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BLU PUTNAM | ERIK NORLAND

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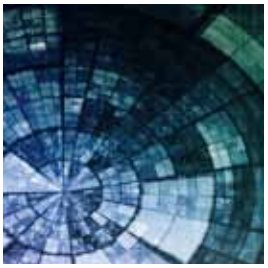


BUSINESS MODELS

INVESTMENTS

Tax cuts: Fuel share prices, not necessarily a catalyst for economic growth[1]

BLU PUTNAM | Chief Economist, CME Group
ERIK NORLAND | Senior Economist, CME Group

ABSTRACT

Tax cuts are typically politically popular. And, they are often justified by their potential to stimulate economic activity; the concept being that lower tax rates lead to higher real GDP growth, and down the road higher tax revenues. While tax rate reductions seem to support equity prices, the link between lower tax rates and future economic growth is exceedingly tenuous. Economic theory sees lower marginal tax rates as driving more investment and economic activity; however, such an outcome depends on whether meaningful tax reform and simplification accompanies the marginal tax rate cuts. Unfortunately, meaningful tax simplification and reform rarely make it through the political process. Hence, loopholes, not tax cuts, continue to drive investment decisions, meaning that tax rate reductions often disappoint in terms of the political promise of higher future economic growth. Looking forward, if the U.S. goes ahead with large corporate and personal income tax cuts effective in 2018, we see little prospect for higher real GDP growth resulting from any tax reductions because we are pessimistic about tax simplification. We do see tax reductions adding materially to the U.S. debt load. Indeed, tax cuts leading to higher debt loads might cause the Federal Reserve to be overly cautious on raising rates, which could negatively impact the U.S. dollar.

[1]Disclaimer: All examples in this report are hypothetical interpretations of situations and are used for explanation purposes only. The views in this report reflect solely those of the authors and not necessarily those of CME Group or its affiliated institutions. This article and the information herein should not be considered investment advice or the results of actual market experience.

1. INTRODUCTION

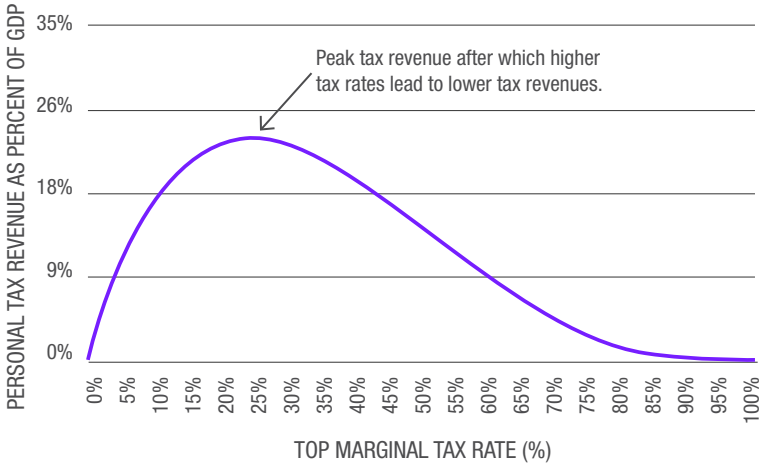
Tax cuts are typically politically popular. They are often justified by their potential to stimulate economic activity; the concept being that lower tax rates lead to higher real GDP growth, and down the road higher tax revenues. The link between lower tax rates and future economic growth is exceedingly tenuous. The statistical evidence for tax cuts leading to higher economic growth is mixed and not very convincing. A number of the critical assumptions in the economic theory of tax cuts are often ignored. When one replaces these heroic assumptions with a more realistic view of the world, it goes a very long way to help explain why tax cuts do not seem to contribute to economic growth, when the intuition is otherwise. Even so, and despite the lack of impact on economic growth, unambiguously, tax cuts seem to help raise share prices.

