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Reexamining the Economics of Costs of Debt

Statement by L. Randall Wray[1]

Introduction

In recent months a new approach to national government budgets, deficits, and debts—Modern Money Theory (MMT)--has been the subject of discussion and controversy[2]. A great deal of misunderstanding of its main tenets has led to declarations by many policy makers (including Federal Reserve Chairman Jerome Powell and Japan's Prime Minister Shinzō Abe) that it is crazy and even dangerous. Supposedly, it calls on central banks to just print money to pay for ramped-up spending. It is purported to claim that deficits don't matter. It is said to ignore the inflationary consequences of spending without limit, and even to invite hyperinflation.

None of these claims is true. MMT is based on sound economic theory. Most of it is not even new. Rather it represents an integration of a number of long-standing traditions that here-to-for had not been linked. It does reach some surprising conclusions, but these conclusions are more consistent with real world outcomes that mainstream theory has trouble explaining. Further, a growing number of prominent economists and financial market participants have recognized that it is worth examining MMT. Its conclusions—especially those regarding the fiscal policy space available to sovereign governments—are being embraced by some policymakers.

In this testimony I do not want to rehash the theoretical foundations of MMT. Instead I will highlight empirical facts with the goal of explaining the causes and consequences of the intransigent federal budget deficits and the growing national government debt. I hope that developing an understanding of the dynamics involved will make the topic of deficits and debt less daunting. I will conclude by summarizing the MMT views on this topic, hoping to set the record straight.

But first let's look at the indisputable facts.

1. Growth of government spending:

Despite all the talk of government spending running amok, over the past 60 or so years government spending relative to GDP has been rather constant. Figure 1 shows postwar growth of government spending, both on a per capita basis and relative to GDP. As we can see, federal government spending essentially stopped growing relative to GDP around 1960, while state and local government spending stopped growing around 1970. In 2006, just before the Great

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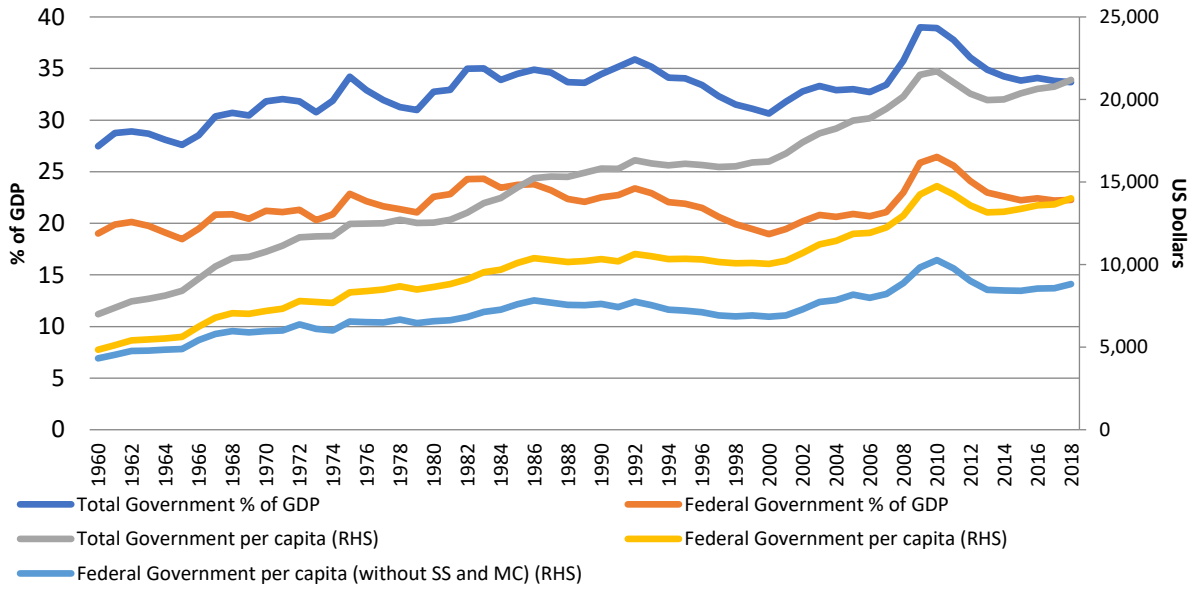
[2] Modern Money Theory itself is not recent; it has been developed and refined over the past quarter of a century.

Recession, US Federal Government spending was 20.7% of GDP, only slightly above its value in 1960 at 20.1%. It had decreased steadily in the 1990s and only increased again due to the government's response to the Great Recession. State and local government spending grew through the 1960s, stabilizing at around 11-12% of GDP after that. In 2019 state and local spending stood at 11.59% of GDP, slightly above its value of 11.35% in 1975.

Figure 1 also shows that Federal Government inflation-adjusted per capita spending has been rising at a pace similar to growth of GDP per capita. If we remove Medicare and Social Security spending, Federal spending has been growing at a slower pace than per capita GDP, indicating that much of the growth of per capita Federal spending has been due to an aging society in which retirement and healthcare spending on the elderly has grown.

Figure 1. US Government Spending, 1960-2018



Source: BEA for Government Expenditures and GDP; FRED for Population and author's calculations. Per capita spending figures are adjusted for inflation.

To conclude: neither state and local government spending nor federal government spending has been growing rapidly relative to GDP and population growth. It does not appear that rising government debt is due to profligate government spending.

2. Federal government deficits and debt:

While politicians and commentators tend to talk about the Federal Government deficit as if it's abnormal and a problem that needs to be solved, a Federal deficit has been the norm for at least the past century. Figure 2 shows the Federal budgetary outcome (deficit or surplus—with the deficit as a negative number) as a percent of GDP since 1930. There are several striking features worth noticing. First, the budget deficit reached above 25% of GDP during WWII, and then rebounded to nearly a 5% surplus when the war ended. After that, the deficit moved in an

increasingly countercyclical manner—with the budget moving toward a surplus before each recession (shaded areas) and then turning sharply to deficit in the downturn. After the mid 1950s, surpluses virtually disappear until the second half of the 1990s—that is, over the past 70 years, deficits have become the norm—and they have increased on trend relative to GDP. Even the long recovery and expansion phase that followed the Global Financial Crisis (GFC) has not been able to produce a budget surplus, as the deficit only fell to about 2.5% of GDP before rising even in the continuing expansion phase after 2015.

Figure 2. Federal Government Deficit (-) or Surplus (+) as Percent of GDP, 1930-2018

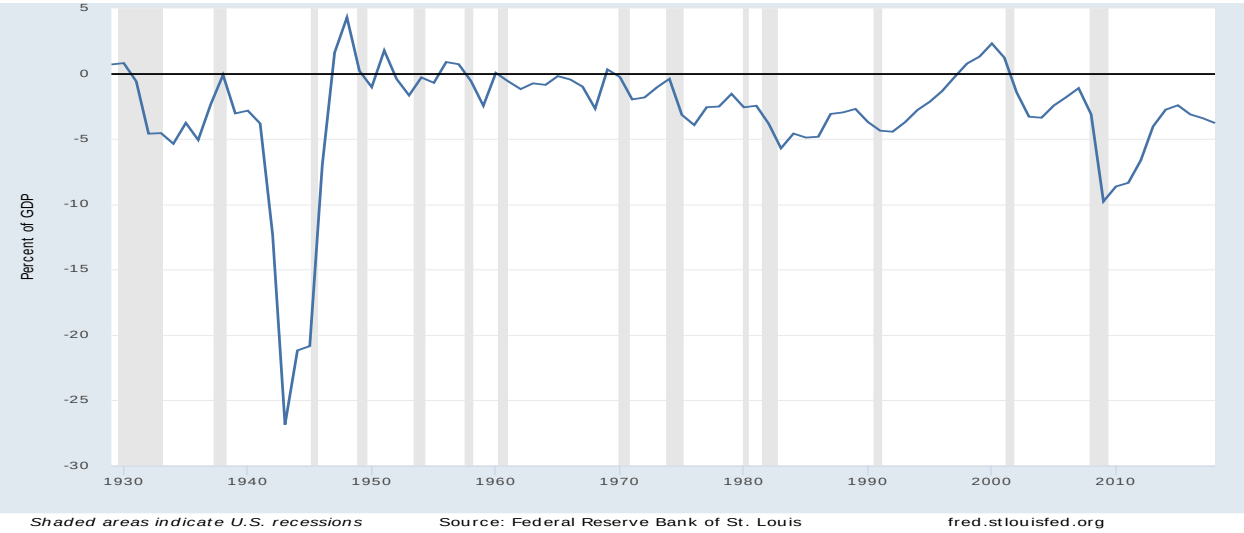
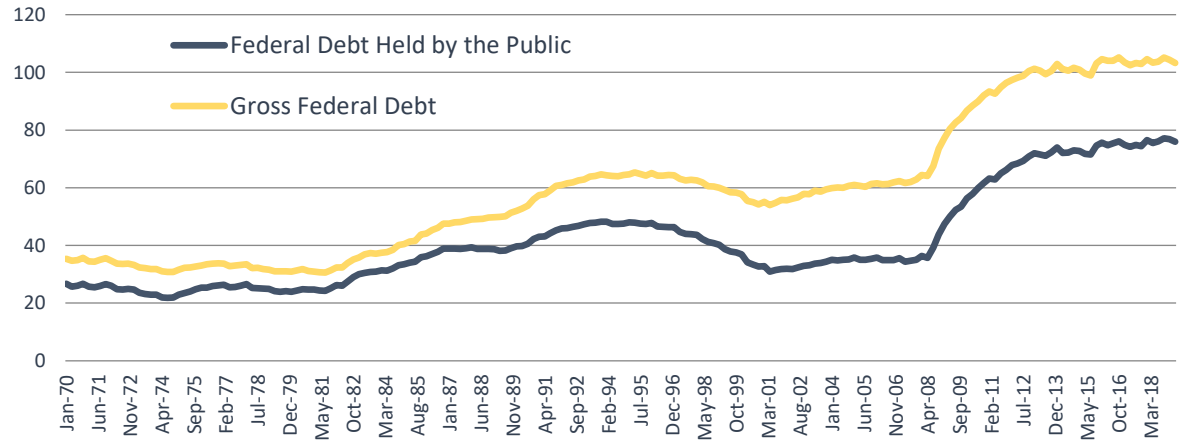


