

A Primer on Fiscal Policy, Government Debt and Deficits

In our travels we are almost always asked about the government debt and deficits. If there is any area of confusion and misunderstanding, public finance could easily top the list. In response to these persistent questions, we are publishing this Frequently Asked Questions paper to address some of those concerns.

#1. I don't see how the government can continue to borrow money and not go broke. I can't do that; my company can't either. Won't the government eventually go broke, too?

No entity can borrow an infinite amount of money without repercussions. However, the repercussions for central governments are different than those for households, businesses or even state and local governments. The two key differences are:

1. Central governments borrow in their own sovereign currency. Thus, the debt they create can be serviced by simply printing money. This is only true for governments that borrow in their own currency.
2. Legitimate governments have a monopoly on violence. It is the only entity to which the people grant the power to use deadly force to enforce peace and order. All other entities in society are restricted to use force in cases of self-defense.

What this means is that a central government can (a) print money to service its debt, and (b) use force to collect money from citizens to service its debt. Thus, the potential fallout from government borrowing isn't default but inflation.

It should be noted that state and local governments are not in the same position. Although they do have similar coercive powers of the central government, they don't issue their own currencies. Thus, they can "run out of money" and default.

#2. What about Greece? Or Argentina? These nations had debt crises or defaulted. How is the U.S. different?

The critical factor is the currency in which a country issues its debt. In both of these cases, the country didn't issue its sovereign debt in a currency it controlled. The situation in Greece is interesting because the Eurozone nations seemingly forgot this issue. The Eurozone doesn't have a Eurobond that is backed by the full faith and credit of all the nations that use the euro for their currency. Instead, each nation issues its own sovereign debt in the euro. Investors in Greek, Spanish, Portuguese, Italian and Irish sovereign debt discovered that these nations were at higher risks of default because the European Central Bank (ECB), not the country itself, controlled currency issuance. Germany, fearful that profligate nations in the Eurozone would borrow on the back of German credit, has not only prevented the creation of a true Eurobond, but it has forced rules that prevent the ECB from directly buying sovereign bonds issued by Eurozone nations.

In the case of Argentina, due to years of fiscal and monetary mismanagement, the country often issues bonds in dollars. When it faces a weakening exchange rate or runs a trade deficit, the risk of default rises.

This is a problem common to many emerging market economies. Leaders of these countries are often more optimistic than the markets, leading them to believe the market interest rate on their local currency debt is much too high in light of the “remarkable growth and prosperity” they foresee. They prefer to borrow at the lower interest rates of dollar-denominated debt, with a plan to refinance it later when the market finally appreciates the local currency debt and its rates are lower. Of course, the intervening period is seldom that benign. Often, the economy doesn’t do nearly as well as expected, inflation rises, interest rates go up and the local currency declines relative to the dollar. This not only makes refinancing unfeasible, but may lead to default as the government scrambles to acquire enough dollars to meet debt maturities.

The U.S. is different because Treasuries are issued in dollars. As a result, this risk isn’t *default*—the risk that comes from high deficits and debt is *inflation*.

#3. Your characterization of federal government borrowing and spending seems overly sanguine. There are clear examples of governments debasing their currencies through excessive money printing. Germany’s hyperinflation after WWI, Zimbabwe over the past two decades and the most recent case of Venezuela are all warning signs of the dangers of fiscal indiscipline. How is the U.S. any different from these examples?

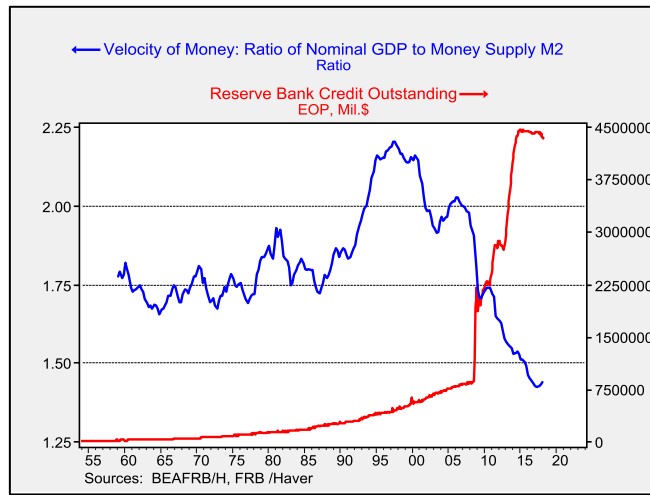
In some respects, the U.S. isn’t any different. However, it is important to note that these examples are rather rare. It’s one thing to allow some inflation; it’s entirely another to conduct policy with no regard for the inflationary consequences. These are all examples of governments that had no regard for the inflationary outcome.

