

An American Resource: Income of the Rich

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1. What is the Limit to Taxing the Rich?

There has been a lot of talk lately of the government spending huge amounts of money on new programs. There is also talk that perhaps some of that spending should be paid for by taxes. Finally, there is a widespread opinion that any new taxes should fall mostly, or entirely, on the rich.

The purpose of this post is to answer the question: How much money do the rich have to tax?

How Much Money Are We Talking Here?

Let's get some numbers for reference. If you're in a hurry, the following paragraph is summarized in the table below. Later I'm going to use data from 2017, so let's stick to that year.

The United States had a [population of about 325 million people](#). That year, the [per capita Gross Domestic Product \(GDP\) was \\$60,060](#). Therefore, the GDP was \$19.5 trillion, a number which is probably impossible for a human being to visualize, but which we can compare to other gargantuan numbers. The federal government spent about \$4.0 T and collected (mostly in taxes) \$3.3 T ([Congressional Budget Office Historical Data](#)), which comes to 20% of GDP in spending, 17% in taxation, and 3% in borrowing. State and local tax revenue ([compiled by US Census](#)) was another \$1.4 T, or 7% of GDP.

Size of United States Economy and Government Spending				
Description	Total (\$ T)	Per Capita (\$ 1000s)	% of GDP	
GDP	19.52	60.06	100.0	
Federal Spending	3.98	12.25	20.4	
Federal Revenue	3.32	10.22	17.0	
Federal Deficit	0.66	2.03	3.4	
State & Local Revenue	1.42	4.37	7.3	

President Biden's "American Jobs Plan" to improve US infrastructure proposed to [spend \\$2 T over eight years](#). That's a lot of money, but the annual cost is \$.25 T, which is 6.3% of the federal budget and less than 1.3% of GDP.

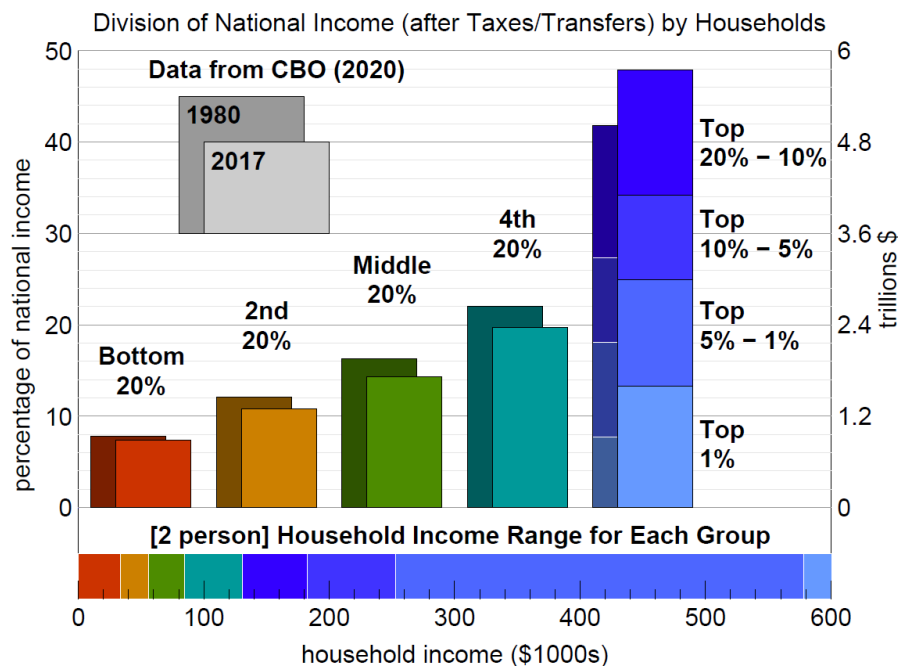
Population growth (around .6% a year), inflation (1-2% a year), and real per capita income growth (1-2% a year) combine to make GDP, federal spending, and all other collective spending numbers grow by 3-4% a year. So projecting 2017 figures to say 2022, GDP etc. should all be 15 to 20% higher.