Figure 3 shows the post-1970 outstanding Federal Government debt as a percent of GDP. With the exception of the second half of the 1990s, the ratio has consistently risen because debt has grown faster than GDP. Note that these deficit and debt outcomes are not due to runaway government spending—which has been relatively flat as discussed in the first section.

Figure 3. Federal Government Debt as percent of GDP 1970-2018



Source: Federal Reserve Bank of St. Louis and U.S. Office of Management and Budget, retrieved from FRED

However, as Table 1[3] shows, this is not an entirely new phenomenon. Even over the period 1791 to 1930, the debt-to-GDP ratio grew on average at a rate of 0.31% per year; since 1931 it has grown at a rate of 4.22% per year—for an average of 1.82% over the entire period. What has changed is the pace of growth. As Tymoigne (2019) shows, until the 1930s the main cause of more rapid growth was war (and this was also true in WWII, of course), but since 1931, the debt ratio fell in only 5 years while it rose in 83 years. Although a growing debt ratio is normal as a long-term trend, what changed after WWII is that there are few years in which the ratio falls.

Table 1. Change in Gross Public Debt Relative to GDP, 1791–2018.

	Change is		**Average Size of Change in Gross Public Debt**
Time Period	**Positive**	**Negative**	**(% of GDP)**
1791-1930	66	74	0.31
1931-2018	83	5	4.22
1791-2018	149	79	1.82
Sources: Treasury Direct, Bureau of Economic Analysis. Note: Division by GDP does not influence the type of changes (positive or negative) in the absolute gross public debt.			

3. Countercyclical movement of Budget Deficits--the role of taxes and transfers:

In the postwar period recessions have become the most important drivers of the growth of debt. Specifically, the main contributor to recent growth of deficits and the debt ratio is the collapse of tax revenue in recession. In general, tax revenues are strongly pro-cyclical, while government spending is only mildly countercyclical.[4] Let us first look at the spending side and then turn to tax revenue.

a) Counter-cyclicality of spending:

Federal government transfer payments rise sharply, with some delay, when recession hits and then fall over the recovery. Unemployment benefits, Medicaid and Supplemental Nutrition Assistance Program (SNAP) are the transfer programs that move countercyclically with unemployment insurance accounting for, on average, half of the automatic increase in spending over the 1965-2014 period (Russek and Kowalewski 2015, 13). However, the countercyclical swing has been diminished since the recession of the early 1990s. Even the severe downturn following the GFC only boosted transfer payments slightly—and they fell off sharply in the recovery after 2009. One of the reasons for this may be the 1996 welfare reform, which replaced the Aid to Families with Dependent Children (AFDC) with the Temporary Assistance to Needy Families (TANF) program. Under TANF, the federal government provides fixed block grants to states, the value of which does not change automatically with the cycle. AFDC, on the other

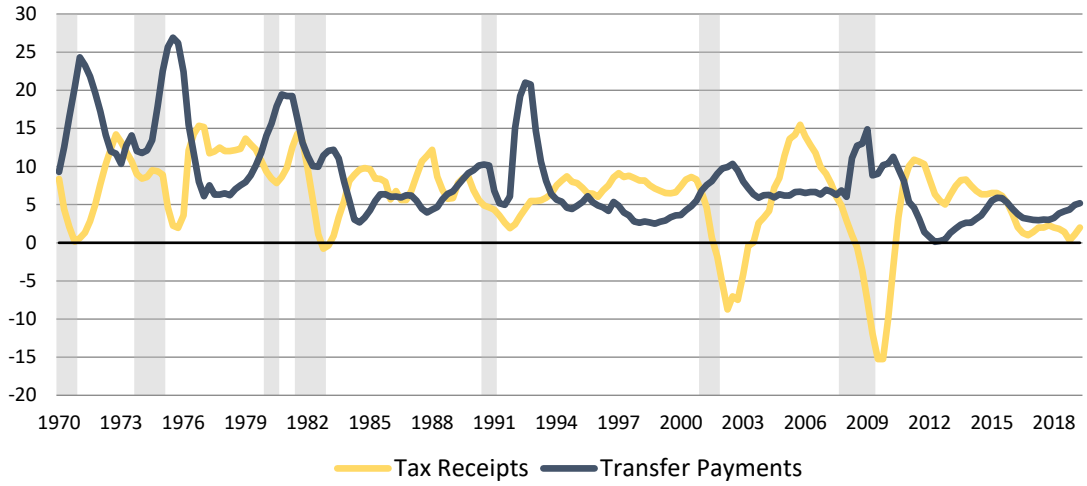
[3] This table is borrowed from Tymoigne 2019.

[4] In contrast to the federal government, state and local government actions can often be pro-cyclical. As a case in point, while the federal government was trying to stimulate the economy in the aftermath of the GFC, state and local government budgets had a contractionary effect of about -0.4% of GDP in 2009. (Follette and Lutz 2010, 17).

hand, was based on eligibility, did not have fixed funding, and hence would be expected to increase in a downturn. Indeed, the value of TANF block grants, $16.5 billion, hasn't changed since the inception of the program (Schott, Floyd and Burnside 2019, 3).

In general, reforms over the past few decades have tried to make it harder for people to get transfer benefits. Hence, it's not surprising that transfers are not as effective as stabilizers. For example, the same legislation that replaced AFDC with TANF also made changes to the food stamps program. Some of the changes that could affect the utilization of the program included eliminating the eligibility of legal immigrants and placing a "a time limit on food stamp receipt of three out of 36 months for able-bodied adults without dependents (ABAWDs) who are not working at least 20 hours a week or participating in a work program".[5]

Figure 4. Growth in Government Tax Revenue and Transfer Payments 1970-2019



Source: BEA and author's calculations. Note: the graph depicts annualized quarterly growth rates. Data has been smoothed using a moving average.

Lastly, even though transfer payments swing widely over the cycle, their share in government spending is rather small. Hence these swings do not affect the budget as much as changes in tax revenue. For instance, during the Great Recession, spending on the Supplemental Nutrition Assistance Program reached a peak of 1.32% of government's current expenditures and unemployment benefits peaked at 2.5% of spending in 2010. Medicaid is somewhat larger and has increased steadily overtime to reach about 8-9% of government spending in 2018. However, it is much less countercyclical than the other two programs.

