

# Inflation Vs. Deflation

Apr. 28, 2020 9:36 AM ET

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Summary

The most hotly debated topic in macroeconomics today surrounds which monetary force is coming, inflation or deflation.

For the past 40 years, the US economy has been grappling with disinflation, or falling rates of inflation, which has pushed bond yields to new record lows.

Will the unprecedented monetary and fiscal response to the ongoing economic crisis reverse this trend, or will it exacerbate the existing pattern and finally tip the economy into deflation?

Most analysts agree the short-term impact is very deflationary, but the disagreement comes in the multi-year view.

I argue that unless Congress makes significant changes to our monetary system, any increase in inflation will likely be transitory and increasingly fleeting. Excessive levels of debt tilt the bias toward deflation.

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The most widely-debated topic among macroeconomic analysts and investors is whether the global economy or US economy, more specifically, will experience inflation or deflation as a result of the current economic crisis and resulting policy response.

Starting in the 1980s, the US economy has been grappling with persistent disinflation, resulting in lower risk-free bond yields. The Federal Funds Rate "FFR" is now pinned at the zero-lower-bound "ZLB" and most of the Treasury curve is firmly below 1%.

Secular economic trends, including deteriorating demographics and a continued build-up of unproductive debt, have contributed to weaker economic growth, a growing output gap, and

dwindling inflation as measured across all convention price indicators - the main concern as it pertains to the government bond market.

The [Federal Reserve has launched](#) a series of liquidity facilities, large-scale QE programs, and repo-programs to combat the economic fallout from the virus outbreak. Congress also has launched multi-trillion dollar stimulus packages, including direct payments, to help ease the financial burden facing a significant percentage of the population.

The policy response from both the fiscal and monetary channels has re-heated the inflation/deflation debate. While this topic is not new, and the participants on both sides are familiar, the tone has intensified.

In this note, I will outline why deflation is the more critical risk without discounting the possibility for an inflationary spiral, pending several crucial steps. We often see a hardened view from either side, without respect for the opposing analysis.

Below I will articulate why deflation is the more likely risk, already starting to get priced-in by markets, but also concede several points to the inflation camp along the way.

Before diving into the analysis, there are several points to state upfront.

First, I'm not making a 30-year forecast with no ability to change my mind should the facts change. Instead, I'm basing my analysis on the current set of circumstances and positioning my portfolio for the most probable multi-year outcome. If the facts change, I remain open to altering my position.

Secondly, I respect that multi-year trends have cyclical trends within them. While a continued path of disinflation is most probable, strong cyclical bounces of reflation will undoubtedly arise as they have over the last three decades. Our process at EPB Macro Research seeks to identify these multi-quarter bounces but to contextualize them within the longer-term trend.

The deflationary thesis holds more weight for three primary reasons.

Weakening rates of population growth and excessive levels of unproductive debt are two long-term structural forces that have been working to undermine the rate of economic growth, widen the output gap, create excess capacity, and exert a general disinflationary force on the economy. Both of these forces will persist.

Recessions exacerbate excess capacity. The current recession is one of the worst economic crises the country has ever faced. The rate of inflation nearly always declines during recessions and typically does not trough for years after the conclusion of the recession and the eventual reduction in excess capacity. A severe recession usually knocks several hundred basis points off the rate of core inflation, placing current measures firmly below the zero bound. The strength of the recovery will determine how persistent the deflation will be.

While the Federal Reserve has engaged in a rapid expansion of its balance sheet and the monetary base, both the money multiplier and the velocity of money will work against the increase in money growth. Velocity tends to decline as debt levels rise. There's no reason to believe the velocity of money will rise significantly. In fact, most evidence points toward a

very aggressive collapse in the velocity of money, a force that will continue to negate monetary policy actions as it has for the last several decades.

Changes to the Federal Reserve Act or direct money printing, something we recently witnessed in the United Kingdom, can negate all the factors outlined above and is something that the deflation camp must respect and watch intently. Currently, such a move is not permitted by the Federal Reserve Act, but we will explore that later in this note.

Gold can perform well during periods of inflation or periods of deflation. The direction of real rates tends to be a more critical factor. As such, my analysis suggests a combination of Treasury bonds, gold, and higher than normal levels of cash is the best way to move forward in the current environment.

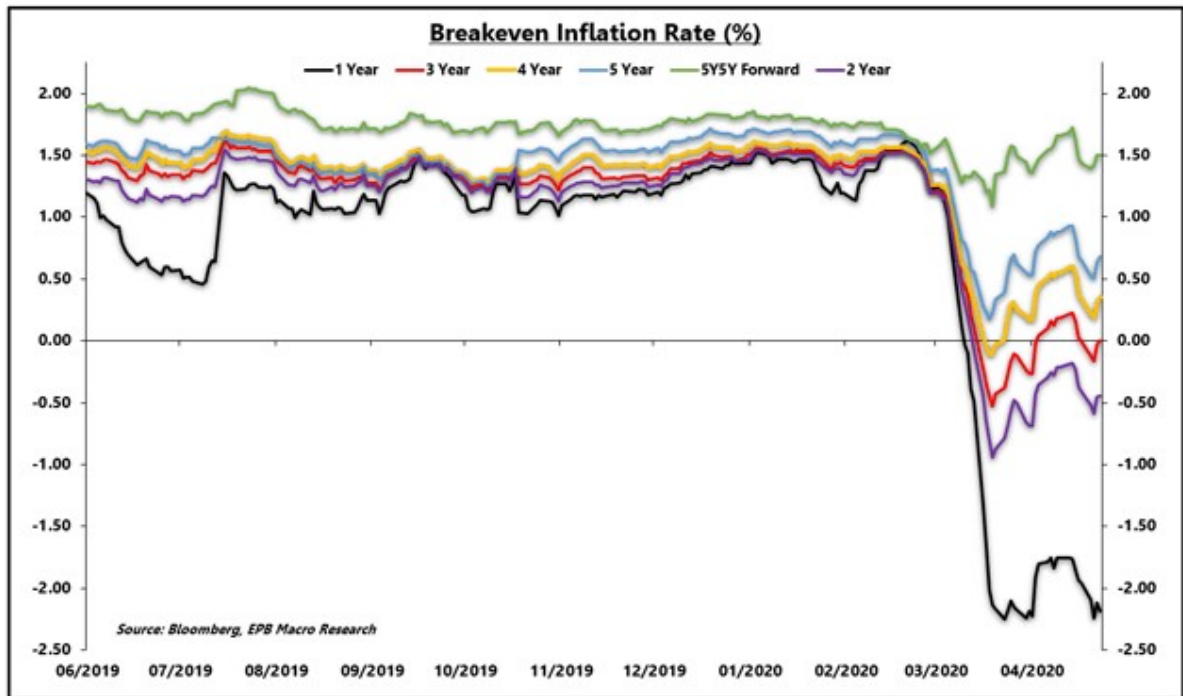
## **Secular Trends**

For the past three decades, the rate of inflation has been declining as measured by all conventional price indicators. As a result, risk-free bond yields, determined by the Fisher equation, have followed the decline in the inflation rate.