Our research focuses, firstly, on the economics of tax-rate reductions. Economic theory sees lower marginal tax rates as driving more investment and economic activity; however, such an outcome depends on whether meaningful tax reform and simplification accompanies the marginal tax cuts. Unfortunately, meaningful tax simplification and reform rarely make it through the political process. Hence, loopholes, not tax cuts, continue to drive investment decisions, meaning that tax rate reductions often disappoint in terms of the political promise of higher future economic growth.

Secondly, we take the U.S. as a case study. The U.S. had major marginal tax rate reductions during the presidency of Ronald Reagan in the 1980s, and there was some tax simplification as well. After the 1980-1982 recession ended, economic growth was quite robust in the 1980s, although not quite as high as in the previous decade. The U.S. national debt went from 31% of nominal GDP in 1980 to 62% for 1992, as the tax cut experiment worked to worsen the finances of the U.S. federal government. Adding to the evidence was the impact of the modest tax increases in the 1990s, which did not appear to meaningfully hinder economic activity yet did dramatically improve government finances.

Finally, we take a look at the possible economic outcomes if the U.S. goes forward with large corporate and personal income tax cuts effective 2018. To preview our conclusions, we see little prospect for higher real GDP growth resulting from any tax reductions because we are pessimistic about tax simplification. We do see the potential for tax cuts assisting to sustain share values. We also see any tax cuts adding materially to the U.S. debt load. U.S. debt loads are moving into the territory that make the economy considerably more fragile, especially related to upward interest rate shocks. Increased fragility does not necessarily mean recession; however, fragility does increase the probabilities of a recession given a significant economic shock. In this scenario, tax cuts might lead to a much more cautious interest rate policy from the Federal Reserve, negatively impacting the U.S. dollar.

Figure 1: Laffer Curve (stylized) – top marginal tax rate versus tax revenue as percent of GDP



Source: Created as an illustration by CME Group Chief Economist

2. TAXATION THEORY AND THE "LAFFER CURVE"

The debate over the economic impact of tax cuts was energized back in 1970s with the work of Arthur Laffer, and became known in the political discourse in the Reagan years as supply-side economics. Arthur Laffer [Canto et al. (1982), Laffer (2004)], and various co-authors [Canto et al. (1982), Canto and Miles (1981)], produced some excellent research in this area. The theoretical model they developed linking tax cuts to future economic growth was both elegant and intuitive. The model also depended on some heroic simplifying assumptions; and as we can observe with hindsight, the devil was in the details of these unrealistic assumptions.

The essence of the relationship between tax rates and economic growth is intuitively visualized in the Laffer Curve. Starting from a zero top marginal tax rate, as tax rates rise, so do tax revenues as a percent of GDP – up to a point. That is, as the top marginal tax rate gets higher and higher, it ultimately serves as a disincentive

for individuals and corporations to seek higher earnings, and tax revenues as a percent of GDP start to fall even as the top tax rate goes higher and higher. Please note that the Laffer Curve is a stylized representation of the theory and the actual peak point of tax revenues related to tax rates is highly controversial, not to mention the shape of the curve itself. The Achilles heel of the Laffer Curve is the heroic assumption that the top marginal tax rate drives personal spending and corporate investment decisions. Unfortunately, tax codes are exceptionally complex and full of special deductions and loopholes. As a result, the link between the top marginal tax rate and actual consumer spending and business investment is tenuous, if non-existent.

