

IS TWO PERCENT (2%) INFLATION REALISTIC?

COMMENTARY

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The Federal Reserve's (The Fed's) 2% inflation target. How did they pick that number and is it realistic to believe that the economy can hit that number over a prolonged period of time, assuming even reasonable (in our mind) economic growth. Or will achieving that level of inflation result in sub-par growth? These are two very good questions, ones that we will attempt to answer over these next pages while providing some historical context as well as insight into what we think is driving or will drive both long-term economic growth and inflation for some time.

Where did it come from?

By many accounts, the Federal Reserve's two percent inflation goal was based on inflation targeting policy initiated by the Central Bank of New Zealand as a way to combat the runaway inflation afflicting many developed countries beginning in the mid-1970s.^{1,2}

According to Samanth Subramanian in an article published in QZ.com (Quartz, September 1988), New Zealand's then Finance Minister was asked if he was satisfied that the country's inflation rate had fallen below 10% for the first time in some years, to which he replied, "no". He then added that he, "would ideally want an inflation rate of between 0 and 1%." While the remark was entirely off the cuff, the Central Bank of New Zealand now had to figure out what exactly the inflation target should be. After studying cost of living estimates, they determined that there tended to be an upward bias to the calculations, and that assuming a bias for New Zealand of

0.75% to 1%, determined that the maximum target rate for inflation should be 2%. Thus began the process of using inflation targeting as a means of setting economic policy. (As a comparison, former Fed Chair, Paul Volker used money supply growth targets as a tool to rein in inflation, since Monetarists like Milton Friedman believed that high inflation was caused by high money supply growth.)³

As an academic, and prior to becoming Chairman of the Federal Reserve, Ben Bernanke had been a proponent of inflation targeting both as a way of holding down inflation, and as a strategy of communicating to the markets what inflation expectations should be. This belief was grounded in the expectation that if an inflation target was explicitly stated by the Federal Reserve (or other Central Bank) consumers' expectations about what inflation might be in the future (emphasis added), would help to bring down or hold down experienced inflation. The idea being that holding down expectations about inflation in the future helps to bring inflation down to or hold inflation near to the desired level. But does it really, and is it helpful for the economy if it is successful? Again, good questions that we will attempt to answer.

Nevertheless, then Chair Bernanke and the Federal Reserve instituted its long-term 2% inflation target in 2012 as one of its primary target metrics. It has been from that point that the Fed has explicitly stated in its comments about inflation, the central bank's goal of using monetary policy to get inflation down to or holding it at its 2% goal.⁴

The Phillips Curve and NAIRU

While the Federal Reserve has a mandate to keep inflation at a consistent level (the inflation mandate is actually a mandate for stable prices), the other part of its mandate is maximum employment.⁵ Much like the inflation mandate, the employment portion of the mandate is often misconstrued to read full employment or zero unemployment.

Full employment is difficult to define but suffice it to say that it does not mean zero unemployment. This is because there will always be some minimum level or frictional level of unemployment due to layoffs, job terminations, quits, etc. It is, however, important to understand what constitutes full employment because slack (too much unemployment) or tightness (too little unemployment) can put pressure on inflation.

In fact, Alban William Housego Phillips (William or Bill Phillips), a British economist, discovered that there seemed to exist an inverse relationship between the level of unemployment and inflation. This came to be known as the "Phillips Curve".^{6,7} In other words, as the unemployment rate drops, the rate of inflation seems to rise. This can create an interesting conundrum for central banks: drive the level on inflation down too low and risk negative economic fallout (higher unemployment) or target a low level of unemployment and risk higher than desired inflation.

When the Phillips Curve in its most pure form didn't prove to provide accurate signals, tweaking was done to focus on the level of unemployment at which inflation would not increase (remember, a zero-inflation rate is neither practical nor desired). From a purely academic standpoint, this natural rate of unemployment (called u^*)⁸, is defined as the unemployment rate at which, controlling for supply shocks, inflation remains stable. This natural rate of unemployment is often referred to by the acronym NAIRU or the Natural

Rate of Unemployment (or the Non-Accelerating Inflation Rate of Unemployment).⁹ Thought of in another way, if the unemployment rate were at the NAIRU, then the rate of inflation should (theoretically) be constant, and the economy and the labor market are in equilibrium.

So, are we there yet? Again, it depends. Because economies are dynamic organisms (in other words they don't stand still), full employment is a moving target. Figure 1 below shows the Natural Rate of Unemployment from January 1949 through April of this year (2024). As you can see, the NAIRU is not constant, having peaked in the late 1970's and declining since, with the current reading at 4.41%. Since the unemployment rate is currently 3.9%, we are (and have been) well below the NAIRU, hence our concern (one of our concerns) about inflation.

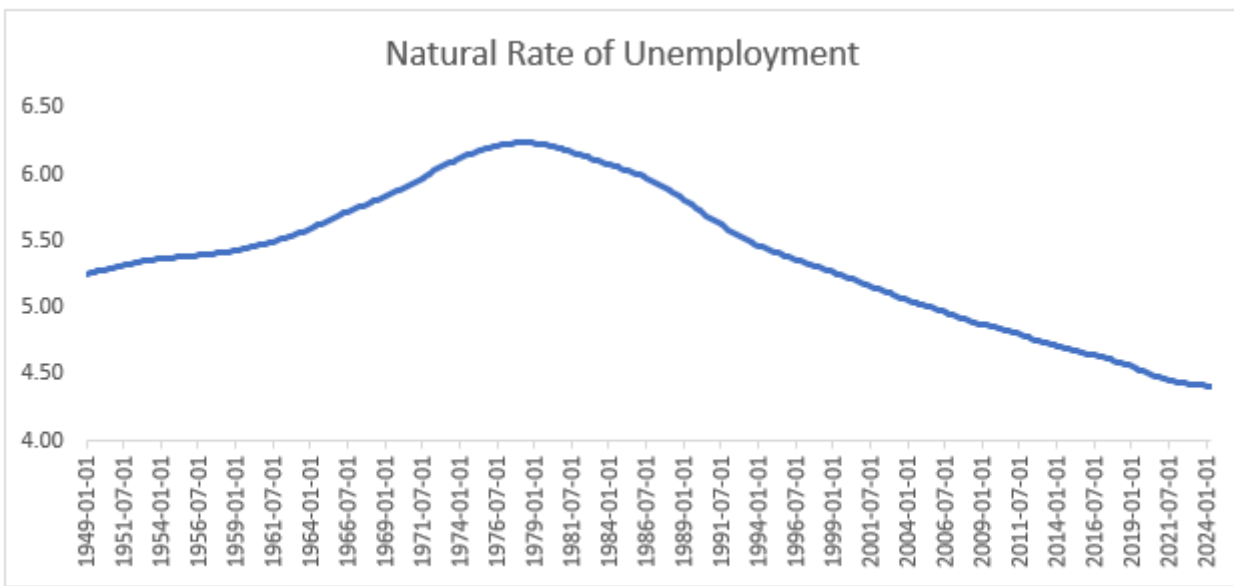


Figure 1 - Source: Federal Reserve Bank of St Louis, FRED database.

