

A Century of Fiscal and Monetary Policy: Inflation vs Deflation



By Lyn Alden

There has been a lot of discussion lately about how effective monetary policy can be.

In my view, the big debate between fiscal policy and monetary policy, or inflation vs deflation, mostly comes down to looking at a long enough historical timeline to see the full context.

The effectiveness of monetary policy, including interest rate manipulation and asset purchases, diminishes significantly when debt is high, interest rates hit the zero bound, and the money multiplier is low. The role of monetary policy doesn't stop then, but it takes a back seat to supporting fiscal policy.

In essence, monetary policy is effective at putting the brakes on an economy, but bad at stimulating an economy, whereas fiscal spending has the opposite tilt.

This article focuses on a set of 100-year charts that I've put together to show some historical context for how long-term debt cycles have been worked through in the past, as well as showing the shifting periods of monetary and fiscal policy dominance. So, let's dive into some history to see how it can apply in today's economy.

In this context, rather than focusing on one quarter or even one year ahead, it's a high-level outline of some of the fiscal and monetary environments that investors are likely to face as we head deeper into the 2020's decade.

The precise path we will take through this decade will depend on myriad fiscal policy choices, social outcomes, geopolitical events, and other variables, so rather than predict exactly how it will play out, we can start with certain observations and decision points, and fill in details over time as we hit certain events.

The Short-Term Debt Cycle

A lot of people are familiar with normal 5-10 year business credit cycles. Most readers have lived through several of them.

At the start of an economic expansion, businesses and consumers start to recover from the previous recession, and so they take on more debt and risk. As the expansion progresses, this higher and higher level of debt and eventual over-investment (from businesses) and over-consumption (from households) make them increasingly leveraged and fragile. Asset prices generally move from cheap to expensive during this process as well.

Eventually, some negative catalyst (external or self-imposed), combined with the elevated debt levels, triggers an economic shock and period of deleveraging, which is recessionary. Policymakers usually respond by offering lower rates and fiscal stimulus to offset this otherwise deflationary period, many defaults occur, the system cleans out some of the excesses of malinvestment and unproductive leverage, and then the cycle starts anew.

The problem is that deleveraging rarely reduces debt levels all the way back to where they started in the cycle, in part due to that fiscal and monetary policy response. By the time the dust settles on a short-term deleveraging event, businesses will have collectively reduced some of their debt, but still have

more debt than when they started the previous short-term cycle. However, monetary policymakers try to get the next business cycle going as quickly as possible, and so they reduce interest rates to lower levels, and therefore encourage more debt accumulation.

The chart below shows the business cycles over the past four decades. Corporate debt as a percentage of GDP in blue decreases during recessions (shaded in gray), but keeps making higher lows and higher highs over the decades, and this is in significant part because interest rates in red reach lower and lower in each cycle and allow for that increased debt accumulation over time. This is driven in part by monetary policymakers:

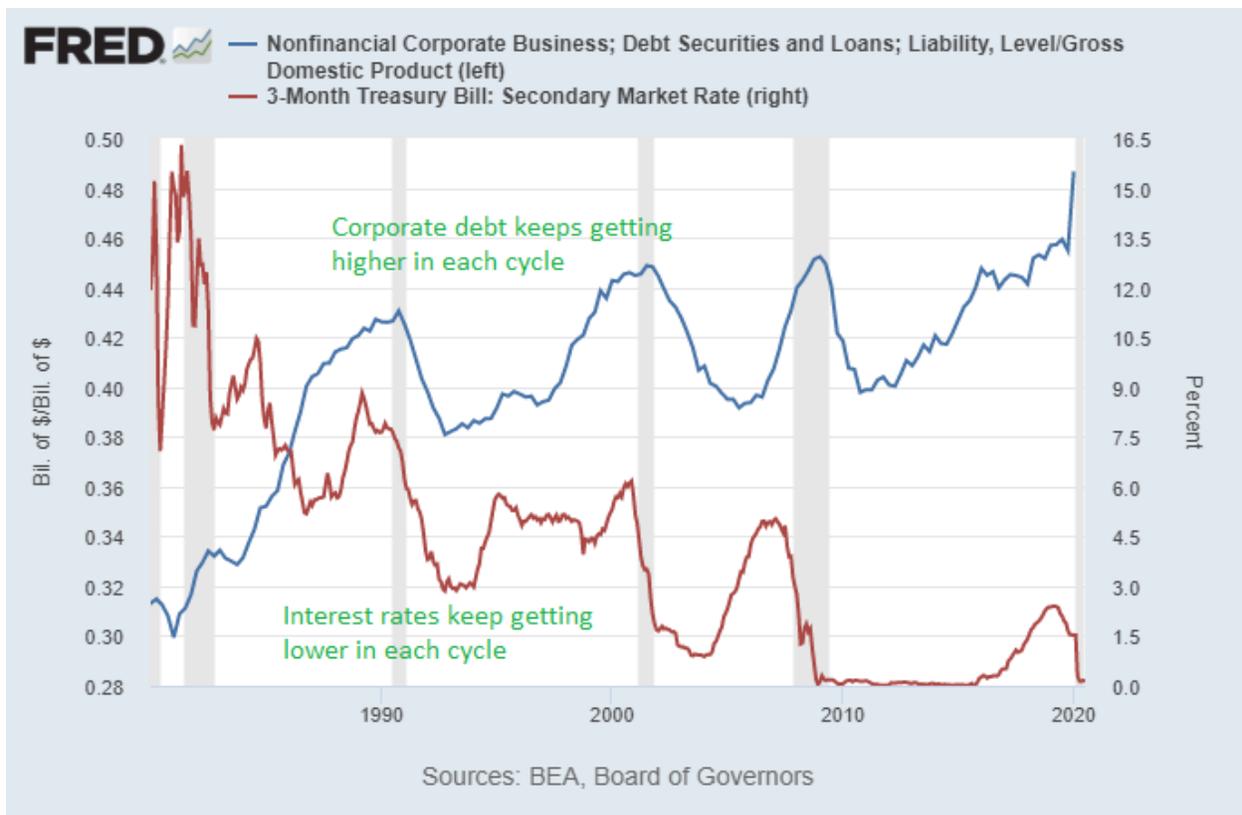


Chart Source: St. Louis Fed

Federal debt accumulation tends to run counter-cyclical to this trend. Federal debt increases swiftly during recessions, because tax revenues fall due to lower economic output, and federal spending increases to offer extra unemployment benefits and stimulus.

In other words, whenever the private sector deleverages a bit in blue below, the public sector leverages up in red below. This Keynesian approach is driven by fiscal policymakers:

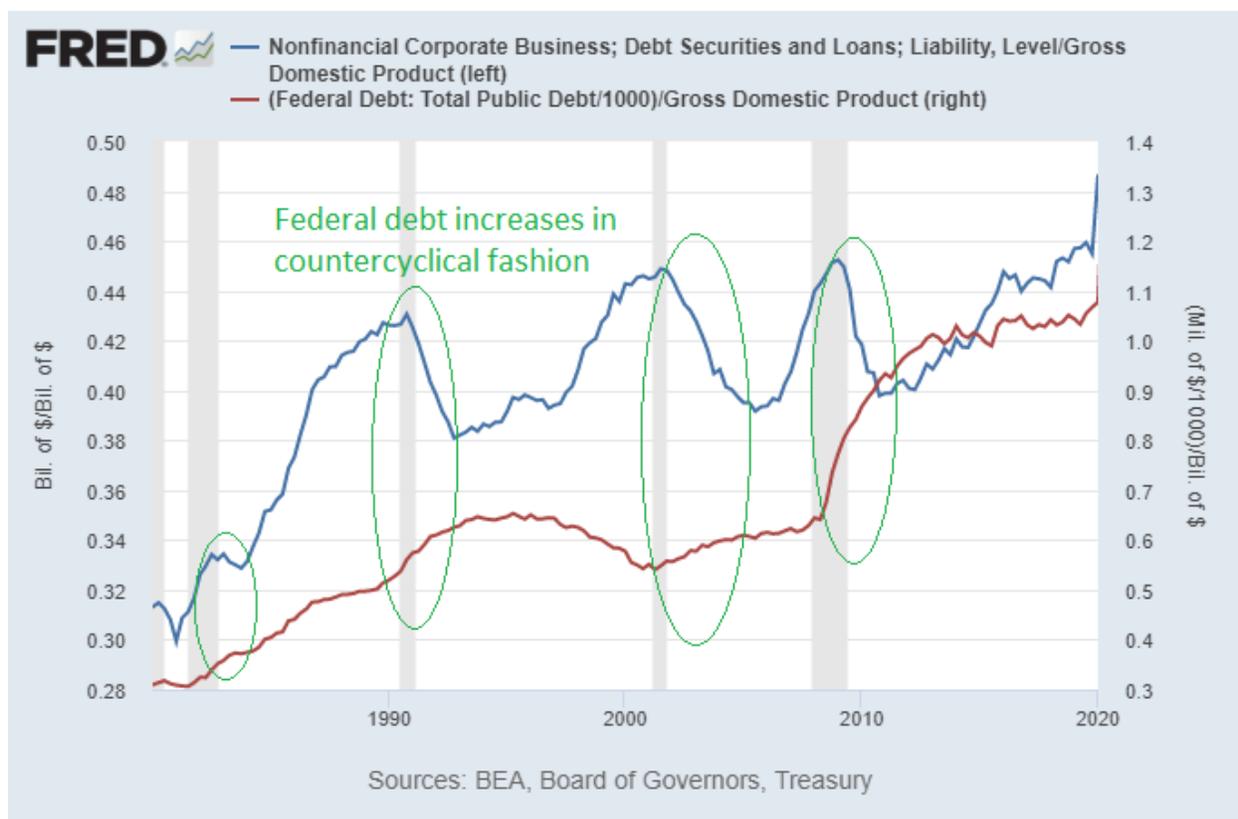


Chart Source: St. Louis Fed

And so we have a string of short-term business cycles building up public and private leverage over decades, leading to something bigger.