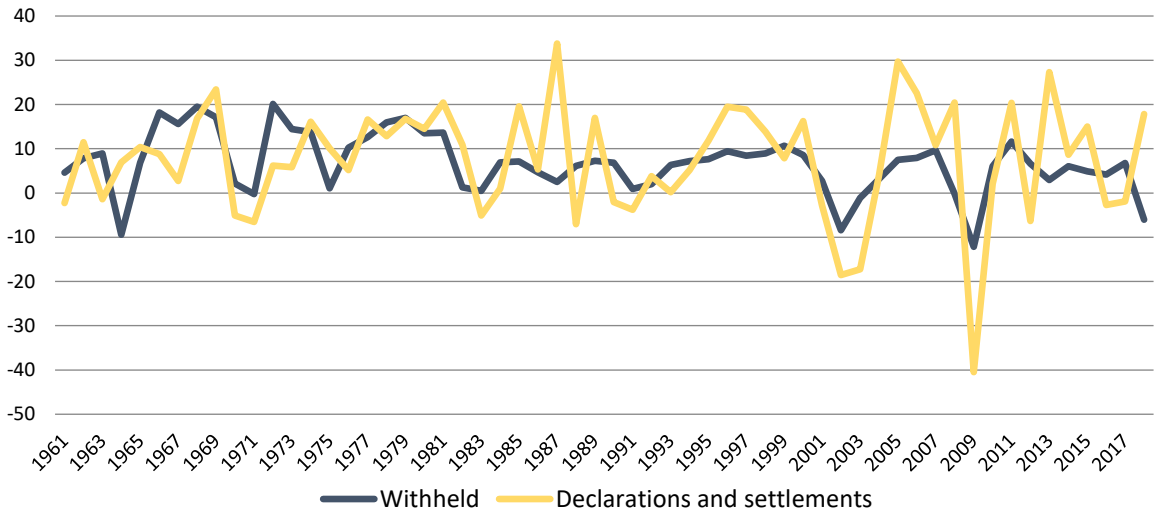
[5] The restrictions on immigrants were changed through subsequent legislation allowing access to children and the disabled and to "qualified aliens who have been in the United States at least five years." Source: https://www.fns.usda.gov/snap/short-history-snap#1999

b) Pro-cyclical movement of taxes

On the other hand, the pro-cyclical movement of tax revenues increased since the 1970s: as shown in the figure above, the growth rate of tax revenues rises sharply in recovery and falls more sharply in recession. For example, in the boom of the early 2000s, tax revenues grew rapidly, reaching a peak growth rate of 15% quarter over quarter in 2005. Tax receipts literally fell off a cliff in both of the recessions of the 2000s; during the GFC, tax revenues plummeted at a rate of 15% per year in 2009. Revenue growth rates have also been falling in the current long expansion—which is unusual. In previous expansions, growth of revenues has remained relatively flat—at above a 5% pace of annual growth. However, by 2018 tax revenue was not growing at all.

The following graph shows tax revenue growth by two categories: withheld taxes versus declarations and settlements. Taxes withheld are cyclical, growing in expansion and falling rapidly in recession. However, the movements of non-withheld taxes are greater—and the amplitude of the swings increased significantly since the mid-1980s, as shown in the following figure. The increasingly large swings of revenues explain much of the volatility of deficits.

Figure 5. Growth in Tax Revenues: Withheld vs. Declarations and Settlements



Source: BEA and author's calculations

A CBO working paper reaches similar conclusions—the pro-cyclical movement of tax revenues, rather than fluctuation of spending is the main driver of the automatic increase in deficits in recessions. Over the 1965-2014 period, three quarters of the impact on the budget from automatic stabilizers has been due to declining tax revenues (Russek and Kowalewski 2015, 17).

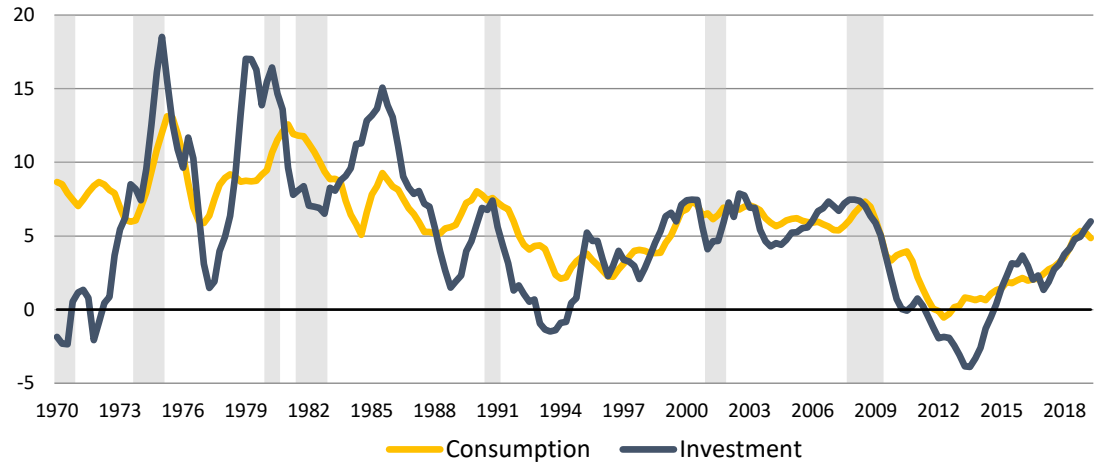
Although the automatic changes in both tax revenues and spending affect the federal balance, the effect is not symmetrical. According to the CBO working paper, during the 1965-2014 period, while the deficit increased by 0.8% of potential GDP during the typical downturn, it went down

by only 0.7% in the upturn. In addition, there were more periods of GDP coming in below its capacity than above it over this period (34 episodes of slack vs. 16 episodes of GDP being above its potential). (Russek and Kowalewski 2015, 17). As I explained, growth below potential increases the size of the deficit, while growth above it usually decreases it. Based on these two observations, we can conclude that the net impact of automatic stabilizers on the budget over the past fifty or so years has been negative (i.e. biased toward deficits).

4. The role of Federal Government consumption and investment expenditures:

Figure 6 plots Federal Government consumption and investment expenditures. Unlike transfer payments, these are somewhat procyclical—growing faster with the boom and slower (or even decreasing) once a recession gets underway. This offsets to some degree the procyclical movement of tax receipts. Rather than helping to stabilize growth, government's consumption spending reduces the automatic stabilizer effects of transfer payments and tax revenues. In the aftermath of the GFC, the falling rate of growth of consumption spending by government exerted a strong drag on the economy—falling to zero by 2011.

Figure 6. Growth in Government Consumption and Investment, 1970-2019



Source: BEA and author's calculations. Note: growth is measured over the same quarter of two years. Data has been smoothed using a moving average.

Even when the government provides discretionary stimulus, it is often in the form of tax cuts, rather than spending increases. According to the CBO paper, "[i]n all but one fiscal year—1975—of the nine years when the budget deficit without automatic stabilizers rose during a year of recession, revenues (with the effects of automatic stabilizers removed) declined relative to potential GDP, and in five of those years—1971, 1982, 1983, 2001, and 2002—the decline in revenues accounted for most of the fiscal stimulus." (Russek and Kowalewski 2015, 19).

Overall, it seems that the stabilizer functions of government spending have weakened in recent years -- and to the extent that they have helped, it has mostly been transfer payments rather than consumption spending (which is more discretionary than transfers). Tax receipts have been more

effective as a stabilizer, rising sharply in booms and falling sharply in downturns, however even there it looks like tax receipts may not be strongly "leaning against the wind" in the current recovery. As the CBO concludes: "[t]he largest addition to the federal deficit from the automatic stabilizers in a single year was 2.5 percent of potential GDP in 1983, followed by 2.2 percent in 2010. In those two years, the automatic stabilizers accounted for 46 percent and 26 percent, respectively, of the total deficit. By contrast, the largest subtractions from the budget deficit were in the late 1960s, when the economy was operating above its potential and the unemployment rate was below the underlying long-term rate. The automatic stabilizers subtracted the most (1.4 percent of potential GDP) from the budget deficit in 1966, followed closely by the effect in 1967 (1.3 percent of potential GDP)." (Russek and Kowalewski 2015, 17)

In conclusion, the weakening of the countercyclical movement on the spending side has played the biggest role in reducing the automatic stabilizers, although in recent years tax revenues have failed to move as much as they used to in expansions. As a result, deficits increase sharply in recession but do not fall as sharply in expansion. It is possible that changes on both the spending and the taxing side made during the administration of President Trump have further weakened the automatic stabilizers. On the spending side, there might be less stimulus in the next recession; on the other hand, tax revenue seems to have stopped growing even in the currently on-going expansion, which has probably contributed to the rising budget deficit.