The bond market is now conceding that deflation is a significant risk. To the credit of the inflation camp, not many analysts argue the initial shock is deflationary. However, we can look at various measures of inflation expectations to reveal that the bond market is currently expecting deflation for at least the next three years and rates of inflation below 1.5% for more than 10 years.

Breakeven inflation expectations are below 0% out to three years and below 1%, on average, almost out to 10 years. The back half of the next 10 years are expected to bring inflation rates gingerly above 1.5%, but that represents a significant decline relative to the past several years.

### **Breakeven Inflation Rates:**



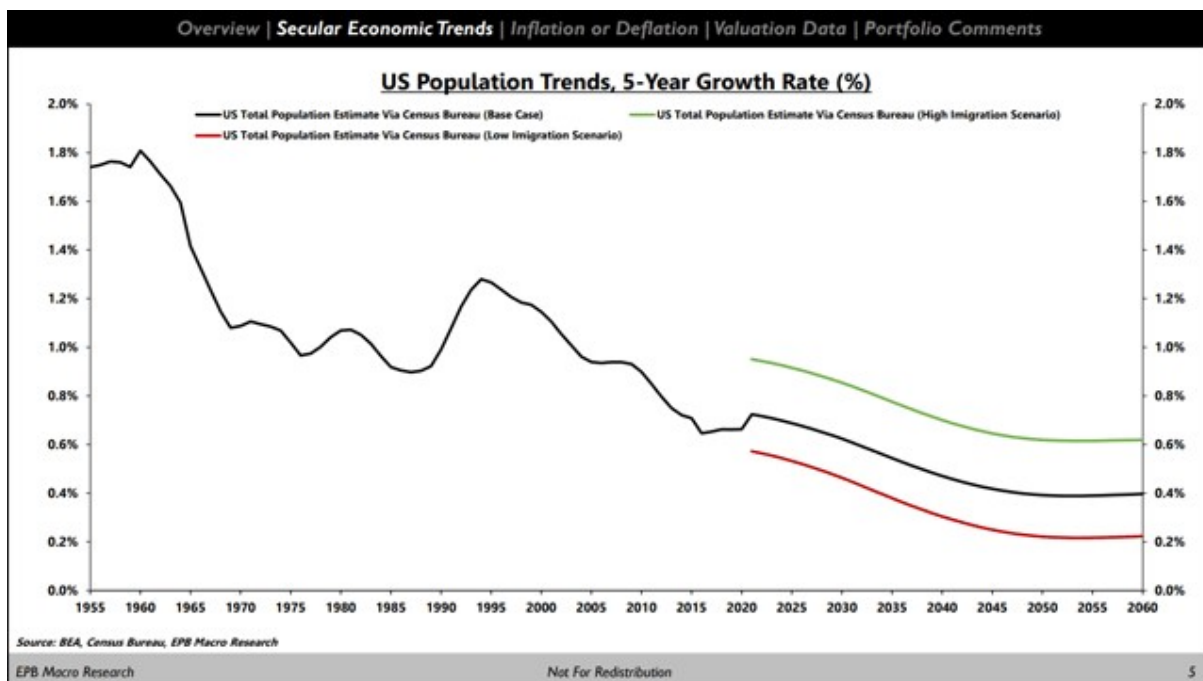
Source: Bloomberg, EPB Macro Research

We should start by addressing the secular economic forces that are causing dwindling rates of inflation and real economic growth, namely population growth and productivity growth. Population growth is falling for a variety of reasons, and productivity growth is mainly declining under the weight of excessive levels of unproductive debt.

The Census Bureau games out a base case scenario, as well as high immigration and low immigration scenario, as it pertains to US population growth estimates.

The following charts show the expected path of US population growth from all three scenarios.