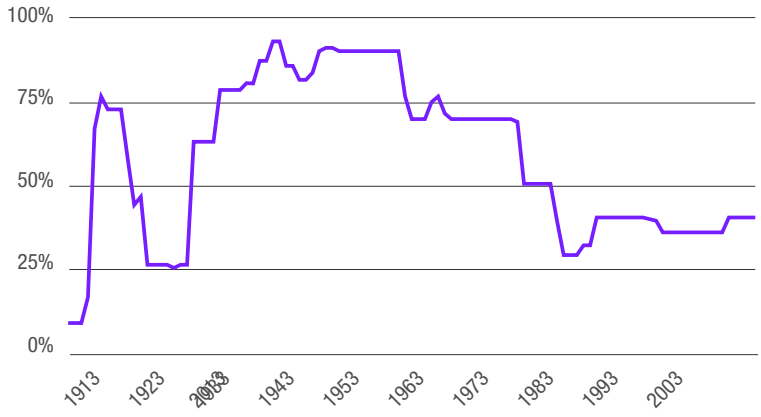
Moreover, even if corporations or individuals were to receive a large realized tax cut, there is little to guarantee that the cuts will impact the components of GDP. For example, corporations might decide to use the new-found money to buy back their stock, refinance their debt, raise dividends paid to shareholders, or make a strategic acquisition. While all of these activities have the potential to increase shareholder value, they do not contribute at all to real GDP growth. Only if corporations increase domestic business investment is there likely to be any link to future GDP growth. It works the same way for individuals, especially the wealthy. Wealthy individuals are much more likely to save more of their tax reduction than average wage earners. Hence, it matters in a significant way if the tax cut is tilted toward the wealthy or not. And then there is the question of whether government spending is held constant or not. If government spending is reduced to offset the short-term negative impact on budget deficits, then the actual spending from the tax cut will almost certainly not compensate for the reduced government spending due to part of the tax cut being saved by individuals or going for stock buybacks and dividend increases by corporations.

The strongest case for tax reform promoting economic growth is when there is meaningful tax simplification. Tax simplification opens the possibility for marginal tax rates to have more influence over economic decisions, since it would eliminate loopholes. Politically, there is often a lot of rhetoric about tax rate decreases being accompanied by tax simplification, but in practice it is exceedingly rare.

3. THE CASE OF THE U.S.

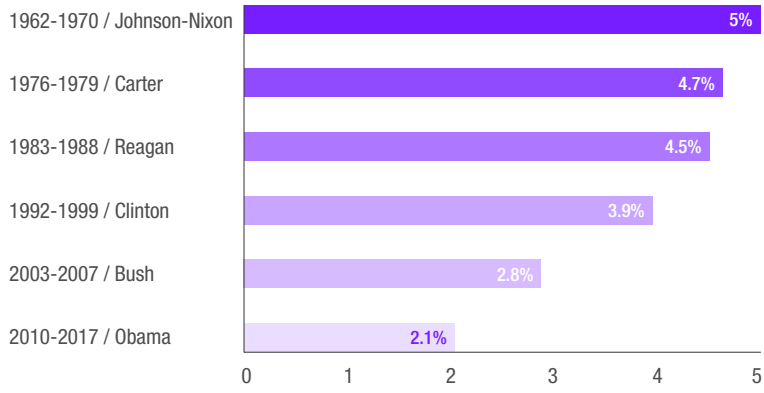
The U.S. has been a very interesting laboratory for analyzing tax changes. The personal and corporate income tax rate, as well as special deductions and loopholes, have been adjusted many times over the past century. Take the top marginal tax rate on personal income as an example. The rate started out in 1913 below 10% and applied to only the wealthiest of individuals. By the 1950s, the top rate was around 90%, but still applied to a relatively few. During the 1960s, the top tax rate was lowered to 70%, the tax base was broadened, and many deductions and loopholes were included in the tax code. The 1980s, under President Reagan, saw large cuts in the top rate, down to 28%,

Figure 2: Top U.S. marginal tax rate for personal income



Source: Tax Policy Center (http://tpc.io/2g2lETc)
Note: Top tax rate was applied to different income levels. Higher rates applied to only very few wealthy individuals. Lower tax rates typically broadened the tax base and applied to more people.

Figure 3: U.S. economic expansions – average annual GDP growth (recessions omitted)



Source: St. Louis Federal Reserve Bank FRED Database (GDPC1)

and some meaningful tax simplification, and the tax base for the top rate was considerably broadened. The 1990s, under Presidents Bush and Clinton, saw some increases in the top tax rate. In short, U.S. top tax rates have been all over the map and have applied to very different tax bases as well over time.