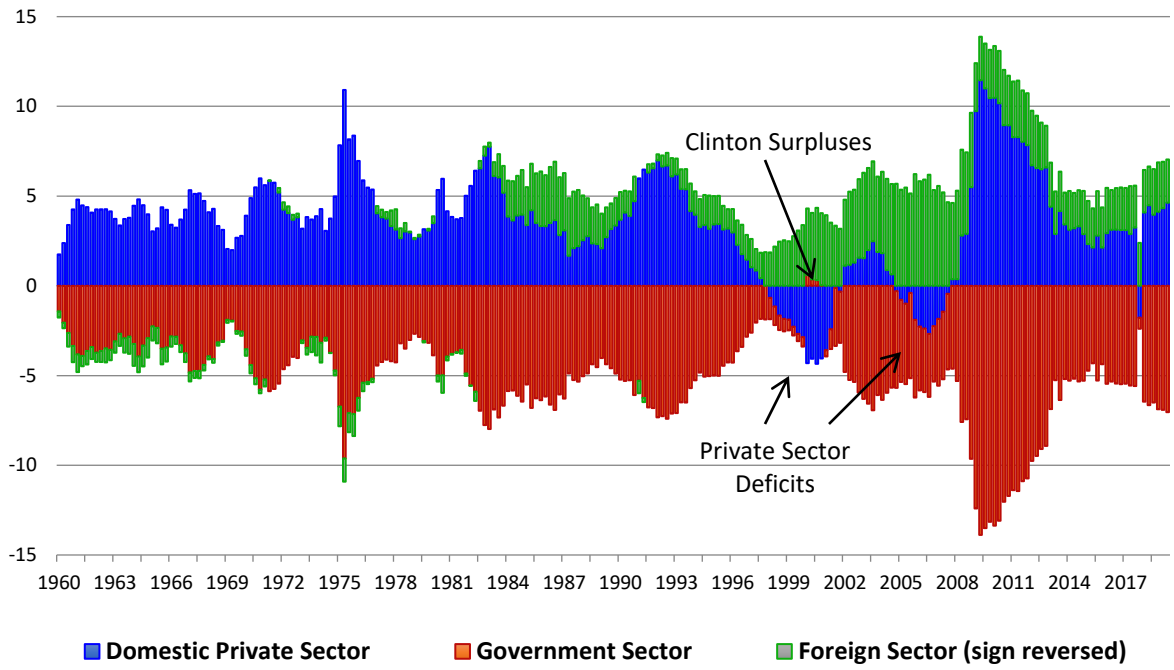
5. Sectoral Balances:

One of the concepts that Modern Money Theory economists use to elucidate the impact of budget deficits on the economy is the *sectoral balance identity* developed by Wynne Godley (1996). At the level of the economy as a whole, aggregate spending is identically equal to aggregate income—every dollar spent is received as income. It is useful to divide the economy into three sectors: government (national, state, and local), domestic private (households and firms), and foreign (rest of the world). If one sector spends more than its income (deficit), at least one other must spend less than its income (surplus) to maintain the aggregate identity that total spending equals total income. The balances (income minus expenditure) of the three sectors have to add up to zero since we are adding up all the income in the economy and subtracting all the spending, which are equal by identity.

We can then write the aggregate identity as: Government balance + domestic private balance + foreign balance = 0. For the USA, the government balance taken as a whole is usually negative (government spending is greater than its revenue--mostly taxes); the domestic private balance is usually positive (approximated as saving is greater than investment[6]); and the foreign sector balance is positive (the rest of the world has a surplus in relation to the US since our current account balance is a deficit). Figure 7 shows the US sectoral balances, with each sector's balance presented as a percent of GDP:

[6] This is also referred to as net saving of the private sector since investment is a type of expenditure and saving is what's left after consumption. In other words, we are looking at what is left of disposable income after the private sector consumes and invests.

Figure 7. US Sectoral Balances 1960-2019Q2



Source: BEA. Note: The government balance in the fourth quarter of 2017 reflects a one-time deemed repatriation tax on foreign earnings accumulated after 1986.

It is easy to see that the government balance (red) is negative (deficit) with the exception of a brief period at the end of the 1990s. This is driven by the Federal Government's balance, as state and local governments generally run small surpluses. The domestic private sector (blue) is usually positive, with the exception of two periods—the second half of the 1990s (dot com bubble) and the mid 2000s (housing bubble). Finally, since the time of the administration of President Reagan, the US runs a chronic current account deficit (so the rest of the world runs a positive or surplus balance) that has trended upward. The typical case is that the US government's deficit equals the sum of the private sector's surplus and the foreign sector's surplus (which equals the US current account deficit, green in the chart, with the sign reversed).

The foreign sector surplus increased in the 1990s reaching a high of 6.2% of GDP in Q3 of 2006. This period of relatively large current account deficits also coincided with private sector deficits. Hence it was the private sector's deficits (some of which took the form of purchasing foreign output) rather than the government's deficit (that fell and turned into a surplus) that pushed the current account deficit higher. With the financial crisis and the Great Recession, the foreign surplus decreased to a little over 2% of GDP and has stayed at about that level for the past decade (2.5% average over 2009-2019). The changes in the government deficit have therefore largely been reflected in the domestic private sector's balance (which has been running between 3 and 4 percent of GDP).

The government deficit increased in 2018 and 2019, largely due to the Trump administration's tax cuts. What is less understood is that with the current account not moving much, the government deficits have added to private sector surpluses. For example, the government's

balance in Q3 of 2017 was a deficit of about 5.6% of GDP while the private sector ran a surplus of 3.2% of GDP. As the government balance moved to a deficit of over 7% of GDP in Q4 of 2019, the private sector surplus increased to 4.63% of GDP.

The sectoral balance relationship described above is an identity that must hold true. The government's overall deficit (driven by the Federal deficit) is always at the right level to offset the sum of the private sector surplus and current account deficit (sign reversed). While we cannot necessarily ascertain causation—which could be quite complex—the sectoral balance tells us that if the US domestic sector spends less than its income ("saves") and the US runs a current account deficit, the government will run a deficit (equal to the sum of the first two). And because state and local governments normally run small surpluses, it will be the Federal budget that is generally in deficit. This is in spite of the will of Congress—whether Congress pursues a balanced budget, by imposing fiscal constraint in the form of tax hikes or spending reductions, the Federal budgetary outcome will be a deficit equal to the sum of the state and local government surplus, the private sector surplus, and the current account deficit. In other words, the identity constrains what is a possible budgetary outcome.

The US current account deficit, in turn, is affected by both domestic conditions and foreign conditions. US net imports generally move with the business cycle—when US growth is strong, net imports rise, and when the US economy slumps, net imports fall. US policy can affect the current account balance, although policy and economic performance in the rest of the world can foil attempts to reduce the US deficit. For example, recent tariff policy might have reduced US imports, but the rest of the world has retaliated so that the final outcome is uncertain. As the US has run significant current account deficits since the administration of President Reagan, it is prudent to assume that this is not likely to be reversed in the near future by US policy, alone. In other words, we can take a current account deficit as largely independent of domestic policy.

The domestic private sector generally runs a surplus; this is largely driven by the household sector, which usually spends less than its income. The business sector often runs a surplus, too, but even when it runs a deficit, this is not usually big enough to offset the household sector's surplus. The decade from 1996 to 2006 was an exception, as noted above, because the household sector ran large deficits (which led to rising indebtedness)—fueled by bubbles in dot com stocks, housing, and commodities.[7] To find a similar period of sustained deficit spending by the private sector we have to look back to the 1920s. In both cases, the private sector deficits were followed by severe downturns and financial crises (the Great Depression and the Great Recession, respectively). Private sector deficits create fragile financial positions and are ultimately unsustainable. The normal/sustainable balance for the private sector is, therefore, a surplus.

If we recognize that the private sector will usually run a surplus and that the rest of the world is likely to continue to run a surplus against the US, we are of necessity concluding that the Federal Government will be running a deficit. As the US transitioned to a chronic current account deficit in the mid 1980s, it is not surprising that larger Federal deficits became the norm, and will likely

[7] Deficits in the business sector before 2000 contributed to the overall private sector deficit, however, after 2000 the business sector ran a surplus—albeit smaller than the household sector's deficit.

persist in spite of Congressional will to reduce them. We must accept the relation presented in the identity: in order to reduce the government deficit we must see a reduction of the domestic private sector's surplus and/or the foreign surplus (our current account deficit). Unfortunately, the balance with the rest of the world is not under our close control, and attempts to reduce the Federal deficit may well backfire by inducing changes in the surplus (or saving) desired by the private sector. For example, cutting government spending or raising taxes might reduce household and business confidence and spending—generating greater attempts to accumulate saving.