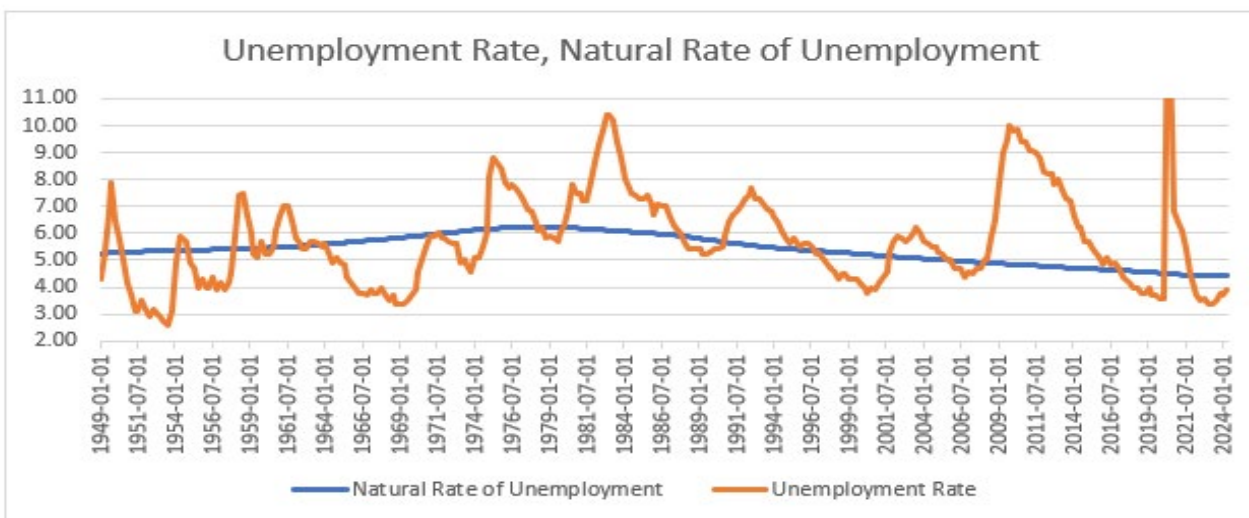


Figure 2 - Source: Federal Reserve Bank of St Louis, FRED database

Figure 2 above shows the Unemployment Rate relative to the NAIRU. While it has been volatile, it is possible to discern that the trend in the Unemployment Rate was higher through the early 1980s (the “early trend”) and since, has begun a (relatively) methodical downward move (the “later trend”). As we will show later in this paper, we believe that the driver behind both the “early trend” and the “later trend” is demographic.

But what do the charts really show? If you think of the NAIRU as the level of full employment, then we can think of the actual level of unemployment as a tool to show us if there is slack (i.e., too many available employees) or tightness (too few available employees) in the economy. Indeed, Figure 3 below does that for us by subtracting the NAIRU from the Unemployment rate to show us the excess or shortfall of people relative to what would be considered full employment. In this chart a reading below zero shows more job availability (tightness) and readings above zero shows higher than desired unemployment (slackness). (The orange vertical bars in the next two charts indicate periods of recession.)

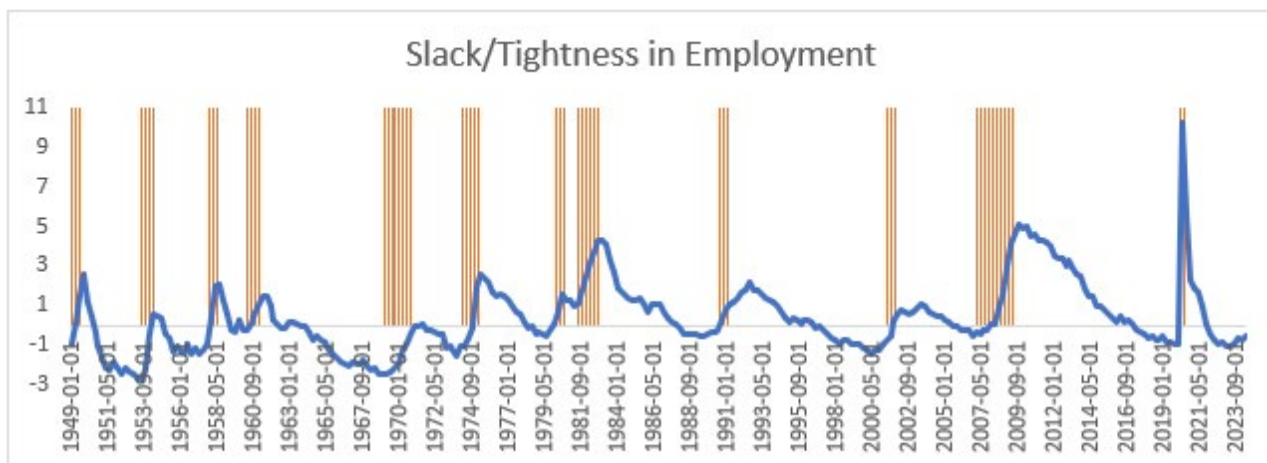


Figure 3 - Source: Federal Reserve Bank of St Louis, FRED database.

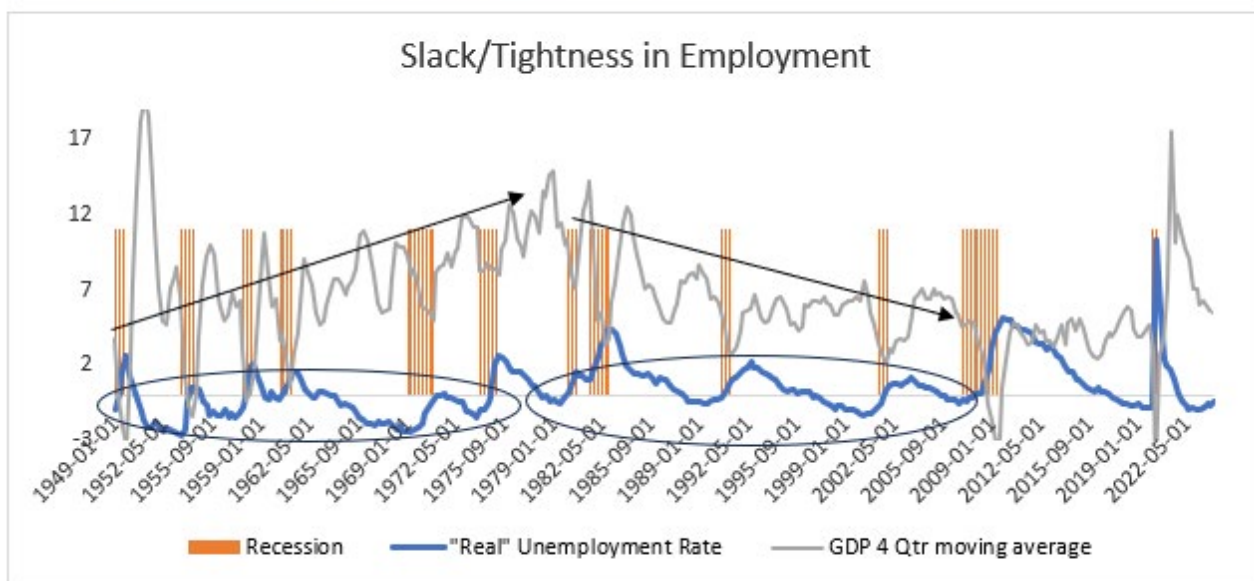


Figure 4 - Source: Federal Reserve Bank of St Louis, FRED database.