**Population Growth Scenarios:**

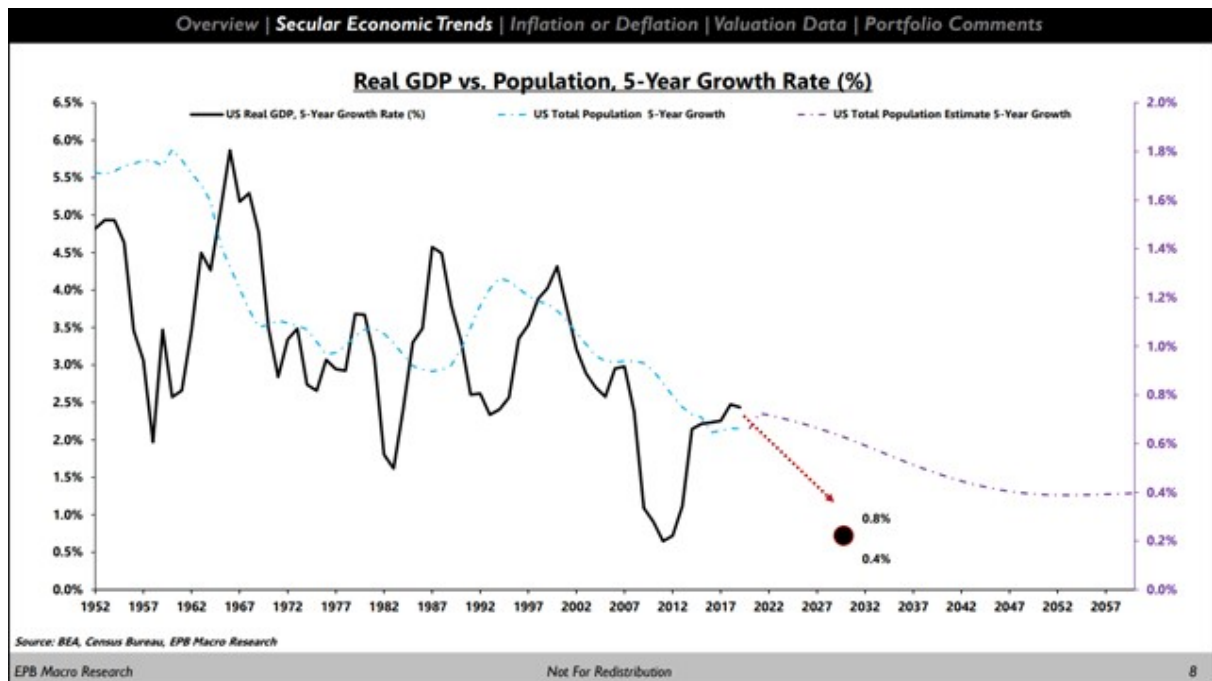


Source: Census Bureau, EPB Macro Research

Diving into politics is beyond the scope of this article. Still, we can place a reasonable probability on the fact that the US is likely to follow the trajectory of the base case or low immigration scenario. Thus, long-run population growth will continue to decline in terms of direction and flatten out in the range of 0.2%-0.4%, a notable decline from today's trend level of roughly 0.6%.

Given the relationship between population growth and total economic growth, this will remain a long-term secular force that works to keep a lid on economic growth, a disinflationary force that will stay in place.

**Population Growth and Real GDP Growth:**



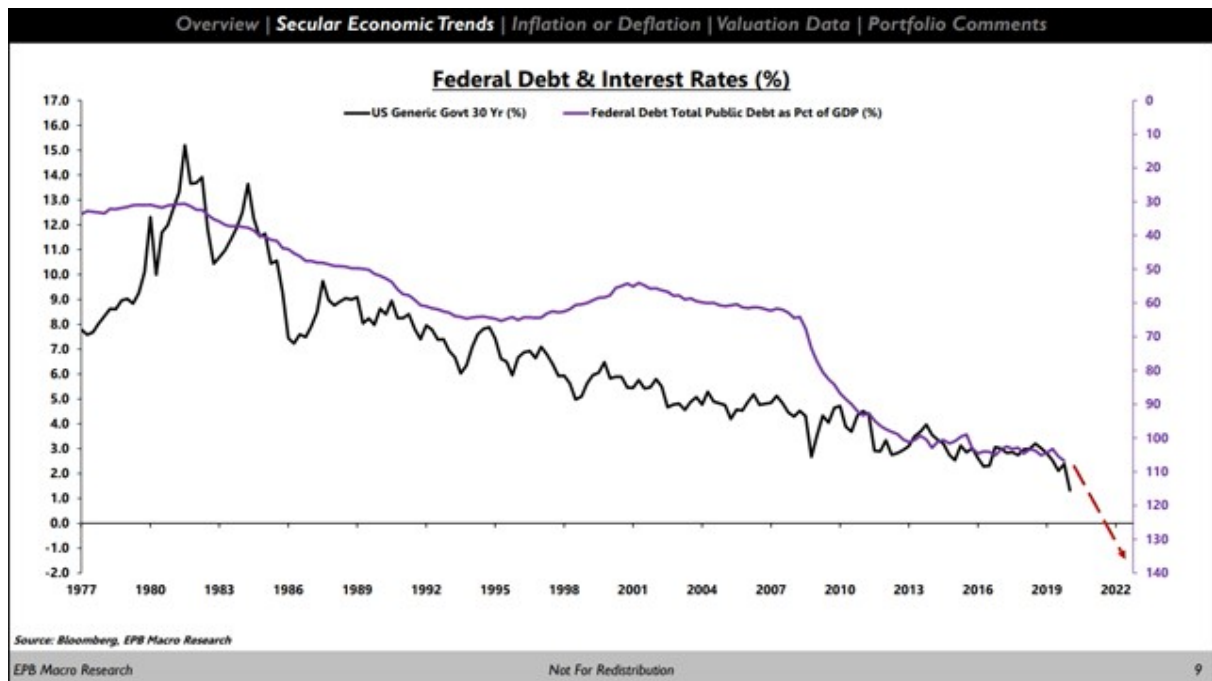
Source: Census Bureau, Bloomberg, EPB Macro Research

The other long-term structural force that will continue to crimp economic growth and add downward pressure to the rate of inflation is the continued build-up of unproductive debt.

High levels of debt are often misunderstood. Commonly, we hear that debt levels are getting too high and that inflation will ensue. The data actually proves that higher levels of debt, particularly unproductive debt that does not generate an income stream, leads to deflation, not inflation.

While private debt is equally important in this analysis (covered later), the following chart shows the relationship between higher levels of federal debt and lower long-term interest rates, a disinflationary relationship.

### Federal Debt and Interest Rates:



Source: Bloomberg, EPB Macro Research

In a majority of historical cases in which high levels of debt led to inflation, it was a transition toward direct money printing that caused the inflationary spiral rather than the debt level. Currently, direct money printing by the Federal Reserve is prohibited, but this will be addressed at the end of this note, in addition to the United Kingdom's uncomfortable step in this direction.

To summarize, two large structural forces will continue to weigh on economic growth, leading to excess capacity and a persistent trend of disinflation.