In fact, the most important insight into hyperinflation is the role of *expectations*. There is a tendency to view debt, deficits and the money supply in a mechanical manner. That’s due, in part, to the discipline of economics borrowing from physics in the construction of theory. Recent theoretical research argues that an economy is more like an organism and a better model might come from biology.

Here is an example. The equation of exchange (money supply * velocity = price * quantity), or productive capacity ($MV=PQ$), has its roots in the 16th century when philosophers noted that increases in the money supply, often from colonies in the Western Hemisphere, led to higher price levels. The equation of exchange does work, but it’s complicated. Classical economists argued that velocity was fixed and the productive capacity of the economy was always fully utilized, so any increase in the money supply will always lead to a higher P, or bring inflation.

In reality, velocity isn’t fixed. In modern economies, inflation expectations play an important role in how often money “turns over.” If the central bank has credible inflation-fighting credentials and the economy is open to new technology and trade, an increase in the money supply can simply lead to lower velocity. The recent expansion of the Federal Reserve’s balance sheet with quantitative easing (QE), which actually led to a drop in velocity, is an example of this phenomenon.

This chart shows money velocity (GDP/M2) along with the Federal Reserve's balance sheet. Although there were fears that QE would lead to inflation, in reality, the increase in the money supply sat on bank balance sheets and didn't trigger a major rise in inflation. We believe this is due to the fact that no other policies changed; the U.S. remained open to trade, the Federal Reserve kept its independence and



promised to enforce its price mandate (roughly a 2% yearly inflation rate on inflation excluding food and energy) and new technology was generally allowed into the economy with few regulatory restrictions. Inflation expectations remained anchored and thus an increase in the money supply simply led to a decline in velocity.

In addition, productive capacity isn't always utilized. So, any slack in the economy can be absorbed by spurring consumption by either increasing the money supply, which can occur by the central bank injecting liquidity into the economy, or by the government running an unfunded deficit.

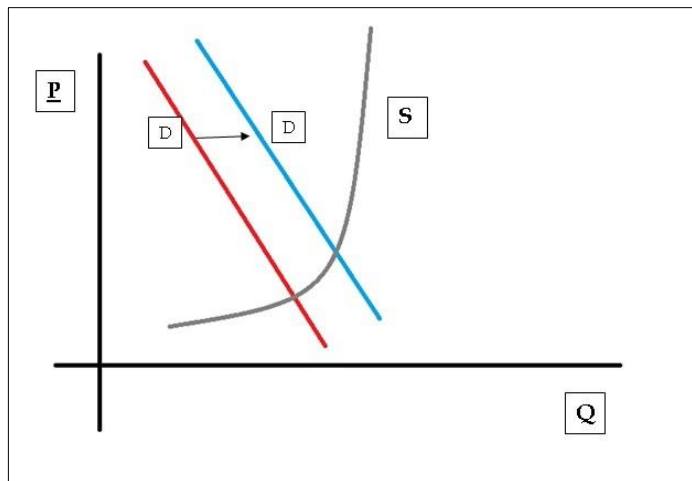
#4. Government spending that isn't financed by taxes still increases the risk of uncontrolled inflation, doesn't it?

It does, but the situation may be even more complicated than it appears. Referring back to the equation of exchange, $MV=PQ$, let's assume the government prints money to spend on public investment. Let's also assume that the investment is successful in increasing Q , the productive capacity of the economy. If the increase in Q exceeds the size of M and V remains constant, then it is possible that government spending funded by monetary printing actually leads to lower inflation or outright deflation. This outcome isn't likely in a developed economy, although it is possible in an emerging economy. In an emerging economy, the impact of any investment is usually positive. As a result, public investment can have a huge multiplier effect. In a developed economy, such an outcome is much less likely.