In the chart above (figure 4), we have introduced GDP as a comparison to what we will call the “Real” unemployment rate (The NAIRU less the unemployment rate). Looking at the chart, two things should become apparent: 1) GDP trended up from 1949 (when this data began) to the late 1970’s, while Real Unemployment trended below zero (the only peaks above zero were immediately after recessions). 2) GDP trended down from the Great Inflationary peak (late 1970’s early 1980’s) until just before the Great Recession (2007-2009) while Real Unemployment tended to hold modestly above zero (with two notable exceptions).

One question we should ask ourselves is, “Why?” Why do we have these two seemingly distinct periods over the last (roughly) seventy years? We believe that it is due to one thing, demographics.

Demographics (Demography) is the study of statistics about populations, such as: births, deaths, income, incidence of disease, etc. which illustrate the changing nature of human populations. (Paraphrased from the Oxford Languages Dictionary.) We believe that by studying the generational make-up of the labor population, we can better understand some of the long(er)-term trends that have occurred over past years and decades and that may occur in future years and decades.

The Rise of the Boomers

The Baby Boom Generation (Boomers) began with the end of World War II and encompasses those born between 1946 and 1964 (or 1966, depending on the demographer).¹⁰ The Boomers were the largest generation in history from the 1960s until relatively recently, representing both the largest number of people and the largest percentage of the population. Why is this important? Because people and their spending decisions drive economic activity. The Chart below may help explain:

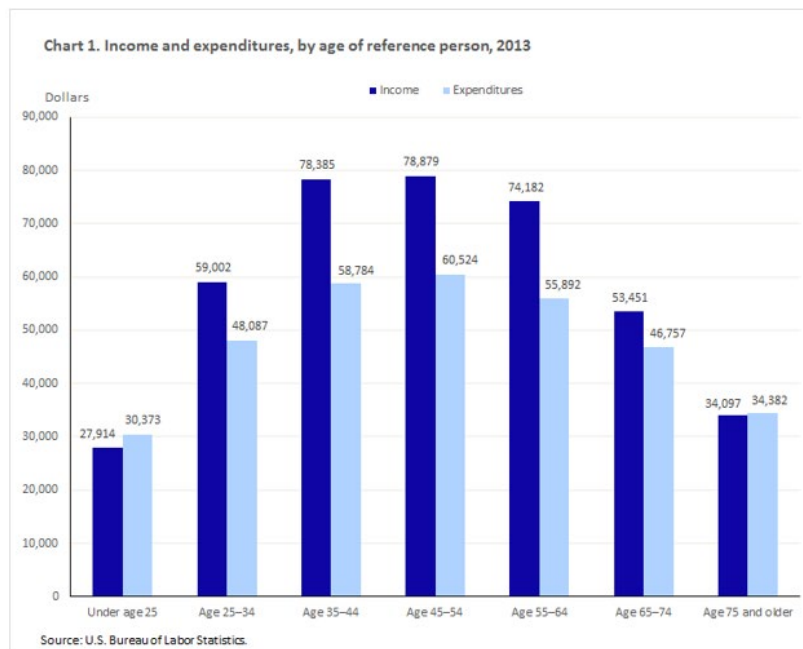


Figure 5 - Source: US Bureau of Labor Statistics

As you can see from the chart above, consumer spending (and income) varies by age cohort. Earnings and spending start out slow at the younger cohort(s), rise until you reach “middle-age”, and then decline as you age towards retirement (and later). In fact, the first time we saw this chart was kind of an “Ah-Ha” moment. We had always assumed that the Boomer generation had been having an outsized impact on the economy, but this chart really brought it home to roost. Specifically, looking at Figure 5 above and comparing it to the GDP and “Real” employment situation outlined in Figure 4, we can begin to see the impact of the Boomer Generation.

Within Employment data, a person is deemed to have entered the labor force once they reach the age of 16 and are either working or actively looking for work (employed and unemployed). The labor force is, therefore, a sub-set of the civilian noninstitutional population. We have often referred to the civilian noninstitutional population as the available labor force.

The available labor force (or civilian noninstitutional population) excludes active-duty members of the US armed forces and people confined to, or living in, institutions and detention centers and residential care facilities such as skilled nursing homes.¹¹ According to that data, the first Baby Boomer entered the labor force in 1962. From then on, the Boomer generation would impact economic and population data as the largest generation in history. (We can see the impact of the Baby Boom generation on the non-institutional population by looking at chart 8 below.)

As a member of the Baby Boom Generation and having lived through the high inflation era of the 1970’s

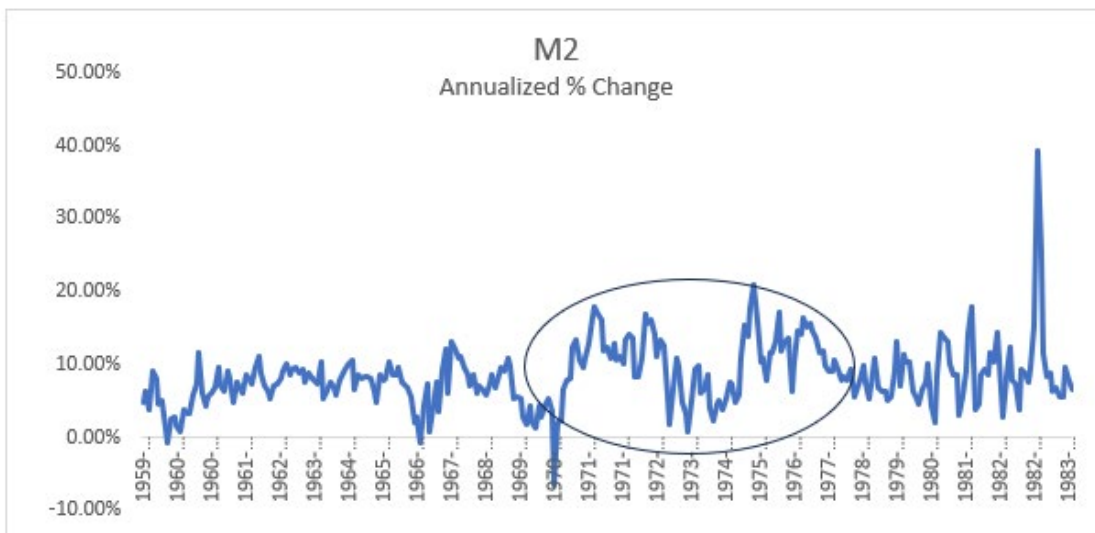


Figure 6 - Source: Federal Reserve Bank of St Louis, FRED Database

and early 1980s, we had often wondered about the root cause of the Great Inflation. While we realize that most point to easy money conditions of the 1960s and ‘70s as the culprit that let inflation get out of hand (and the following chart seems to bear that out), we always thought that there had to be more to the story. (The late economist Milton Friedman had often said that “inflation is everywhere and always a monetary phenomenon.”)¹² Quite frankly, saying inflation was caused strictly by hyperactive money

supply growth seemed to us to be overly simplistic.