The Long-Term Debt Cycle

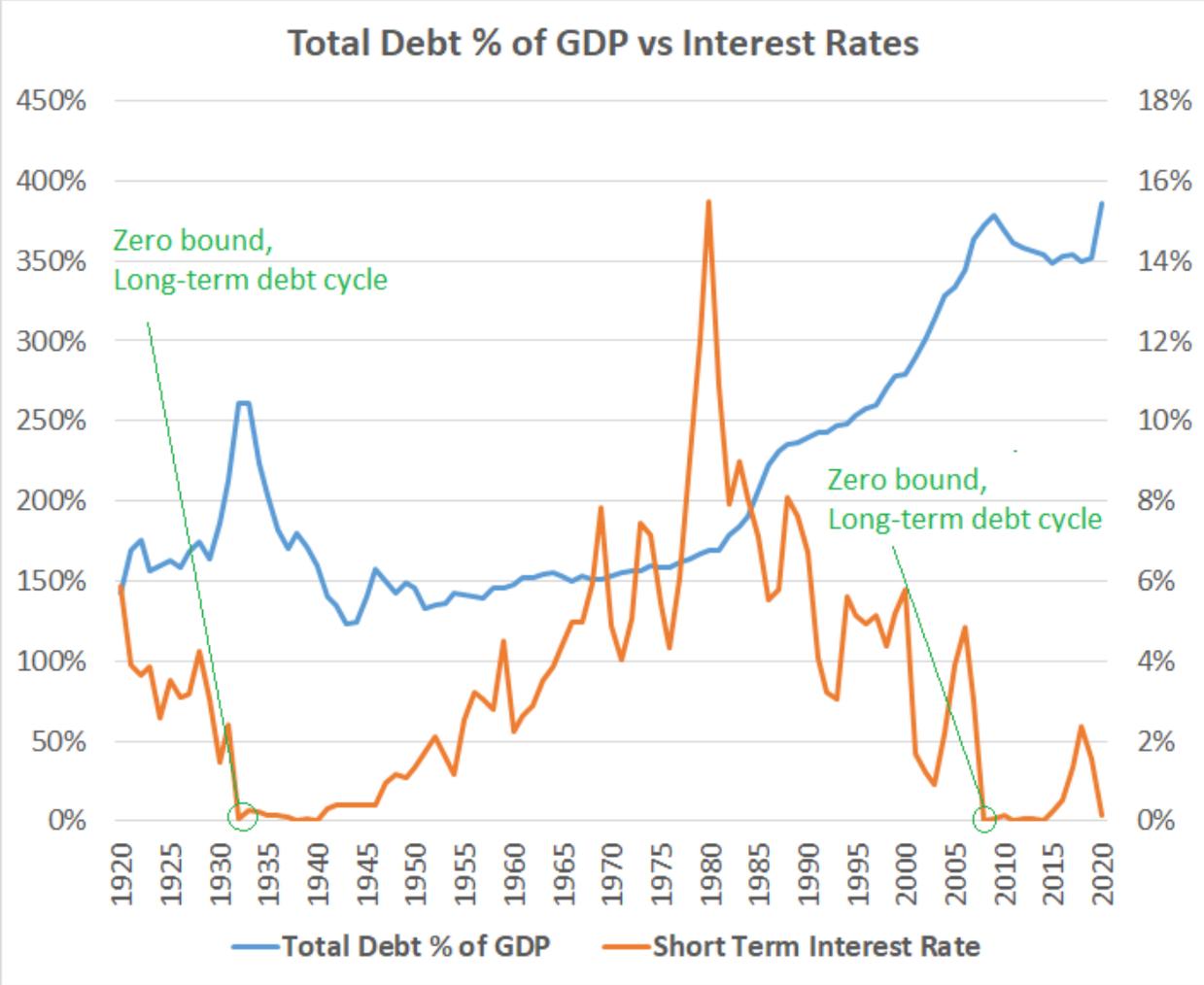
Fewer people are familiar with the long-term debt cycle, because it only reaches a turning point every several decades, and we have to look back into boring history books to see the details.

To make it harder, history merely rhymes, rather than repeating itself identically, so analysts have to take historical data and construct forward probabilities from it based on new conditions and notable differences from past analogues.

After many of those short-term business cycles accumulate debt from one cycle to the next, to a higher and higher level, total debt in the system (federal, corporate, household, and other forms of debt) reaches extremely high levels, and interest rates run into the zero bound, and policymakers have trouble pushing them much below that threshold. The zero bound is where the magic starts to happen, and things change.

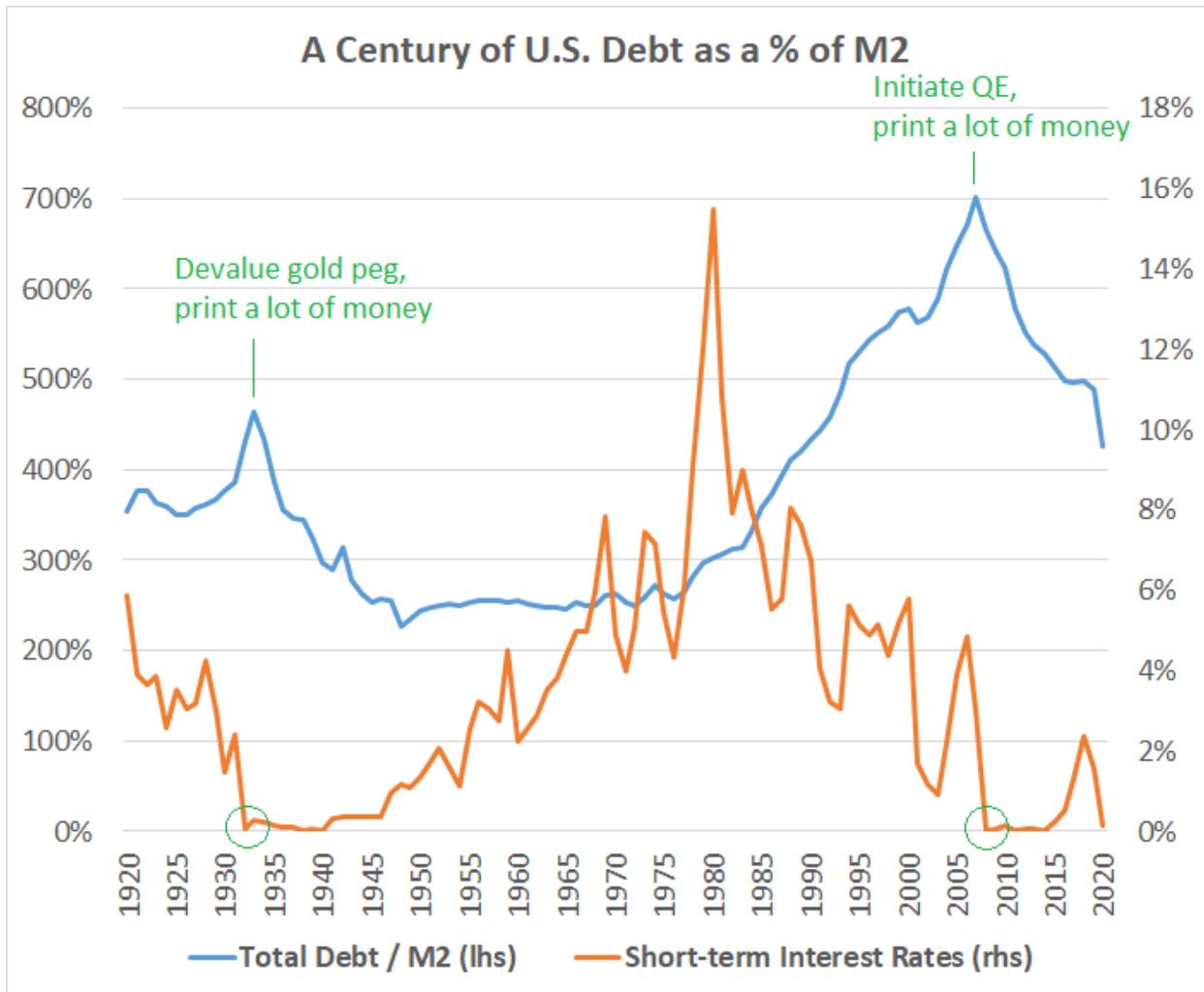
There were two long-term debt cycles over the past century. The first one peaked in two stages in the 1930's and 1940's, and the second one peaked in two stages (so far) in the late 2000's during the 2008-2014 period and again into the 2020's.

Here is total debt as a % of GDP in the United States over the past century in blue on the left axis, along with short-term interest rates in orange on the right axis:



Data Sources: U.S. Treasury Department, U.S. Federal Reserve

And here is total debt as a % of the broad money supply, which shows the structural peaks of each cycle even more clearly:



Data Sources: U.S. Treasury Department, U.S. Federal Reserve

A normal amount of system-wide debt can be deleveraged nominally. People and businesses pay for their mistakes by losing money and filing for bankruptcy, creative destruction occurs, strong businesses devour weak businesses, the dust settles, and the system can build up from there.

However, a huge amount of system-wide debt, equal to a few hundred percent of GDP, including up to the sovereign level, is basically impossible to deleverage nominally, because it crashes the whole system when attempting to do so, and creates a vicious cycle. Instead, those peaks tend to be deleveraged with a major expansion of the money supply.

In other words at the end of a long-term debt cycle, the denominator (currency) goes up a lot more than the numerator (nominal debt) goes down.

Long-term Debt Bubbles Don't Deleverage Like Normal Cycles

People often blame policymakers for printing money and other dovish things when a long-term debt cycle starts to go awry, but that's not where the key mistakes are made.

Instead, the key mistakes were made in the decades that led up to the peak, with over-use of monetary policy (usually accompanied by a set of poor fiscal policies) that encouraged the build-up of debt in the first place. Once it's built up to that extreme level, including at the sovereign level, the options to deal with it are limited.

More specifically, someone's liability is someone else's asset. When you default on a liability, you destroy someone else's asset. When people and institutions lose assets, they are harmed financially, and if they are leveraged against those assets, they can go bankrupt and their liabilities get destroyed as well (which are also someone else's assets).

Similarly, when people get laid off from work, that reduces their consumption, which causes other businesses to lose revenue and lay off their employees as well, which further reduces consumption in the system. With a broad default and no fiscal policy response, several banks begin to fail.

This vicious cycle of asset price declines, job losses, and bankrupt businesses in turn reduces federal and state and local tax revenue, because wage income and investment income fall, which (if money-printing to support public debt is not used and a balanced budget is instead maintained) means that either social programs need to be cut (which would reduce income to beneficiaries and thus also result in less consumption and tax revenue), or tax rates need to be increased (which takes away excess funds for private investment or consumption), and/or sovereign bonds would default (which would render every bank in the country insolvent, because those bonds are their safest assets).

In a system with normal leverage, the natural deleveraging process can play out and the system remains robust and solvent overall, eventually bottoms,

and comes out stronger on the other side with a real market-driven recovery. In that scenario, banks don't crash, the sovereign isn't highly leveraged, only a manageable subset of businesses and households are highly leveraged problem areas, and they don't contaminate the whole system.

However, in such a highly-leveraged system at the peak of a long-term debt cycle, with debt that was only able to reach such extreme levels in the first place due to consistent policy intervention during the preceding decades, a series of initial defaults would start triggering a tidal wave of more defaults, and it all would collapse like a Jenga tower because there is too much debt relative to the amount of money in the system.

