

BRIEF OVERVIEW OF INFLATION IN THE U.S. OVER THE PAST 120 YEARS

“THERE ARE KNOWN KNOWNS. THESE ARE THINGS WE KNOW THAT WE KNOW. THERE ARE KNOWN UNKNOWNNS. THAT IS TO SAY, THERE ARE THINGS THAT WE KNOW WE DON'T KNOW. BUT THERE ARE ALSO UNKNOWN UNKNOWNNS. THERE ARE THINGS WE DON'T KNOW WE DON'T KNOW.” - DONALD RUMSFELD

On Wednesday October 13, 2021, the U.S. Bureau of Labor Statistics released the CPI data for the month of September. The result for the CPI-U (Inflation for All Urban Consumers) was 5.4%, the fifth month in a row of year-over-year inflation over 5.0%. The last time this index showed a rate over 5.0% was in May of 1991. The Chairman of the Federal Reserve (the “Fed”), Jerome Powell, mentioned when he spoke to Congress on September 28, 2021, that pressure on prices, particularly due to supply bottlenecks, is temporary, and inflation will return to the long-run goal of 2.0%. The question on all investors’ minds is therefore: How long is temporary?

By Charles Buchanan, CFA

In November 1955, the Secretary of the Treasury, George Humphrey called inflation “a public enemy of the worst type”. He continued by congratulating the Eisenhower Administration for keeping inflation at 0.5% over the preceding 2.75 years. In his opinion, the cooperation between the Fed and the Treasury was the reason for the effective balancing of economic growth and inflation. However, the celebration for finally conquering inflation was short-lived.

The Known Knowns, History of Inflation in the U.S.:

Great Inflation of the 1970s

In 1958, William Phillips, a New Zealand-born economist, observed that historically an inverse link appeared to exist between inflation rates and unemployment rates.¹ As other economists observed similar relationships in other countries, the “Phillips curve” came to prominence in central bank circles during that era. It is an economic concept which states that with economic growth comes inflation, which in turn should lead to more jobs and less unemployment. The logic is simple and, looking at the following chart that

shows U.S. inflation rates beside unemployment rates up until that time, it is easy to understand why.

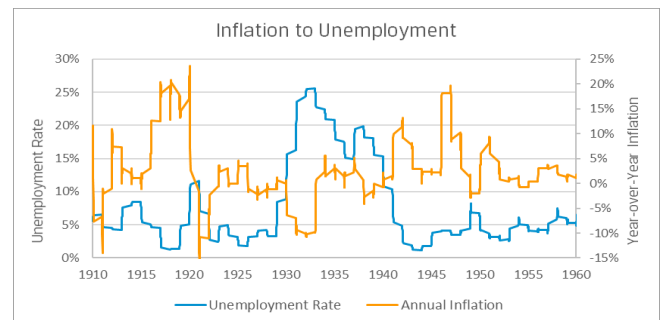


Figure 1. Inflation and unemployment (percent) 1910–1960

Sources: [Inflation 1871-1947 \(http://www.econ.yale.edu/~shiller/data.htm\)](http://www.econ.yale.edu/~shiller/data.htm); 1947-present (<https://fred.stlouisfed.org/series/CPIAUCNS>)

[Unemployment 1900-1947 Series D 1-10 Labor Force and its Components \(https://www2.census.gov/library/publications/1975/compendia/hist_stats_colonial-1970/hist_stats_colonial-1970p1-chD.pdf\)](https://www2.census.gov/library/publications/1975/compendia/hist_stats_colonial-1970/hist_stats_colonial-1970p1-chD.pdf); 1949-present (<https://fred.stlouisfed.org/series/UNEMPLOY>)

Unfortunately, it was too simple, and as unemployment started to rise, decision makers in the 1970s believed

¹ William Phillips, *The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957* (Wiley, 1958)

they could “buy” more jobs at the cost of increased inflation. As the graph shows below, government debt increased, but so did inflation and unemployment. In October 1974, almost 20 years after George Humphrey made his comments, President Gerald Ford also declared inflation to be public enemy number one. This time, however, there were no congratulatory remarks as inflation in the USA had surpassed 9% for the first time since the beginning of World War II.