Overall, we harbor serious doubts that public investment can dramatically increase the productive capacity of a developed economy like the U.S. Take infrastructure spending as an example. In a fully developed economy like ours, it is hard to find public projects that dramatically improve productive capacity. We can't build the Interstate Highway system twice; in fact, during the building process of adding lanes to busy highways, traffic flow is impeded and gridlock usually remains once the project ends.¹ Fixing bridges is necessary but won't necessarily improve productivity—it merely keeps productive capacity at the same level (obviously, productive capacity declines if the bridge collapses). It should also be noted that spending on education, the enforcement of contracts and security, and health care can also boost the supply side of the economy. However, determining the exact degree of improvement is difficult to measure.

¹ Economists generally hold that “rush hour” is a failure to properly price road use. If drivers paid user fees for road use and these rates rose during peak rush hours, businesses and drivers would adapt to change the workday and spread traffic across more hours, improving the efficiency of commutes. The reason road charges are generally not implemented is that citizens prefer freeways and thus resist paying for something that they view “should” be free, which is why no matter how many lanes are added to busy highways, the wider the road, the more drivers will use them, leading to persistent gridlock during high traffic periods.

At the same time, deficits and debt that simply support household consumption are problematic. Although they give the economy a short-term boost, if they push the aggregate demand curve into the upward sloping parts of the aggregate supply curve then inflation is the ultimate result. As the accompanying chart shows, fiscal spending shifts the demand curve to the right. This leads to greater output but higher price levels.



Source: CIM

#5. Isn't the U.S. just like any other country? Most other nations can't run fiscal deficits without running into problems.

There is a very important element to the dollar/deficit situation that is often misunderstood and underestimated. The United States is in a unique situation because the dollar is the world's primary reserve currency. Nations around the world use dollars in international transactions because it's widely accepted and the U.S. has deep and open financial markets that allow foreign entities to invest their reserve dollars. This same financial system has an efficient banking system that facilitates payment.

To acquire dollars, nations have an incentive to run trade surpluses with the U.S. The reserve currency status, in effect, creates a "dollar/Treasury" standard instead of the "dollar/gold" standard that existed during the Bretton Woods era.² To better understand the impact of being the primary reserve currency, the savings identity from macroeconomics is helpful³:

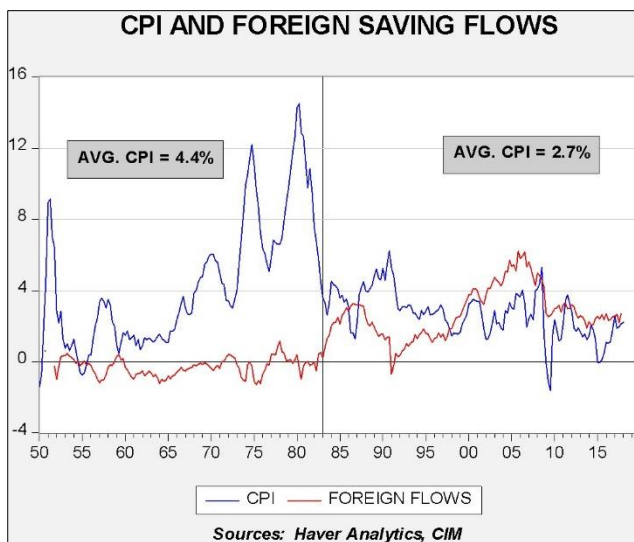
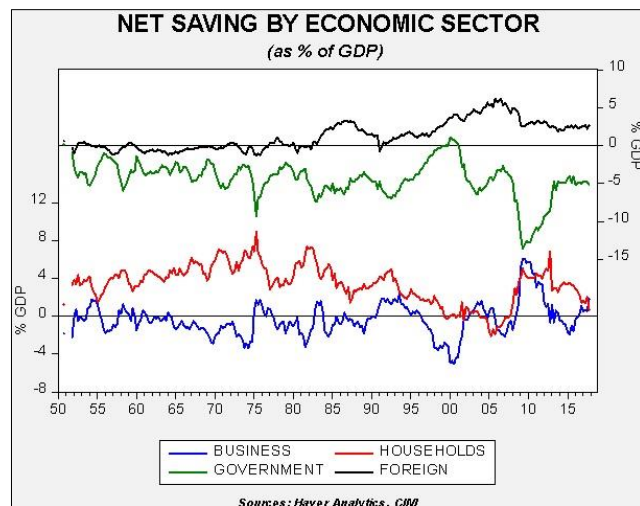
$$0 = (\text{private savings balance}) + (\text{public savings balance}) + (\text{foreign savings balance})$$

Or, the difference between investment compared to household and business saving, the fiscal balance and the trade deficit equals zero. Because this is an identity, the three calculations will always equal zero in the same way a balance sheet balances to zero.