When we were looking at historical inflation within the United States, something clicked (see Figure 7 below).



Figure 7 - Source: Federal Reserve bank of St Louis, FRED Database.

“That chart looks very familiar.” Indeed, the directional move of the inflation chart did look familiar. Directionally, it looks remarkably similar to the demographic chart of the Baby Boom generation as a percentage of the total non-institutional population as we (boomers) entered the labor force and moved into our fastest spending growth years.

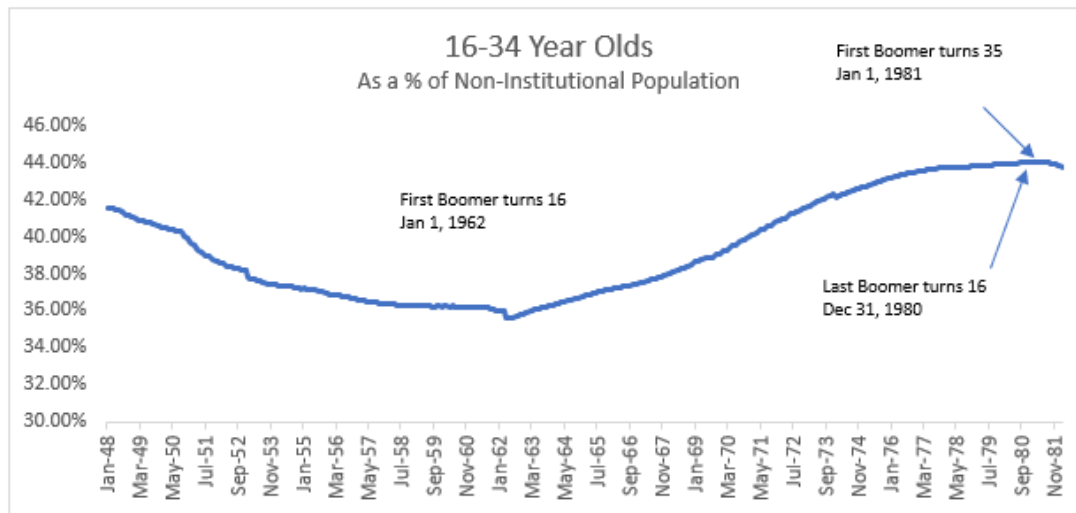


Figure 8 - Source: Federal Reserve Bank of St Louis, FRED Database.

Looking at the above chart, the high inflation experienced in the 1970's and 1980s made sense. It was basic economics.

Basic economics teaches that supply and demand must remain in balance and price is the fulcrum on which it rests. Looking at the Boomer generation as a percentage of the total non-institutional population in the chart above, we note that the Boomer generation entered their prime growth earning and spending years during the time of the Great Inflation. Looked at another way, if you include in the demand equation a generation that moves the 16–34-year-old cohort from roughly 36% of the total non-institutional population in 1961 and grows it to represent approximately 44% of the total population by 1981, it should not have been surprising that inflation rose.

If, indeed, Boomers were increasing their spending in the earlier portion of their earning and spending years one would expect to see that show up in some manner. We can see this by looking at something called the velocity of money. [From the Federal Reserve Bank of St Louis FRED database, definitions: The velocity of money is the frequency at which one unit of currency is used to purchase domestically produced goods and services within a given time period. In other words, it is the number of times one dollar is spent to buy goods and services per unit of time. If the velocity of money is increasing, then more transactions are occurring between individuals in an economy. The frequency of exchange can be used to determine the velocity of a given component of the money supply, providing some insight into whether consumers and businesses are saving or spending their money. Money of Zero Maturity or MZM is equal to M2 less small denominated time deposits plus institutional money market funds. M2 is M1 (Currency outside of the US Treasury, Federal Reserve Banks and vaults of depository institutions, demand deposits and other liquid deposits consisting of checking accounts and savings deposits including money market deposits) plus small denominated time deposits (less than \$100,000) less IRA and Keogh balances at Money Market Funds.]

As you can see from the chart below, the velocity of money (specifically MZM which is the broadest definition of money) grew dramatically until late 1981 when then Chair of the Federal Reserve, Paul Volker, began the task of reigning in money supply growth and, therefore, inflation. In our mind MZM growth into the early 1980s seems to coincide with the Baby Boom generation as it was entering the labor force and began spending. Again, if the largest demographic in history is entering a period of their lives when spending increases the fastest, then it makes sense that the velocity of money would increase at the same time money supply is rising. Inflation should have increased.

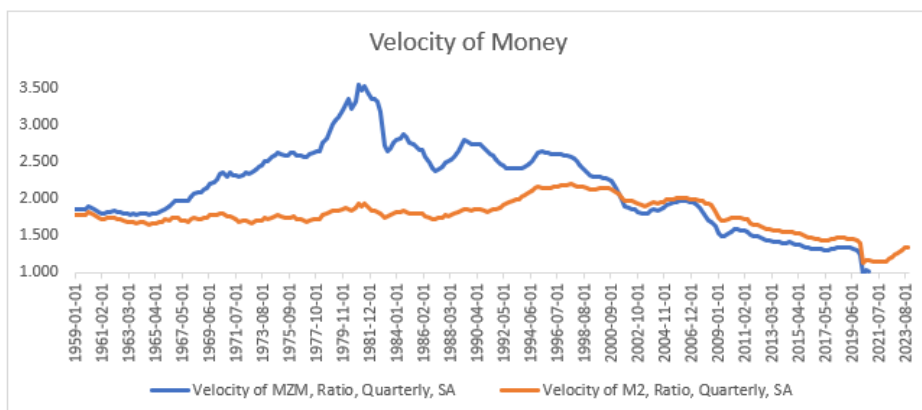


Figure 9 - Source: Federal Reserve Bank of St Louis, FRED Database

It is also interesting, in our mind, that there had been concerns about inflation having been unnaturally low during the first two decades of this century. Indeed, as you can see in the chart below CPI spent much of this century below the Fed's preferred target of 2.0%, particularly in the period just after the Great Recession (2007 – 2009). This can also be attributed to the fact that the velocity of money, whether MZM or M2, had been in a period of decline since the 1990s – particularly for M2.