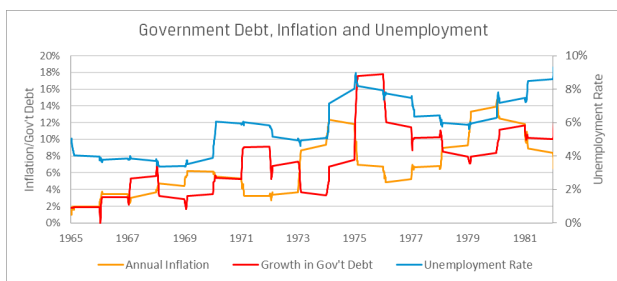


Figure 2. Government Debt, Inflation and Unemployment 1965–1982

Sources: Government Debt 1871 - 1965 (<http://www.treasurydirect.gov/>); 1965 -present (<https://fred.stlouisfed.org/series/GFDEBTN>)

It was not until Paul Volcker became the Chairman of the Fed in 1979 that effective steps were taken to tackle the inflation issue. Volcker took aggressive action by quickly raising the Fed Funds Rate to over 20%. This solution was not comfortable for many as it forced people out of work, and the recession that followed between 1980-1982 included unemployment rates over 10%. Famously, indebted farmers drove tractors from across the country to park in front of the Federal Reserve building in protest of the Fed’s actions.



² Compounded real total return of the S&P 500 of 14.4% annually from Dec. 1982-Dec. 1999. (Price info from <http://www.econ.yale.edu/~shiller/data.htm>)

Bradley Graham, *The Farmers in the Fed*. Washington Post, June 1, 2018

Nonetheless, the results were eventually effective, and the aggressive raising of interest rates was a major factor in helping to control inflation and finally enabling the U.S. economy to begin one of its greatest bull markets.²

War Time Inflation of 1920 and 1947

The 21st century provides us with two other examples of high inflation in the U.S., and in both cases, the wartime inflationary periods were preceded by enormous government spending to support the war efforts. As the graph below shows, the total government debt annual increases during the two world wars were far greater than those of any other recent crisis.

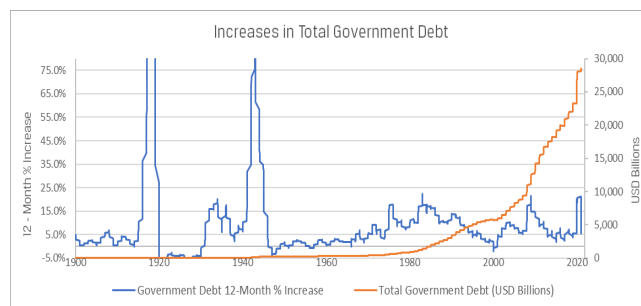


Figure 3. Increase in Total Government Debt 1900–Sept 2021; Sources: Same as Figure 2

Inflation during World War I started prior to the U.S. joining the conflict in April 1917. This was due to increased prices for commodities as the European countries involved in the war bought agricultural goods and war supplies from the Americans. Additionally, the European countries paid for their purchases with gold, which increased the money supply.³

With the increase in the money supply, “wage inflation” generated by soldiers coming back from the war asking for higher wages, and the expiration of price controls, the stage was set for higher inflation. However, the eventual inflation wave was very brief compared to that experienced during the Great Inflation of the 1970s. Inflation peaked at 23.7% in June 1920 (the war had ended 19 months prior) before declining into 26 months of deflation from January 1921 to February 1923 before

³ The U.S. was still on a “true” gold standard until the passage of The Gold Reserve Act of 1934.

returning to a much more stable level of inflation up until the Great Depression of the 1930s.

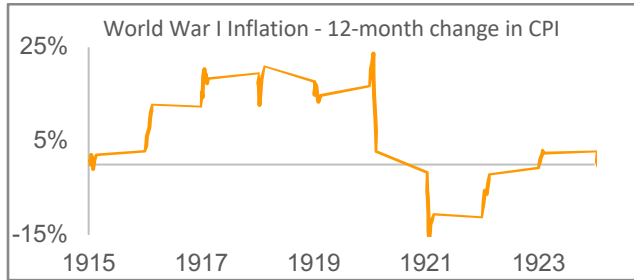


Figure 4. Inflation 1915–2024; Sources: Same as Figure 1

World War II saw similar increases in government debt as the government issued bonds, while the Fed kept interest rates low by buying them. Price controls helped keep inflation low, but once those controls expired in June 1946, inflation jumped to 9.4% in July, and then averaged around 13.1% for 24 months from August 1946 to July 1948. Again, just as after World War I, this period of high inflation was followed by 11 months of deflation between June 1949 and April 1950 with an average annual rate of -1.9%.