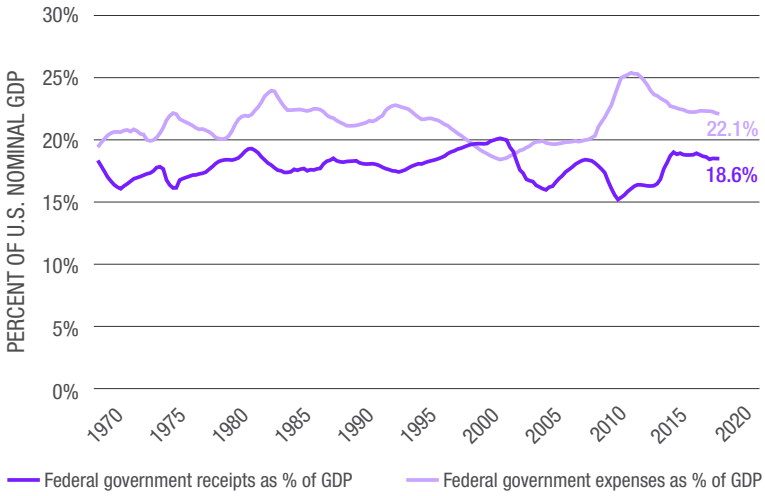
All of these tax rate changes did not have a discernible impact on the pattern of the last six decades of slowly decelerating economic growth rates. In the 1960s, the U.S. was arguably a 5% real GDP annual growth economy. Each decade since then, however, has shown a steady deceleration down to the 2% annual growth trend seen since the economic expansion following the Great Recession of 2008-2009.

Indeed, we would argue that since 1950 the U.S. has experienced three growth drivers. The 1950s and 1960s were about recovery from the war, building a modern economy, and improving the infrastrucutre, such as the interstate highway system. The result was rapid growth in labor productivity and well above average GDP growth. The 1970s and 1980s were about the arrival of the large baby boomer generation into the workforce. The baby boomers, born after WWII and into the early 1960s, resulted in very rapid expansion of the labor force as they matured into their twenties in the 1970s and 1980s, keeping post War economic growth elevated, as these new workers were absorbed into the economy.

From the 1990s onward the drivers changed direction. The arithmetic is informative. Real GDP growth can be decomposed into growth in the labor force and growth in labor productivity. While labor productivity growth has ebbed recently, the demographic trend has been even more powerful, with aging boomers retiring and smaller generations following, leading to very low growth rates in the labor force – now below 1% in the U.S. Hence, it is hard to find an impact from all the different tax regimes, when demographic patterns explain such a substantial part of the deceleration of potential GDP growth.

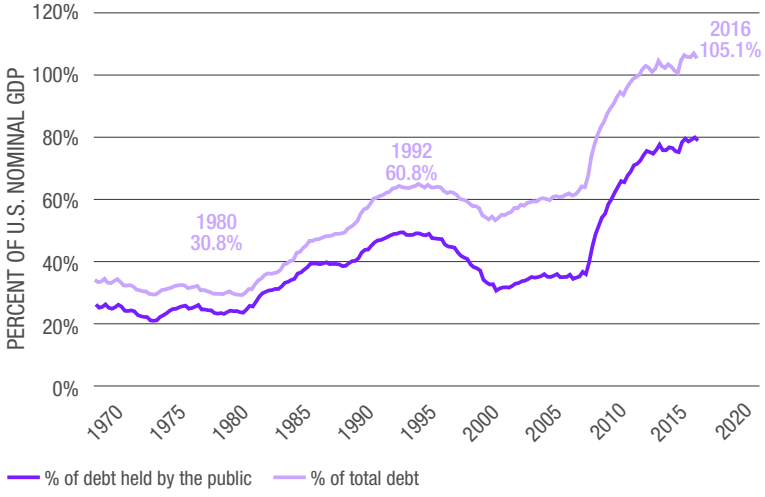
Nevertheless, one cannot study the impact of tax rate cuts on GDP growth without special attention to the 1980s. In two stages, the highest marginal tax rate went from 70% to 28%, and there was some tax simplification. Economic growth in the 1980s held up very well as baby boomers were in their prime working years and not starting to leave the labor force yet. While tax revenues as a percent of GDP remained in the 17.5% to 18.6% zone during 1983-1990, budget