² President Nixon took the U.S. off the gold standard in 1971.

³ For a more in-depth discussion, see WGR, May 2017, [Reflections on Trade: Parts I-IV](#)

This chart shows net saving by sector, scaled by nominal GDP. The foreign sector is the inverse of the trade deficit; a trade deficit is essentially the importation of foreign saving. The government sector is the fiscal deficit (mostly Federal government because state governments don't usually run deficits). As that deficit has increased over the years, it has been offset by rising foreign saving. It is also interesting to observe the steady decline in household saving. Although commentators will often blame the trade deficit on excessive household spending, the reality is much more complicated. If the reserve currency nation is open to trade (and, if it's not, the international financial system would fail to function⁴) and foreign nations develop policies to purposely build saving (e.g., restrict consumption, undervalue the exchange rate, impede trade), then under an open system that saving is thrust on the world. The reserve currency nation is the most obvious destination for this saving. Thus, when foreign saving is "dumped" on the U.S. economy, it must be absorbed and the fiscal deficit is a common way of balancing the saving identity. However, on the above chart, it is worth noting that the U.S. ran a modest fiscal surplus in 2000. As the fiscal surplus developed, foreign saving continued to flow into the U.S. economy. The offset was a plunge in business saving (actual dissaving), which was partly behind the technology bubble.



The bottom line is that the dollar's reserve currency status does give the U.S. the ability to run larger fiscal deficits because foreigners' need for dollars provides saving flows. In the absence of these flows, inflation would likely be higher as the accompanying chart indicates.

This chart shows the yearly change in CPI along with flows of foreign saving. Note that inflation fell as foreign flows increased.

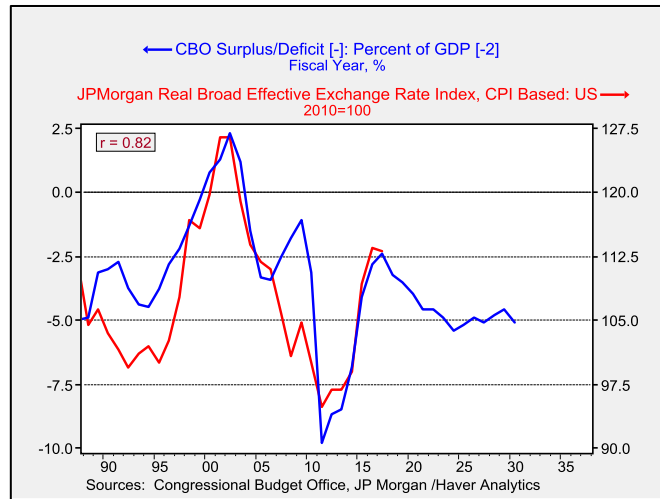
#6. So, what consequences should I worry about in terms of the deficit and the growing debt?

Here is our list of concerns in order of importance:

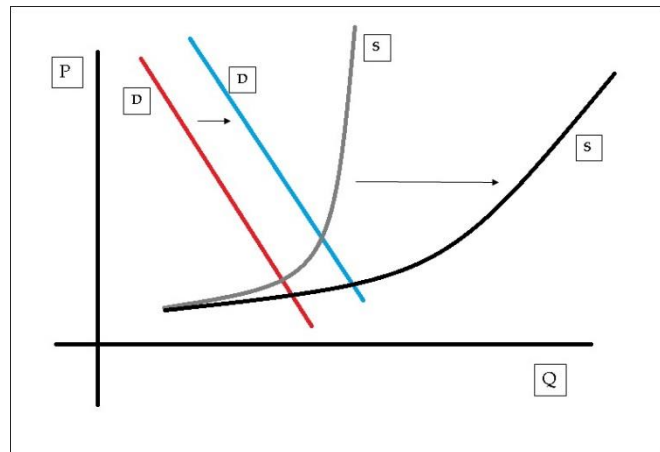
The dollar: Excessive borrowing and growing debt could undermine confidence in policy, which is ultimately confidence in the currency. We note that, since the late 1980s, U.S. fiscal deficits have been associated with dollar weakness.