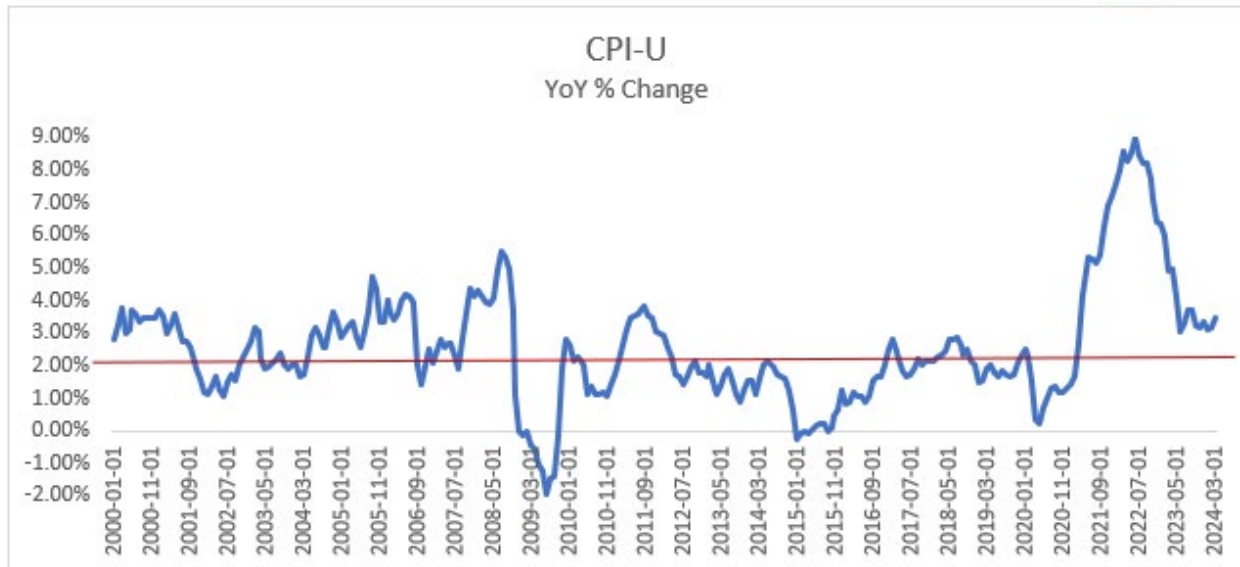


Figure 10 - Source: Federal Reserve Bank of St Louis, FRED database.

Which gets us back to the real question: Is 2% inflation realistic?

Inflation Through History

In order to determine whether or not a two-percent inflation rate is realistic, we need to put inflation in its proper context. What has inflation been historically, how is it defined and what kind of economic growth should be expected with various rates of inflation.

As has been publicly reported, the Federal Reserve's preferred inflation gauge is the Personal Consumption Expenditures (PCE) implicit price deflator for which we have data going back to January 1947. While this is a relatively long time, the data only encompasses the period of the Baby Boom generation (1946 – January 2024). (See Figure 11 below) The average rate of inflation over this period on a quarterly annualized basis is 3.15%. It might also be noted that (using the red line as the two-percent target) this measure of inflation did spend a reasonable amount of time below the two percent "target". It also spent time both well above and well below.

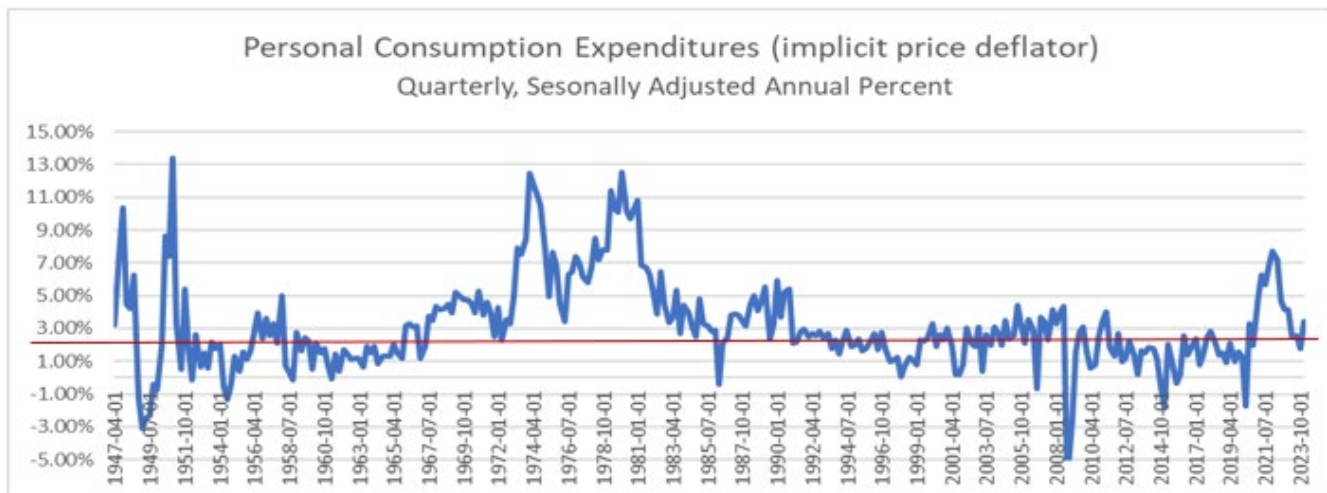


Figure 11 - Source: Federal Reserve Bank of St Louis, FRED database.

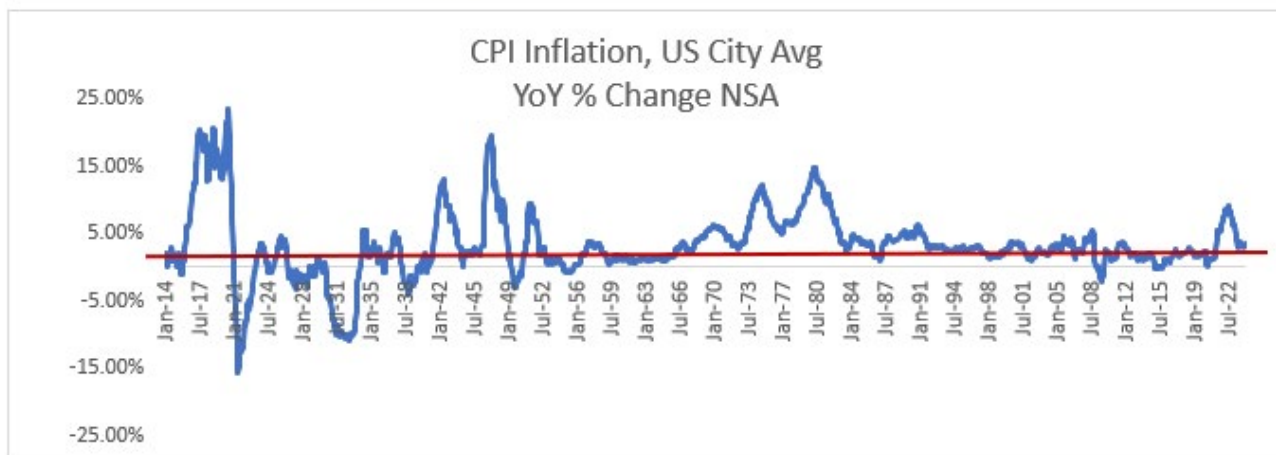


Figure 12 - Source: US Bureau of Labor Statistics

If we use CPI data, we are able to get a much longer historic picture of inflation. Figure 12 presents us with CPI Inflation on a Year-over-Year basis for the US City Average beginning in 1913. (Inflation data is provided monthly, so we have calculated the annual rate using the same period one year ago.) You will note that (again using the red line as the two-percent target) inflation using this longer-term measure also shows that the rate spends time both above and below the two-percent target, and that amplitude (in other words the size of the variation around that red line) has shrunk considerably post WWII. That said, it turns out that the average annualize CPI inflation rate is also not that dramatically different than that of the PCE data - 3.28% on average from 1913 to March 2024 (vs 3.15% for the shorter-term PCE data).

