Demo for Tax Plan

1/28/2019

Wealth tax computation

```r
setwd('..')

# Research:
research_df <- read_csv("rawdata/research.csv")

# Elasticities
ela1 <- as.numeric(research_df[1,"param"]) # 0.5 - eim, David. 2017. "Behavioral Responses to an Annual

ela2 <- as.numeric(research_df[2,"param"])  # 0.5 - Jakobsen, Kristian, Katrine Jakobsen, Henrik Kleven

ela3 <- (as.numeric(research_df[3,"param"])+ as.numeric(research_df[4,"param"]))/2 # (2 + 3)/2 - London

ela4 <- (as.numeric(research_df[5,"param"])+ as.numeric(research_df[6,"param"]))/2 # (23 + 34)/2 - Brül

final_ela <- mean(c(ela1, ela2, ela3, ela4))




# Data
# Number of tax payers
numberTaxpayers <- c(640198, 171310, 41637, 24974, 5155, 2612, 911)
taxBase <- c(6716, 3510, 2376, 2460, 1285, 660, 2560)
num_billionares <- round(400 * 1.8^1.4)
top_tax_base <- 0.01 * ( 400 * ( (1-0.15) * 7.2 - 1 ) * 1.25 )

cum_numberTaxpayers_scf <- c(1100144, 298649, 72143, 34552, 7119,  2555,  671)
cum_numberTaxpayers_dina <- c(673449, 194548, 78434, 32751, 10236, 4491, 1597)
cum_numberTaxpayers_scf[7] <- num_billionares
cum_numberTaxpayers_dina[7] <- num_billionares

cum_tax_base_scf <-  c(203.97, 121.63,  81.79, 59.18, 36.67, 27.46, 20.78)
cum_tax_base_dina <- c(187.35, 135.38, 105.02, 80.11, 53.43, 36.94, 23.39)
cum_tax_base_scf[7] <-  top_tax_base
cum_tax_base_dina[7] <- top_tax_base

total_wealth <- 94e12 # [SOURCE]
total_hhlds <- 129400000

# Numbers in third bracket differ in 1 hhld 41636 instead of 4637
# numberTaxpayers <- c(640198, 171310, 41637, 24974, 5155, 2612, 911)
aux1 <- (cum_numberTaxpayers_dina + cum_numberTaxpayers_scf)/2
numberTaxpayers <- c(-1 * diff(aux1, lag = 1), num_billionares)
```

```
aux2 <- (cum_tax_base_dina + cum_tax_base_scf)/2
tax_base <- c(-1 * diff(aux2, lag = 1), top_tax_base) * 100

# Guesswork

hhld_gr <- 0.009
evasion_disc <- 0.15



#### Policy:
# Rates

# Brackets
brackets <- c(10e6, 25e6, 50e6, 100e6, 250e6, 500e6,  1e9)
tax_rates <- c(0,     0, 0.02,  0.02,  0.02,  0.02, 0.02, 0.02)




#######

tax_starts_at <- brackets[min(which(tax_rates>0 ))]
print(round( sum( numberTaxpayers[brackets>=50e6] )/1000 )*1000)
```

```
## [1] 75000
```

Policy Result

We write regarding your proposal to impose a progressive annual wealth tax on American households with net worth (sum of all assets net of debts) above $50m million. The tax would be 2% on the net worth above $50 million with an additional 1% tax on net worth above $1 billion. We estimate that about 75,000 American households (less than 0.1%) would be liable for the wealth tax and that the tax would raise around **$2.75 trillion** over the ten-year budget window 2019-2028, of which $0.3 trillion would come from the billionaire 1% surtax. The wealth tax would raise approximately 1.0% of GDP per year ($210 billion relative to a $21.1 trillion GDP in 2019).

The figure below illustrates the distribution the tax burden across the population and, with detailed information on the fraction of households that will pay a wealth tax:

```
# Insert a PNG of the figure here.
```

Methodology

Data Sources

There are two main sources on the wealth of all American households: the Survey of Consumer Finances (SCF) from the Federal Reserve Board and the Distributional National Accounts (DINA) recently created by Piketty, Saez, and Zucman[1], which estimates wealth by capitalizing investment income from income tax

---

[1]Piketty, Thomas, Emmanuel Saez, and Gabriel Zucman, "Distributional National Accounts: Methods and Estimates for the United States", Quarterly Journal of Economics 133(2), 2018, 553-609. Data online at http://gabriel-zucman.eu/usdina/

returns. The latest year available for each source is 2016. Both sources can be used to estimate the tax revenue of the 2% wealth tax above $50 million. For the billionaire surtax, the best source is the Forbes 400 list of the richest 400 Americans. The latest year available is 2018.