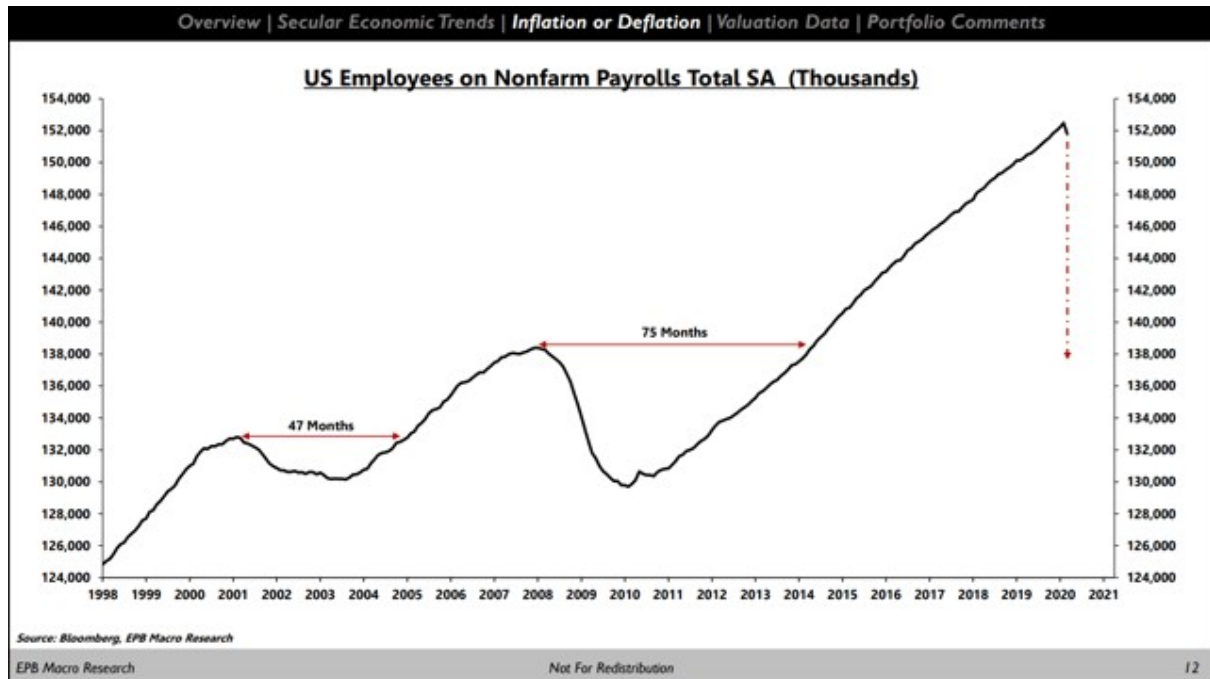
As we stack up the inflationary analysis against the deflationary case, we must consider the long-term secular backdrop is strongly deflationary.

## Inflation and Recessions

Recessions specifically reduce the rate of inflation as recessions create excess capacity and a widening output gap.

In the prior two recessions, it took 47 months and 75 months, respectively, to regain the number of jobs that were lost. In this recession, the number of job losses will erase upwards of 20 million paychecks based on preliminary data from the report of the initial claims.

### Labor Market:



Source: Bloomberg, EPB Macro Research

While some percentage of jobs will return upon the reopening of the economy, some other portion will be lost indefinitely.

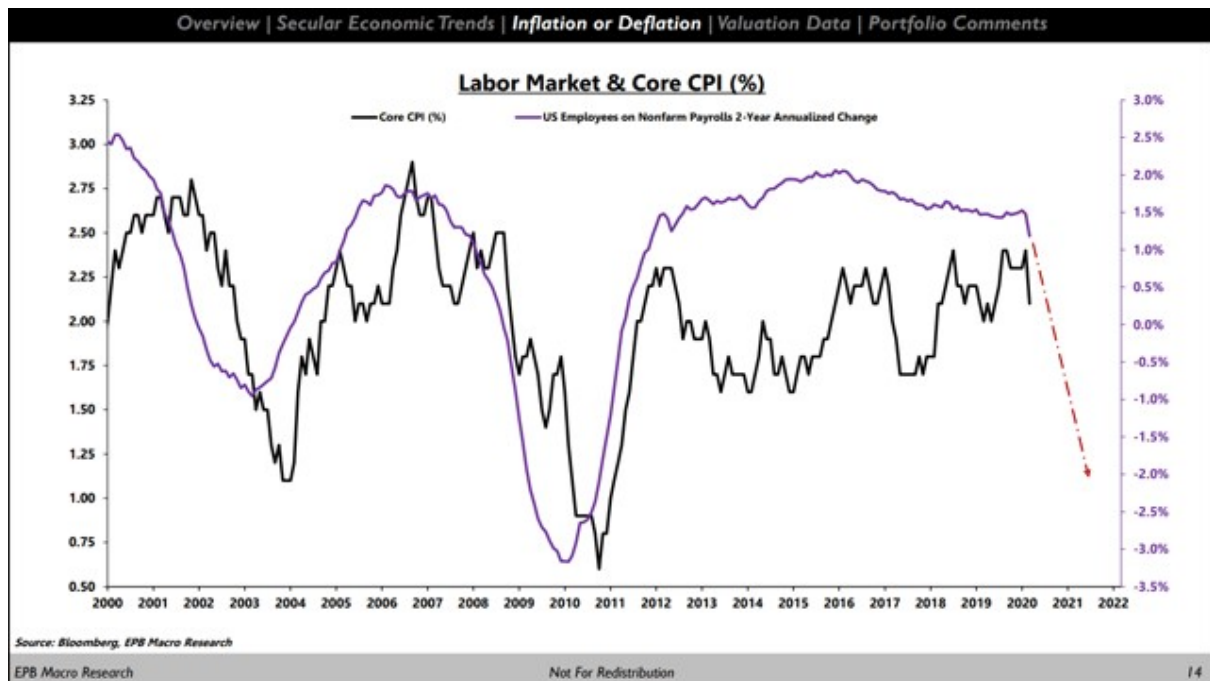
What's particularly troubling about this recession specifically is the concentration of jobs that were lost in what was supposed to be the less-sensitive service sector.

Currently, the economy is structured to accommodate more than 150 million jobs. In a matter of weeks, the economy will have a gap of 20 million jobs relative to the peak. This gap is a highly deflationary force.

While many factors drive the rate of inflation, the relationship between the core CPI inflation rate and the two-year change in non-farm payrolls shows that core inflation remains under pressure until the labor gap starts to close.

**Labor Market and Inflation:**





Source: Bloomberg, EPB Macro Research

As noted in the breakeven chart above, the bond market already is pricing in deflation for several years, partly due to a collapse in the price of oil. What should be noted in the chart above, however, is that the rate of core inflation troughs well after the conclusion of the recession, near 2004 and 2011, respectively.

The rate of core inflation starts to improve as the labor gap closes. Following a similar pattern would result in a decline in core inflation for a number of years, making the fears of hyperinflation premature.