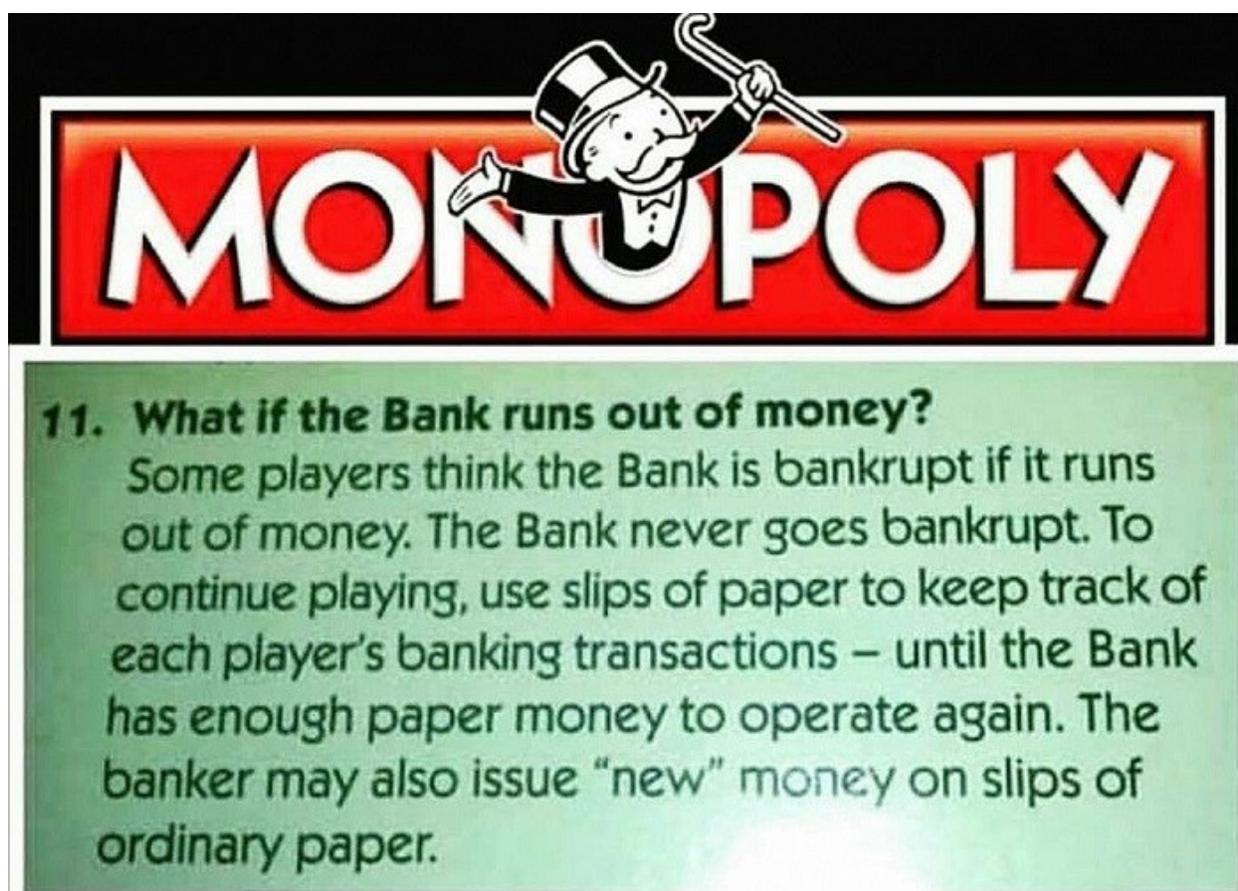


So, a hands-off policy approach works quite well in normal deleveraging events, but it historically fails in major deleveraging events when debt is at extreme levels, even the sovereign entity is highly leveraged, and a large percentage of people are reliant on government payments.

Politicians and central bankers of monetary sovereign nations simply don't have an incentive to go down that Jenga-tower deflationary collapse route, especially since it was in part due to their policy in the first place that debt was able to get so high.

Therefore, a monetary sovereign system rarely if ever gets to that point of collapsing in on itself in a prolonged deflationary spiral, because the reality when trying to deleverage from such a high level, is that collective human nature doesn't allow it for long. Even if politicians were to attempt to take the pure austerity route and cut spending programs and let system-wide defaults happen, the economy gets more and more painful, and after a few years, people vote those politicians out of office in favor of politicians promising stimulus.

Another way of putting it, is that a fiat currency regime rarely if ever collapses from lack of printed fiat. When the zero bound for interest rates is reached, and/or sovereign debt is high and they run low on real private buyers of their sovereign debt, they print. If there is a historically high public and private debt level relative to the number of fiat currency units in the system, they increase the number of fiat currency units in the system.



Source: Hasbro

Plus, socioeconomic factors start to get messy in those extreme economic environments. The peaks of long-term debt cycles tend to also come with peak levels of societal wealth concentration, where the gap between the super rich and everyone else becomes wider than normal. Money ceases to move around the economy smoothly and reach people of all income levels, and instead just concentrates near the top. A combination of tight fiscal policy and loose monetary policy tends to exacerbate that outcome.

Populist politics then become more commonplace, and while some strands of it can be quite rational based on countering prevailing policies that are rightly viewed as needing reform, there are also more dangerous or extreme strands that begin to emerge as well, particularly if those initial and more rational strands go unaddressed. Policymakers historically face the choice of doing something to alleviate the financial burdens of the broad population, or risking outright revolution.

In other words, when the top 0.1% of a population have as much wealth as the bottom 90% of a population (meaning that an average member of the top 0.1% owns about 900x as much wealth as an average member of the bottom 90%), politics tends to not be very smooth. Economic growth also tends to be slow and stagnant, since the broad middle class is the engine of the economy.

It's interesting how the century-long wealth concentration cycle matched almost perfectly (inversely) with the century-long interest rate cycle. Wealth concentration peaked during high levels of system-wide leverage and low interest rates, and bottomed during periods of low leverage and high inflation and high interest rates:

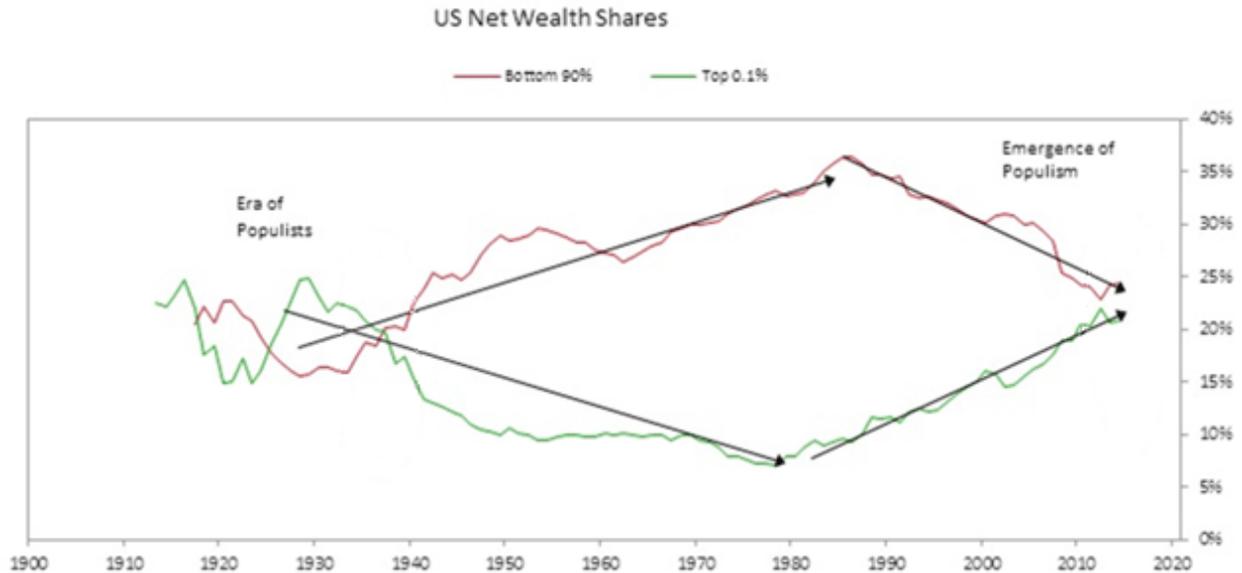


Chart Source: Bridgewater Associates

And then there's the national security angle. Economic theories work well in closed system hypothetical scenarios, but what about open systems where international competitors exist? If one country decides to take the bitter medicine and go through a decade-long massive nominal default and debt collapse and let everything clean out nominally fair and square, during that whole process they become vulnerable from a geopolitical and military point of view compared to nations that instead choose to intervene with printed money and kick the can down the road and prop up their economies. So, there's an in-built geopolitical incentive for policymakers to print.

So, historically, the difference between a normal short-term deleveraging event and a long-term deleveraging event, is that the long-term version usually includes a significant component of currency devaluation.

A Cycle as Old as Time

In U.S. history, international history, and going back literally thousands of years to ancient Greece and Mesopotamia, the common answer during generational peaks in debt levels, almost inevitably, is that currency itself eventually gets devalued by some extent instead of just a nominal debt collapse occurring.

Even an example from 2600 years ago captures today's situation in an eerily accurate way:

*In the Athens of 594 B.C., according to Plutarch, 'the disparity of fortune between the rich and the poor had reached its height, so that the city seemed to be in a dangerous condition, and no other means for freeing it from disturbances seemed possible but despotic power.' The poor, finding their status worsened with each year- the government in the hands of their masters, and the corrupt courts deciding every issue against them- began to talk of violent revolt. The rich, angry at the challenge to their property, prepared to defend themselves by force. Good sense prevailed; moderate elements secured the election of Solon, a businessman of aristocratic lineage, to the supreme archonship. He **devalued the currency**, thereby easing the burden of all debtors (although he himself was a creditor); he reduced all personal debts, and ended imprisonment for debt; he cancelled arrears for taxes and mortgage interest, he established a graduated income tax that made the rich pay at a rate twelve times that required of the poor; he reorganized the courts on a more popular basis; he arranged that the sons of those who had died in war for Athens should be brought up and educated at the government's expense. The rich protested that his measures were outright confiscation; the radicals complained that he had not redivided the land; but within a generation almost all agreed that his reforms had saved Athens from revolution.*

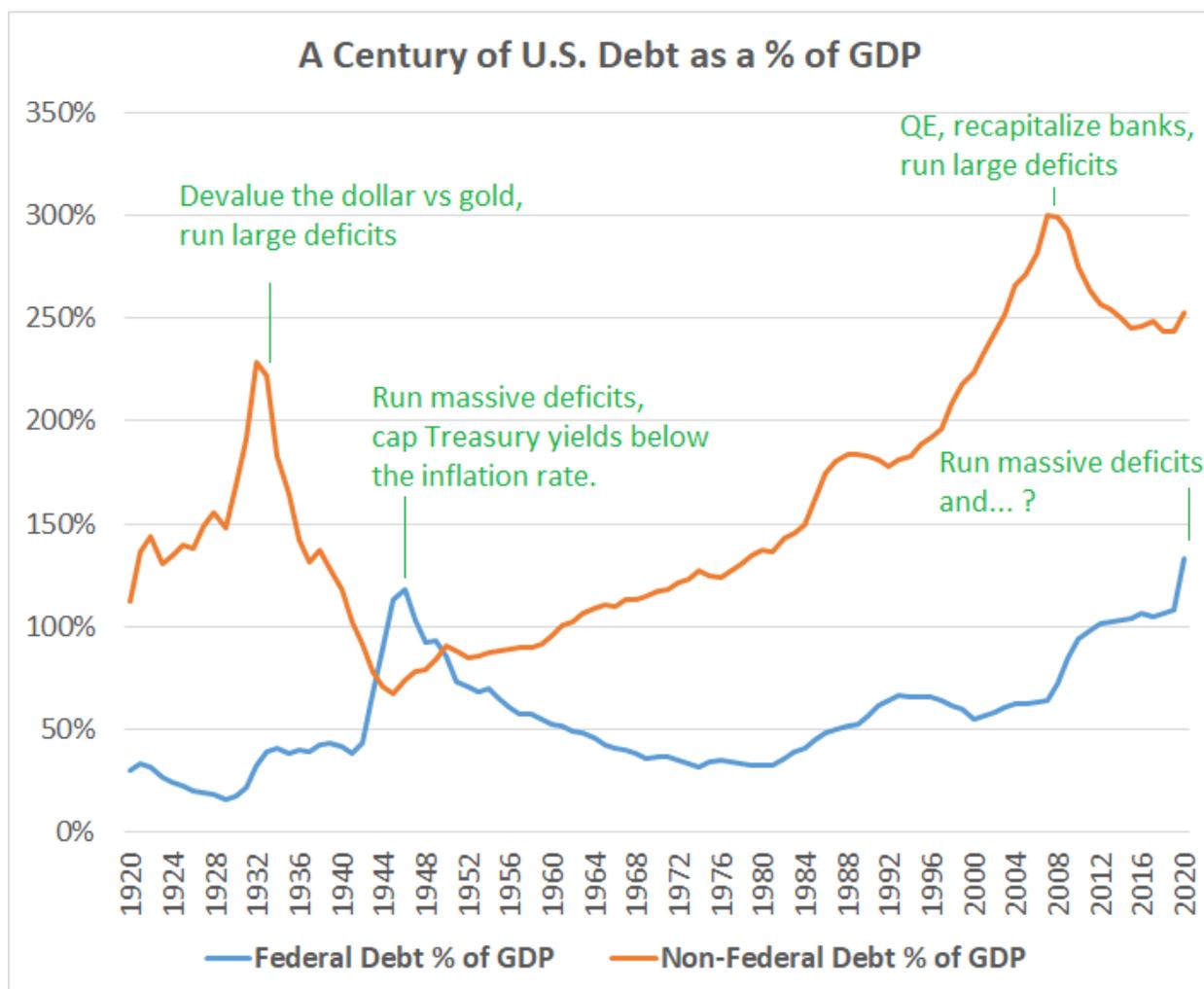
-["The Lessons of History", Will and Ariel Durant, 1968](#)

In a long-term debt cycle deleveraging process, nominal debts may only decrease partially, but currency that the debts are denominated in get devalued and expanded dramatically, either in terms of what it was pegged to or in terms of price inflation, and the result is that the value of existing debt decreases relative to nominal GDP and other broad economic measures, rather than decrease by a lot nominally.