⁴ For further reading, see: 1) Temin, P. and Vines, D. (2013). *The Leaderless Economy: Why the World Economic System Fell Apart and How to Fix It*. Princeton, NJ: Princeton University Press. 2) Kindleberger, C. (1986). *The World in Depression 1929-1939* (2nd ed.). Berkeley, CA: University of California Press.

This chart shows the JPM dollar index, which measures the dollar's exchange rate against a basket of currencies, adjusted for inflation and trade flows, compared to the fiscal balance, advanced two years. The data indicates that the dollar tends to weaken when the U.S. runs larger fiscal deficits. This was not the case in the early 1980s when the Reagan deficits were coupled with Paul Volcker's unusually tight monetary policy. However, the Volcker Fed was probably a historical anomaly. Volcker's appointment and the tight monetary policy he engineered was a factor that made President Carter a one-term president. High deficits tend to undermine confidence in the dollar and lead to a weaker currency.



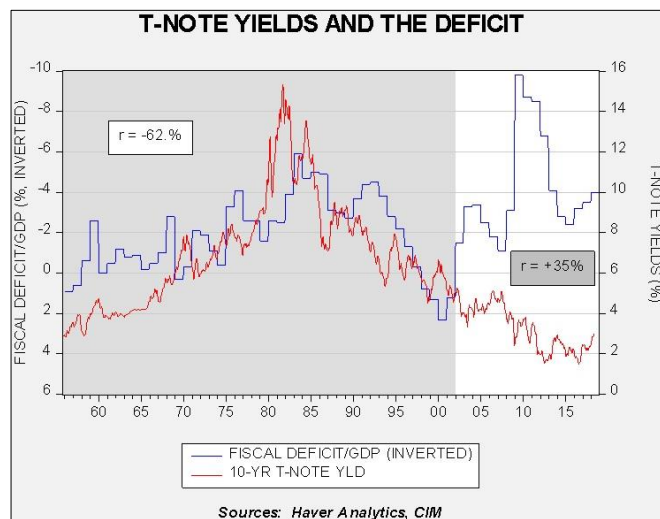
Inflation expectations: Inflation is the intersection of aggregate supply and aggregate demand; that's what determines the price level. The steady decline in inflation over the past 35 years has mostly been due to deregulation and globalization. By deregulation, we mean that the economy is open to the rapid introduction of new techniques and new technologies. Deregulation has reduced costs and improved efficiency. Globalization has not only opened the U.S. economy to tap the world's productive capacity, but it has forced foreign competition on the labor markets.



This environment has shifted the supply curve to the right and downward, meaning steady price levels even with rising aggregate demand. The chart below shows this situation. The rightward and flattening shift in the supply curve represents the impact of globalization and deregulation. Although a political backlash is brewing against these policies, for now, they remain in place.

The impact of deficits on long-duration interest rates has changed over the years.

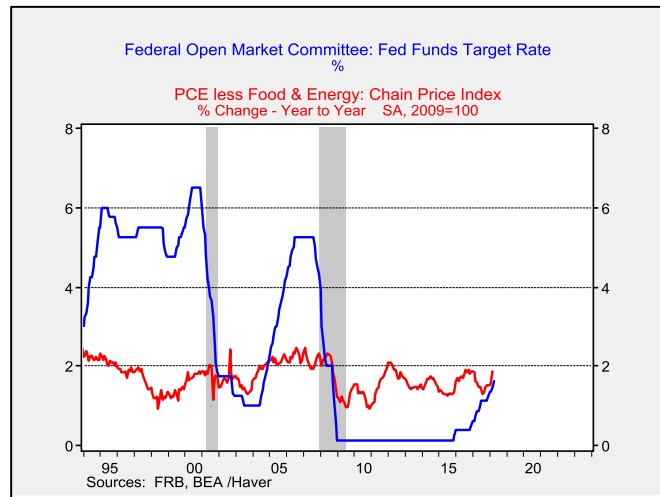
This chart shows the 10-year T-note yield with the government deficit as a percentage of GDP. From 1955 to 2001, the two series were rather tightly correlated. However, since 2002, not only has the relationship broken down *but the sign on the correlation has reversed*. It is clear that from the mid-1950s into the turn of the century, worries about the deficit likely affected inflation fears and boosted long-term interest rates. But, for most of this century, rising deficits have had no effect on interest rates.