The persistence of the disinflationary trend will be heavily influenced by the speed at which the labor market is able to close the gap to peak employment.

## Money and Velocity and Direct Money Printing

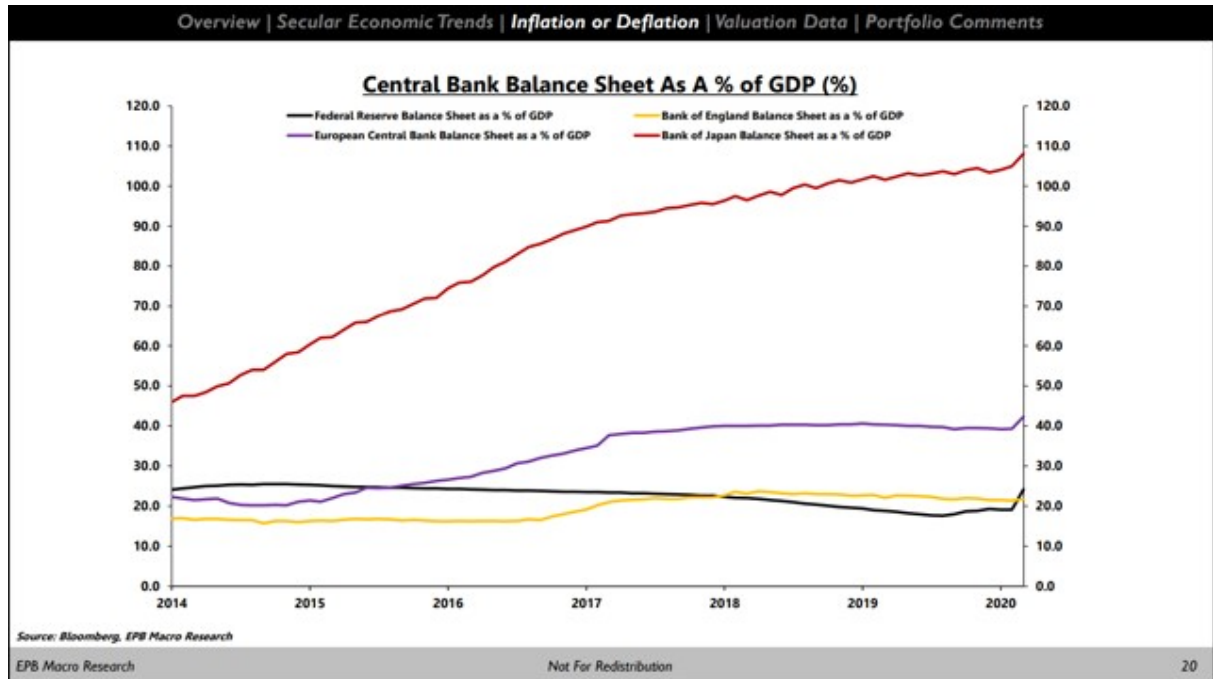
The biggest inflationary fear comes from the fiscal and monetary response to the ongoing crisis. Debt-financed fiscal spending, large-scale QE programs, and direct payments to citizens have caused the analyst community to adopt a ubiquitous and misguided use of the acronym "MMT."

To better understand why the current situation is not MMT or direct money printing, we have to review the US monetary mechanics and compare the path of the Federal Reserve to that of the Bank of England.

To start, we must concede that currencies are all relative. Two fiat currencies can both devalue relative to gold, but they cannot devalue relative to each other simultaneously.

When considering the actions of the Federal Reserve and Congress, we must realize that all major central banks are engaged in the same balance sheet expansion and asset purchases.

### Central Bank Assets As A % of GDP:



Source: Bloomberg, EPB Macro Research

Recently, the Bank of Japan called the Federal Reserves' hand with its own unlimited asset purchase program.

### BoJ Announcement Preview:

TOKYO -- The Bank of Japan next week will discuss shifting to unlimited purchases of Japanese government bonds, putting its annual target of roughly 80 trillion yen (\$742 billion) on hold in response to the coronavirus-induced economic slump, Nikkei has learned.

The BOJ will also weigh doubling yearly purchases of corporate bonds and commercial paper during the policy meeting next Monday, sources say, in an effort to help cash-strapped businesses finance their operations.

The bank is expected to maintain its negative 0.1% policy rate and its policy of guiding the 10-year government bond yield to around zero percent.

Because the BOJ has corralled interest rates within the target range, its JGB purchases have remained well below the 80 trillion yen annual pace.

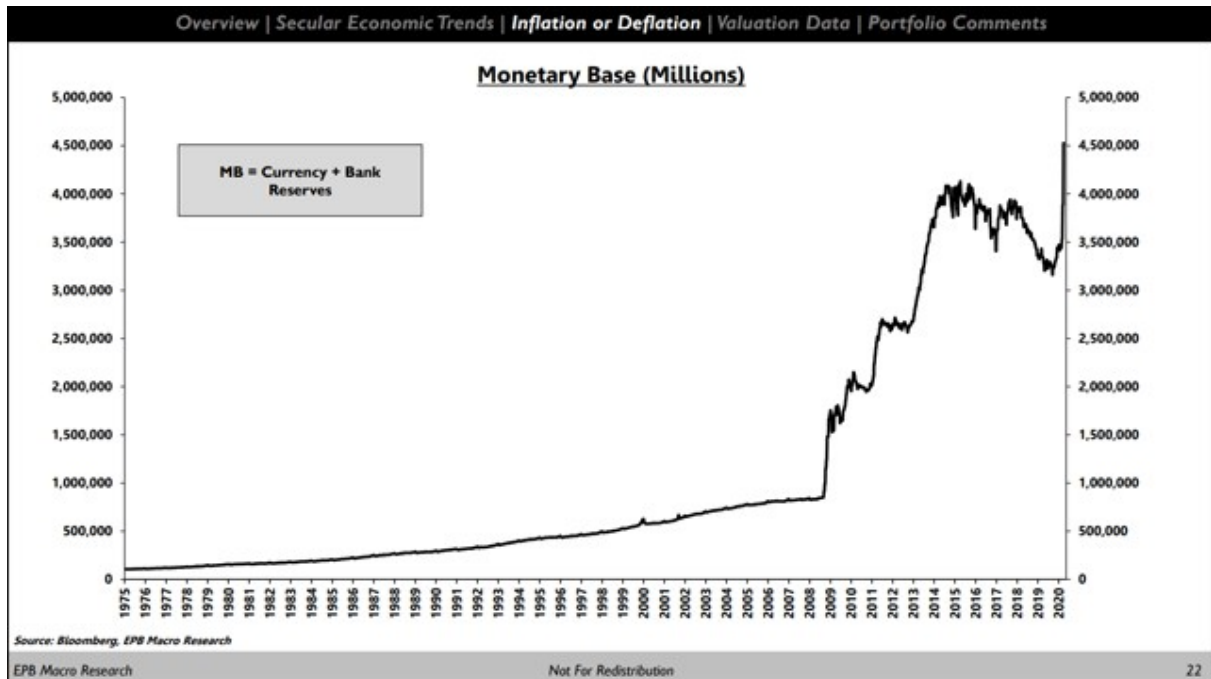
But the Japanese government is poised to issue more debt, which could put upward pressure on yields. The central bank seeks to make clear it will maintain its aggressive monetary easing stance by scrapping the limit on government bond buying.