In other words, as I said before, the denominator (currency) is often expanded to alleviate a system-wide generational debt problem, rather than the numerator (nominal debt levels) going down much.

If we focus on U.S. history, and separate total debt as a percentage of GDP into 1) federal debt as a percentage of GDP with virtually no nominal default risk and 2) non-federal debt as a percentage of GDP that does have substantial nominal default risk, we can see the separate measures used.

The orange peaks resulted in deflationary or disinflationary banking crises, while the blue peaks went more in the inflationary devaluation route. This chart shows why I described long-term debt cycles as peaking in two stages, and I think we still have quite a bit to go for the second blue peak that's playing out today:



Data Sources: U.S. Treasury Department, U.S. Federal Reserve

Non-federal debt (the orange line above) looks like it decreased a lot on that chart in the 1930's and early 1940's. Indeed, non-federal debt as a percentage of GDP fell from 225% to 75% from peak to trough, which seems like a huge deleveraging. However, in nominal dollar terms, non-federal debt only decreased by about 20% from peak to trough during that period.

Instead, along with that partial nominal deleveraging, the U.S. dollar value peg to gold was reduced from \$20.67/oz to \$35/oz, combined with some degree of fiscal stimulus and a big expansion of the monetary base, which reinflated the broad money supply and nominal GDP and therefore reduced the debt-to-GDP and debt-to-M2 ratios. The numerator went down 20%, but the denominator skyrocketed.

The economy improved from its 1932/1933 lows as it moved deeper into the 1930's, but encountered another recession in 1937 which led to more stagnation. Importantly, the economy experienced outright deflation in the early 1930's and sharply shifted into a period of reflation in the mid/late 1930's after the gold peg was reduced and the monetary base was expanded, but the economy did not encounter outright high inflation. This was a noninflationary currency devaluation, meaning that currency was devalued relative to gold, but was not devalued much against broad prices in general, since the inflationary forces were counter-acting an existing deflationary force of debt.

Then, the U.S. entered the world war in the early 1940's and began massive deficit spending (partially monetized by the Fed buying a lot of Treasuries). The Fed capped all Treasury yields well below the prevailing inflation rate to inflate away part of their purchasing power, and the country's industrial production was tripled in five years.

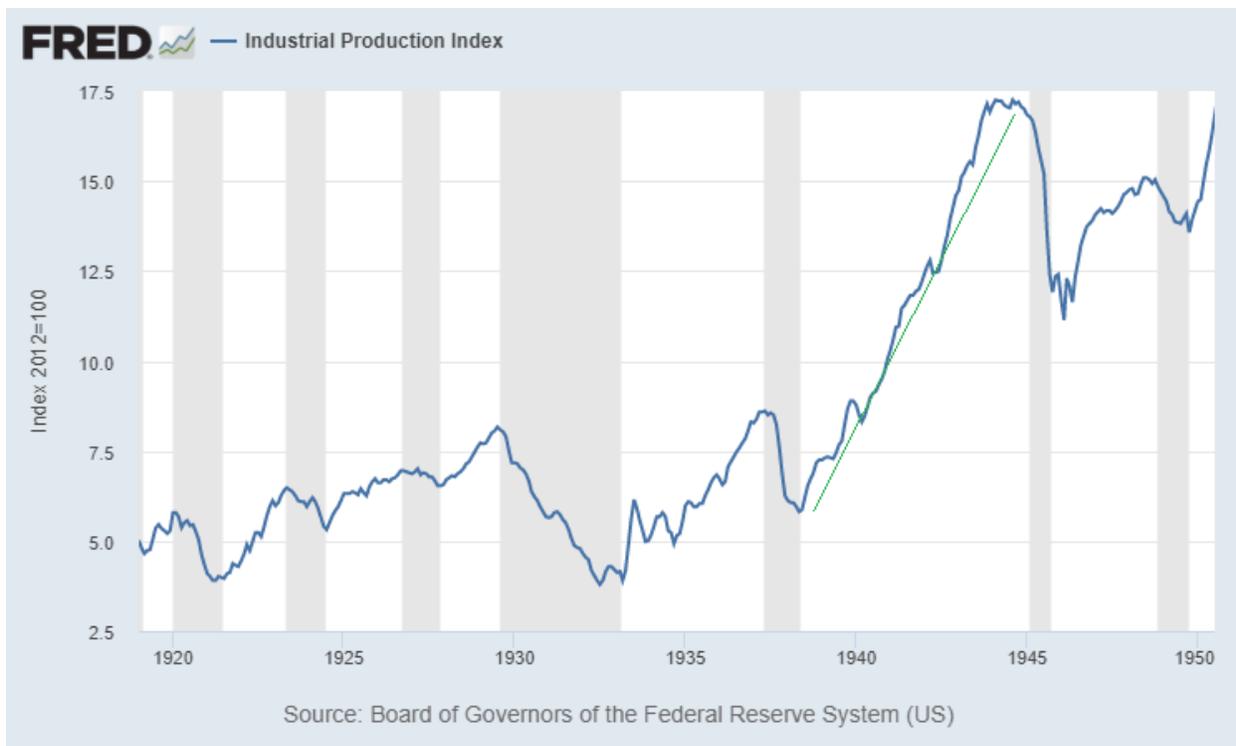


Chart Source: St. Louis Fed

People often say the war brought the economy out of the depression. However, that's only half-true.

The act of war itself was economically subtractive (losing irreplaceable lives and having their expensive equipment destroyed on foreign soil, half a world away), but the productive infrastructure that the war forced the country to build through federal deficit spending, which they were able to come home to and re-purpose for domestic use, was hugely additive in terms of new technology and overall productivity in the subsequent peacetime economy, and this was further boosted with the G.I. spending bill to get those soldiers trained or educated as they entered the domestic workforce.

After the war, the federal debt never really deleveraged much nominally, but they held nominal debt relatively flat for a while, as nominal GDP caught up, partially from growth and partially from inflation, with interest rates capped by the Fed below the inflation rate. So again, it was a period of aggressive spending and currency devaluation, followed by a period of relative austerity, that reduced debt as a percentage of GDP, this time at the federal level.

In modern parlance, the war forced the 1940's to be a very MMT-heavy decade in terms of fiscal and monetary policy, and the pandemic may be a catalyst to make the 2020's decade into a similar outcome, especially given the same long-term debt situation. In other words, an external catalyst changes the public perception and policymaker perception, about fiscal deficits.

In such a scenario of massive deficits and financial repression like the 1940's had, holders of currency and bonds were effectively partially defaulted on in real terms (often not nominal terms, especially at the sovereign level) and only got part of their purchasing power back. On the other end, debtors effectively got bailed out and only have to pay back a portion of the purchasing power that was owed, even though they largely paid back the full nominal amount in many cases, but in weaker currency units.

Ark Investment Management published a great chart [in a recent research paper](#), which shows how frequent currency devaluations have been worldwide, particularly in the past century:

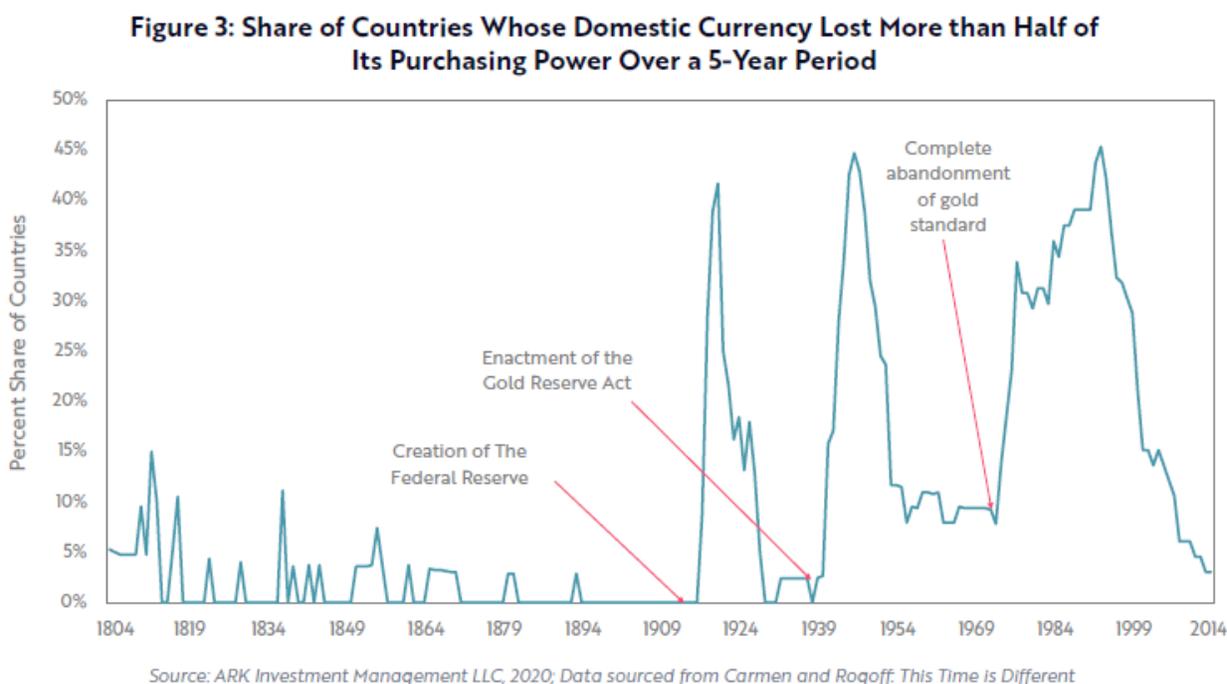


Chart Source: Ark Investment Management

That doesn't even include currencies that lost a third or a fourth of their purchasing power over a 5-year or 10-year period. The percentages would be

far higher with those looser cut-offs. It only includes currencies that lost half of their purchasing power in five years.

