MEKETA
INVESTMENT GROUP

Stagflation

WORKING PAPER
FEBRUARY 2022

CONTRIBUTORS
Alison Adams, PhD
Ted Benedict, CFA, CAIA
Frank Benham, CFA, CAIA
Thomas Dunleavy, CFA, CAIA
Allan Emkin
Gloria Hazard
Stella Mach
Orray Taft, CAIA, FRM
Rafi Zaman, CFA

Inflation rose 7% in December 2021, capping off a year of increasing inflationary numbers. The last time the US saw such high inflation was in 1982, when the US economy was suffering through the second leg of back-to-back recessions, inflation had soared, and the Federal Reserve had hiked rates to 19%. That was the last time the US experienced an economic condition called stagflation, where the measures used to fight runaway inflation tipped the economy into recession and pushed unemployment above 10%. For investors there was no place to hide as bonds and equities suffered negative returns.[1]

[1] Sources: Bureau of Labor Statistics, FRED, and Federal Reserve.

Fortunately, since that time, stagflation has been rare in advanced economies. But memories of steep market losses caused by stagflation cast a long shadow. Hence the recent surge in US inflation has investors concerned that they may experience stagflation for the first time in 40 years. This is because both bonds and equities (public and private), which represent the primary components of many diversified portfolios, could suffer negative returns in a stagflationary environment.

While Meketa believes that it is unlikely that the current inflationary environment will deteriorate into full-blown stagflation, we acknowledge that institutional investors may benefit from a closer look at stagflation, its origins, variables, and potential outcomes.

The history of stagflation

The term stagflation was originally a political term coined in the United Kingdom (UK). In the 1960s and 1970s, the UK suffered from spiraling inflation, rising unemployment, and weak economic growth. Government efforts to spur growth by indexing wages to support consumer spending repeatedly failed to deliver economic growth. The conservative government of Margret Thatcher eventually broke the stagflationary spiral in the 1980s by slashing government spending, liberalizing state businesses, and tightening monetary policy.[2]

[2] Source: How Margret Thatcher Changed the World. https://www.bbc.com/news/business-22073527.

Stagflation in the US occurred in association with the oil supply shocks of 1973-74 and 1979-81. The first oil shock occurred at a vulnerable time when the US economy was transitioning from the gold standard. The federal government borrowed heavily to finance the Vietnam War and the expansion of social programs in the 1960s and early 1970s. Wages and domestic demand soared. And for a time, the Federal Reserve kept borrowing costs low to support the "Guns and Butter" spending. But in 1971 when the

Nixon administration suspended the gold-convertibility of the US dollar, the value of the dollar weakened, reflecting the high debt burden of the government. In an attempt to stabilize prices, the Nixon administration launched a series of price and wage controls to slow the rate of inflation.[3] The price and wage fixing schemes created scarcity and, once removed, resulted in catch-up inflation.

The Arab Oil Embargo of 1973 lasted only five months, but the price of oil quadrupled and stayed elevated for most of the 1970s. In the 1970s, the US economy depended on oil, and the embargo pushed prices of goods and services higher in nearly every sector. A good portion of American workers had their wages indexed to inflation. So as inflation rose, wages rose accordingly. American businesses suffered a double blow of higher energy costs and higher wages. Higher operating and labor costs forced businesses to lay-off workers.[4]

The US business cycle swung back and forth between strong growth and recession between 1973 and 1979 (see Figure 1). By 1979, the Iranian Revolution ushered in another global oil crisis and the price of oil tripled. Inflation soared to almost 14% on an annualized basis and unemployment exceeded 10%. In response to the crisis, President Jimmy Carter appointed Paul Volcker to chair the Federal Reserve. Volcker began to swiftly raise interest rates, and by 1981 the Fed Funds Rate (FFR) had vaulted to over 19%. The US economy fell back into recession very quickly, but Volcker's actions had finally tamed inflation by the end of 1983.