The Federal Reserve Bank of Minneapolis has CPI data (annual by year) going back to 1800, which we have used to look at much longer-term data. This provides some interesting insights. It turns out that the very long-term average inflation rate is 1.45% from 1801 (the index begins in 1800 so in calculating an inflation rate, the rate is actually as of 1801). Why is the very long-term inflation rate (VLTIR) so much lower? In a word, we believe this has to do with the economic cycles and the imposition of a central bank.

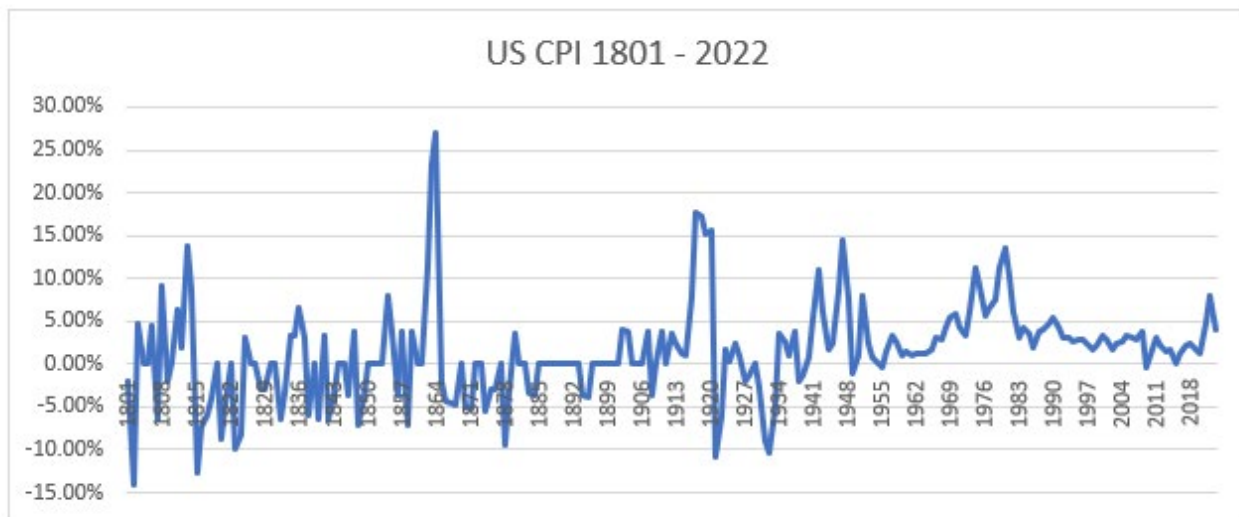


Figure 13 - Source: Federal Reserve Bank of Minneapolis

We have been taught to expect a standard economic cycle to consist of both expansion and recession, with the inflationary backdrop consisting of higher (than desired) inflation and disinflation when the rate of inflation declines to some “ideal” level. With the CPI data provided above, you can see that something else occurred with relative frequency prior to World War II – deflation. In a deflationary environment (as opposed to a disinflationary environment) the inflation rate actually turns negative, with prices falling.

What is wrong with falling (rather than rising) prices? While it might seem that falling prices are a good thing, deflation actually creates consumer reactions that are harmful. This is because in a rising inflationary period, consumers buy today because they know that prices will be higher tomorrow, but in a deflationary environment, consumers don't buy today because things will be cheaper tomorrow. In a nod to Milton Friedman, deflation results from reduced consumer access to (or hoarding) money (whereas inflation is increased or too much consumer access to money). With the advent of the US Federal Reserve System in 1913, and Federal deposit insurance in 1933, deflationary periods were largely relegated to history.¹³

If (one of the) mandate(s) of the Federal Reserve is stable prices so that the economy can maximize its potential (i.e., maximize that level of economic growth consistent with stable prices), then the implication is that there is a positive relationship between the level of economic growth and inflation. In other words, if the economy grows too fast, then inflation rises and conversely if you push down the rate of inflation (through monetary policy actions) then economic activity slows.

If we can impact the speed of economic growth through changes in inflation, can we associate a specific growth rate with a specific inflation rate? In other words, if the Fed targets a 2% inflation rate, would that allow or be consistent with a specified economic growth rate? To put it in statistical terms, are they correlated (i.e., move together)?

One benefit of using the Personal Consumption Expenditures (PCE) Deflator as the measure of inflation is that it is a component of the reported quarterly GDP data. The graph below shows Nominal GDP (which includes an inflation measure) graphed with the PCE Implicit Price Deflator. What we should notice from the graph is that it would appear, at least visually, that any potential correlation between inflation and economic growth is tenuous at best.

