Modern Monetary Inflation

As a thought experiment, one could ponder what would happen if a modern-day tycoon, such as Elon Musk, decided to liquidate all his assets and distribute his fortune equally to everyone. If we limit our fantastical muse to every citizen of the United States, we would each receive $530.12[1]. Yet, in a post-Covid world, this thought experiment has real world implications. Today, global central banks are utilizing monetary policy to counter the second order consequences resulting from government intervention and fiscal policy response to the pandemic. In addition, geopolitical strife continues to add to the confluence of events currently roiling capital markets led by the highly inflationary environment.

What is Inflation?

An economist defines inflation as a general increase in the prices of goods and services in an economy. Anecdotally, we all reference inflation on a regular basis. When your grandfather reminisces about paying $0.29 per gallon for gas in 1953 or your mother can't wrap her head around how Costco can still afford to only charge $1.50 for a hotdog and soda; that's inflation. The renowned economist Milton Friedman stated, "Inflation is always and everywhere a monetary phenomenon, in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output." It can be characterized as a faster increase in money supply in relation to the wealth produced within an economy. Effectively, this generates pressure of demand on a supply that does not increase at the same rate. Thus, the Consumer Price Index [CPI] and the Personal Consumption Expenditure Index [PCE] increase—generating inflation.

In the modern global economy inflation transcends borders, affects international trade balances, and influences global economic output. In a local economy, as referenced in the prior $0.29 per gallon 1953 gas price, inflation reduces the value of currency over time. On an international scale, inflation affects relative general price levels through the Purchasing Power Parity. The currency with the higher inflation rate loses value and depreciates, while the currency with the lower inflation rate appreciates on a relative basis. Therefore, inflation reduces the purchasing power of currencies in foreign markets.

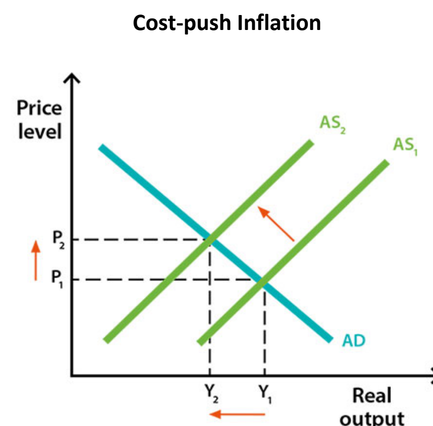
What causes Inflation?

On a fundamental basis, inflation causes can be grouped into three components:

Cost-push Inflation

When aggregate supply for goods and services falls, with no change to demand, prices are driven higher. Upon the onset of the Covid-19 pandemic, government mandates brought the economy to an abrupt halt. Factories ceased production, shipping channels were shut down, and all non-essential businesses were required to close. Supply chain disruptions led to an immediate increase in the price of commodities. For example, the price for lumber—to buy one contract for 110,000 board feet lumber futures—spiked from $259.88 on April 2nd, 2020, to $1686.00 on May 7th, 2021, an increase of 542.25 percent.

Cost-push Inflation



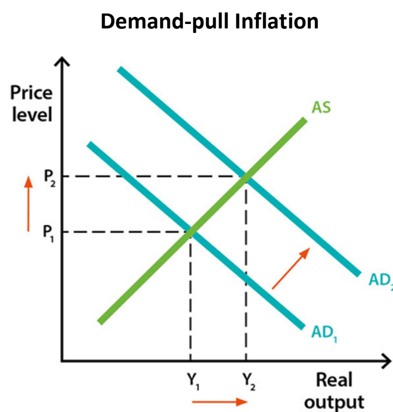
Source: Reserve Bank of Australia
AS1,2 – Aggregate Supply
AD – Aggregate Demand

Demand-pull Inflation

When aggregate demand for goods and services increases to exceed the supply that can be sustainably produced, demand-pull inflation occurs. To hark back on the muse of a tycoon distributing his or her fortune among the citizenry; each would be allocated $530.12. A more

appropriate real-life reference would be the federal government's response to the pandemic. The Coronavirus Aid, Relief, and Economic Security (CARES) Act included an unprecedented distribution of money to citizens and private and public institutions to stimulate the economy. Eligible people were allocated up to $3,200.00. The colloquial definition, too much money chasing too few goods comes to mind. The lockdowns fostered the largest quarter-over-quarter drop in GDP on record. The inflationary effects of the stimulus were manifested in a rapid increase in the ratio of money supply to goods and services available, and the results were immediately quantifiable. The ensuing spike in Retail Sales was by far the highest on record and jumped over 622 percent over the pre-Covid historic mean.