The [1H2020 letter by Hirschman Capital](#) noted a similar phenomenon. They found that over the past two centuries, 51 out of 52 countries that reached sovereign debt levels of 130% of GDP ended up “defaulting”, either through devaluation, inflation, restructuring, or outright nominal default, within a pretty wide spread of 0-15 years or so after that point.

Japan, as the largest creditor nation in the world currently, is the one example out of 52 that has avoided that outcome vs the other 51 examples. Japan didn't fix their problem; with record debt-to-GDP, they likely just delayed and mitigated it far better than most. Their sovereign debt as a percentage of GDP has continued to increase, pushing the previously-known boundaries on how much debt a sovereign entity can hold.

A way to think of that study, is that sovereign debtors historically became partially insolvent with a 98% probability in the long-run when debt levels relative to GDP pass the event horizon into extreme territory of over 130% of GDP, but the actual event of outright currency devaluation can come shortly, or quite a bit later.

It's like the Titanic hitting an iceberg; once struck, the outcome of sinking became almost inevitable, and yet the ship persisted in a state of being afloat and slowly sinking for quite a while. It became a question of timing, and most importantly, acquiring lifeboats.

Investors could have theoretically traded Titanic contracts in the meantime, with varying ups and downs in price based on news from the engine room or from the captain about the state of the ship. Based on historical probability, that's mathematically what currency holders and bond holders are doing when a sovereign hits over 130% debt to GDP. They are buying bonds at record high prices (aka record low yields) at a time when the sovereign is least likely to be able to repay its debt in real purchasing power terms over the next decade or two as some of those long bonds mature.

Long duration sovereign bonds with interest rates that are below the prevailing inflation rate, are interesting trading vehicles due to their convexity, but are problematic long-term buy-and-hold assets in those environments because they are likely to have negative real yields for quite a while.

The vast majority of debts, public and private, are denominated in a specific amount of currency, which has no intrinsic value. During a long-term debt crisis, the money supply gets greatly expanded to deal with that debt burden, and yet those pre-existing debts are still owed in a fixed amount of currency. So, those debts get partially inflated away. That's the inherent nature of fiat currency; its supply is infinitely flexible by policymakers to the upside.

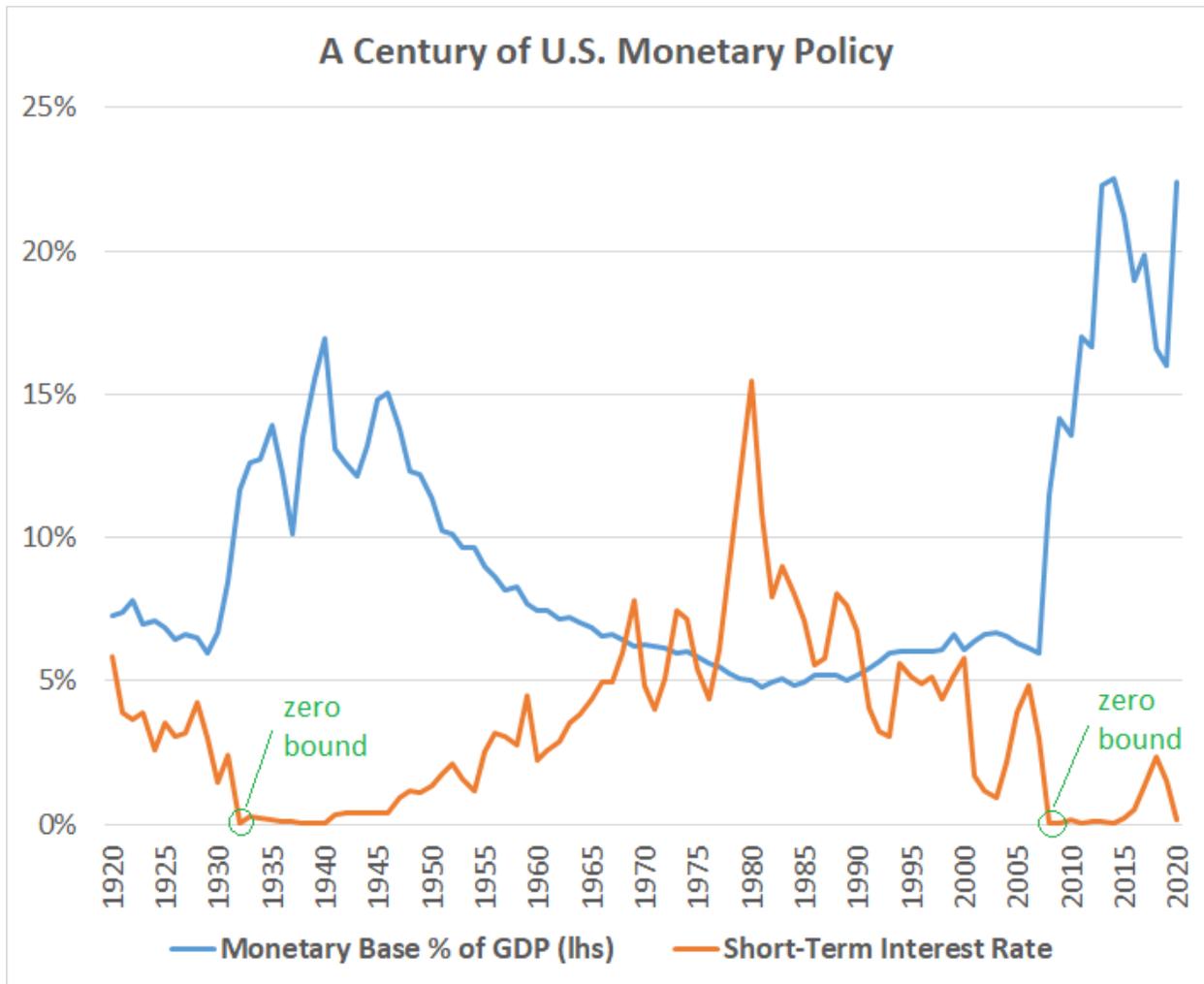
Just like how buying stocks in overvalued equity markets often results in a loss of purchasing power over the next 10-20 years, lending and buying debt (and even holding cash) with low interest rates during a debt bubble, often results in a loss of purchasing power over the next 10-20 years as well.

A Century of U.S. Monetary Policy

Monetary policy and fiscal policy historically take turns in how potent their effects are on the economy.

During a booming economy, with banks happily lending for productive purposes, and higher interest rates and inflation levels generally, monetary policymakers have the power to put on the brakes, or to lighten up when the economy softens, which means monetary policy has a lot of influence, for better or worse.

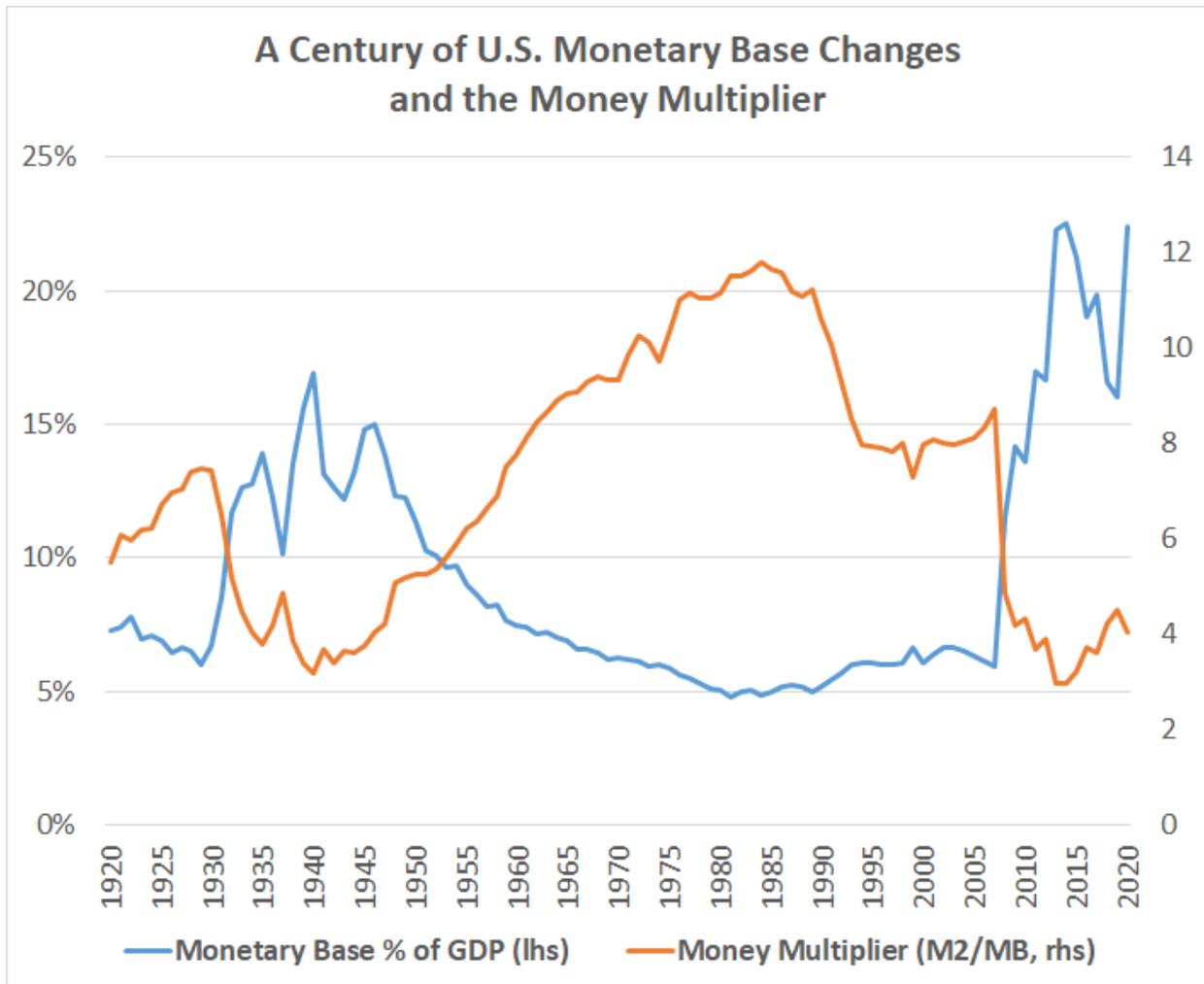
However, at the point when the zero bound is reached, monetary policy runs out of ammo with its interest rate tool, but can shift to expanding the monetary base aggressively (aka quantitative easing or "QE"), which at first has some level of effectiveness to combat a deflationary shock and pick the banking system up off the ground, but overall can't do much beyond that. QE can recapitalize banks from low reserves to high reserves, and it can offset a deflationary shock or liquidity crisis, and can prop up asset prices to some extent, but can't create sustained inflation or expansion of the broad money supply on its own.



Data Sources: U.S. Treasury Department, U.S. Federal Reserve

As debt builds up in the system, economic growth slows, and the money multiplier shrinks. The Great Depression and the Great Recession were during periods of significant money multiplier bottoms, which along with the zero bound being reached, is what made them so different than every other normal recession. Even as monetary policy makers expand the monetary base (the combination of currency in circulation and bank reserves), it doesn't make banks lend more, so broad money supply doesn't grow as quickly as the monetary base.

This chart shows the monetary base as a percentage of GDP in blue, and the money multiplier in orange:



Data Sources: U.S. Treasury Department, U.S. Federal Reserve

1930's and 1940's

The 1930's Great Depression was a difficult era, because it wasn't just one recession. The worst point of it was in the early 1930's after the big crash, but as things gradually recovered, the economy hit another recession in 1937 and stagnated again, and couldn't seem to get out of its slump. Even as the monetary base expanded, the money multiplier kept stagnating.