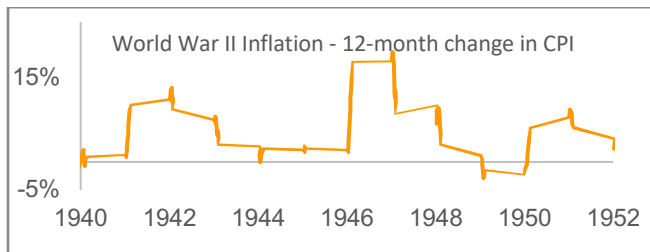


Figure 5. Inflation 1940–1952; Sources: Same as Figure 1

The deflationary period after World War II was very brief compared to that which followed World War I. Once the Chinese entered the Korean War in 1950, there was the potential for a third world war. Prices of commodities and consumer durables increased as businesses and individuals ramped up purchases to prepare for war production and the possibility of renewed food rationing.

The Known Unknowns:

What Makes This Time Different?

In both wartime inflations, the increases in prices were accompanied by decreases in unemployment. This had a positive effect as it helped the economy avoid

“stagflation”, where prices increase, but employment and economic growth do not. The recent Covid-19 pandemic appears to have more in common with sudden wartime spending increases than the slow increases of the 1970s. However, there are other factors to consider that make the current situation unique compared to the prior inflationary periods.

Unemployment

The sudden increase and subsequent decrease in unemployment is unprecedented. The number of unemployed people in the U.S. increased from 5.7 million in February 2020 to 23.1 million in April 2020. It then decreased rapidly falling to 9.7 million by March 2021. The labour participation rate was at 61.6% in September compared to 63.4% in January 2020. This means that there may be about 3 million more U.S. workers who have either temporarily or permanently decided not to participate in the workforce. There have been reports of potential workers not going back for various reasons, including fear of getting Covid-19, lack of child care, and because they are receiving enhanced unemployment benefits.

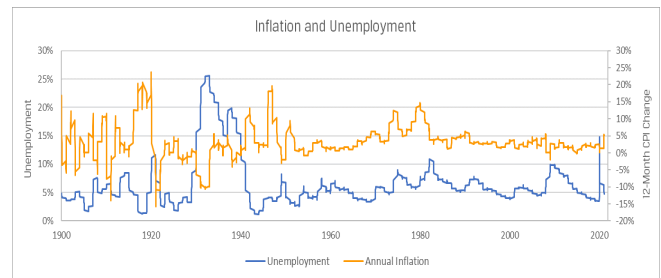


Figure 6. Inflation and Unemployment 1900–Sept 2021; Sources: Same as Figure 1

Indebtedness

The size of the government debt today as measured by Debt-to-GDP broke its previous peak of 119% set in January of 1946 when it reached 126% in March of 2020. It reached an even higher level of 136% in April 2020 and has stayed above 120% since then. In 1946, there was an inflationary spike after the ending of wartime price controls. In advanced economies this has the effect of decreasing Debt-to-GDP ratios. However,



there is debate whether the prolonged periods of loose monetary policy beforehand will diminish this effect.⁴

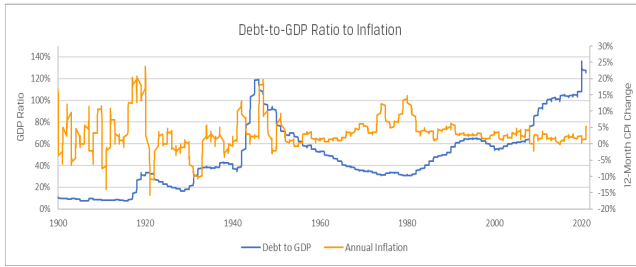


Figure 7. Debt-to-GDP Ratio 1900–Sept 2021

Sources: GDP 1871-1946 (<http://hsus.cambridge.org/HSUSWeb/HSUSEntryServlet>) 1947-present (<https://fred.stlouisfed.org/series/GDP>)

Asset Prices

The CAPE Ratio is also known as the Shiller PE ratio after Yale University professor Robert Shiller who popularized the ratio in his book “Irrational Exuberance” and won the Nobel Prize in Economic Sciences in 2013. The ratio looks at the current real price of the S&P 500 divided by the average real earnings of the index over the preceding 10 years to eliminate seasonal fluctuations. As the graph below shows, the highest was during the dot-com bubble, peaking at 44.2x in December of 1999. In February 2021, this ratio broke the 35x level for the first time since February 2001 and it increased to 37.4x in July 2021. The inflationary periods after the world wars or during the 1970s were not preceded by extremely high asset prices.