Demand-pull Inflation



Source: Reserve Bank of Australia
$AD^{1,2}$ – Aggregate Demand
AS – Aggregate Supply

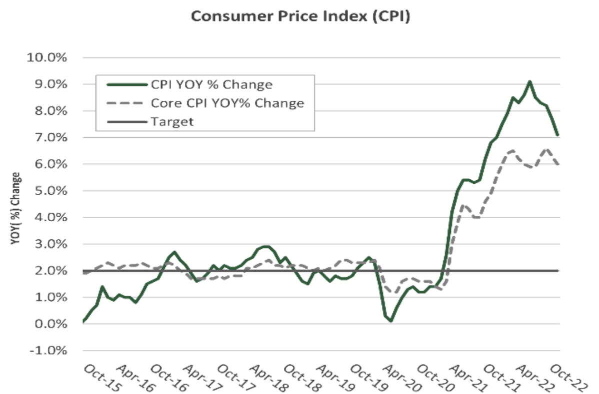
Inflation Expectations

The definition of the third cause of inflation is reflected in its name. Household and firms' expectations for future price increases influence economic behavior in the present. If workers anticipate inflation to be higher in the future, they will demand higher wages in the present to mitigate losing future purchasing power. After the Great Financial Crisis, wage growth averaged 2.8 percent from December 2009 to May 2020; it then abruptly increased to 6.4 percent post-pandemic indicating wage inflation. The Federal Reserve is acutely aware of the corollary effects inflation expectation has on price stability. Inflation Expectations are often categorized as 'Anchored' and 'Unanchored'. Economists generally consider inflation expectations to be anchored when consumer sentiment toward future inflation is in-line with the Federal Reserve's target rate of 2 percent. Intuitively, when expectations surpass the Federal Reserve's target, the adage "a self-fulfilling prophecy" is an apt description for the implications of price stability e.g., not stable.

How is Inflation Measured?

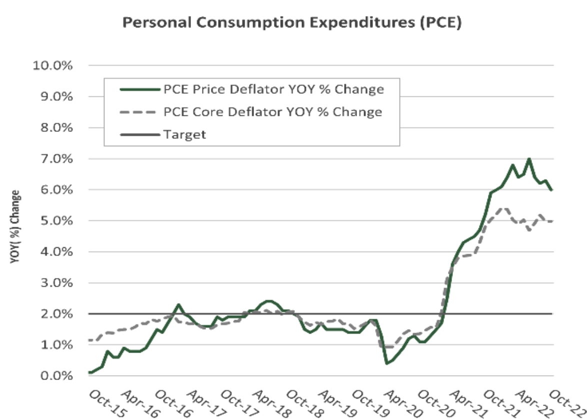
A litany of economic data exist that market participants scrutinize to gauge inflation. The two primary economic indicators are the CPI and the PCE. Within the two indices are the driving forces of our consumption-driven economy; approximately 70 percent of US GDP is derived from consumer spending. Clocks, lamps, decorative items, beef, bicycles, books, dishes and flatware, childcare, and, yes, gas are among the thousands of goods and services accounted for in the two indices.

The CPI is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. It is a household survey meaning that it is based on survey results from individuals indicating what they are buying and how much they are paying for those goods and services. CPI is also used to determine Social Security Benefits 'COLAs' or Cost-of-Living Adjustments. Incidentally, Social Security general benefits were adjusted higher by 8.7 percent for 2023. This is the 4th largest increase since the inception of COLAs in 1975. The 2023 COLA is superseded only by increases in the Paul Volcker era of 1979, '80, and '81—an ominous sign for near-term prospects of inflation abating to the Fed's 2 percent target. Throughout its 109-year history, CPI has averaged 3.28 percent on a year-over-year basis.



Source: US Department of Labor

The PCE Index is a measure of the prices that people living in the United States pay for goods and services. The PCE is weighted by data acquired through business surveys indicating the goods and services businesses are selling and the prices they are receiving. The relevance of the PCE cannot be understated. When the volatile food and energy components are stripped out, what remains is referred to as the PCE Core Deflator. The PCE Core Deflator Index is the Federal Reserve's preferred gauge of inflation and is referenced for the goal of a 2 percent inflation target.