6. Federal deficits and GDP growth rates:

The discussion above leads to the conclusion that Federal deficits are largely outside the direct control of Congress—they are largely endogenously determined. As discussed, the deficit will always be at the right level to ensure the sectoral balance identity holds. This doesn't mean that policy is completely impotent—but it does mean that attempts to reduce (or increase) the size of the Federal deficit can be thwarted by movements of the other balances. Moreover, any attempt to reduce government deficits must be analyzed in the context of the sectoral balances. If policymakers want to lower the government's deficit, which other balance do they expect to adjust? Are they advocating that the domestic private sector move toward a deficit? Or are they advocating for a current account surplus? This makes a difference—moving toward a private sector deficit would likely invite another serious financial crash; moving toward a current account surplus will require adjustments by our trading partners. It isn't possible to talk about reducing the Federal budget deficit without considering one or both of these strategies.

On the other hand, faster growth could reduce deficits without necessarily producing fragile finances in the domestic private sector. As we have seen, two important factors that can affect the budgetary outcome are movements of tax receipts and transfer payments, both of which are influenced by the growth rate of GDP. As growth picks up, revenue grows faster and transfer payments grow more slowly (or even fall)—which would together tend to reduce the size of the federal deficit.

At the same time, faster growth is associated with movement of the domestic private sector balance toward smaller surpluses (and even to deficits). However, this is attenuated by growth of imports relative to exports (which moves the current account balance toward bigger deficits). In this case the fall of the Federal budget deficit would equal the sum of the reduction of the domestic private surplus less the increase of the current account deficit. This would be strictly true only if there were no impact on state and local government balances—but generally faster growth increases their surpluses as revenues rise and some transfers fall (so that the reduction of the federal budget deficit would be somewhat smaller). Slower growth of GDP would affect the Federal budget outcome in the opposite direction, generally increasing the deficit. This is likely to increase the government debt ratio for two reasons: deficits add to outstanding debt, and if the debt grows faster when GDP grows more slowly, that will boost the debt ratio.

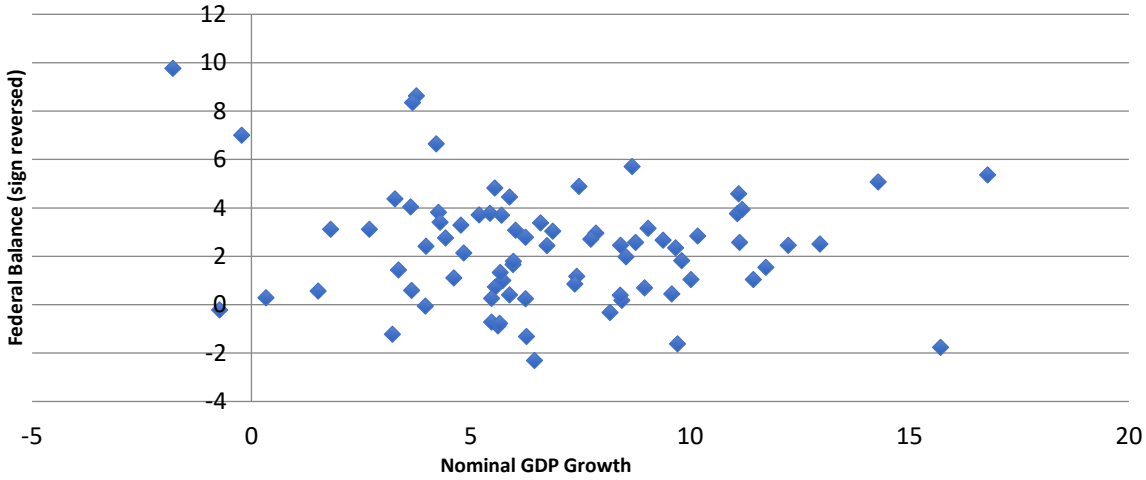
If faster growth is accompanied by reduction of the Federal deficit and reduction of the private sector surplus, this doesn't necessarily put the private sector in a more financially precarious

situation. For example, if private sector income is growing robustly, its ability to service debt will be growing. Even if its surplus (or saving) is diminished, it may still be in a safe financial position. This would be a "good" way to lower the deficit. On the other hand, if the private sector's surplus declined along with a reduction of the budget deficit in a period of slow growth, that would be a "bad" way to lower the deficit as servicing private debt could be difficult.

Moreover, as I have argued, the deficit itself is not an entirely discretionary variable. Congress can decide to spend less (or more) and to raise or lower tax rates, but the impact on the deficit and the debt ratio is not under direct control. For example attempts to lower the deficit could be counterproductive as they could lower the rate of growth of GDP and thus increase the budget deficit as private sector spending declines. On the other hand, while it is usually believed that a large increase of government spending (say, a fiscal stimulus package, or spending for a Green New Deal initiative) would increase the deficit and lead to a larger debt ratio, the actual budgetary outcome will depend in complex ways on the impact on economic growth, as well as on how the other two main sectors respond to such changes.

Figure 8 plots the combination of deficit-to-GDP ratio and the rate of GDP growth by year.

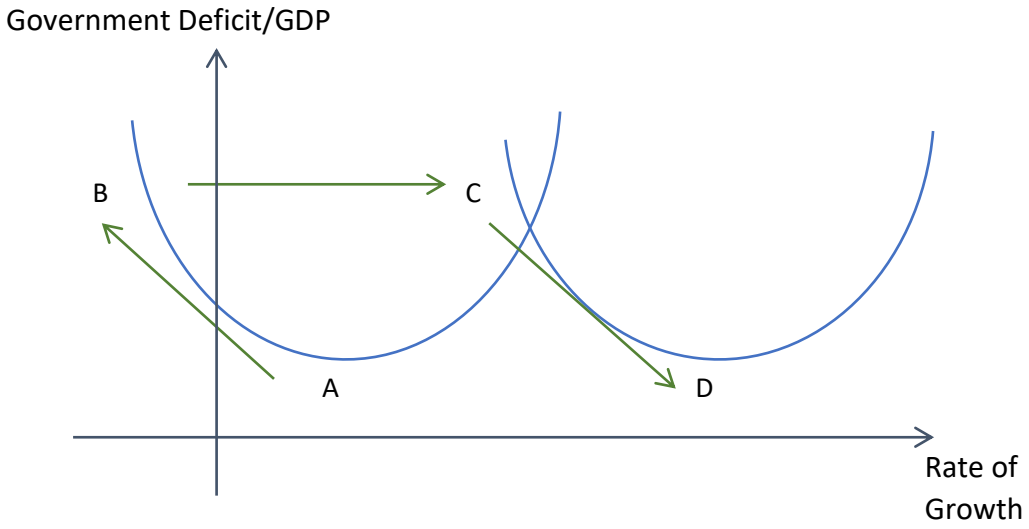
Figure 8. Growth and the Federal Government Balance 1930-2018



Source: BEA and author's calculations for GDP growth rate; FRB of St. Louis and Ofice of Budget Management for data on the federal balance (retrieved from FRED). Note: Data excludes outliers. The sign of the federal balance is reversed.

What the data show is that there is no determinate relation between deficits and economic growth. We can hypothesize that there are two paths to large deficits: the "good" way and the "bad" way. The good way would be a discretionary boost to aggregate demand through either a spending increase or a tax cut. While a deficit would be created, this would boost economic growth. The increase of the deficit could be temporary as faster growth would raise tax revenue (and some kinds of transfer spending would fall). Keynesians argue that this can happen through multiplier impacts set off by fiscal stimulus—that can "pay for itself" through growth of demand; Supply Siders use the Laffer Curve to explain that tax cuts can stimulate the supply side and generate the revenue to "pay for themselves".

However, deficits can also be created in the bad way: slow growth reduces tax receipts (and increases some kinds of transfer spending). What this means is that we can achieve the same deficit ratio in either the "good" way or the "bad" way—and what will be different is the growth rate. We can hypothesize that each deficit ratio outcome is associated with (at least) two different growth rates, as the following curve shows:



Assume the economy is at Point A—say, a 3% deficit ratio and a 4% rate of growth. Now let us suppose that government imposes a new consumption tax (or cuts spending), reducing the growth rate. The economy moves up and to the left toward Point B (a budget deficit of 10%) as growth collapses (turning negative) and the deficit ratio rises. Even though the tax rate has risen, revenue falls because the recession scares households and firms, which reduce spending in an effort to build up savings.[8] That allows total revenue to fall even if consumption taxes (both rates and even revenue from the consumption tax[9]) do rise.