Figure 4: U.S. federal government receipts and expenditures as percent of GDP



Source: St. Louis Federal Reserve Bank FRED Database (FGEXPND, FGRECPT, GDP)

Figure 5: U.S. national debt as percent of GDP



Source: St. Louis Federal Reserve Bank FRED Database (GFDEGDQ188S, FYGFGDQ188S)

deficits increased and the national debt soared. Indeed, the total outstanding U.S. national debt was about 31% of GDP in 1980 and was over 53% in 1990, at the end of the decade. The idea that lower tax rates, even with some tax simplification, would result in substantial additional GDP growth so that tax revenues would rise and close the budget deficit did not happen.

Subsequent U.S. Presidents in the 1990s, both Republican and Democrat, made the decision to close the budget gap with increases in tax rates. Federal debt fell from 64% of GDP in 1993 to 55% of GDP in 2001. This process was reversed in the 2000s, as government

expenses soared in the immediate aftermath of the Great Recession. By 2013, the national debt as a percent of GDP was 101% in the U.S. From 2013 through 2016, with tight controls over government spending and modest economic growth, national debt ratios remained relatively stable at just less than 105% of GDP.

4. LOOKING TO FUTURE U.S. TAX POLICY AND POTENTIAL MARKET SCENARIOS

U.S. tax policy featured prominently in the 2016 elections, and there is a strong likelihood of tax legislation making it through Congress and becoming effective in 2018. Even if the U.S. reduces both personal and corporate income tax rates, the devil will be in the details and probably not at all clear until the legislation passes both Houses of Congress – no mean feat, as we have observed during 2017 regarding the attempts to pass a new healthcare law.

The tax debate is likely to focus on three main challenges: (1) whether lower taxes will increase future economic growth as analyzed here, (2) the possibility of tax simplification, and (3) the implications for the budget deficit and national debt.

The debate about tax cuts and future economic growth will largely pit economists against politicians. Politicians in favor of a tax cut are going to consistently argue that higher growth will follow, allowing for lower projections of future deficits and national debt levels. Many economists, not all of course, will follow along the lines argued in this research, and will be very cautious in projecting higher economic growth in the face of severe demographic headwinds.

Our base case scenario assumes very little tax simplification because the special interest groups associated with each deduction and loophole are exceedingly strong. If one is willing to make the assumption of major tax simplification, then the case for stronger economic growth is much easier to make.

Estimating future budget deficits and national debt levels for the U.S. depend critically on the assumptions about growth that one is willing to make. And, politically, it will pit factions of the Republican party that have historically railed against rising the national debt versus other factions that want lower taxes no matter what and are willing to risk higher debt levels. It is this debt-versus-tax cut debate within the Republican Party that will largely determine the deals that need to be struck to pass tax cuts. Our base case scenario is that cuts in the personal income tax will be quite modest with little reform of current deductions, while we see much more consensus around a larger cut in corporate taxes. Hence, we will focus on some additional comments on corporate taxation in the U.S.

The first point to note is that corporate tax data in the U.S. is quite tricky to interpret. Let us take the 2016-2017 tax data as an example. Corporate tax receipts received by the U.S. federal government in the four quarters from July 2016 through June 2017 were reported as U.S.$409 billion. This headline number, used by many to analyze the size of the potential tax cuts, includes taxes paid by the Federal Reserve Bank, and that is a big problem for tax analysis.