*Source: Nikkei Asian Review*

Often we conflate Federal Reserve "money printing" with an equal and consistent increase in the money supply. This is not the case.

When the Federal Reserve buys an asset from the private sector, the Federal Reserve increases excess reserves, which represents an increase in the monetary base, not the money supply.

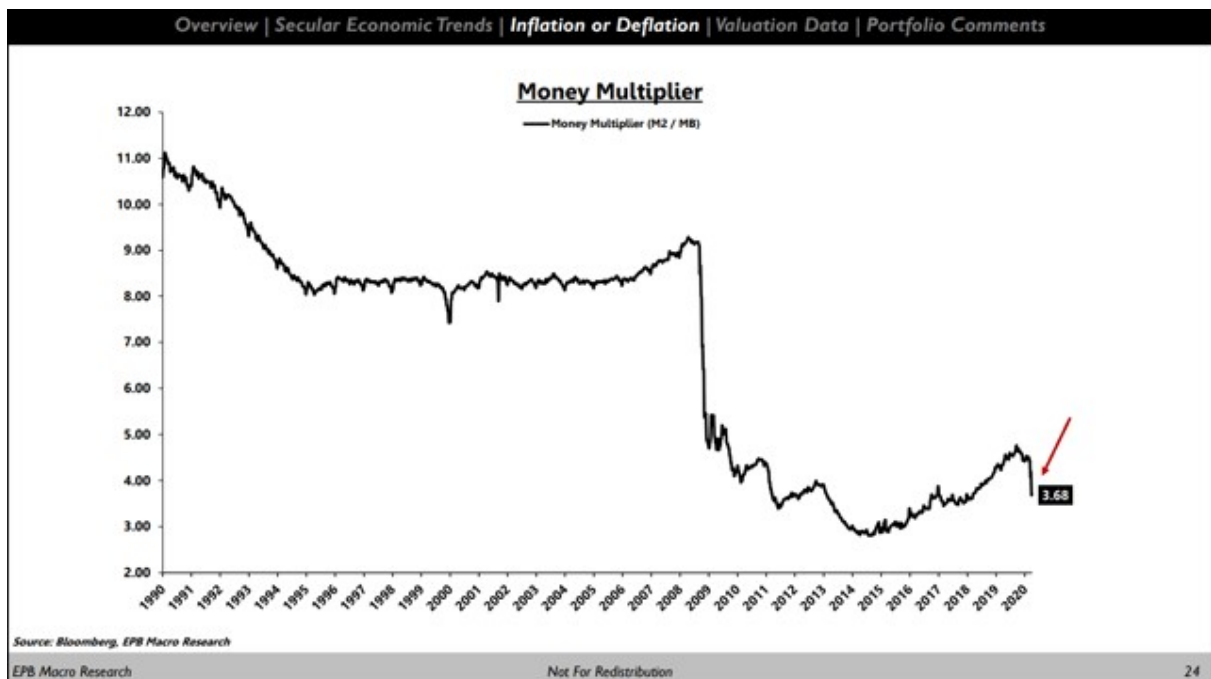
**Monetary Base:**



Source: Bloomberg, EPB Macro Research

The rate at which the monetary base translates to the money supply through loans and other mediums is called the money multiplier or "little m."

### Money Multiplier:



Source: Bloomberg, EPB Macro Research

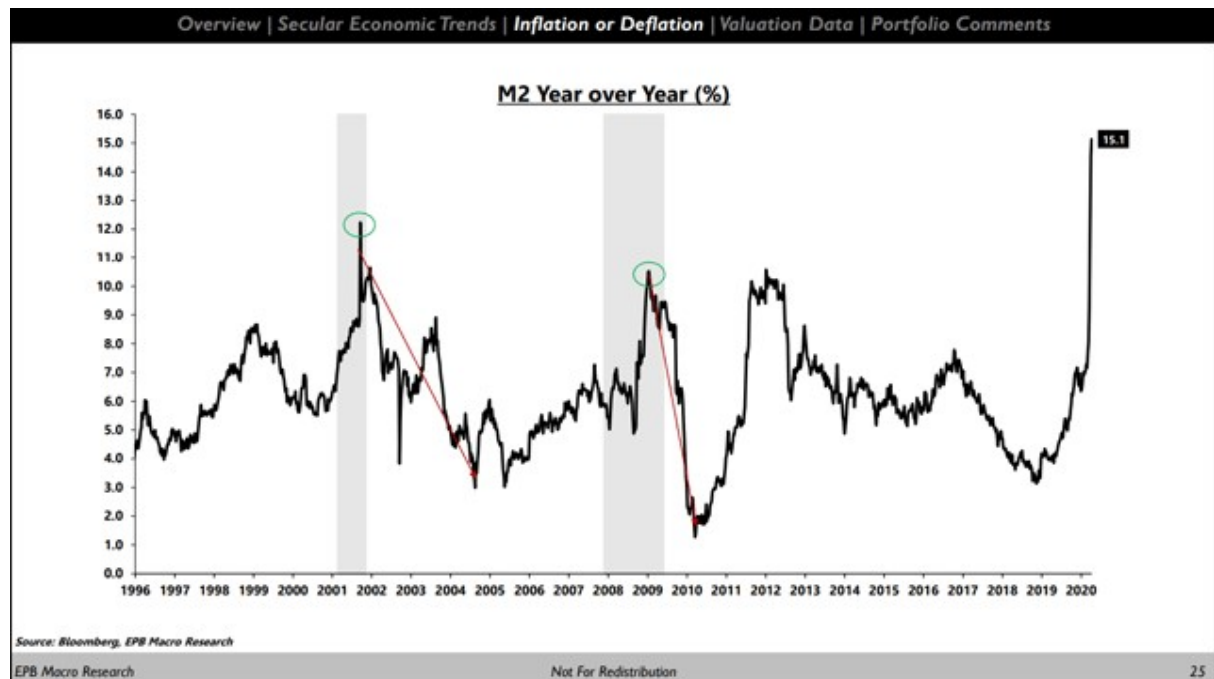
Many factors influence little m, but primarily, banks must agree that a profitable loan can be made, and consumers must have a reason to take on additional debt. If both parties agree and default risk is determined to be manageable, a loan is made.