[3] Nixon's Treasury and Federal Reserve had used price fixing schemes to try to lower inflation after the end of Bretton-Woods, but like most price fixing schemes in economic history, the suppression of prices created scarcity and pushed prices very high once the schemes were eliminated. The price controls of 1971-1974 lasted through the end of the Nixon administration. In 1974, the Whip Inflation Now campaign of the Ford administration relied on voluntary restraint and thrift.

[4] Source: https://www.federalreservehistory.org/essays/great-inflation

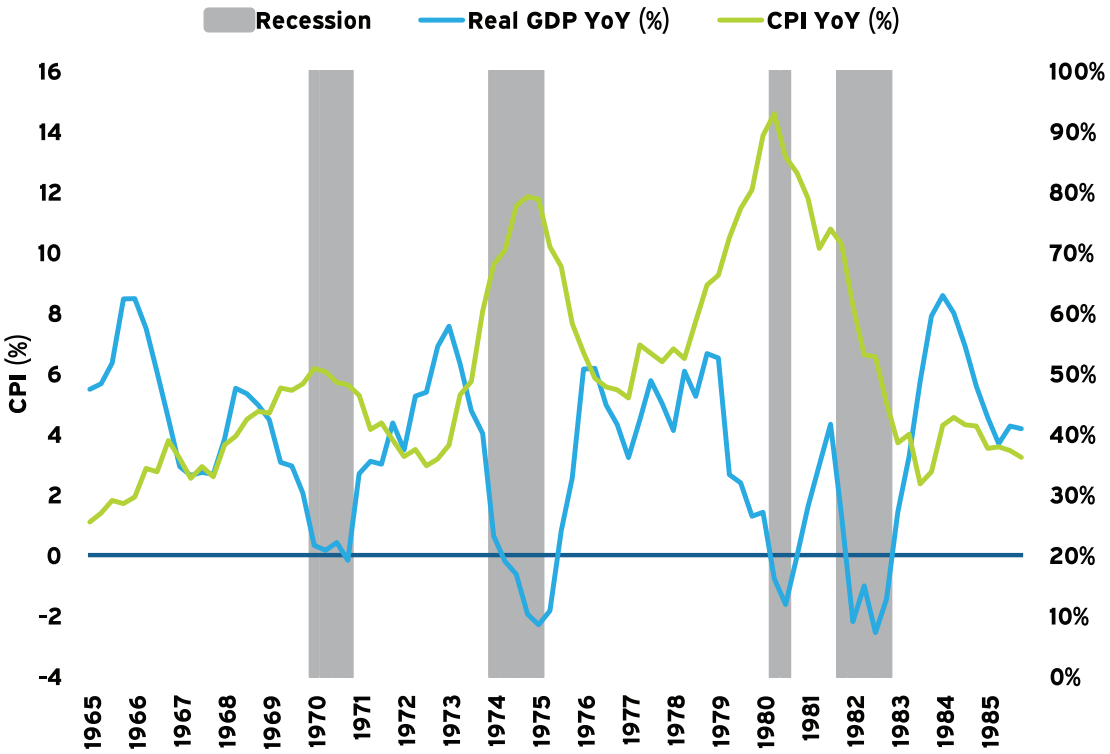

FIGURE 1
US Growth, Inflation and Recessions (1965-1985)
Source: FRED

Why US stagflation is possible but unlikely today

As the US economy recovers from the effects of the global pandemic and serial lockdowns, we can see some parallels with the 1970s and 1980s. In the past, stagflation was associated with rising inflation and high energy prices as well as rising unemployment and weak economic growth. When each variable is examined independently, the US economy is currently growing well above potential and unemployment is near pre-pandemic lows. Very strong economic growth and an improving unemployment rate do not align with the classic definition of stagflation (see Figure 2).