2. Portrait of Household Income

The Income Distribution

The answer to my question can be found in [The Distribution of Household Income, 2017](#), published by the Congressional Budget Office (CBO) in October 2020. For technical details about the report, see **Appendix** at the end of this document.

The households are ordered by income, so that the lowest-income fifth of the population is in one group (called a **quintile**), next lowest fifth is another quintile, etc. The top quintile is subdivided further to get statistics on the top 1%, the top 5%, and the top 10%. The bar graphs in the figure show the percentage of total national income that went to each group of households in 1980 and 2017.



In 2017, the top quintile received nearly half of the total national income. The top 5% alone received 25% of the total income, more than the total earnings of any of the bottom 4 quintiles. The richest 1% got almost 14% of the national income, with at least 20 times higher average household income than any of the bottom 3 quintiles.

The wealthy always got a large share of the economy, but that share has grown since 1980. The three middle quintiles each lost more than 1% of the national income. Note that for a group earning about 10% of the national income – such as the second quintile – losing 1% of the national income means a loss of about 10% of the group's income. Even the households in the 80% to 95% range lost a little ground over this period. The 95%-99% group gained about 1% of national income. The top 1% gained another 6%, almost doubling its share from 1980.

Many people consider this change to be a gigantic transfer of wealth from working class and middle class families to the rich.

Inside the Quintiles

How much money does it take to get into a specific income group? The bottom of the figure shows the income limits for each group (for 2017). For a household of two people, an income in the low ten thousands puts you in the bottom quintile, mid ten thousands in the 2nd or 3rd, and around \$100,000 puts you in the 4th. A household needs \$250,000 to get into the top 5%, and almost \$600,000 to join the 1% club.

3. So How Much?

Marginal Tax Rate Barrier

As marginal tax rates become high, they grow less effective at capturing income. Rich people make a greater effort to hide money from the tax collector. Even aside from that, we can't have a tax rate of over 100%, and we can't have a marginal rate greater than 100%. If we are trying to only add taxes to some upper income range, we hit a **Marginal Tax Rate Barrier** before we hit a tax barrier. [I explain this barrier in a previous post.](#) If the minimum after-tax income of any households in the group is A_L , and the average household income of the group is A , then the additional revenue can be no more than $A - A_L$. Because of legal and illegal methods of tax avoidance, the actual revenue collected will be well short of this amount as well.

Income Which Can Be Taxed More

The sum total 2017 income for the country after taxes and transfers was \$12 T. This is strangely lower than GDP, a curiosity I discuss more in the **Appendix**. In any case, I've labelled each 10% tick mark on the vertical scale of the bar graph with \$1.2 T. From this you can aggregate income for the top 1%, 5%, and 20% and calculate the average household income (see table below, items 3 and 2). The horizontal bar at the bottom of the figure shows the minimum income of each group (table, item 1), which allows for calculation of the income below the Marginal Tax Rate Barrier (table, item 4).

Measures of Household Income for Top-Earning Groups			
quantity	top 1%	top 5%	top 20%
1. minimum (\$1000's)	580	250	130
2. average (\$1000's)	1250	470	230
3. aggregate (\$ T's)	1.6	3.0	5.8
4. available (\$ T's)	0.9	1.4	2.5

Scenarios Calling for Higher Taxes

Biden has argued for a 16 year pay-back period for his infrastructure plan, but even if we do pay-as-you-go, **\$250 billion a year amounts to only 16% of after-tax income from the top 1%**

and 8% of the top 5%. Considering the huge increase in income that the top 1% has gotten in the past 40 years, 16% higher taxes (or a smaller amount if spread a little further down within the top quintile) is not going to break the bank. However, it is 32% of the Marginal Tax Rate Barrier amount for the top 1%. It would constitute a large increase in the marginal tax rate for that group.

On the other hand, suppose we wanted to close the federal budget deficit as well. That cost, combined with infrastructure, would be about \$.9 T, a much taller order. If borne only by the top 1%, it would bring their marginal tax rate to 100%, and would be hard to sustain even for the top 5%. Such a large tax increase would probably have to fall on households throughout the top quintile to be feasible. Households at the 80th percentile of income (around \$130k for a family of two) are not wealthy, but a tax could be designed to fall relatively lightly on households below the top 5%.