We will come to rest where the higher government deficit equals the higher nongovernment sector's desired surplus. This is in line with the sectoral balance approach discussed previously: the sum of the balances across sectors is zero. If, for example, we begin at Point A with a budget deficit of 3% and a current account deficit of 2%, the domestic private sector's balance is a surplus of 1%. However, as the economy slows—moving toward Point B, the slower growth also reduces imports so the current account "improves" somewhat. From the sectoral balance

[8] This sounds similar to the Laffer Curve's prediction: if the tax rate is already above the optimal rate, raising taxes reduces revenue. However Arthur Laffer relied on supply-side effects while I rely on demand-side effects.
[9] The new tax might raise more revenue even as the economy slows, but total tax take could still fall as income taxes, etc., fall.

perspective, the government's balance moves further into deficit (to, say, a 9% fiscal deficit), the current account deficit falls (say from 2% to 1%) and the private sector's surplus grows (to 8%, the sum of the other two balances). That's the ugly way to increase a fiscal deficit[10].

What is the "good" path to bigger deficits? Measured and targeted stimulus (spending increase or tax reduction) designed to restore confidence of firms and households. In that case we move along the curve from Point A toward Point C. As the fiscal deficit increases, growth improves. Note, however, that the deficit boost will probably be temporary. As government spending rises, households and firms find their incomes rising, generating larger budget surpluses for them. Eventually their expectations become more optimistic and they increase discretionary spending, so their surpluses will fall. Tax revenues will increase—not because rates rise but because income increases. We will observe that the fiscal deficit falls as the domestic private surpluses decline. The current account surplus will fall, too, as imports rise. Precisely how much the deficit will fall depends on the movement of the private surplus and current account surplus—with the deficit falling to equality with the sum of the domestic and foreign balances.

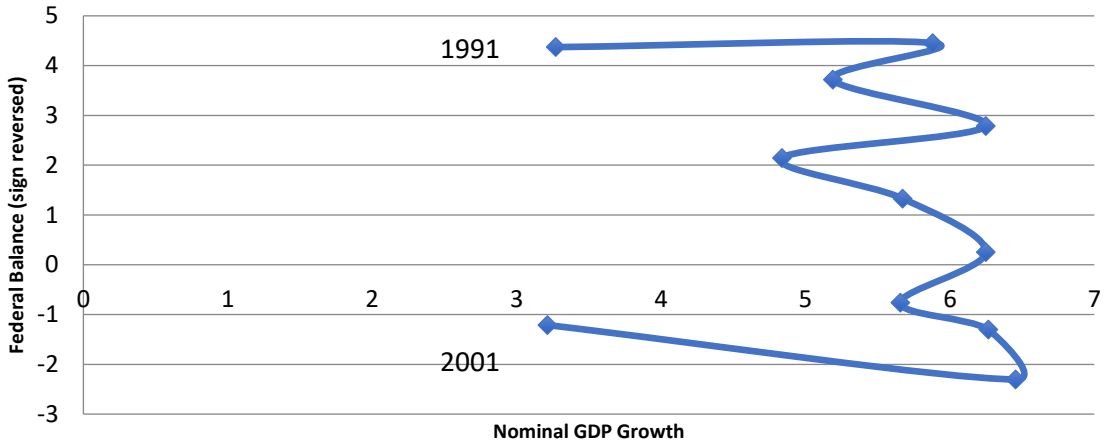
In the graph above, the curve shifts to the right. The new point D will be consistent with higher growth for a given deficit ratio (compared to the original point A). There's nothing natural about the deficit ratio at Point A—as it depends on the other two sectoral balances. In other words, the deficit ratio is always at just the "right" level to balance the other two sectoral balances. It makes no sense to speak of the government's balance without reference to the other two balances. And it is better to focus on economic growth rather than the deficit ratio—as a high deficit can be reached with both a reduction of stimulus or an addition of ramped up stimulus.

7. Recent US Experience with Deficit Ratios and Growth Rates:

The following graphs show US data from the past four decades. If we focus on the movement of the plots showing the combinations of the deficit ratio and the growth rate over the course of a cycle, we can see the relationships discussed above. For example, we can begin with the 1991-2001 period (Figure 9 below) which includes the recovery from the Bush recession, the Clinton expansion and the brief recession at the end of the 1990s (when the dot com bubble crashed). Starting at the top, as the recovery from recession gained steam in 1992, the growth rate/deficit ratio combination moved from (3.3/4.3) in 1991 to (5.9/4.5) in 1992—a horizontal movement that was boosted in part by a growing budget deficit (up from 2.7% in 1989 to 4.5% by 1992). As the growth rate continued to climb, settling at almost 6% per year through the rest of the 1990s, the deficit was eliminated by 1998 and a growing surplus was created (the zigzag line drops below zero). By 2000 the federal surplus reached its peak at 2.3% of GDP and growth reached its peak of 6.45%. However, growth could not be sustained as the budget surplus took demand out of the economy. By 2001 growth fell to 3.2% and the surplus fell sharply to just above 1%.

[10] While it is beyond the scope of this paper to discuss the case of Japan, this seems to be the typical path of its deficit. The government engages in a fiscal stimulus as the economy slows, but withdraws it quickly as the economy seems to recover, slowing growth and increasing the budget deficit. The result has been three decades of stagnant growth and a government debt/GDP ratio of over 230%. For more on Japan, see Wray 2019b.

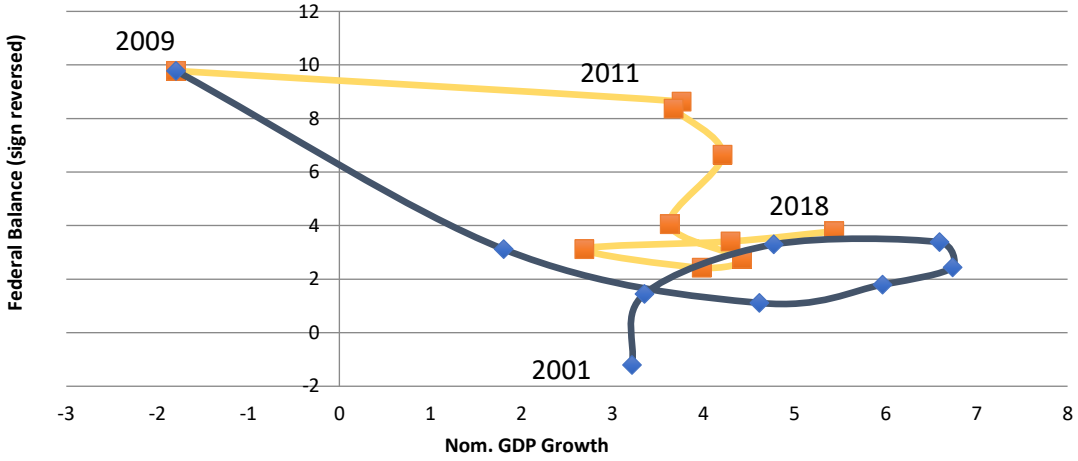
Figure 9. Growth and the Federal Balance 1991-2001



Source: BEA and author's calculations for GDP growth rate; FRB of St. Louis and Ofice of Budget Management for data on the federal balance (retrieved from FRED). Note: The sign of the federal balance is reversed.

The second graph shows the period 2001-09 and the period 2009-18. Start at the bottom of the zigzag. Beginning in 2001 with a growth rate/deficit ratio combination of (3.2/-1.2) (a budget surplus), a deficit returned and the deficit ratio grew to 3.3 in 2003 and 3.7 in 2004. The economy recovered quickly after 2002 growing by 6.6% in 2004 and 6.7% in 2005, as the deficit fell to 2.4% in 2005 and to 1.1% by 2007. Tax revenues grew at a rapid pace, contributing to economic headwinds. As the Global Financial Crisis began to slow growth, the deficit exploded to 9.8% in 2009 as growth plummeted to -1.8% (negative growth). Finally, the slow recovery has gradually reduced the deficit reaching a low of 2.4% in 2015 before increasing back up to 3.8% in 2018. Nominal growth averaged about 4% over 2010-18.

Figure 10. Growth and the Federal Balance 2001-09 and 2009-18



Source: BEA and author's calculations for GDP growth rate; FRB of St. Louis and Ofice of Budget Management for data on the federal balance (retrieved from FRED). Note: 2009 is an outlier. The sign of the federal balance is reversed.