In a weakening economy, little m starts to decline as the chart illustrates.

As a result, the Federal Reserve has a diminished impact on the money supply.

Charts of M2 money supply growth have started to circulate, highlighting the meteoric rise to unprecedented levels. Without context, this expansion of the money supply is alarming.

### Money Supply Growth (%):



Source: Bloomberg, EPB Macro Research

There are several points to note in the chart above. First, it's not uncommon to see the rate of money supply growth spike in the middle of recessions. The Federal Reserve starts engaging in easing actions, comparing against tightening operations in the year-over-year growth rate formula, and corporations draw down existing lines of credit, which work to increase M2.

In both prior recessions, as is expected in this recession, the rate of money supply growth falls sharply at the conclusion as corporate revolvers are restored, Fed programs taper as they already have in the Treasury space, and the year-over-year comparison becomes unmanageable.

Secondly, GDP is equal to money times velocity.

$$GDP = M * V$$

We know GDP is in free fall, so if M is rising, V must be collapsing.

Historically, velocity collapses during recessionary periods and will do so again when Q1 and Q2 GDP data is released later this year.

### Money Supply and Velocity:



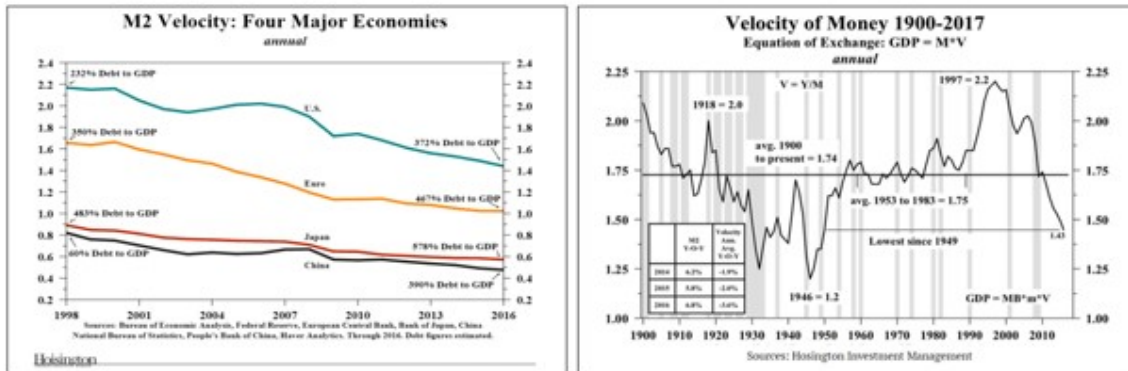
Source: Bloomberg, EPB Macro Research

The velocity of money tends to decline as an economy becomes increasingly indebted.

As we see from the following chart, velocity has trended sharply lower in all major economies as debt levels have soared.

It's incomplete to have a conversation about inflation without citing all the variables in the equation of exchange, including velocity.

### Velocity and Debt:



Source: Hoisington Management, Lacy Hunt

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Source: Hoisington Management, Lacy Hunt, EPB Macro Research

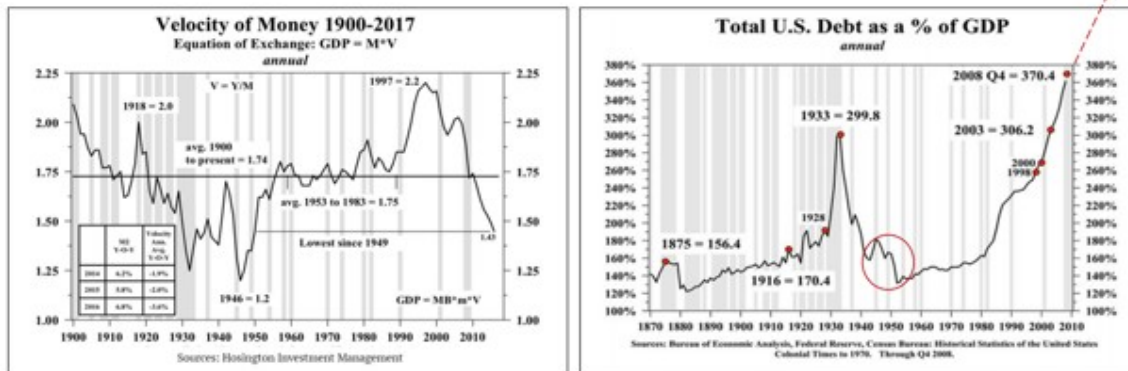
Some analysts claim that velocity is fickle and can rise at any moment, pending a loss of confidence in fiat currency. While this is true, a collapse of the currency in today's monetary system without a change in the Federal Reserve Act, is unlikely.

Analysts cite the 1940s period in which velocity started to rise and describe several situations that caused the change in the direction of the velocity of money.

Many factors influence velocity, but as stated above, total debt levels are critical to this process.

When analyzing the change in velocity around the Great Depression period, any conclusion is incomplete without citing the massive reduction in public and private debt. It's beyond the scope of this article to discuss why or how the level of debt was reduced so dramatically. Still, the facts remain that velocity bottomed in 1946 after the level of public and private debt fell from 300% to a much more manageable level in the 150% range.