None of these sources provides perfect estimates but reassuringly, the SCF and DINA provide close estimates of the tax base above $50 million. One of the important virtues of the progressive wealth tax is that it will generate much more accurate data to estimate and track the wealth of the wealthiest Americans.

Methods

1 - We age the 2016 SCF and DINA microfiles to 2019 by inflating the number of households and wealth uniformly to match the aggregate projections for population and total household wealth from the Federal Reserve Board [SOURCE]. We also add the Forbes 400 to the SCF data. The total household net worth projection is $94 trillion for 2019 (the SCF records a total household net worth of $87 trillion in 2016).

2 - Tax avoidance/evasion: recent research shows that the extent of wealth tax evasion/avoidance depends crucially on loopholes and enforcement. The proposed wealth tax has a comprehensive base with no loopholes and is well enforced through a combination of systematic third party reporting and audits. Therefore, the avoidance/evasion response is likely to be small. To be on the conservative side, we assume that households subject to the wealth tax are able to reduce their reported net worth by 15% through a combination of tax evasion and tax avoidance. This is a large response in light of existing estimates[2].

3 - In 2019, there would be around 75000 households liable to the wealth tax (72000 households according to the SCF data and 78000 tax filers according to the DINA data). In both cases, this would be less than 0.1% of the 130 million US households in 2019. The tax base above $50 million would be $8.2 trillion based on the SCF data and $10.5 trillion based on the DINA data. Hence, the two data sources provide fairly close estimates, which we average as $9.3 trillion, i.e. approximately 10% of total household net worth of $94 trillion population-wide. A two percent tax on this base would raise $187 billion in 2019.

4 - For the billionaire surtax, the Forbes 400 reports that in 2018 the top 400 richest Americans had an average net worth of $7.2 billion and that the 400th wealthiest had $2.1 billion. Given the recent stock price declines, we assume that the wealth of the Forbes 400 in 2019 will be the same as in 2018. We also assume that their reported wealth for tax purposes would be 85% of the Forbes estimate due to avoidance and evasion. Hence the top 400 wealth taxpayers would report at least $1.8 billion (=2.1*.85) and have an average reported wealth of $6.1 billion (=7.2*.85). Hence, the Forbes 400 taxable base would be 400*(6.1-1)=$2040 billion or approximately $2 trillion. Using a standard Pareto interpolation technique, we estimate that the billionaire tax base between $1 billion and $1.8 billion (below the Forbes 400) would add 25% to the Forbes 400 tax base and would add about 500 families[3]. Therefore, the billionaire surtax base is estimated

---

[2]Seim, David. 2017. "Behavioral Responses to an Annual Wealth Tax: Evidence from Sweden", American Economic Journal: Economic Policy, 9(4), 395-421 and Jakobsen, Kristian, Katrine Jakobsen, Henrik Kleven and Gabriel Zucman. 2018. "Wealth Accumulation and Wealth Taxation: Theory and Evidence from Denmark" NBER working paper No. 24371, obtain small avoidance/evasion responses in the case of Sweden and Denmark in two countries with systematic third party reporting of wealth: a 1% wealth tax reduces reported wealth by less than 1%. Londono-Velez, Juliana and Javier Avila. "Can Wealth Taxation Work in Developing Countries? Quasi-Experimental Evidence from Colombia", UC Berkeley working paper, 2018 show medium size avoidance/evasion responses in the case of Colombia where enforcement is not as strong: a 1% wealth tax reduces reported wealth by about 2-3%. The study for Switzerland, Brülhart, Marius, Jonathan Gruber, Matthias Krapf, and Kurt Schmidheiny."Taxing Wealth: Evidence from Switzerland," NBER working paper No. 22376, 2016 is an outlier that finds very large responses to wealth taxation in Switzerland: a 1% wealth tax lowers reported wealth by 23-34%. This extremely large estimate is extrapolated from very small variations in wealth tax rates over time and across Swiss cantons and hence is not as compellingly identified as the other estimates based on large variations in the wealth tax rate. Switzerland has no systematic third party reporting of assets which can also make tax evasion responses larger than in Scandinavia. Our 15% tax avoidance/evasion response to a 2% wealth tax is based on the average across these four studies (2%*(.5+.5+2.5+28.5)/4=16%).