We believe the relationship between deficits and long-term interest rates changed because of falling inflation expectations. Inflation expectations are one of the most important, mostly unobservable, factors in financial markets. If households and businesses expect rising prices, it becomes a self-fulfilling prophecy. These sectors will accelerate purchases before prices rise further. When the Federal Reserve talks about inflation expectations becoming “unanchored,” this is what they mean—households and businesses project higher prices and engage in behaviors that lead to even higher prices.

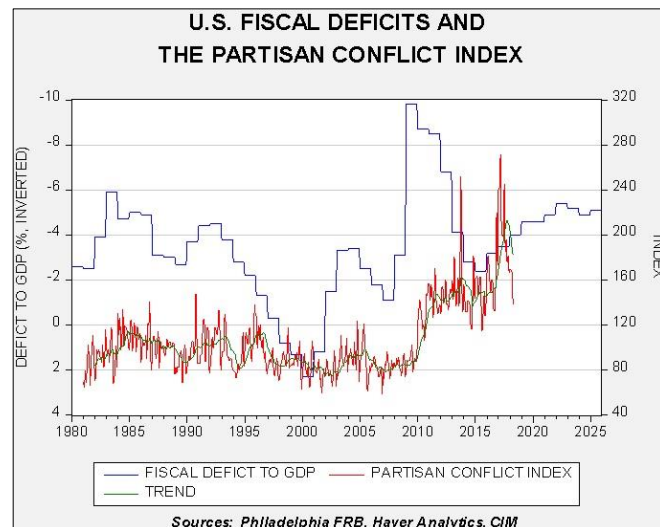
Paul Volcker’s interest rate shock in the late 1970s and early 1980s was designed to break expectations of higher future price levels. Monetary policymakers are very concerned about keeping low inflation expectations anchored and will tend to raise rates whenever the core inflation rate breaks over 2%.

Since the mid-1990s, the Federal Reserve has tended to raise rates when core inflation approaches or exceeds 2%. This is done to keep inflation expectations anchored.



Government confidence: Although inflation is the primary worry that comes from deficits and rising government debt, there is another concern that can develop. Large deficits can be a measure of political instability.

This chart shows fiscal deficits as a percentage of GDP and the Philadelphia FRB partisan conflict index⁵ which measures, through the analysis of media, the level of disagreement among political figures. Note that the conflict index began to rise sharply in 2010, not long after the deficit jumped. If the political class is in disarray, Congress may resort to deficit spending instead of resolving their differences in the budget process. Casual observation would suggest a high degree of partisanship; this index offers data showing the degree of dissention.



It should be remembered that there is a degree of “political talk” surrounding deficits and debt. The party out of power has few levers to constrain the party in power. Opposing deficits is one way the minority party can have some degree of influence over the majority party. Thus, it is important for investors to always be aware that some degree of the political “noise” surrounding this issue is for political purposes and may not be all that great of a threat.

At the same time, if investors conclude that the political system is “broken” then they may be less confident in the government’s ability to manage its affairs. That assumption could lead to higher interest

⁵ <https://www.philadelphiafed.org/research-and-data/real-time-center/partisan-conflict-index>

rates and, in extreme cases, cause the hoarding of key commodities and increase demand for store of value assets (e.g., gold, silver, etc.).

