Tax havens make GDP screwy

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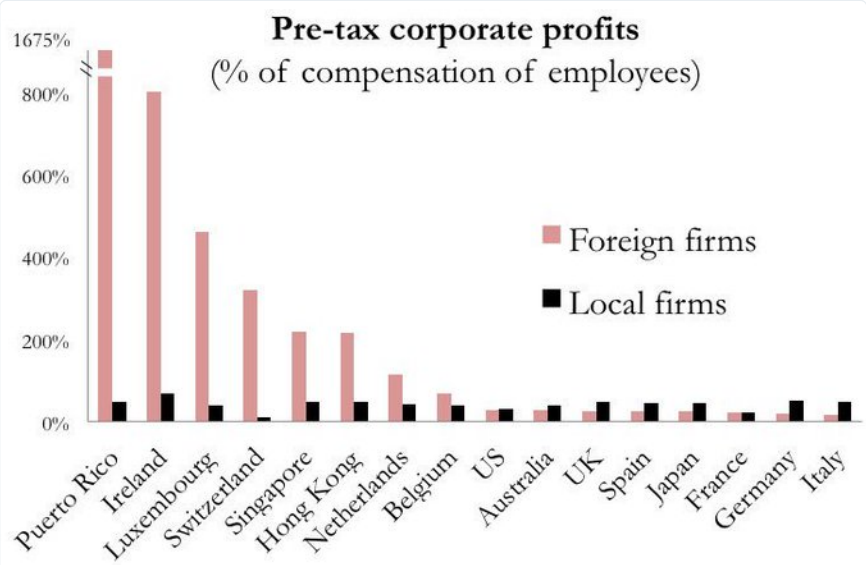
Most people reading this have probably encountered reports, or seen graphs, comparing some variable of interest across countries, and often the thing being compared will be measured as a percentage of GDP. We might, for example, expect a fairly wealthy country like Norway to spend more comparable dollars on healthcare than a less wealthy country like Mexico. This adjustment-for-resource-level is a potentially more informative way of looking at things than just looking at dollar amounts in isolation. But as I will demonstrate in this post, GDP does not always tell us quite what we imagine it is telling us, which is presumably, again, the level of resources that a country has at its disposal. What I am going to do here is use the latest paper from Gabriel Zucman, Thomas Tørsløv, and Ludvig Wier, which is about tax havens and how much money firms squirrel away in them, to show one way in which the GDP metric can go off the rails. I will show how GDP comparisons can wildly misstate the relative positions of certain countries (the U.S. being chief among them), and how using total consumption, rather than GDP, as a denominator can yield much more likely results.