[3]We make the classical assumption that the tail of the wealth distribution is Pareto distributed. As the average wealth of the Forbes 400 ($7.2b) is 3.4 times the threshold to belong to the Forbes 400 ($2.1b), the corresponding Pareto parameter is a=3.4/(3.4-1)=1.4. Standard calculations imply that the extra tax base between $1bn and $1.8bn (relative to the tax base above $1.8bn) is [(1.8/1)^(a-1)-1] =.27 or approximately 25%. The number of families above $1bn is estimated as 400*(1.8/1)^a=911, or about 900. The important point is that the vast majority of the billionaire surtax base (over three quarters) is in the Forbes 400, for which we have relatively good estimates of net worth.

at \$2.5 trillion and hence the billionaire surtax would raise \$25 billion in 2019 from about 900 billionaire families.

5 - The combination of the 2% tax above \$50 million and the billionaire surtax would raise \$187 + \$25 = \$212 billion in 2019.

6 - To project tax revenues over a 10-year horizon, we assume that nominal taxable wealth would grow at the same pace as the economy, at 5.5% per year as in standard projections of the Congressional Budget Office or the Joint Committee on Taxation. This growth is decomposed into 2.5% price inflation, 1% population growth, and 2% of real growth per capita. This implies that tax revenue over the 10 years 2019-2028 is 13 times the revenue raised in 2019[4]. This uniform growth assumption is conservative as the wealth of the rich has grown substantially faster than average in recent decades. The estimates by Saez and Zucman[5] show that, from 1980 to 2016, real wealth of the top 0.1% has grown at 5.3% per year on average, which is 2.8 points above the average real wealth growth of 2.5% per year. Average real wealth of the Forbes 400 has grown even faster at 7% per year, 4.5 points above the average. The historical gap in growth rates of top wealth vs. average wealth is larger than the proposed wealth tax. Therefore, even with the wealth tax, it is most likely that top wealth would continue to grow at least as fast as the average.

7 - This 10-year projection implies that revenue raised by the progressive wealth tax would be $13 \cdot 212 = \$2756$ *billion, rounded to \$2.75 trillion. Out of these \$2.75 trillion, the billionaire surtax would raise $\$25 \cdot 13 = \$325$* billion, rounded to \$0.3 trillion.

8 - It is important to emphasize that our computations assume that the wealth tax base is comprehensive with no major asset classes exempt from wealth taxation. Introducing exemptions for specific asset classes would reduce the revenue estimates both mechanically and dynamically as wealthy individuals would shift their wealth into tax exempt assets. Because your proposal does not include any large exemptions, we do not believe our revenue estimate needs to be adjusted.

Info from spreadsheet: Numbers from stata program wealth-tax.do [to be reproduced] We start from SCF 2016 inflated to 2019 and adding Forbes 400 2018.

---

[4] With r=5.5%, we have [1+(1+r)+..+(1+r)ˆ9]=[(1+r)ˆ10-1]/r=12.9, approximately 13.

[5] Saez, Emmanuel and Gabriel Zucman, "Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data", Quarterly Journal of Economics 131(2), 2016, 519-578, updated series available at http://gabriel-zucman.eu/usdina/

We start from DINA tax data 2016 inflated to 2019. To inflate, we assume 0.9% # household growth per year, wealth inflated uniformly to match 2019 aggregate total of $94Tr). Uniform discount of 15% to account for tax evasion/avoidance when wealth tax in place.

Our analysis complies with the highest levels of transparency and reproducibilty of open policy analysis proposed by the Berkeley Initiative for Transparency in Social Sciences. We invite critiques and contributors of this analysis to follow similar standards.

```
# Ask Sara:
 # - Zooming capabilities?
 # - Interactive number seems off sometimes
```