How Much Income Do the Rich Have to Tax?

The top 1% would have no trouble paying for a tax increase raising less than \$100 B. Increases in the \$100-200 B range would be a substantial change for the top 1% but not large for the top 5%. \$1T would be a substantial tax increase even if applied to the entire top quintile. The upper limit of feasible tax increases on the top quintile is probably around \$2 T, which would raise marginal tax rates from 37% to 83% on income above \$130k.

To answer the original question, upper income brackets have a few trillion dollars of income, but the [marginal tax rate barrier](#) limits the size of tax increases targeted to a certain income bracket. In an emergency, the government could collect up to maybe \$2 T in taxes, but only if the net is extended fairly widely in the richest 20% of families. Short of an emergency, I doubt it is possible to reach as high as \$1 T in new taxes on upper incomes even with a solid pro-tax majority in all 3 “houses” (Representatives, Senate, and White).

I’ve ignored dynamic effects of raising taxes. A burst of infrastructure spending will expand the US economy and generate more revenue? An exodus of angry millionaires moving to Bermuda will generate less revenue? I’m leaving those debates for another day.

Of course none of this is to say if or by how much taxes should be raised. The alternatives of chronically increasing federal deficits, collapsing infrastructure, and worsening climate disasters are all plausibly worse than the harm of reducing the income of families making hundreds of thousands – or millions – of dollars. But if we are going to talk about raising taxes on the rich, we should have a realistic view of what is feasible.

Appendix: Some Technical Details

Household Size

I've shown the income limits for two-person households; but the CBO also adjusted the limit for different size households. If we use the variable L for a given quintile income limit calculated for one-person households, the same limit for a household with N people is \sqrt{NL} . Why the square root? The idea is that as the number of people in a household goes up, to maintain the same standard of living, the household income must go up, but since there are a lot of savings from living together, it should be less than NL . No single formula will give an a solution that applies to all households, so the square root is chosen for simplicity.

What's a Household? What is "Income"?

A household is a group of people living together in the same housing unit such as an apartment or single-family house. A household can be a family but it can also be unrelated roommates. The household data is taken from a sample of tax returns and extrapolated to all the households in the US. The income statistic shown here includes wages, capital gains, and other components of **market income**, plus cash government benefits such as Social Security payments, plus non-cash benefits such as Medicaid, minus federal taxes. The CBO report includes statistics for several other components of income.

Digression on Embarrassing Discrepancy

The GDP of a country is supposed to equal its Gross Domestic Income. Adding up all the income (before taking out federal taxes and adding in the non-cash benefits mentioned above) gives us \$14.1 T, only 72% of the 2017 GDP. The Census has a separate measure of income based on an annual questionnaire which gives a similarly low number. I don't understand the discrepancy. There is a subtle difference between GDP and the Gross National Product (GNP), and so perhaps GNP is the correct statistic to compare the CBO income data, but from what statistics I could find, this is not a big factor for the United States. There is also a component of GDP which is related to depreciation (loss of value of business equipment as it gets old), but I'm not sure how that enters into the calculation of income.

Here I use the income from the CBO calculations. If this is missing some source of income that would make it comparable to GDP, it may underestimate how much income is available.

What About State/Local Taxes?

Since we are looking at after-tax income, we should subtract state and local taxes as well. I could not find a government source for the distribution over different incomes, but the Institute for Taxation and Economic Policy (ITEP) has an analysis which shows the tax burden (tax per income) decreasing with income, with "[average effective state and local tax rate on the nonelderly](#)" going from a high of 11% of family income for the bottom quintile to a low of 8% for the top 1%. Since there is not a huge variation in tax burden among income levels, and

since a few years of economic growth since 2017 should add a comparable amount, let's call it a draw. I'm not considering state/local taxes in the conclusions.

What about the 2017 Tax Cut?

In 2017 Republicans passed a controversial tax cut. According to critics of the cut, [the effect of the law on income](#) (estimated for the year 2025) will be to raise after tax income by about 1% for the 3 middle quintiles and about 3% for the top 1%. I ignore this in my calculations.