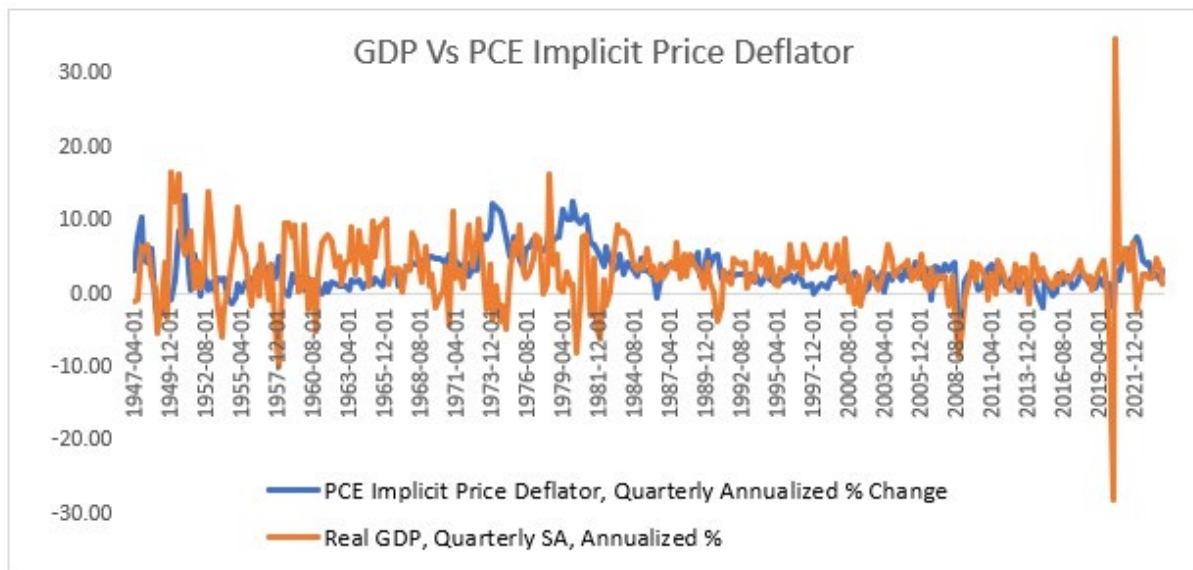


Figure 14 - Source: Federal Reserve Bank of St Louis FRED database

We have looked at both Nominal and Real GDP (Real GDP removes the impact of inflation and is determined by subtracting the inflation rate from Nominal GDP) and their correlation to Inflation as determined by the PCE Implicit Price Deflator over the period 1947 to March 2024. We have looked at the relationship on a direct basis (Q1 1947 to Q1 1947, Q2 1947 to Q2 1947, ..., Q4 2023 to Q4 2023) lagged the PCE deflator to GDP by 2 years, 1 year 18 months and 6 months. We found that while GDP was modestly positively correlated to Nominal GDP (which makes sense), the greatest correlation was to unlagged PCE with a correlation of 0.46 (a correlation of 0.46 is modestly positive). The correlation between PCE and Real GDP was essentially nonexistent (from -0.02 to 0.08). (In positive correlation the data moves together, whereas with negative correlation the data moves in opposite directions. Perfect Positive Correlation has a correlation of 1, whereas Perfect Negative Correlation has a correlation of -1. With a correlation of 0, there is no correlation between the sets of data.)

You should also notice from the above chart that, at least visually, the correlation between the data looks to have changed after 1981, and it did. Breaking the data into two subsets there is a difference between the pre 1981 data and the post 1981 data. In a nutshell, for both Real and Nominal GDP the correlations improved in the post 1981 data and worsened in the pre-1981 data, with the biggest change occurring in the correlation between Real GDP and Inflation. In that case the pre-1981 correlation was modestly negative (-0.15) whereas the post 1981 correlation was modestly positive (0.19). (The Correlation between Nominal GDP and Inflation changed only modestly. The pre-1981 correlation declined to 0.43, whereas the post-1981 correlation rose to 0.47.)

While we can't really deduce any correlation between inflation and economic growth, we should be able to determine that something is different between the data in the pre and post 1981 time periods. That difference, we believe is demographic. Indeed, if you refer to Figure 8 above, you will note that the last member of the Baby Boom generation turned 16 at the end of 1980 and the first member of the generation turned 35 at the beginning of

1981. In other words, prior to 1981 the largest generation in history was entering the labor force and (in our view) significantly impacting both economic growth and inflation. Once we hit 1981, the entirety of the generation was now in the labor force and the greatest portion of their income and spending growth was now, largely, behind them.

So, What is Normal?

If there is very little correlation between economic growth as described by GDP and inflation as described by the Implicit Price Deflator, what should investors come to expect as “normal” and does the Fed’s inflation targeting really work? In other words, what is “normal”?

As we stated earlier in this paper, an economy is a very dynamic organism that is impacted by numerous things, and a change in one component of this dynamic organism can have unexpected or uncertain implications for the broad economy. While the rate of inflation doesn’t do a very good job of explaining the economic growth landscape, it does have a psychological impact on economic decision makers (i.e., people).

Does inflation targeting “work”? We believe that, at the margins, using interest rates to raise or lower the amount of or demand for money can impact the inflation rate which positively (or negatively) impacts consumer behavior. Since consumers drive economic activity, it is possible to change some behaviors by driving short-term rates up (or down). Unfortunately, as the late Milton Friedman wrote, the impact of monetary policy changes on economic activity occurs with “long and variable lags.” Specifically, Friedman when writing of the feasibility of using monetary policy to target the price level said, “I find it virtually impossible to conceive of an effective procedure when there is little basis for knowing whether the lag between action and effect will be 4 months or 29 months or somewhere in between.” In other words, while many central banks around the world use inflation targeting to set policy, it is unclear whether or if it actually works.

Ultimately, in our view targeting inflation by itself isn’t bad. After all it probably makes sense to set some kind of target so that markets have an idea of where monetary policy is likely headed given economic conditions. Yet a bad target is likely just as bad as having no target and, in our view, setting a target based on thin air is setting a bad target.

In our view, a more proper process should likely involve looking at history. Within the United States economic history, there are two broad time periods that likely qualify. The first would cover the entirety of US economic history. While this might seem to make sense, there are a few issues with using data back to the late 1790s. First, the data, if available, is sporadic at best. Second, as an emerging economy until really near the end of the 19th century, economic data would be impacted by a changing monetary base and lack of some type of central banking system. (The United States did have a type of functioning central bank with the First Bank of the United States, established in 1790 and operated until the expiration of its charter in 1811. The Second Bank of the United States was established in 1816 and closed after a failed attempt to re-charter it in 1832. An attempt that was led by President Andrew Jackson.)¹⁴

The second would cover the period since the inception of the Federal Reserve in 1913. By then economic information was a little more available (although not nearly to the extent it is now), and the Fed began to try impacting monetary policy, though its initial purpose was to address the, then, ongoing issue of bank panics. We will term this the Federal Reserve Period (FRP). The data we provide below will cover this FRP in order to provide you with some background on what we believe “normal” is (or should be).

We repeat the Chart on inflation from earlier in this piece below but replace the two percent “target” from that chart with the average rate of inflation over the period of the chart (3.28%). A couple of things should become apparent from the data: 1) the trend in the rate of inflation appears to be generally rising up until the early 1980s (as discussed earlier); 2) the trend in inflation had been generally declining since the early 1980s; 3) the amplitude in the inflation data was much wider pre-World War II (which, we believe, is one of the reasons much of Wall Street uses the Post-WWII period as the appropriate comparative time period).