None of this should be too surprising: the deficit moves in a countercyclical manner and helps to smooth the cycle as an automatic stabilizer. This movement is largely nondiscretionary—it is baked into the system, so to speak. More important, what these figures show is that there is no "natural" deficit ratio, and each deficit ratio is consistent with many different growth rates. It is not possible to say what the "right" deficit ratio is for achieving any given growth rate as each growth rate is also associated with multiple deficit ratios. In other words, simply looking at the deficit ratio cannot tell us whether the government is proactively stimulating the economy or whether it is merely the result of economic performance.

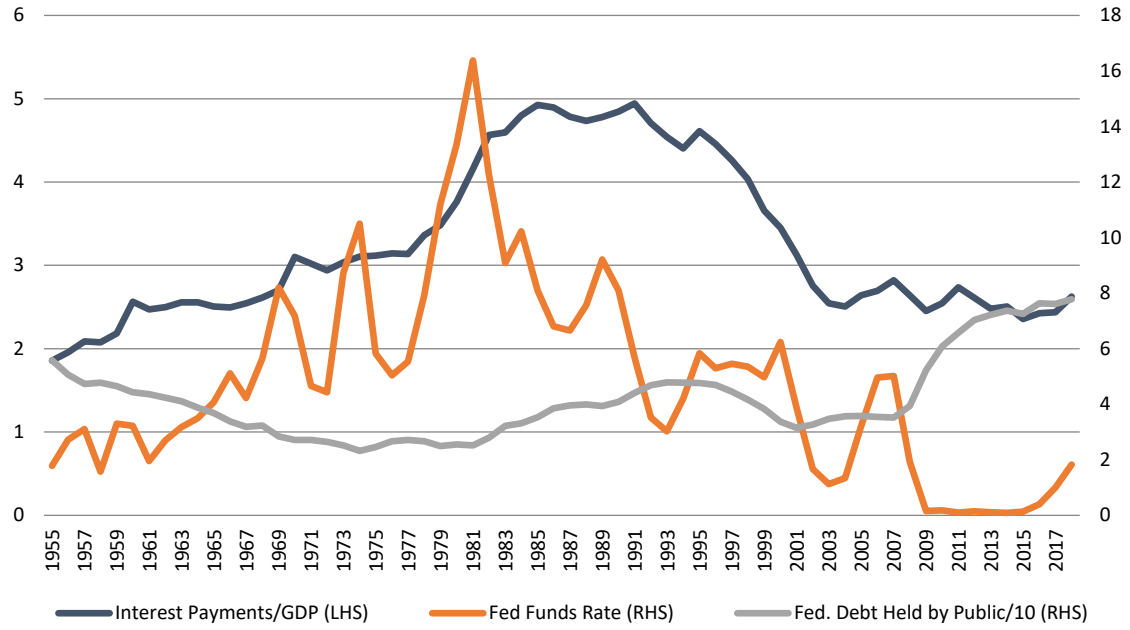
When, however, we observe the deficit falling significantly, we can surmise that it is pulling demand out of the economy and is likely to be followed by recession. The correlation is quite strong as I showed above: the deficit invariably falls as the economy peaks and then heads toward recession, rises quickly in recession, and then begins to fall over the course of the subsequent recovery and expansion. Of course, it is difficult to tell exactly how much of the movement is discretionary and how much is the result of policy activism—but in some sense that is almost beside the point. Armed with this understanding, policymakers could take a more active role—either building more powerful automatic stabilizers into the system (countercyclical spending and pro-cyclical taxes) or using discretionary spending and taxing as needed. Given the lags involved in discretionary policy, it probably makes more sense to strengthen the automatic stabilizers—which, as I argued above, have weakened over the recent past.

8. Debt and Interest Rates:

There has long been a belief that budget deficits and rising debt increase interest rates—whether based on loanable funds analysis (government borrowing competes with private borrowing for a scarce supply of savings) or the more technical ISLM model (rising money demand for a limited supply of money). Further, bond "vigilantes" are said to be likely to demand higher rates to compensate for a rising risk of government default as the debt ratio rises. Finally, economists worry about the sustainability of rising debt ratios in conjunction with rising interest rates. That would increase spending on debt service and could cause deficits to spiral.

The following graph displays the relationship among Federal Government interest payments (as a percent of GDP), the fed funds rate and the Federal Government debt ratio (scaled). The correlation between the debt ratio and the fed funds rate appears to be somewhat negative—with a falling debt ratio from 1955 associated with a generally rising fed funds rate, and with a rising debt ratio from the late 1980s associated with a generally falling fed funds rate. This is the opposite to the relation usually supposed.

Figure 11. Interest Payments, Fed Funds Rate, Federal Government Debt, 1955-2018



Source: FRED for the Fed Funds Rate; BEA and author's calculations for Interest Payments; OMB for Federal Government Debt. Note: Interest payments are expressed as a percent of GDP. Federal debt held by the public includes holdings by the Federal Reserve. The debt ratio is divided by 10 to scale it.

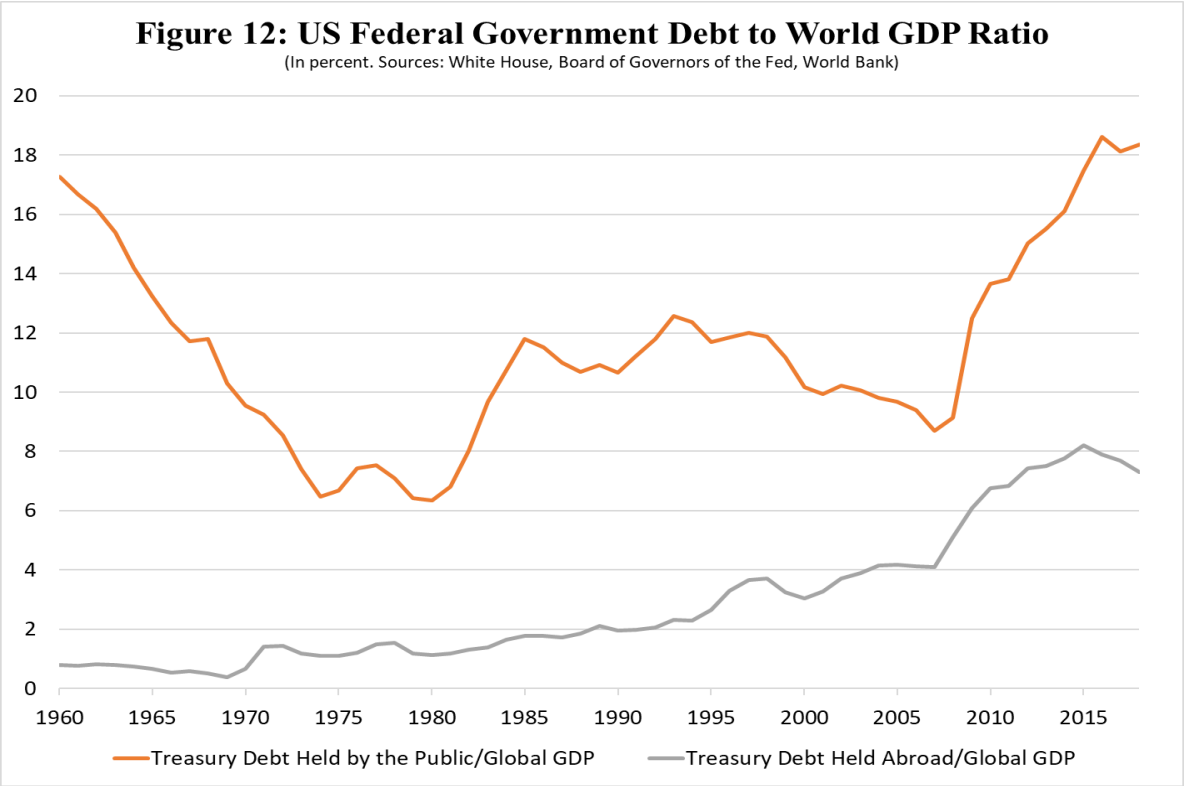
On the other hand, debt service (Federal interest payments as a percent of GDP) is not closely related to the debt ratio—rising in the early period (when the debt ratio was falling) and falling or holding steady over the later period as the debt ratio generally rose. It appears that debt service follows the fed funds rate, although with a lag of a few years. This makes some sense as the fed funds rate is the shortest-term rate so it takes some time for rising fed funds rates to feed through to higher rates on longer term government debt. Further, it takes time for a higher interest rate to lead to higher debt service costs as treasury rolls over maturing debt into higher rates.

