology

The Economic Analysis Team recommends an underweight position in the Information Technology sector relative to the S&P 500 Index for the upcoming semester. Current valuations are stretched beyond historical averages and are currently trading at a 21% premium to their 10-year PE average, indicating they have further room to correct themselves. Traditionally, the sector struggles during periods of high inflation, regardless of the health of the economy. Furthermore, history shows that IT underperforms in periods of rising interest rates, economic downturns/recessions, and periods where GDP growth is below average. Meanwhile, ongoing supply chain issues continue to cripple the industry. Although the sector's long-term fundamentals remain strong, the near-term headwinds will impair growth opportunities.

Health Care

The Economic Analysis Team recommends a neutral weight position in the Health Care sector relative to the S&P 500 Index for the upcoming semester. There are many factors that prove positive for the sector, such as its historically defensive nature in peaking economic growth environments, an aging global population, a growing middle class in emerging markets who are in high demand for drugs and medical treatments, and the resumption of elective care. There are still risks and negatives associated with the sector, however, such as the prospect of prescription drug price controls and regulations regarding anticompetitive contracting practices and the pandemic's lingering impact. The industry also faces volatile investment conditions and labor shortages that affect the management, operation, and financial performance of the sector.

Financials

The Economic Analysis Team recommends a neutral position in the Financials sector relative to the S&P 500 Index for the upcoming semester. U.S. financial institutions have looked forward to the return of a higher interest rate environment for some time, but the aggressive and fast-paced nature of the Fed's rate hikes has sparked recessionary fears and volatility in the markets. Higher rates tend to have a positive impact on banks but can also harm credit quality, and elevated inflation can bring about increased costs for borrowers. Valuations remain relatively attractive as compared to other sectors, but forward earnings estimates have flattened out.

Sector Positioning

Consumer Discretionary

The Economic Analysis Team recommends an underweight position in the Consumer Discretionary sector relative to the S&P 500 Index for the upcoming semester. High inflation, increasing unemployment estimates, and growing recessionary probability all serve as blockades for growth in the upcoming six months. Consumer sentiment remains extremely low and even with persistent retail spending and PCE reaching record numbers recently, the sector has performed poorly. Personal saving rate is the lowest since the Great Recession, and revolving consumer credit owned and securitized is at the highest level ever. Furthermore, valuations remain stretched as the sector is trading at a 14% premium to its 10-year historical PE average. As the business cycle moves into a contractionary phase, the tendency for the Discretionary sector to underperform suggests an underweight in the Fund's position would be prudent.

Industrials

The Economic Analysis Team recommends a neutral position in the Industrials sector relative to the S&P 500 Index for the upcoming semester. While prospects for an increase in infrastructure and clean-energy investments will likely support the machinery and building materials industries, the pace of spending is uncertain. Although transportation and air freight have benefited from a return in demand as economies reopen, higher fuel costs and supply backlogs may pressure profits at a time when valuations for the sector are relatively unattractive. Furthermore, U.S. manufacturing orders have contracted four out of the past five months, nearing stagnation in October.

Communication Services

The Economic Analysis Team recommends a neutral weight position in the Communication Services sector relative to the S&P 500 Index for the upcoming semester. Since the launch of the Communication Services sector in late 2018 (with the exception of last semester), the Team has consistently underweighted it relative to the S&P 500 Index due to a secular decline in "old media" and the shift away from traditional and cable T.V. The Team has come to realize that it is short-sighted to continue underweighting a sector composed of companies that are in the process of transitioning toward online mediums instead of relying on a dying business model. Despite the highly concentrated nature of the sector's market capitalization, the Team believes a neutral weight in the sector is warranted.

Consumer Staples

The Economic Analysis Team recommends an overweight position in the Consumer Staples sector relative to the S&P 500 Index for the upcoming semester. The sector tends to outperform during the late stages of the business cycle given its defensive nature and stable earnings power. The sector enjoys a steady, inelastic demand for its products, which will be the main driver for outperformance if the U.S. enters a recession. Staples has shown resilience this year, largely outperforming the market due to many constituent companies' pricing power, which has allowed them to pass

Sector Positioning

along increasing input costs to the consumer. The industry is also trading at a discount on a valuation basis, providing a good entry point into a recession-proof industry.

Energy

The Economic Analysis Team recommends an overweight position in the Energy sector relative to the S&P 500 Index for the upcoming semester. Short- and medium-term fundamentals remain attractive while supply shortages and strong demand persist. Ongoing geopolitical tensions as well as Western Europe's divesture from natural gas will continue to push the global shortage and serve as a catalyst for strong pricing growth. U.S. inventories have decreased about 17% YTD, and OPEC's recently announced production cuts, signaling it has reverted to a price-defense mode after recent price decreases, will assure supply remains below average levels. Valuations are extremely attractive as the sector is trading at a 41% discount to its 10-year PE multiple, despite this year's strong outperformance.

Materials

The Economic Analysis Team recommends a neutral weight in the Materials sector relative to the S&P 500 Index for the upcoming semester. The sector typically performs well during the expansion stages of the business cycle since economic growth and spending support the demand for raw materials and chemicals. Although prices for major metals and chemicals remain elevated given strong demand versus supply constraints, global economic growth is at risk of easing amid peaking U.S. growth and tighter financial conditions resulting from the threat of inflation and the Russia/ Ukraine war.

Utilities

The Economic Analysis Team recommends a neutral weight in the Utilities sector relative to the S&P 500 Index for the upcoming semester. This sector performs relatively better when concerns regarding slowing economic growth resurface and underperforms when those worries fade. Signs of peaking economic growth provide a tailwind for this sector. However, expectations of higher short- and long-term interest rates counterbalance the defensive attributes somewhat since the sector acts as a bond proxy.

Real Estate

The Economic Analysis Team recommends a neutral weight in the Real Estate sector relative to the S&P 500 Index for the upcoming semester. Components of this sector are very sensitive to increasing interest rates and have historically underperformed most other sectors when the Fed raised rates, as illustrated in the aftermath of the 2008 Financial Crisis. However, in counterbalance to this risk, certain REITs can act as a strategic hedge against inflation since they can quickly increase their revenue streams to adapt to an inflationary environment.