Then, World War II in the 1940's forced them to build a ton of productive industrial assets via massive federal deficit spending and financial repression, and existing debts were further devalued by inflation. The full scope of the depression era period characterized the initial crash and partial economic

collapse, the subsequent rebound into further economic stagnation, and the eventual war and inflationary currency devaluation.

2010's and 2020's

Although not identical, the 2008 Great Recession was similar. Policymakers expanded the monetary base dramatically and many people feared imminent inflation, but that expansion of the monetary base mostly just re-capitalized the banking system, brought banks from 3% reserve levels up to 10%+ reserve levels, and didn't result in a lot of lending or broad money supply increase or economic growth.

The economy superficially recovered from those 2009 lows, especially in terms of asset prices, but GDP growth was slow by historical standards throughout the cycle, the labor participation rate among prime age workers never fully recovered to pre-crisis highs.

The economy eventually ran into the COVID-19 shock and stagnated again, with a starting point that was still highly-indebted. This forced policymakers in 2020 to run deficits at a scale not seen since the 1940's, and it remains to be seen what the final outcome will be.

The Limits of Monetary Policy

Eventually, monetary policy on its own runs out of ammo, with rates at zero and aggressive expansion of the monetary base happening, but little real lending, and little velocity of money or strong growth in broad money supply, or strong rebound in GDP. Further QE at that point can pump up asset prices, which can in some cases make wealth inequality worse, and can't do much about the real underlying economy.

That is why, over the past six months since the pandemic further popped the existing debt bubble, several Federal Reserve officials have called for more fiscal response. This is somewhat unusual by tradition, because central bank policymakers are supposed to be relatively apolitical. However, they realize that their tools have run low, and so they point to Congress to do more.

When Fiscal Policy Takes Over

Let's revisit some of the previous monetary policy charts, but overlay the fiscal policy on top of them.

Macro analysts often fall into a few camps. Some believe that QE is outright inflationary, but it's not. Others believe that QE is never inflationary, or even disinflationary, which is also incorrect.

Instead, whether QE is inflationary or not, largely depends on whether it is accompanied by high fiscal spending, since QE's role in that environment is merely to recapitalize the banking system and monetize those fiscal deficits.

In other words, many people correctly identify that a highly-leveraged system, with banks not lending much, is inherently disinflationary. However, they must also consider fiscal policy response, which in extreme environments, can go around the banking system and re-inflate the economy out of an otherwise disinflationary structural situation.

Consumer price inflation can be caused by all sorts of policy and psychological reasons, but ultimately occurs because too much money is printed and spent relative to the productive supply of goods and services in the economy. In opposition to that, deflation is caused by technological progress and productivity improvement, excessive debt levels which constrain spending, and an abundance of supply of goods and services relative to both demand and the amount of money in the system.

People often think that high money velocity is required for inflation, but for the most part it isn't. The 1940's only had a brief spike in money velocity, but currency lost a third of its purchasing power that decade through several spikes of high inflation. The 1970's had weak money velocity, but sustained high inflation. The 1990's had a strong rebound in money velocity to multi-decade highs, but low inflation. If a ton of money is created, only a modest uptick in velocity is needed to start an inflationary cycle. Indeed, velocity ends up being a coincident indicator, rather than something that happens first.

Aggressive broad money expansion, often accompanied by some degree of supply limitation, is generally inflationary.

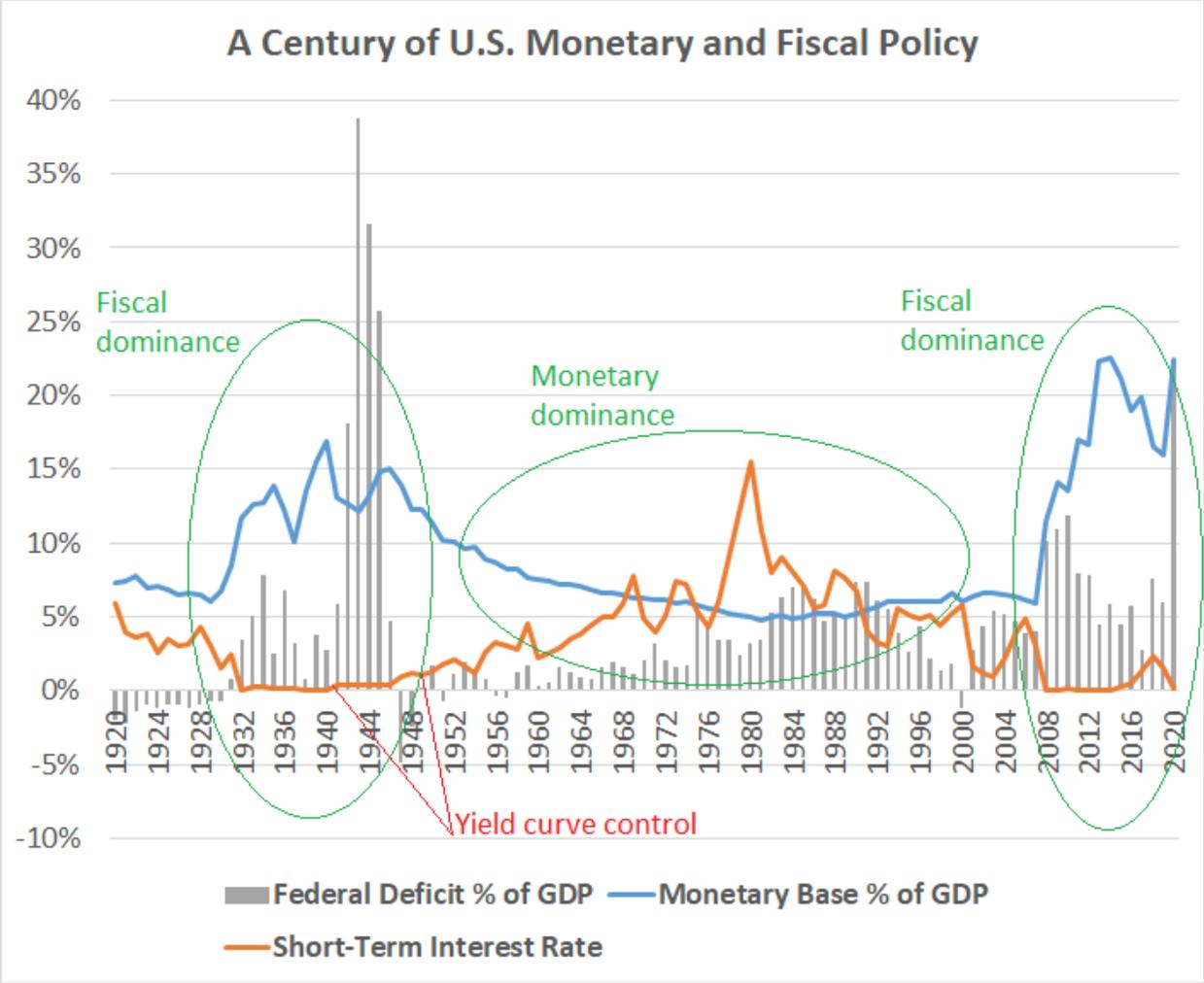
The long-term structural trend is towards lower inflation or outright deflation, and normally, that would be a good thing. As humanity's technology progresses and productivity improves, it would be natural for your money to buy more goods and services than it could 5 or 10 years ago, rather than less.

However, because we structured our economy around a debt-based system, deflation is viewed by policymakers as the biggest enemy; something to be fought off wherever it shows up, so they seek to counter that inherently deflationary trend with inflationary monetary and fiscal policy.

After short-term interest rates hit the zero bound and the monetary base expands dramatically (blue and orange lines in the chart below, like before), monetary policy by itself basically runs out of ammo. So, fiscal policy takes over in the form of massive deficits (gray bars in the chart below), and a significant portion of those deficits become monetized, meaning that the Federal Reserve buys those Treasury securities by expanding the monetary base (aka "printing money") rather than financing those deficits by existing currency holders actually buying the Treasuries.

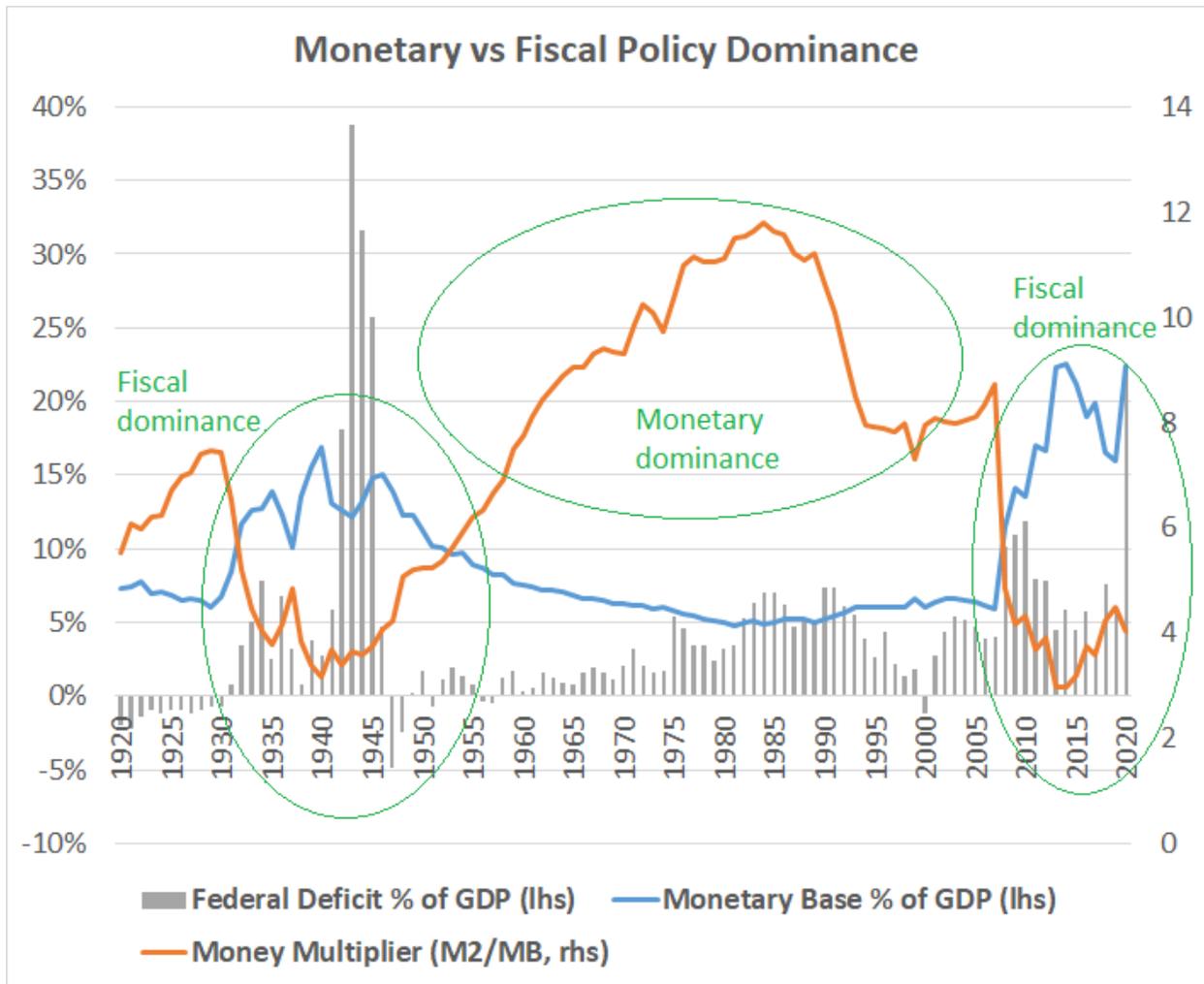
That last part is an important distinction. The Treasury borrowing capital from sources of private capital in the economy and redeploying it elsewhere in the economy may or may not be stimulative, depending on how productive that spending is. However, when the Federal Reserve expands the monetary base to fund Treasury expenditure as a form of debt monetization (and especially if it caps Treasury yields below the prevailing inflation rate), it is a direct currency devaluation, destroying of debt in real terms, and inherently stimulative in a nominal sense. Whether it is stimulative in a real sense (meaning inflation-adjusted) depends on how productively that capital is put to use. This is because the fiscal authority is spending money, without drawing that money from any private lenders. The money they are spending is being created.