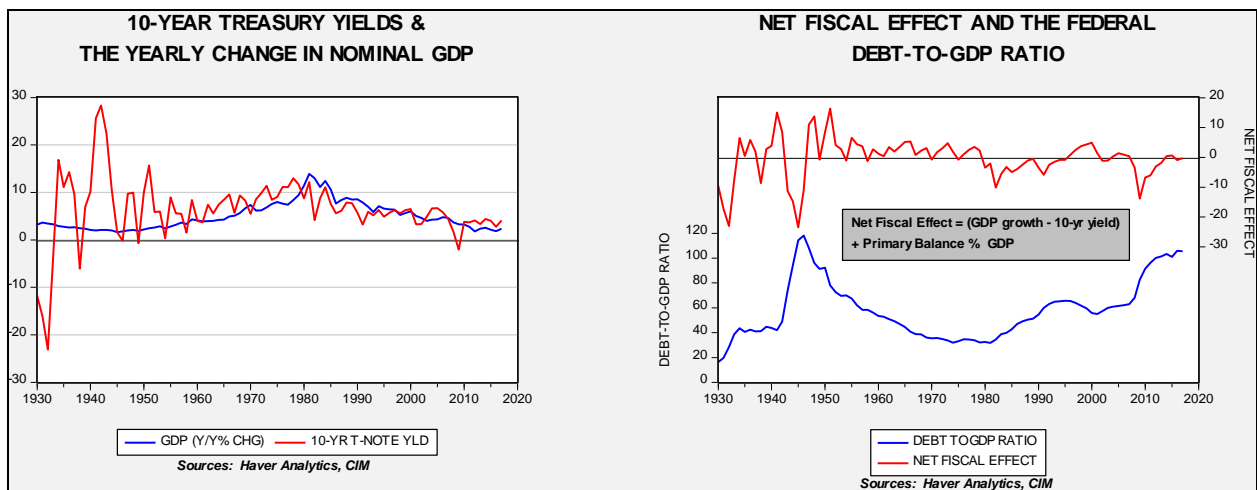
#7. If the debt becomes too large and has to be reduced, doesn't that mean years of austerity? Shouldn't that be avoided so as not to burden our grandchildren?

This is an argument often raised. To some extent, if the government deficit spending is used to expand the productive capacity of the economy, our progeny should pay it. After all, they will benefit from the investment made today. On the other hand, spending for consumption support and using unfunded borrowing to pay for it is a potential burden for our offspring, unless, of course, that consumption is used wisely (education, training, etc.) and improves a person's human capital.

But, if policymakers decide the debt is unsustainable, what are their options? There are three paths. The first is default. The government can simply stop servicing the debt. As noted in question #1, this is unnecessary for a nation that borrows in its own currency, but default is clearly an option if it borrows in another currency. Defaulting on debt does impair future borrowing, although it is rather surprising how short lenders' memories have been.⁶ The second method is austerity, which usually means some mix of tax increases and spending cuts to create fiscal surpluses which are used to buy back the debt.

However, the government really doesn't ever have to pay off the entire debt. Private sector debt is usually tied to an asset, such as capital equipment, a house, a car, etc. Thus, the lender requires that the debt be liquidated because the asset will eventually become worthless. But government debt isn't tied to any specific asset so liquidation isn't really necessary. Instead, lenders just need to be assured that the debt will be serviced.⁷

Gross domestic product measures the income of the economy and thus the ratio of government debt to GDP is a good proxy for the ability to service debt. If a government decides it must reduce its debt, it doesn't necessarily need to reduce the actual level of the debt but reduce it relative to the size of the economy. And, there is a formula that describes this process which we call the Net Fiscal Effect, which is: (nominal GDP growth - 10-year T-note yield) + Primary balance as % of GDP.



The chart on the left shows the yearly change in GDP and the 10-year T-Note yield. The chart on the right shows how the process works. **The upper line is the difference of the chart on the left plus the**

⁶ Argentina is a serial defaulter, having done so eight times since 1816. And yet, it always seems to find new lenders.

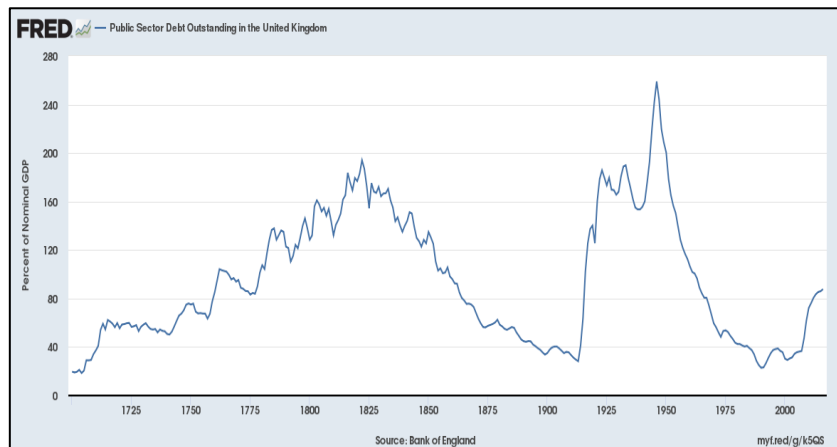
⁷ The most extreme example of this is the British "consols," which were perpetual interest-only bonds.

fiscal deficit excluding interest payments. Note that when the upper line is persistently positive, the government debt/GDP ratio, shown on the lower line, declines.