The most important point to make is that the fed funds rate is entirely within the scope of policy—it is not determined by bond vigilantes but by the Federal Reserve. Since interest payments on the debt are strongly related to the fed funds rate, a major determinant of the "sustainability" of a rising debt ratio is Federal Reserve policy. We conclude that higher debt ratios do not seem to lead to higher debt service, and that it is within the scope of monetary policy to keep debt service costs low by maintaining low fed funds rate targets.

9. Foreign holdings of US Treasury debt:

Some claim that excessive US Federal indebtedness forces the Treasury to borrow from abroad and that at some point foreigners might refuse to lend more dollars. In recent years, foreigners hold nearly half the Treasury bonds held by the public. Foreign official holdings (in foreign central banks and treasuries) account for nearly two thirds of the total held abroad. Most of the foreign holdings are in countries that are net exporters, and almost all the rest is held in off-shore banking centers. Foreign individuals account for just 10% of foreign holdings. (Wray 2019a) The

following graph shows the total Federal government debt held by the public as well as the portion of that debt held by foreigners, both as a per cent of global GDP:



As a percent of global GDP, the debt ratio has gradually climbed back to where it was in 1960. In 1960, however, the world was on the Bretton Woods system, in which the US dollar was pegged to—and competed with—gold as the international reserve. Today the dollar is the primary international reserve currency. As of 2016, the ratio of Federal debt to global GDP was about 18%, and the portion held abroad was less than 8% of global GDP.

This could be the more relevant yardstick for measuring the debt ratio for the international currency reserve. Other than the offshore banks, US treasury holdings are mostly accumulated by countries running bilateral current account surpluses against the US.[11] It is highly unlikely that the demand for US dollars is even close to satiation. International exporters trade with the US because they want US dollars—mostly because they need them for imports or to manage their exchange rates.

Further, during the last global financial crisis, there was an immediate run to dollars, only relieved by massive intervention of the Federal reserve—which originated over $29 trillion in loans, of which approximately 40% went to foreign central banks and much of the rest went to private global banks. US treasuries are held as the safest financial assets in the world.

[11] When private exporters sell to Americans, they convert their dollar earnings to domestic currency deposits. Their domestic banks then convert dollars to domestic currency reserves held at their central banks. These foreign central banks hold dollar reserves at the Fed, which are converted to US treasury bonds to earn interest.

When the rest of the world finally gets all the treasuries they want, they'll stop targeting the US with their exports. That will allow our current account deficit to shrink, which will allow the budget deficit to fall for any level of the domestic private sector surplus. If the current account deficit were to fall to zero, the budget deficit would fall to equality with the private sector surplus. All else equal, this would lower the path of the growth of the debt to GDP ratio.

Conclusions: MMT and the Federal Budget

One of the common and oft-repeated misconceptions about MMT is that it claims government deficits do not matter. However, as I have argued in this paper, government deficits affect the economy in important ways. Deficits represent a net injection of spending into the economy and add to the private sector's surplus (holding the external sector's balance constant). The private sector usually tries to be in a surplus position. As the US current account has been and will continue to be in a deficit over the foreseeable future (and this is largely outside of the control of US policymakers, as the recent experience with tariffs has demonstrated), the government deficit has to be greater than the current account deficit to allow the domestic private sector to net save.

Moreover, as I demonstrated in this piece, the government deficit is largely endogenous. Congress can try to lower the deficit by lowering government spending or raising taxes, but these actions can have the opposite effect by lowering growth—which would tend to reduce tax revenues and increase spending on transfers. By the same token, if government stimulus boosts growth (through increased spending or tax cuts), the deficit ratio could fall and even move into surplus.[12] The ultimate result will depend on the other sectoral balances—we cannot look at the government's balance in isolation.

Using the sectoral balance framework, we can understand why government deficits are today's norm in the US economy. We can also understand that they *should be* the norm *given the nation's current account deficit*– in other words the functional purpose of the government's budget outcome should be to allow the private sector to normally net save (run a surplus). Only in an overheated expansion *should* the government's budget move to surplus to take demand out of the economy. This is why it is important to build automatic stabilizers into both spending and the tax system. It is in this sense that the final budgetary outcome doesn't matter – it shouldn't be the goal of policy but rather should depend on economic performance. Government spending and tax policy should be set to achieve multiple public purposes. But the final relation between total spending and total tax revenue will be determined simultaneously with the sum of the balances of the domestic private sector and the external sector.

Just as government deficits add to private sector surpluses, government debt adds to private sector net financial wealth (again, holding the external balance constant). Indeed, the total wealth of the private sector as a whole consists of real assets, claims on foreigners and claims on the government, i.e. government bonds plus currency, since private assets and liabilities add up to

[12] I am not necessarily asserting that a Laffer Curve result is inevitable—neither spending increases nor tax cuts necessarily "pay for themselves" by boosting growth sufficiently to balance spending against tax revenue. In our view, it depends on the nature of the spending and tax cuts (ie: where they are targeted) and also the reaction of the other two sectors to the policy change.

zero (within the private sector, someone's asset is someone else's liability). Hence growing Federal government debt implies that the private sector is accumulating net financial wealth.[13]

The US Federal Government can never be forced to default on its debt; it will always be able to service it since servicing debt by the national government involves exchanging one liability for another.[14] While it is true that the legislated debt limit can get in the way of making payments—including payments of interest on the debt—the debt ceiling is entirely within the purview of Congress. It is not set by bond vigilantes or foreign governments. If the Treasury is forced to default, it will be Congress that forces it to do so, not the bond market.

Furthermore, the experience of the past decade has demonstrated that the fear that interest rates will rise due to high government deficits is misplaced. Despite historically high deficit and debt-to-GDP ratios, interest rates on government bonds have been extremely low. While some view this as anomalous, MMT demonstrates that government deficit spending always creates the wherewithal with which government bonds can be purchased since deficits add to private sector surpluses.[15] Hence, interest rates need not rise with bond ratios as the government is not competing with the private sector for a limited pool of finance.

It is also important to note that the Federal Reserve has a large degree of control over interest rates. While it usually chooses to control only the short-term rate, it can control long-term rates as well, just as it attempted to do with its Quantitative Easing policy in the aftermath of the GFC. If desired, it can do this more directly—as it did in WWII—by standing ready to purchase bonds at higher prices and lower interest rates in the open market.

Although MMT has a set of policy prescriptions to achieve full employment and price stability, what I have discussed here is largely descriptive. MMT allows us to look at the economy through a different lens. While economists and policymakers may advocate for reducing government deficits and debt, MMT cautions that what we might be reducing is economic growth, as well as the private sector's surpluses and net financial wealth.

Hence, instead of saying they want to reduce government deficits and debt, supporters of "fiscal consolidation" and other such policies should say that they want to lower growth and lower private sector net saving since that's what the impact of their policies is likely to be. At the very least, supporters of austerity should indicate which of the other two balances will be reduced

[13] It is possible for both the US government and US domestic private sectors to run deficits—leading to external accumulation of financial claims on both of these sectors. However the normal situation is for the US government sector to run a deficit, and for both the external and US domestic sector to accumulate net financial claims on the US government. See Wray 2019a for discussion of foreign holding of US Federal government debt.

[14] Servicing US Federal government debt takes the form of credits of reserves at accounts held at the Federal Reserve. Interest and principal are paid by reserve credits to recipients and simultaneous debits to the Treasury's account at the Fed. It is true that the Treasury might need to sell bonds in the new issue to obtain the deposits at the Fed that will be debited. Dealer banks must stand ready to buy these new issues, or else risk their status as primary dealers (FRB New York, Primary Dealers: https://www.newyorkfed.org/markets/primarydealers).

[15] The US current account deficit means that some of the net saving created by the government's deficit is accrued abroad; this saving is then largely allocated to Federal Government bonds. See Wray 2019a for evidence.

along with the Government's budget deficit, and how they will do this. The budget deficit cannot be reduced without reducing the private sector surplus and/or the current account deficit.

When we reframe the issue of deficits and debt and look at it from the perspective of how government actions affect the private sector, we get a completely different perspective on the economy. This is what MMT economists try to do – to evaluate government (fiscal and monetary) policy actions based on their impact on the private sector, rather than on some vague metric of what is an acceptable level of deficits and debt.

As I argued, high deficits can be correlated with high growth, but also with slow growth. Similarly, there is a good way and a bad way to reduce deficits. We can try to reduce deficits through austerity measures, in which case the response of the economy may end up increasing the deficit, as it slows growth. Or we may choose to boost growth through proactive fiscal policies which could then increase tax revenues and reduce transfer spending thus lowering the deficit. Because the deficit or the debt ratio is not a good indication of economic performance, it should not be the focus of policy making in any case.

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