Source: US Department of Commerce

Combating Inflation

The Federal Reserve is responsible for implementing monetary policy to facilitate optimal US GDP output and economic expansion. The Federal Reserve is said to have a *dual mandate*—full employment and price stability.

Price stability implies low and stable inflation over the longer run, hence the 2 percent inflation target. In an inflationary environment the Federal Reserve may increase the Federal Funds rate which, in turn, raises borrowing costs throughout the financial system. Higher interest rates disincentivize borrowing and encourage saving. Looking to buy a $575,000 house? The average 30-year fixed rate mortgage hit a pandemic cycle low of 2.82 percent on February 9th, 2021, which equates to a $2368.76 monthly payment. On November 3rd, 2022, the 30-year fixed rate had jumped to 7.35 percent for a monthly payment of $3961.59. Incredibly, this represents a 67.23 percent increase in monthly payments for the exact same $575,000 home. Consumer sentiment begins to shift in higher interest rate environments. Our would-be home buyer may wait to purchase the home; they then would have no need to purchase new dining room furniture or an entryway rug. The change of consumer sentiment is reflected in both CPI and PCE.

Full employment occurs when unemployment has fallen to the lowest possible level without creating inflation. Economists refer to this level as the natural rate of unemployment. According to the Congressional Budget Office, the natural rate of unemployment is currently 4.4 percent. A relationship exists among the levels of unemployment, inflation, and interest rates. As inflation decreases, unemployment tends to rise. The trade-off for inflation versus unemployment is steeper when unemployment is low, and the inverse relationship is procyclical. When businesses anticipate demand for products to wane, they scale back production. In many instances, scaling back production involves laying off workers. As the unemployment rate increases job seekers lose leverage over employers to demand higher wages, and thus, wage inflation abates.

The collective global government response to the Covid-19 pandemic was to pause most business commerce on both a domestic and international scale. The negative externalities were immediately clear, which implored Central Banks to react by executing monetary policy to ease financial conditions to an unprecedented extent. The three largest Central Banks: the US Federal Reserve, the European Central Bank, and the Bank of Japan utilized Open Market Operations to expand balance sheet assets reaching nearly $25 trillion combined. These asset purchases created a glut of liquidity in capital markets. They simply created a faster increase in money supply in relation to the wealth produced within the economy. Concurrently, the Federal Reserve also lowered interest rates to zero, while both the ECB and

BOJ took interest rates in each respective market even further into negative territory. The economy was firing on all cylinders, albeit in an artificially low interest-rate environment. In 2022, the post-pandemic unemployment level reverted to historic lows; at 3.7 percent, it is currently below the natural rate of unemployment. The whipsaw effect resulting from government intervention to the pandemic and coincident geopolitical strife created rapid inflation the world over.

Market volatility has intensified as financial conditions tighten and global central banks pursue monetary policies to combat the persistently high inflation and maintain market stability. To stave off inflation, central banks have begun unwinding balance sheet assets and hiking interest rates at the fastest pace in forty years. The Federal Reserve's hawkish pivot may already be leading to a disinflationary environment. The four hundred twenty-five basis point increase in Federal Funds rate in 2022 is already affecting rate-sensitive assets. The rapid rise in mortgage rates, along with home prices at all-time highs, have pushed homebuyer affordability to the lowest level on record. As a result, new and existing home sales are dwindling rapidly—a harbinger for a slowing economy. Leading indicators also show unemployment is ticking up. The inverse relationship between unemployment and inflation creates a difficult situation for the Federal Reserve to manage.

The political and social headwinds associated with rising unemployment and the slowing economy may prompt the Federal Reserve to pause interest rate hikes. Recent CPI and PCE data show evidence of slowing economic conditions beginning to mount. It is Chandler Asset Management's view that the Federal Reserve will set monetary policy in restrictive territory in 2023 given the totality of increase in the Federal Funds rate applied in 2022. We believe the Fed will ultimately pause and keep monetary policy settings restrictive for a period of time. A lower interest rate environment is not anticipated until sustained improvement in inflationary conditions has been achieved.

Note[1]: $530.12 = E. Musk Net Worth ($176B) / USA Total Population ($332M)[1]

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Questions?

Please contact Chandler at info@chandlerasset.com, or toll free at 800-317-4747 with any questions or to learn about investment management solutions for public entity investment programs.

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