Since the Great Recession, Federal Reserve Banks have gone through a period of massive asset purchases (i.e., quantitative easing or QE), and they earn substantial profits on their huge portfolios of U.S. Treasury securities and mortgage-backed securities. After keeping a very small surplus to add to their paid-in capital, the Federal Reserve Banks make quite large contributions to the U.S. Treasury. From July 2016 through June 2017, these contributions, reported as corporate taxes paid by the Fed, totaled U.S.$86 billion, on earnings of U.S.$87, or an effective rate of almost 99%. Clearly, the Federal Reserve is a special case and should be excluded from an analysis of U.S. corporate taxes.

Figure 6: U.S. federal corporate taxes and profits as percent of GDP

Source: St. Louis Federal Reserve Bank FRED Database. Corporate Profits = A053RC1Q027SBEA, Federal Reserve Profits = B397RC1Q027SBEA, Federal Corporate Taxes = B075RC1Q027SBEA, Federal Reserve Bank Taxes = B677RC1Q027SBEA, US Nominal GDP = GDP. Note: Corporate profits and taxes are net of Federal Reserve Bank profits and taxes.

The current annual level of corporate taxation, not including the Fed, is about U.S.$323 billion, or about 1.7% of GDP. Put another way, the scope for corporate tax cuts is not all that large in terms of a percentage of GDP, and if most of the tax savings are expected to go toward stock buybacks, dividend increases, debt pay-downs, and acquisitions, then one can easily see the benefits to stock prices, just not for the economy.

Also worth noting is the role of tax loopholes. U.S. corporate profits on a GDP basis before taxes (and not including earnings of Federal Reserve Banks) were running at 11.35% of GDP for the Q3/16 – Q2/17 period.[2] As noted earlier, corporate tax receipts, not including the Federal Reserve tax payments, ran at 1.7% of GDP over the same period. Given that the top marginal rate is 35%, it is clear that corporations mostly do not pay the top rate, as that would imply corporate tax receipts of almost 4% of GDP. Indeed, the average effective corporate tax rate is about 15%. What this means is that is that top tax rate does not drive business investment decisions, and so expectations of increased capital spending in the U.S. from a cut in the top marginal tax rate are not easily justified.

Given our relatively dim view that tax cuts will increase GDP growth, our perspective is that the budget deficit will rise, increasing the national debt as a percent of GDP. This scenario is associated with two very distinct possible market impacts.

First, tax cuts are bullish for stocks. How much the chances of a tax cut is discounted in the current share prices is highly debatable. However, given the legislative hurdles, it would seem that some discount is being applied to tax cut probabilities, so any tax cut might have a further positive impact on shares.

What is less obvious is the possible impact on Federal Reserve interest rate policy. With inflation stuck just below 2% and our base-case scenario not assuming much above 2% real GDP growth, the Federal Reserve may adopt a bias in 2018 after tax legislation is passed, if it is passed, that the possibility of increases in the national debt make the economy more fragile and argue against higher interest rates (i.e., higher interest expense). That is, this base-case scenario sees tax cuts and a higher national debt associated with a more dovish Federal Reserve, which has the potential to put downward pressure on the U.S. dollar.

Of course, if one rejects our base case and goes with a higher-growth scenario, the market expectations are quite different. Higher-growth expectations argue for higher short-term interest rates and a very different path for the Federal Reserve, and probably for the U.S. dollar. Further, while equities are still beneficiaries of any tax cut, not all shares may respond in the same manner. If the tax legislation includes closing some loopholes in the corporate tax code, this is expected to hit mega-tech and large-company stocks harder than small-company stocks. Hence, if one adopts the loophole-closing scenario for the tax cut, the Russell 2000 small company index might do better than the mega-tech heavy NASDAQ 100 index.

[2] Source: St. Louis Federal Reserve Bank FRED Database. Corporate Profits before tax = A053RC1Q027SBEA, Federal Reserve Profits = B397RC1Q027SBEA, Federal Corporate Taxes = B075RC1Q027SBEA, Federal Reserve Bank Taxes = B677RC1Q027SBEA, US Nominal GDP = GDP).

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