Stagflation Criteria	1973-74	1979-82	December 2021
Peak inflation (CPI)	11.0%	13.5%	7.1%
GDP Annual Growth (YoY)	-0.5%	-0.3%	5.7%
Peak Fed Funds Rate	12.9%	19.1%	0.01%
Peak Unemployment	6.1%	10.8%	3.9%
Peak hourly wage growth	8.9%	9.1%	4.5%

FIGURE 2
2021 US Economic Statistics V. Stagflationary Periods

Sources: The table is illustrative and historical data showing peaks and averages may differ from monthly and annual data from the period. Sources include Bureau of Labor Statistics, FRED, Bureau of Economic Analysis, and Federal Reserve.

- **Growth:** Perhaps the most important difference is that the US economy is growing at a very rapid rate. In 2021, the US grew 5.7%. This is the fastest annual growth recorded for the US since 1984. For comparison, the US grew 2.2% in 2019.[5] Consensus growth forecasts for the US in 2022 range between 3.5% and 4%.[6] While the US may grow at a slower pace in 2022 than in 2021, these forecasts include a series of Fed rate hikes as well as the withdrawal of fiscal stimulus. Professional forecasters appear to agree that the US will continue to benefit from re-opening tailwinds of pent-up demand, rising wages, healthy balance sheets, and very low borrowing costs.[7]

- **Unemployment:** In contrast to the soaring unemployment of the 1970s and 1980s, the US labor market is remarkably strong. In 2020, unemployment exceeded 14%. But since then, the labor market has healed rapidly. At the end of 2021, the unemployment rate reached 3.9% and is approaching pre-pandemic levels.[8] While the labor force participation rate is below pre-pandemic levels, it has been trending back up since the beginning of 2021. COVID-related early retirement, medical precautions, and childcare demands, appear to have contributed to the low participation rate. These factors are expected to diminish as the pandemic threat subsides. Substantial fiscal support as well as rent and student loan forbearance schemes will expire in 2022, encouraging more discouraged workers to return to the workforce. It is unclear if the child tax credit extended during the pandemic will be renewed in 2022.

- **Supply shocks:** Perhaps the most important similarity with the 1970s is the steep and rapid rise of oil prices. The current energy shock, unlike those of the 1970s, is due primarily to domestic issues, specifically the shuttering of domestic production in 2020 in response to COVID lockdowns. Oil producers have been slow to add back

[5] The Federal Reserve's dual mandate is to support price stability and maximum employment. The US economy is thought to have an optimal rate of employment where the maximum number of workers are employed and at which wage inflation pressures will not manifest. In 2020, the FOMC noted that the US economy appeared to be able to have a lower rate of unemployment without experiencing inflation and introduced its flexible and adjustable inflation targeting (FAIT), allowing unemployment to fall below 4% and inflation to run above 2%.

[6] As of January 2022, the US economy grew 5.7% in 2021.

[7] Source: IMF and Conference Board 2022 forecasts for US economy in 2022. Data as of January 2022.

[8] Many individuals over 55 have seemingly chosen to leave the workforce and retire rather than return to work.

production capacity as serial lockdowns have delayed a return to pre-pandemic travel and commuting patterns. The price of gasoline has increased over 30% since October 2020, driving up the costs of transportation across the board. With the price of oil trading above $80 a barrel,[9] we could see more production capacity added in 2022 and 2023. The pandemic has also distorted the labor markets at a time when the US economy is growing at twice its potential rate of growth. COVID-related retirements, a surfeit of savings buoyed by investment gains, reluctance to return to public facing work, the demands of childcare, and other variables have contributed to labor scarcity. Furthermore, demand for remote services and deliveries has driven structural changes in the economy where new enterprises are competing with traditional businesses for skilled workers. Currently, job openings exceed the number of applicants in many sectors. Should these conditions persist, we could experience increased wage pressures in 2022.

[9] West Texas Intermediate (WTI) crude oil spot price as of early February, 2022.