This method was how the U.S. was able to reduce its debt/GDP ratio after WWII. The process of keeping the borrowing rate below nominal growth and the primary balance is known as *financial repression*. Essentially, lenders to the U.S. Treasury received a rate of interest that didn't fully reflect the inflation risk they were taking, which is revealed in the fact that they received a yield persistently less than nominal GDP growth. The government did run modest primary surpluses during this period, mostly by suppressing the level of interest rates through financial market regulation.

This method has been used by superpowers for centuries to recover fiscally from the cost of major wars. Before the U.S. assumed the role during WWII, the U.K. was the world's superpower for about two centuries. As was the case for the U.S. following WWII, the U.K. usually concluded major wars with a debt-to-GDP ratio of around 200%, accompanied by the usual hand-wringing by financial market participants. The chart below shows British public debt as a percentage of GDP, starting in 1700 through 2016. At the end of the Napoleonic Wars, this ratio approached 200%. After WWI, there was a similar outcome but there wasn't enough time to reduce the relative level of debt before WWII erupted. But, after WWII, Britain was able to dramatically reduce the relative level of the debt. Financial repression and the economic growth below-market rates usually spur allowed both superpowers to bring down debt to more manageable levels within about two decades.

The high inflation years of the 1970s led to disintermediation of the banking system as depositors moved money into financial assets that paid a rate of interest in excess of the inflation rate. Financial repression can reduce the government debt/GDP ratio but it is more difficult to execute financial repression under conditions of deregulated financial markets.



However, it isn't impossible. A government could instruct its central bank to not allow interest rates to rise above a certain level. Over time, that would likely raise inflation expectations and foster rising price levels.

On the above chart, the net fiscal effect rose sharply after 2009. Much of this was due to the Fed's QE program which was designed to hold down interest rates. That may or may not have been the goal of policy, but it did lead to a slowdown in the rise of the debt/GDP ratio.

#8. So, when I see debt and deficits rise, what should I worry about?

To conclude, here is our ranking of concerns.

1. Inflation will tend to rise, everything else held equal.
2. We would expect a weaker dollar, again, all else held equal.
3. Inflation expectations could rise if deficits rise at the same time as:
 - a. The Federal Reserve allows inflation to rise above its target;

- b. The President or Congress begins to interfere with the Federal Reserve's independence;
 - c. The government takes steps to impede trade;
 - d. The government increases regulation on technology and the labor markets;
 - e. Excessive fiscal spending undermines the dollar's reserve status.
4. If inflation expectations rise, it will tend to boost interest rates and lower equity multiples.
 5. If deficits occur due to the lack of political consensus, then deficits become a symbol of political instability. This could lead to increasing inflation expectations and undermine investor confidence.

It is important to note that as long as inflation expectations remain anchored and the economy remains deregulated and open to trade then the expected level of the Federal deficit, by itself, is probably manageable. However, high debt levels reduce the margin for error and the potential for an inflation scare rises if policymakers slip by impeding trade or reregulating the economy. Obviously, our new forecast is aggressive. We are expecting a P/E of 21.1x (on a trailing basis) which is at the high end of the normal distribution of this measure of valuation. We don't know the path of future legislation and rule changes. If the administration decides to enact severe trade restrictions, we would not only expect a weaker multiple but also a decline in S&P 500 earnings. Although rhetoric from Washington has been elevated on this issue, to date, nothing of much significance has been enacted. In addition, as we detailed in both the 2018 Outlook and the 2018 Geopolitical Outlook, there are plenty of exogenous events that could adversely affect equity markets. However, if those adverse outcomes don't materialize, 2018 has the potential to be another good year for equities.

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