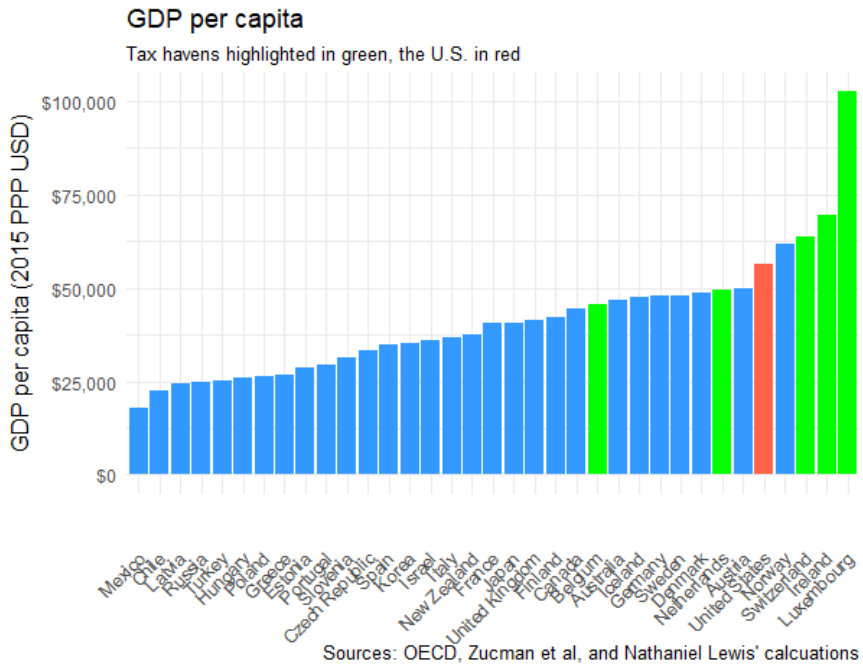
Tax havens have high GDP per capita

To very poorly summarize Zucman et al.'s paper, there are a handful of countries in which corporations set up shop (on paper, not in terms of

machines) due to low-to-no taxes, and it's mostly U.S.-based firms benefitting from this. Here is a graph from the paper illustrating the obvious extent to which this is just a scheme to extract profits in a country:



Since I have been using OECD data extensively lately, I will use those countries to illustrate my main point here. To begin with, let's look at where the tax havens identified in this paper fall in terms of comparable-dollar per capita GDP. I have highlighted the tax havens in green, and the U.S. in red:



As can be seen, the three biggest tax havens also have the highest GDP per capita, and the other two are within the upper end of the distribution.

Consumption intuitively makes more sense than GDP in many cases

Here I want to introduce the metric of total consumption. I will quote extensively from my analysis on social welfare spending for People's Policy Project:

> *"Actual individual consumption (AIC) consists of all goods and services used by households, regardless of who pays for them. This will encompass everything from hamburgers to a college course on Dostoevksy; a visit to*

> *the amusement park, or a visit to the doctor. Again, it does not matter whether the hamburger was paid for with a Social Security check, food stamps, or a portion of a lawyer's paycheck.*

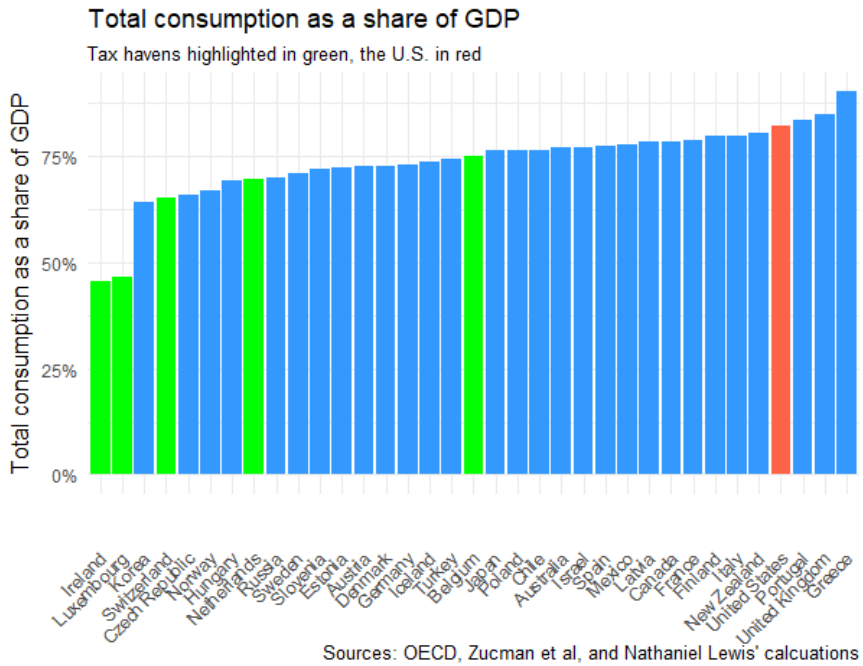
> *Of GDP and AIC, the OECD says this: "GDP per capita provides an average measure of economic activity … but for comparisons of material well-being of households, actual individual consumption per capita is preferred."*

> *This is because GDP includes things like income generated in a country that then gets expatriated back to a different country where the parent firm is located. In other words, it can include a lot of money that residents of a country never actually get a chance to appropriate.*