- **Inflation:** Each sub-component of the CPI inflation index, appears to have its own lock-down and reopening story. But for now, it is not clear that each sector's price increase will prove to become harmonized into broad-based higher inflation expectations. In 2021, each monthly inflation report seemed to capture different sector pricing pressures. Early in 2021, demand for semi-conductors drove technology prices higher. Reluctance to take public transportation and very low borrowing costs created demand for new and used cars. A shortage in semi-conductors helped create a shortage in new cars. In the fall, national moratorium on evictions for non-payment of rent in 2020 and into 2021 expired and resulted in a surge in rental prices. The component that captures housing price appreciation within CPI, owners' equivalent rent (OER), has still not fully captured the national surge in home prices in 2020 and 2021.[10] The Fed's preferred measure of inflation, PCE, rose 4.3% in the third quarter of 2021, but the Fed forecasts that the PCE inflation indicator will fall to 2.6% by the end of 2022. Although market indicators are changeable, the breakeven inflation estimates align with the Fed's long-run inflation outlook with the 5-year breakeven rate around 2.8% and the 10-year breakeven rate near 2.5%. For now, market indicators point to inflation being a near-term issue but not a long-run threat.

[10] OER is approximately 40% of the CPI basket and currently lags the increase in house prices in 2020 and 2021.

- **Duration:** For most economists, the "Great Inflation Period" lasted from 1965 through the 1980s with periods of stagflation that lasted at least a couple of years at a time. At this time, inflation has been well above target for a few months but accompanied by very strong growth and falling unemployment. We have not yet seen indications that high inflation will persist over the long term.

Today, the Federal Reserve could find itself in the position of raising borrowing costs to cool demand and stabilize price inflation before the US labor market is fully recovered from two years of COVID-related disruptions. The Fed must walk a narrow path to support a broadening and deepening of economic and employment recovery while attempting to cool demand and lower inflation expectations without forcing the US economy into recession. Investors may be concerned about the possibility that the Fed could inadvertently reignite stagflation with a "policy mistake" as they exit their current accommodative policies.

If stagflation returns, what can an investor do?

Although the level of potential losses in a stagflationary environment is unknown, what is clear is that there are few if any places to hide. Being well diversified may mitigate - but not eliminate - potential losses. While we do not know what may happen, our analysis (see Figures 3 and 4) indicates that most asset classes could suffer negative returns in a period of prolonged stagflation. However, assets such as cash, TIPS, commodities, core real estate, and gold are likely to perform better than traditional bonds and equities.

Asset Class[11]	Low Growth and Moderate Inflation	Low Growth and High Inflation
Cash	0.4	0.7
Long-term Gov't Bonds	-5.6	-7.8
Short-term TIPS	-1.5	-1.5
TIPS	-3.2	-3.4
US Equity	-11.3	-14.0
Global Equity	-16.2	-20.4
Core Private Real Estate	1.7	2.0
Public Natural Resources	-13.5	-15.7
Commodities	4.4	7.6
Gold	1.0	3.1

FIGURE 3
Average Annualized Returns Under Low Growth and High Inflation (%)

Source: Meketa sensitivity analysis based on asset class performance for the period 1973-2021. Asset class returns reflect annualized, nominal returns. Low growth is defined as the bottom quartile of quarter-over-quarter GDP growth (less than 0.3%), Moderate Inflation is the median of month over month inflation (0.28%), High Inflation is the 75th percentile of month over month inflation (0.45%). Some asset class performance has been backfilled with representative returns. For detailed information about the modeling methodology, please refer to Meketa's "The Inflation Variable: Evaluating Potential Outcomes."

While real assets such as real estate, infrastructure and natural resource equities are often considered an inflationary hedge, our analysis indicates that the performance of these private and public investments depends on the presence or absence of economic growth, the level of inflation, and the duration of the inflationary period. For example, if inflation remains at moderate levels for a short period of time (so that underlying growth is not disrupted), real estate, infrastructure and natural resource equities may perform moderately well. However, if inflation is prolonged and growth is below potential, even these asset classes are unlikely to offer positive returns.

Depending on the nature of the stagflationary environment, some asset classes may even offer positive returns. For example, gold and commodities provided gains during periods of high and persistent inflation in the 1970s. If a prolonged supply shock occurs in the energy market, like it did during the 1970s, it would not be surprising to see strong gains by commodities. If investor confidence in the ability of the Federal government to rein in inflation and pay its debts was to wane, gold could perform well.