This chart is crowded with information, but it's worth taking the time to absorb it. The crux of it is that when interest rates run into the zero bound, fiscal spending takes over:



Data Sources: U.S. Treasury Department, U.S. Federal Reserve

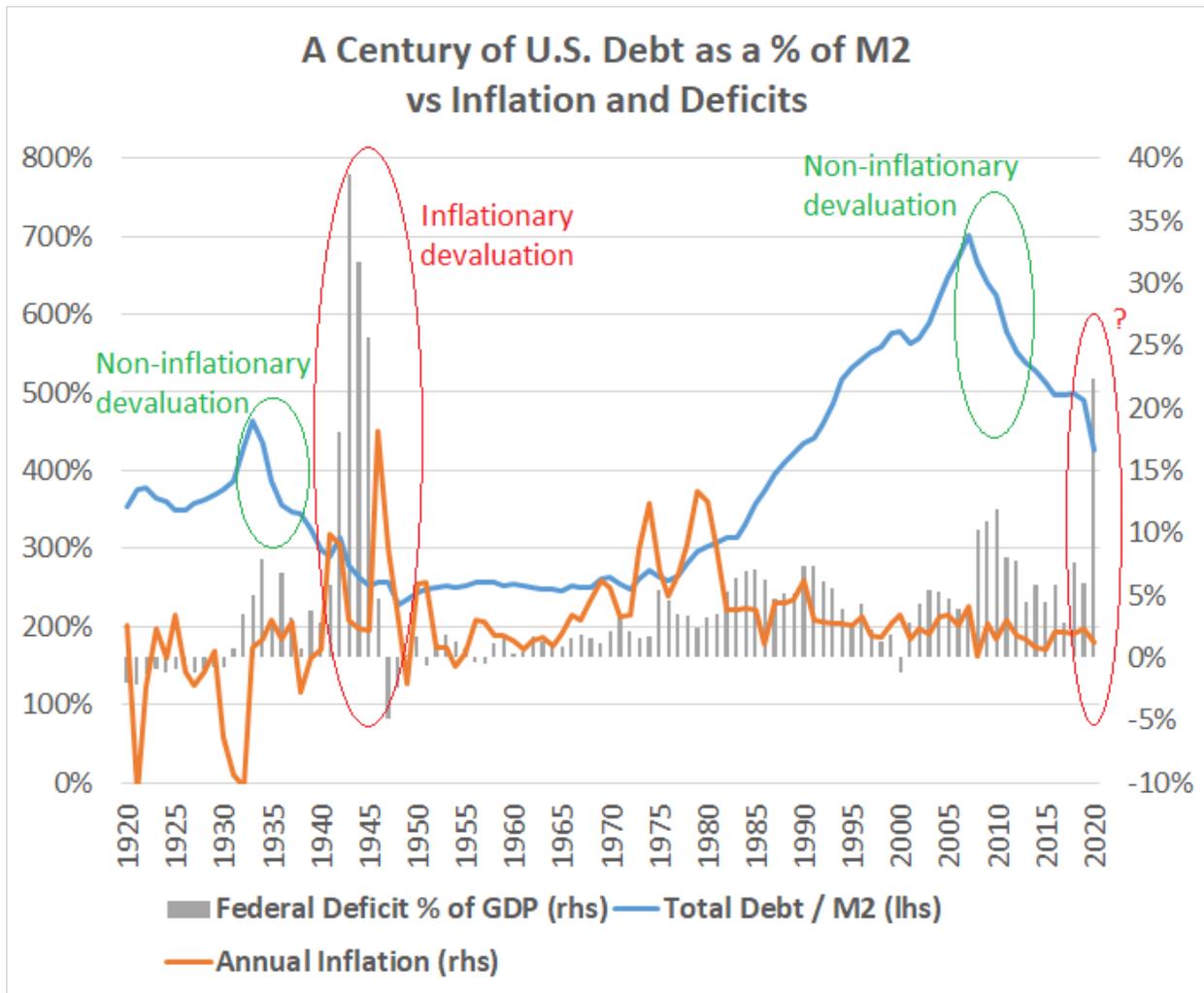
When the money multiplier was basically dead in the 1930's and early 1940's, and the economy was stagnating in a disinflationary environment, a huge amount of currency was printed and spent, while interest rates were capped below inflation, and thus currency was devalued, and therefore the debts denominated in those currencies were devalued. Fiscal policy took over, and basically went around the normal bank lending system:



Data Sources: U.S. Treasury Department, U.S. Federal Reserve

The total ratio of debt-to-M2 in the system hit long-term secular peaks in 1933 and 2008, when rates hit the zero bound and the central bank expanded the monetary base.

In the years after those 1933 and 2008 peaks, there was a deleveraging event in debt-vs-M2, which was not very inflationary, and was led primarily by monetary policy. After that stagnated for a while after the 1930's peak and ran into the next recession/war, fiscal spending heated up and caused the next leg of devaluation, which was inflationary.



Data Sources: U.S. Treasury Department, U.S. Federal Reserve

After all, if policymakers realize they are in an environment of persistent currency disinflation from various trends, what do they do? They print currency!

At first it starts from monetary policymakers expanding the monetary base, but then it spreads to fiscal policymakers when the situation remains stagnant (since monetary policymakers, unlike fiscal policymakers, cannot directly spend).

If fiscal policymakers realize that the economy is stagnant and banks aren't lending, they can pass fiscal bills to go around the banks (or through the banks by backstopping loans for them) and get money directly to consumers and

businesses, aka “helicopter money”. This could take the form of higher spending, or could take the form of unfunded tax cuts, or both. Therefore, it’s not really a left-leaning or right-leaning political phenomenon; deficits can take the form of whatever the trending political view decides.

The main consequence for policymakers to print and spend too much fiat currency with large deficits, is that it can cause runaway inflation. So, when inflation is measured to be low or even negative due to excessive debt in the system, they aggressively print and spend. Eventually they overshoot, but that consequence comes with a lag and feels good at first.

This is because at first they print during a period of low monetary velocity and high debts, but then when debts start to become devalued vs money supply, velocity picks up a bit, supplies of goods and services are limited, and inflation picks up. People often point to velocity as preceding inflation, but historically it’s the opposite; money velocity doesn’t pick up until broad money supply ramps up and debt starts to get devalued vs that money supply.

In other words, we can characterize parts of the long-term debt cycle as being times when monetary policy is dominant, or fiscal policy is dominant.

When system-wide debt is low, interest rates are fairly high, the economic growth rate is decent, banks are lending, and inflation is a bigger risk than deflation, monetary policy takes the front seat, and fiscal policy takes a supporting role. Manipulating interest rates in that environment has a notable effect on inflation and lending/borrowing behavior, and monetary policymakers have notable influence to choose between inflationary growth and disinflationary contraction. Fiscal policymakers, meanwhile, are constrained because large deficits in that environment more easily lead to higher inflation. The 1950’s through the 2000’s were characterized by monetary policy dominance in the United States.

On the other hand, when system-wide debt is high, interest rates run into the zero bound, and measured inflation is very low, monetary policy runs out of ammo. At that point, currency devaluation and outright fiscal expenditure (which the monetary authority purchases by increasing the monetary base, rather than the fiscal spending being drawn from real private lenders) becomes a more powerful tool for stimulus. Fiscal spending takes priority over monetary policy, and leads it. The 1940’s and so far the 2020’s were characterized by fiscal policy dominance in the United States.

What Currency Devaluation Looks Like

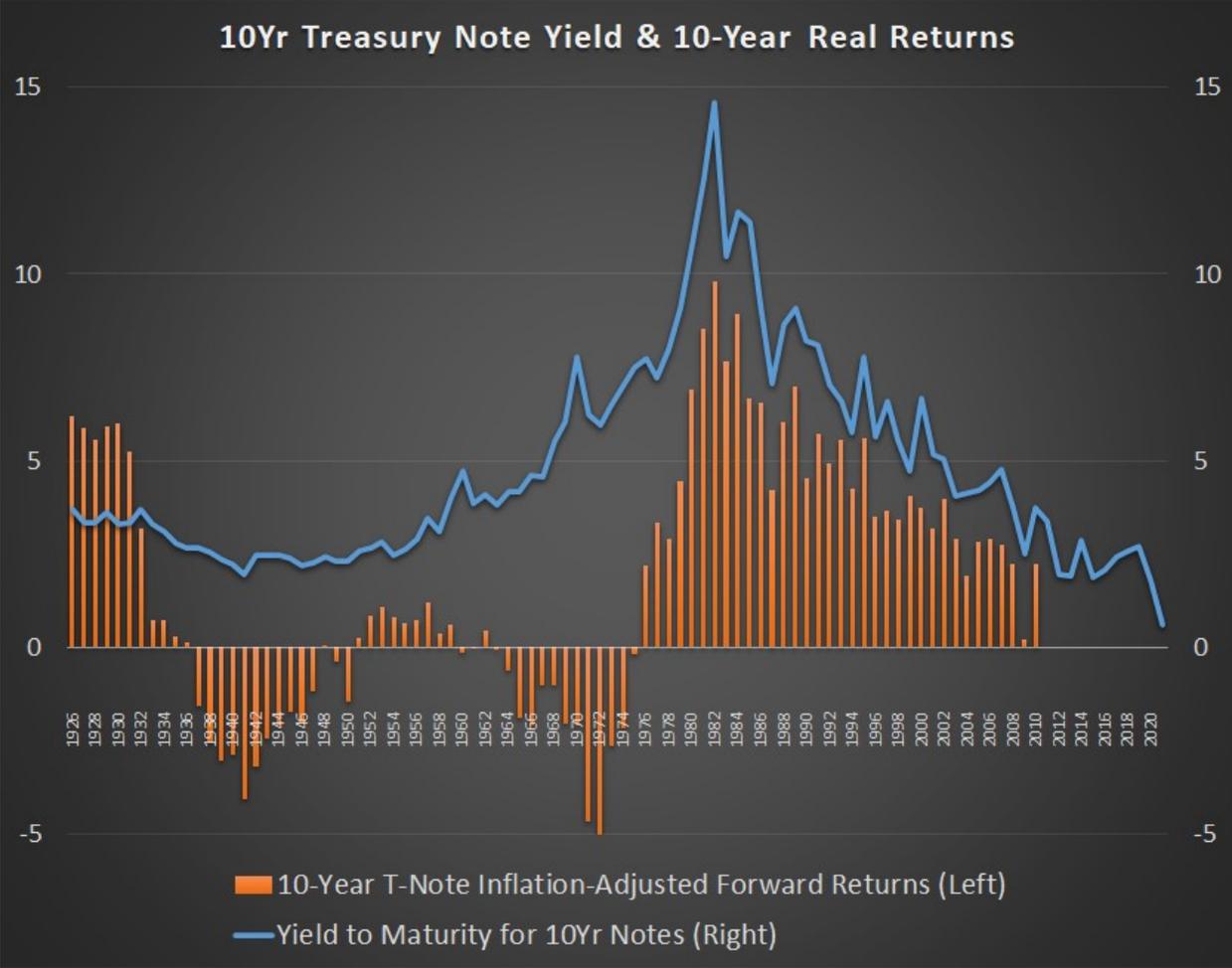
To provide a tangible example for bondholders, and connect back to the Ark currency devaluation chart from earlier in this article, we can look at a history of U.S. currency devaluation.