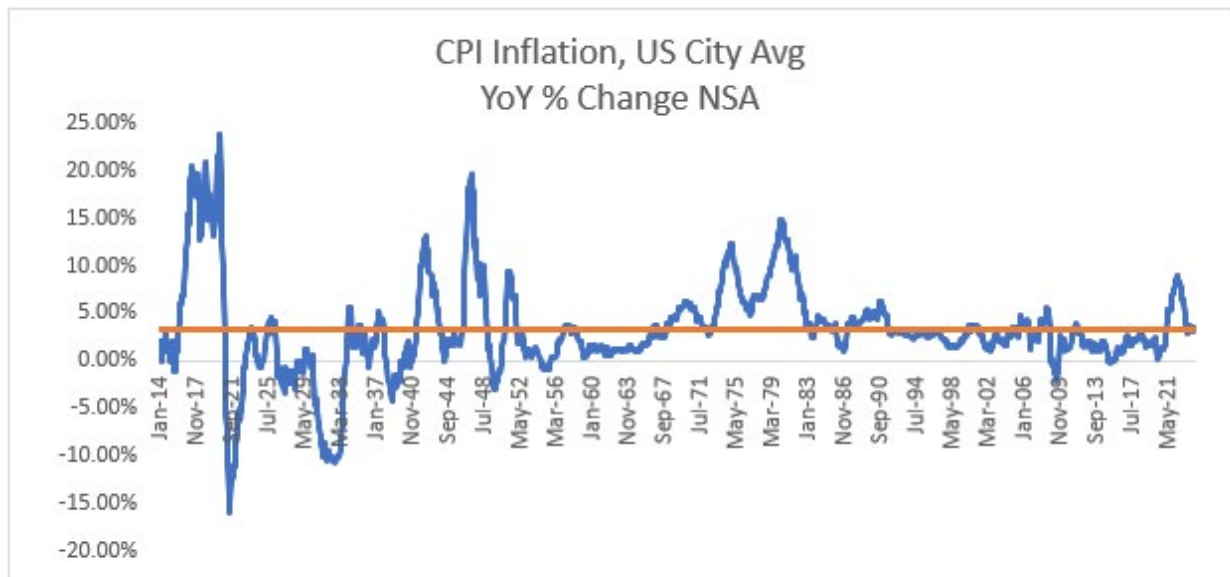


Figure 15 - Source: US Bureau of Labor Statistics

As we discussed earlier, we believe that the reason for the generally rising trend in inflation pre-early 1980s and the generally falling trend on inflation since then has to do with the aging of the Baby Boom Generation. Remember, the Boomers were entering the labor force from roughly 1962 through roughly 1981, with a concomitant increase in demand for “stuff” and spending on “stuff”. As demand and supply (and usage) of money righted itself (in part, due to former Fed Chair, Paul Volker’s extreme monetary measures), inflation abated and began declining as the Boomer Generation aged. We can actually see this as we look at inflation broken down by decade.

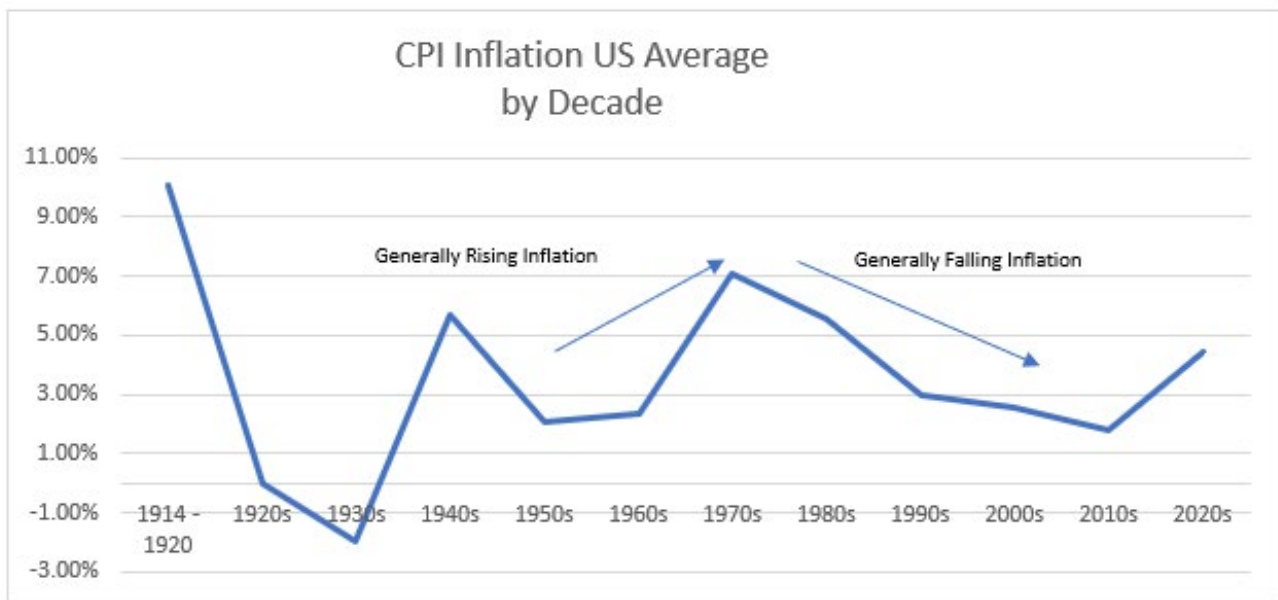


Figure 17 - Source: US Bureau of Labor Statistics

We can see the same information broken out numerically in the table on the right, which is the average inflation rate each decade. The table shows us a couple of things. First the average rate of inflation did rise from the 1950s until the 1970s and then declined until the 2020s. The second thing, which we believe is important if the expectation is that the inflation target “goal” is or should be two percent, is that with few exceptions, the US economy has spent precious little time at or below a two percent inflation rate.

Average by Decade	
1914 - 1920	10.05%
1920s	0.01%
1930s	-1.95%
1940s	5.66%
1950s	2.07%
1960s	2.33%
1970s	7.09%
1980s	5.56%
1990s	3.00%
2000s	2.57%
2010s	1.77%
2020s	4.44%

Two thoughts occur to us: 1) If, since the advent of our Federal Reserve System in 1913 and for most of the Post-WWII history Inflation has been above the Federal Reserve’s 2% inflation target and, 2) if the average inflation rate since the advent of the Federal Reserve System has been closer to 3%, why is the Fed continuing to target an inflation rate that seems to have no bearing on reality or history? That is a very good question.

Conclusion

We believe that it is increasingly unlikely that the domestic economy will be able to achieve a 2% inflation rate without either reinvigorating quantitative tightening or increasing short term rates to levels that would likely push the domestic economy into recession. Given the current level of nervousness about already (in the market’s view) restrictive monetary policy, we find it difficult to arrive at scenario in the current interest rate cycle, where the Federal Reserve would find it necessary to resume rate hikes. We find it far more likely that the Fed will declare victory over inflation with a seemingly innocuous statement such as, “we believe that we have made sufficient progress in lowering inflation to a level consistent

with stable prices while maintaining an acceptable level of economic growth. As we remain data dependent, we believe that the dangers to the economy are now on the side of unemployment rising to more unacceptable levels and will act, as necessary, to reduce the likelihood of adverse employment trends.”

At the risk of stating the obvious, we are not the Federal Reserve. We believe that in order to get to 2% inflation, it will be necessary to either hold interest rates at the current level for a much longer period or hike rates one or two additional times. Additionally, it makes no sense to us to use a target that has no bearing on economic reality or history, and it makes no sense to us to maintain that target when (in our view) it would run contrary to economic growth. As such, we do not believe that we will see 2% inflation before the Fed decides to change policy and begin the cycle of cutting rates. Is a 2% inflation target desirable or rational? In our mind, no.

Disclosure:

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The information herein has been obtained from sources known to be reliable. However, no guarantees, representation or warranty, express or implied, is made as to its accuracy, completeness or correctness.

Footnotes:

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