> *Total consumption is AIC plus collective consumption. Collective consumption is whatever the government pays for that isn't used tangibly by individuals. For example, it will include the administrative costs to run the government and its programs, as well as things like military and police expenditures."*

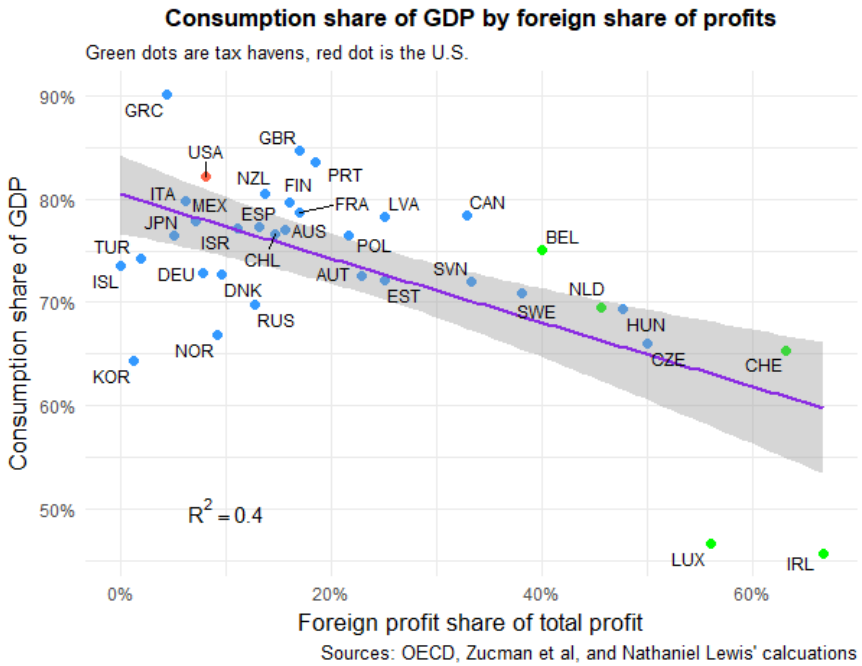
Tax havens have low consumption relative to GDP

Different countries have varying levels of total consumption as a percentage of GDP. Let's take a look, once again highlighting the tax havens in green, and the U.S. in red:



While Ireland and Luxembourg, the biggest tax havens in the OECD set, are at the top of the GDP distribution, they have the lowest total consumption, measured as a share of GDP. Meanwhile, the U.S. is top 5 in both cases.

We can do some inferential statistics here too. Let's take, from Zucman et al.'s paper, profits from foreign firms as a share of total profits generated within a country as our predictor variable, or our x-axis. Along the y-axis, as our outcome variable, we will take total consumption as a share of GDP:

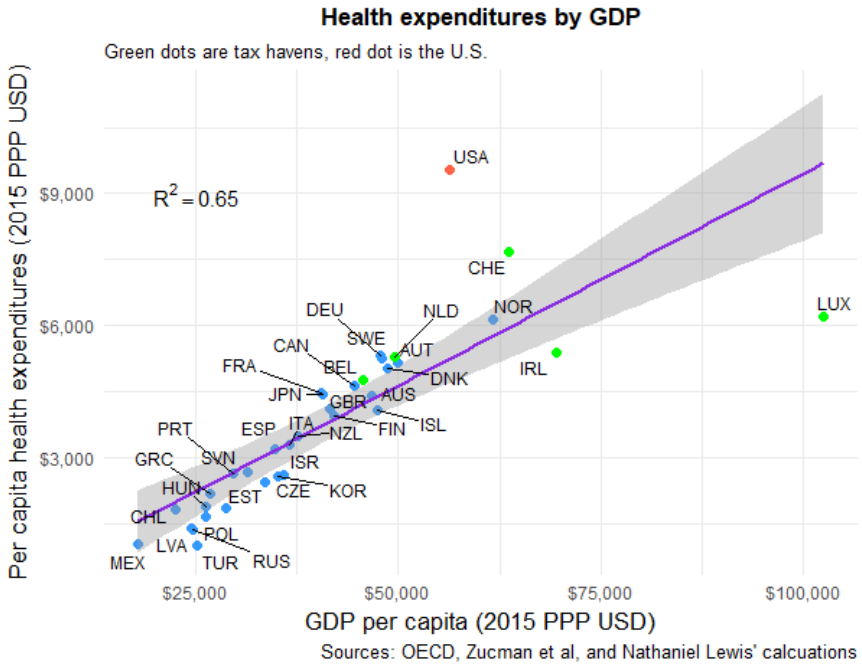


About 40% of variance in consumption as a share of GDP is explained by the proportion of foreign profit within a country. Remember, this profit doesn't even really get a chance to reach the people in the country within which it is generated. Some of it, sure. But a tiny fraction. This 40% explained is impressive, once you consider all of the other variables involved—such as investment levels, or, more interestingly, in the case of Norway, sovereign wealth funds.

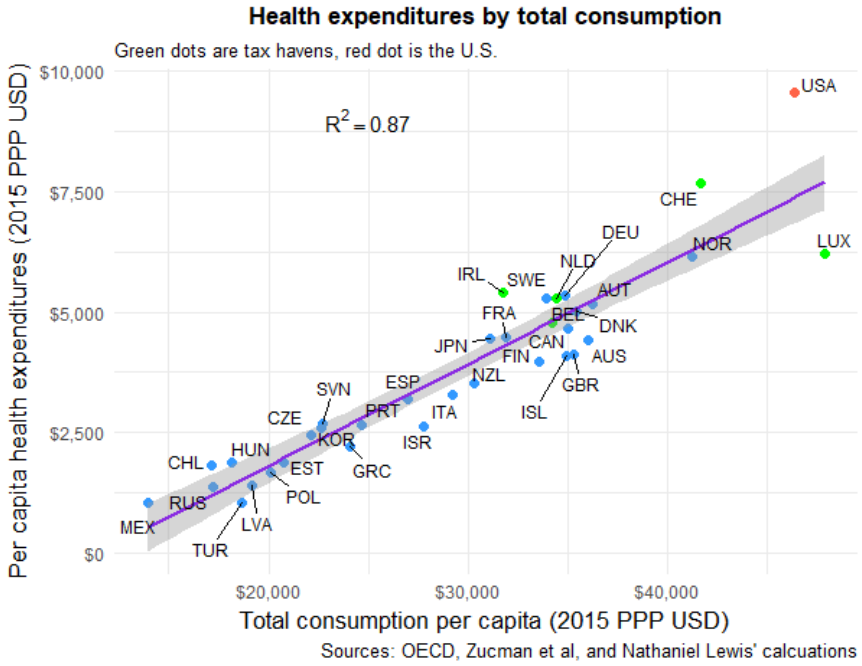
So it should be clear that these sorts of shenanigans are inflating GDP numbers. A reasonable question is: does it matter? And I would say, if you're trying to do something approaching good scientific practices, yes, it matters. I have been finding that using per capita consumption, rather than GDP per capita, is a much better predictor of things, beyond

just making more sense. Almost every time, out of a dozen times, that I have run a single variable regression with first GDP, and then consumption, as the denominator, consumption produces a better fit.

Since we started with healthcare expenditures as the outcome variable, let's end that way. First, expenditures measured as a percentage of GDP with, once again, tax havens in green and the U.S. in red:



And now we do it with expenditures measured as a percentage of consumption:



Consumption is clearly the better denominator here.

Think about whether GDP makes sense for the analysis at hand.

Since I am interested primarily in U.S. stuff, I'll leave this heuristic. If you're presented with an "as a percentage of GDP" figure, and you think that consumption would be better, you can adjust the U.S.'s relative ranking downward. (With Ireland, you'd want to adjust upward by quite a bit, at least in recent years.) This means, for example, that the U.S. isn't spending as much on healthcare as is understood by such a comparison, but also that the U.S. is spending way less on social welfare.