[11] The benchmarks used for each asset class are: Cash - Bloomberg Barclays US Treasury Bill Index, Long-term Gov't Bonds - Bloomberg Barclays US Treasury: Long Index, Short-term TIPS - Bloomberg Barclays US Treasury Tips 1-5 Years Index, TIPS - Bloomberg Barclays Global Inflation-Linked: US Tips, US Equity – Russell 3000, Global Equity – MSCI ACWI, Core Private Real Estate - NCREIF ODCE Equal Weighted, Public Natural Resources - S&P Global Natural Resources Net TR Index, Commodities – Bloomberg Commodity Index, Gold – LBMA Gold Price PM USD.

Conclusion

While we acknowledge that inflation in the US is a concern, we do not yet see conditions that would indicate that stagflation is imminent. As long as unemployment remains low and growth above potential, we believe that comparisons to stagflation in the 1970s and 1980s are premature.

That said, we believe it is useful for investors to have an understanding of what kind of impact stagflation could have on their portfolio and how they might be able to prepare for it. We believe that a properly diversified portfolio should take into account the possibility of multiple environments, not just the one an investor believes is most likely to occur. We encourage our clients to speak with their consultants about the best way to address the concern of stagflation for their portfolio.

Appendix

Asset Class	Very Brief, Extreme Inflation Spike	Brief, Extreme Inflation Spike	Extended, Extreme Inflation Spike
Cash	0.8	0.7	0.9
Long-term Gov't Bonds	-5.5	-5.7	-4.9
Short-term TIPS	0.1	0.2	0.0
TIPS	1.0	0.9	1.5
US Equity	-11.6	-10.3	-15.5
Global Equity	-13.1	-12.0	-16.3
Core Private Real Estate	1.5	1.5	1.2
Public Natural Resources	-8.4	-7.6	-11.1
Commodities	10.0	11.1	6.6
Gold	40.5	35.9	55.7

FIGURE 4
Average Annualized Returns Under High Inflationary Periods (%)

Source: Meketa sensitivity analysis based on asset class performance for the period 1973-2021. Asset class returns reflect annualized, nominal returns. Extreme Inflation Spike is defined as being in or above the 95th percentile of month-over-month inflation (0.45%). Very Brief Inflation lasts 1-2 months, Brief Inflation lasts 4-8 months, and Extended Inflation lasts 12+ months. Meketa has backfilled the performance returns of TIPS, real estate, and public natural resources. For detailed information about the modeling methodology, please refer to Meketa's "The Inflation Variable: Evaluating Potential Outcomes".

Disclaimers

This document is for general information and educational purposes only, and must not be considered investment advice or a recommendation that the reader is to engage in, or refrain from taking, a particular investment-related course of action. Any such advice or recommendation must be tailored to your situation and objectives. You should consult all available information, investment, legal, tax and accounting professionals, before making or executing any investment strategy. You must exercise your own independent judgment when making any investment decision.

All information contained in this document is provided "as is," without any representations or warranties of any kind. We disclaim all express and implied warranties including those with respect to accuracy, completeness, timeliness, or fitness for a particular purpose. We assume no responsibility for any losses, whether direct, indirect, special or consequential, which arise out of the use of this presentation.

All investments involve risk. There can be no guarantee that the strategies, tactics, and methods discussed in this document will be successful.

Data contained in this document may be obtained from a variety of sources and may be subject to change. We disclaim any and all liability for such data, including without limitation, any express or implied representations or warranties for information or errors contained in, or omissions from, the information. We shall not be liable for any loss or liability suffered by you resulting from the provision to you of such data or your use or reliance in any way thereon.

Nothing in this document should be interpreted to state or imply that past results are an indication of future performance. Investing involves substantial risk. It is highly unlikely that the past will repeat itself. Selecting an advisor, fund, or strategy based solely on past returns is a poor investment strategy. Past performance does not guarantee future results.