**Velocity and Debt:**



Source: Hoisington Management, Lacy Hunt

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Source: Hoisington Management, Lacy Hunt, EPB Macro Research

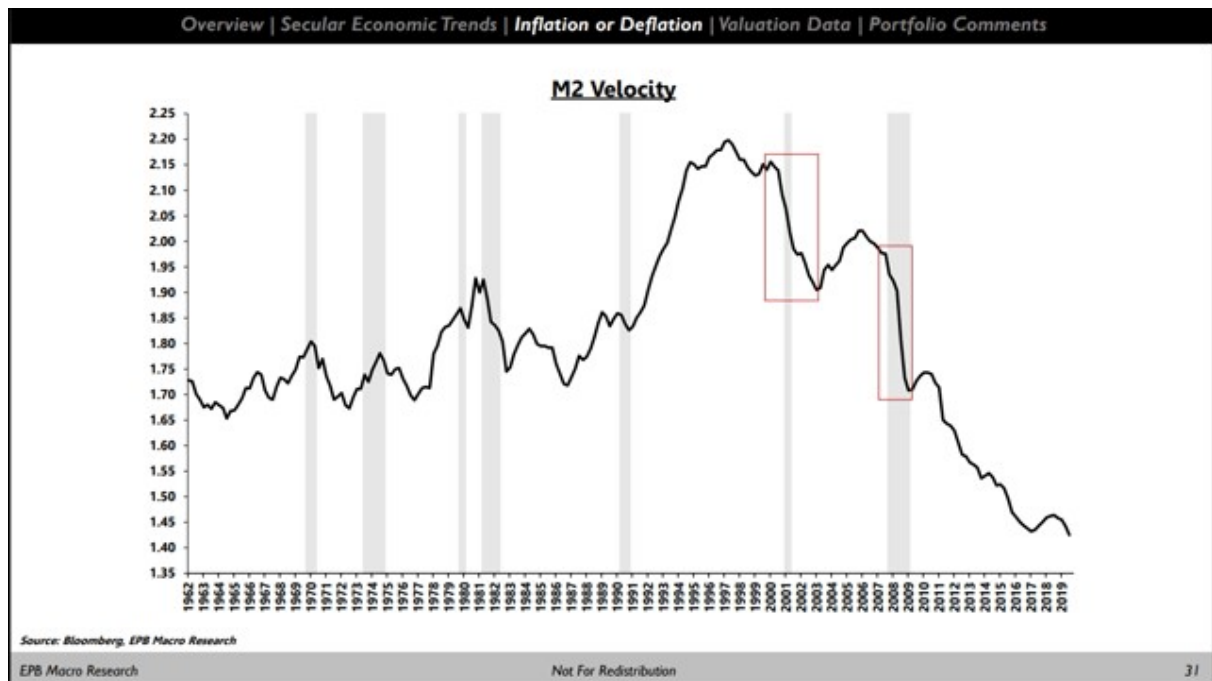
Heading into the 2008 crisis, debt levels (public and private) had reached the highest levels in recorded history, and the country had another opportunity to clear the level of debt, which would have been undoubtedly more painful in the short run.

Instead, decisions were made, and the US economy entered the current crisis with debt levels roughly in the 370% of GDP range.

As a result of choosing a path of increased indebtedness, the velocity of money staged a historic collapse.

**Velocity:**





Source: Bloomberg, EPB Macro Research

Currently, we are in the process of expanding debt levels once again, assuredly increasing debt as a % of GDP well north of 400%. Ironically, this level still remains lower than the relative debt load of Europe, the UK, Japan, and China.

Given the equation of exchange, we know GDP is in free fall, and money supply growth is soaring, so by definition, velocity is collapsing as we'd expect in a sharp recession.

To achieve a lasting inflationary spiral, one that's not transitory, money supply growth needs to stay elevated and be met with at least stable velocity, something that would be "different this time" as the economy suffocates under unprecedented debt levels.

The money process in the United States by which the Treasury issues debt to the public and then likely purchased by the Fed still increases the level of debt in the economy. Increases in spending are met dollar for dollar with increases in debt.

In the United Kingdom, however, dangerous steps have been taken in the direction of true "money printing."

In the United Kingdom, recently, the Bank of England announced that it would "advance" 400 million pounds to the UK Treasury and establish an "overdraft" account. In this process, the central bank is directly paying the bills of the Treasury, and new debt is not created when new money is spent.

Summarizing the statement, [Reuters notes](#):

*Thursday's announcement allows the government to borrow billions of pounds direct from its overdraft with the BoE rather than always immediately needing to go to financial markets which could face further coronavirus-related disruption.*

This facility has been used before, peaking at around 20 billion pounds with promises to be repaid by the Government.

Given the relatively small scale of this facility, the GBP did not collapse, and yields on 10-year Gilts remain below 0.30% as of this writing. Still, it does start an uncomfortable precedent of direct money printing, an action not currently permitted by the Federal Reserve.

In short, while the USD will undoubtedly fluctuate in value as it always has, unless the US starts to change the Federal Reserve Act and allow direct money printing, the velocity of money will continue to be under great pressure as mounting debt levels (public and private) cripple the economy. Declining velocity will work against massive increases in money supply growth, partially or totally offsetting a lasting inflationary spiral.

**We would need to see a rise in money growth with at least stable velocity to have a lasting inflationary impact.**

At EPB Macro Research, we seek to spot transitory boosts to inflation by monitoring commodity prices, breakeven inflation rates, FX cross rates, equity market internals, and producer prices, among other short-term factors.

## **Gold, Cash and Treasury Bonds**

A combination of gold, cash, and Treasury bonds is the most balanced way to play the future landscape.

Treasury bonds will benefit from the deflationary force, while gold will rise in value when real interest rates decline in response to an inflationary breakout. Gold also can rise in a deflationary environment if nominal interest rates decline substantially, and real rates continue to drop.

Cash also is a winner in deflation and provides optionality to buy risk assets as discounts become available.

At EPB Macro Research, gold, cash, and Treasury bonds are the overweight allocations of risk while stocks and commodities are underweight relative to a standard "All-Weather" or "Risk Balanced" portfolio.

*(These slides were taken from a Quarterly Webcast presented to members of EPB Macro Research.)*