The money supply and velocity collapsed in 1930's when monetary policy ran into its limits, and it wasn't until fiscal policy took over with massive deficits, that velocity picked back up and inflation started to show its head. At that point, monetary policy united with fiscal policy to hold rates below the prevailing inflation rate while spending a lot of currency into circulation, which devalued a large portion of the existing debt bubble.

Despite the U.S. reaching superpower status and creating strong underlying growth, cash savers and Treasury holders lost a considerable portion of their purchasing power in the 1940's. The federal debt was therefore paid down as a percentage of GDP partially through inflation.

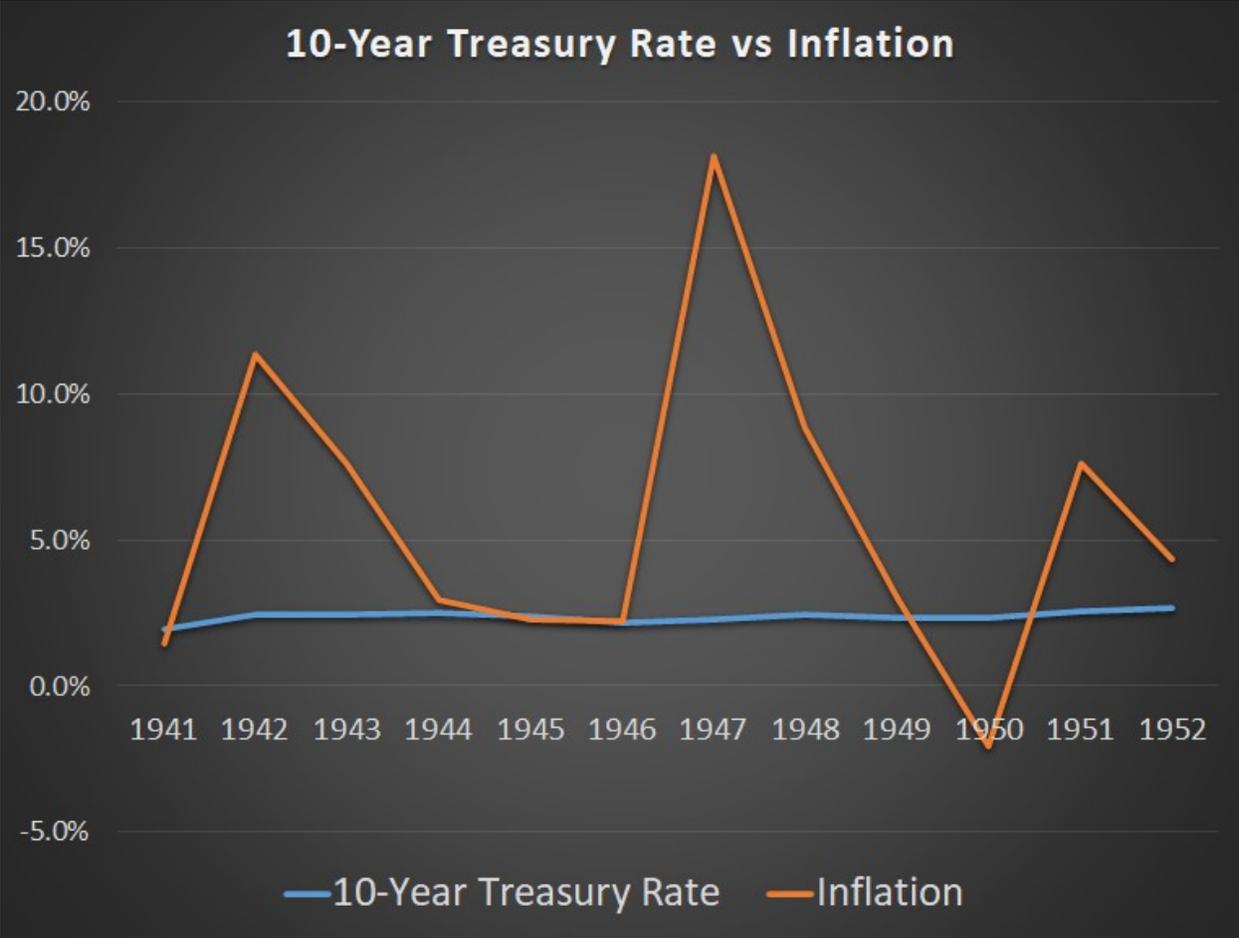
All-in-all, there was a roughly four-decade period, from the mid-1930's to the mid-1970's, where 10-year Treasuries that were bought and held to maturity, spent most of their time in a state that failed to maintain their purchasing power vs consumer price inflation, and especially vs gold.

This chart shows 10-year Treasury yields (blue line) vs the inflation-adjusted annualized return of 10-year Treasuries bought that year and held to maturity (orange bars):

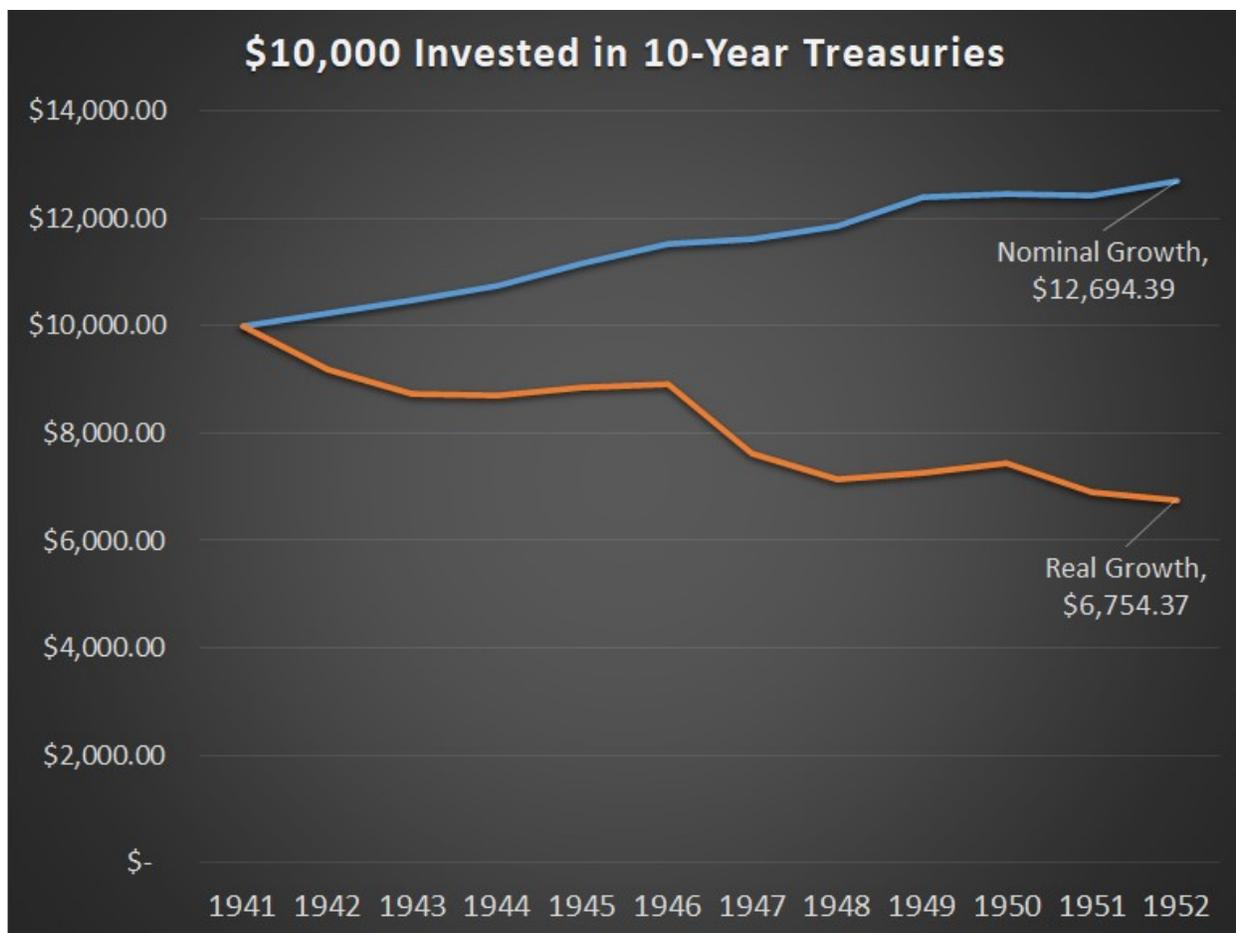


Data Sources: Robert Shiller, Aswath Damodaran

During the 1940's, the war period of massive fiscal spending, the Fed capped rates below the prevailing inflation rate. Inflation was transient, coming in spikes, and yet rates were capped at 2.5% or below:



As a result, here's what happened to anyone who bought and held 10-year Treasuries to maturity from the early 1940's. Those Treasuries were paid back nominally, but a full third of their purchasing power was lost due to inflation of both the money supply and consumer prices:



Data Sources: Robert Shiller, Aswath Damodaran

In large part, that was how the long-term debt cycle of the 1930's and 1940's was paid down; Treasury holders lost purchasing power, despite getting paid back in nominal terms, because it was the currency itself that was devalued, rather than sovereign bonds being defaulted on. The same can basically be said for cash savers; anyone with a lot of currency exposure.

The dollar peg vs gold was sharply reduced, massive deficits were run to circulate currency into the economy, those deficits were in significant part monetized by the Federal Reserve, and the Federal Reserve capped Treasury yields below the prevailing inflation rate for a decade.

As the dust settled and the debt was well on its way to being inflated away, they shifted towards a period of relative austerity and stabilization (which, along with the expanded industrial base, is what made it a partial devaluation rather than leading to a complete devaluation).

The memo to bond holders and currency holders was basically: “Thanks for playing, try again next time.”

Investors would do well to watch for this phenomenon in the 2020’s decade. The “endgame” for the current high-debt environment will likely involve a combination of high fiscal deficit spending (monetized by central banks), cash and Treasury yields held persistently below the prevailing inflation rate, a trend shift from disinflation to inflation, and subsequently a period of currency devaluation.

However, for investors and traders, this becomes a matter of timing. The timing and magnitude of fiscal policy will play the key role in inflationary or disinflationary outcomes. Whenever they’re spending aggressively, the near-term outcome leans towards inflation. Whenever they’re gridlocked or employing austerity, the near-term outcome leans towards disinflation.