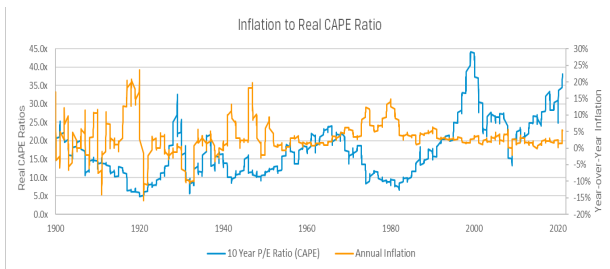


Figure 7. Inflation to real CAPE ratio 1900–Sept 2021

Sources: CAPE 1871-present (<http://www.econ.yale.edu/~shiller/data.htm>)

Extended Periods of Low Interest Rates

Common sense would suggest that prolonged periods of low interest rates will result in an increase in the money supply as more businesses and individuals have easier access to capital, and this would therefore lead to inflation. However, both inflation and interest rates in the U.S. have remained low for a prolonged period. To avoid a “taper tantrum” in the bond market, the Fed has been very careful with its language about how slowly it will allow rates to increase as it tapers its quantitative easing. However, as we saw in the 1970s, it was not until the drastic interest rate increases of Paul Volcker that the inflation problem finally got resolved. Therefore, if inflation becomes more than a temporary blip, the Fed may need to resort to more extreme measures.

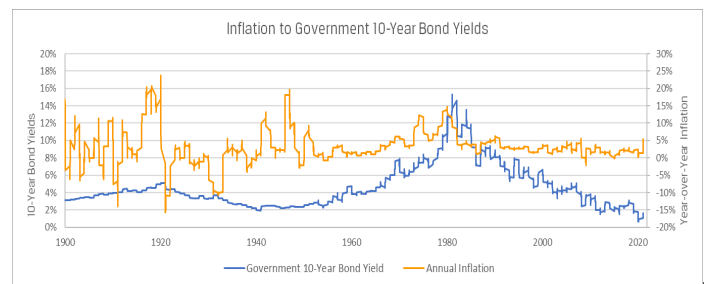


Figure 8. Inflation to government 10-bond yields 1900–Sept 2021

Sources: GS10 1871-1952 (<http://www.econ.yale.edu/~shiller/data.htm>); 1953-present (<https://fred.stlouisfed.org/series/GS10>)

The Unknown Unknowns:

Just as this Covid-19 global pandemic was not on anyone’s financial model in 2019, there are countless other unknown potential hurdles that may befall the Fed as it attempts to “beautifully deleverage” the U.S. economy (to borrow a term from hedge fund legend Ray Dalio)⁵. It is beyond the scope of this article to attempt to identify the unknown unknowns or predict the future. Rather, it looks at the current economic situation and considers how it relates to what we know from the past, how it differs in ways we can identify now, and also admits the existence of endless other unknown variables that will only be known after they present themselves over the coming months. For now, we need to stay vigilant with our portfolios, and hope this inflationary period is short and painless. Nevertheless, as Karl Otto Pöhl, a former president of Germany’s central bank and a key defender of the importance of

⁴ Ichiro Fukunaga, Hideaki Matsuoka, Mr.Takuji Komatsuzaki *Inflation and Public Debt Reversals in Advanced Economies* (IMF, 2019)

⁵ How The Economic Machine Works by Ray Dalio (<https://www.youtube.com/watch?v=PHe0bXAluk0>)



price stability put it in 1980, “Inflation is like toothpaste; once it’s out, you can hardly get it back in again.”⁶

⁶ Jack Ewing, *Karl Otto Pöhl, a Former President of the German Central Bank, Dies at 85*. New York Times, Dec 10, 2014

