Problem Set 2

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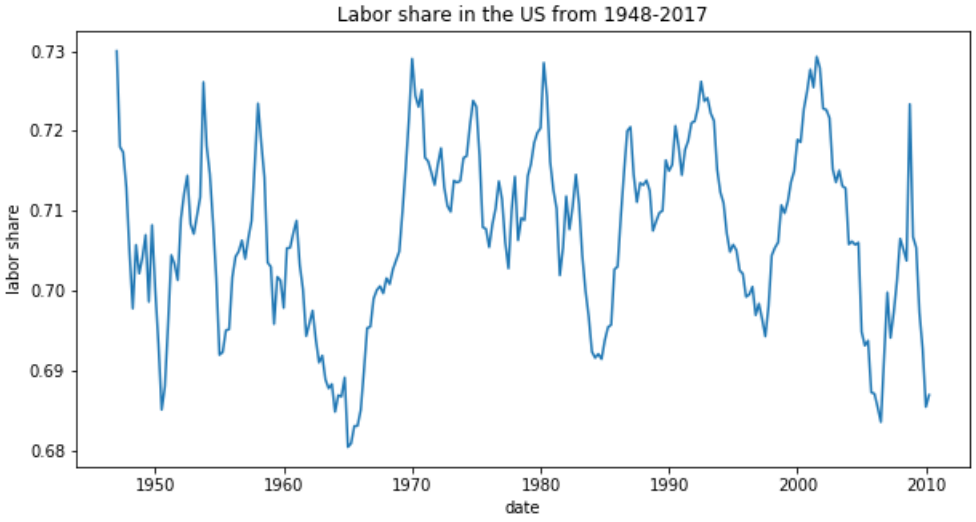
1 Quantitative Macroeconomics

1.1 Problem set 2

Question 1

The three labor shares are computed very similarly. For the US I used the method discused in class, meaning that I gathered the part of income that is unambigusly attributable to labor (UL)and the part of income that is ambiguously attributable to labor or capital (AI). I compute: $\frac{UL}{Y-AI} = \theta$, where Y is the GDP. Then finally I use theta in order to identify what part of the ambiguous income is attributable to labor which allows me to compute the Labor share. $LS = \frac{UL+AI\theta}{Y}$

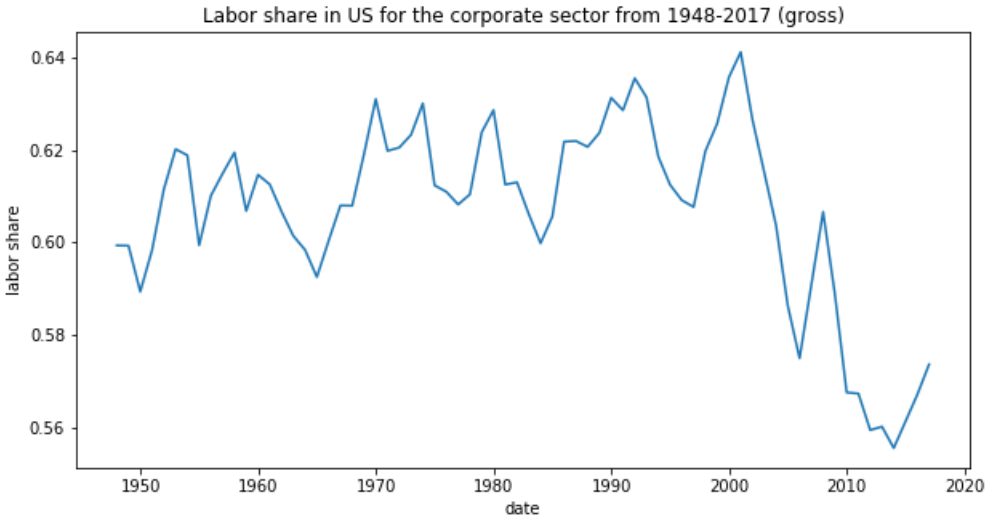


The Labaor share seems to be fluctuating around a level of 0.71 which is in adequacy with the kaldor fact that Labor share should constant over time.

In order to estimate the labor share I used 2 different datasets. The issue is that in the second dataset I do not have gross but net domestic product. So I use the depreciation from the first data to estimate the labor share. Before including the depreciation of capital the labor share seemed to be stationary around 0.71 however, now we can notice two things. First the level of the labor share is lower but also it is decreasing over time which contradicts the kaldor facts.

Question 2

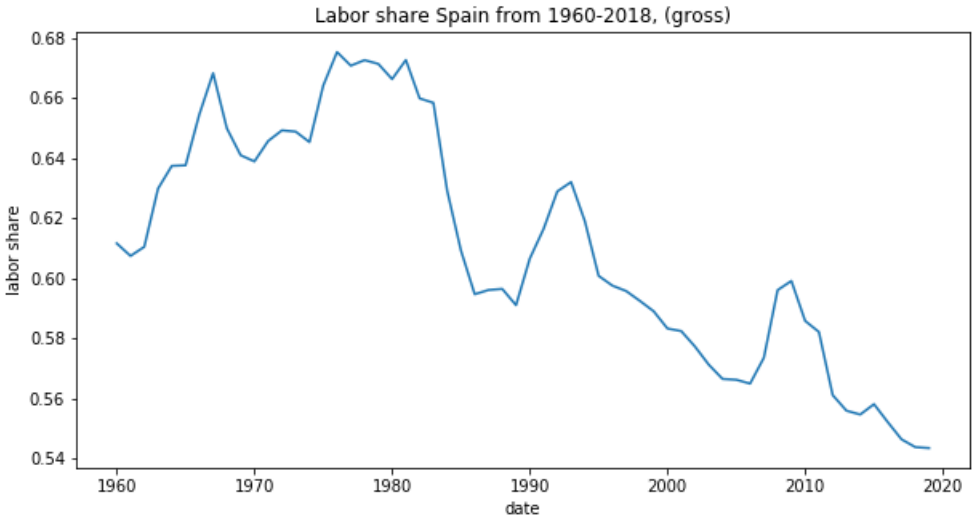
The corporate sector seems to have a slight increase in the labor share until the 90s then it decreses slowly to it s initial level. It might be surprising to observe these results since we know that Kaldor facts predict a labor share fluctuating around a level which is not the case here. Kaldor facts are predictions for an economy and not for sectors so it might be possible that while labor share increased in the corporate sector it also droped on average in other sectors to compensate for the increase.



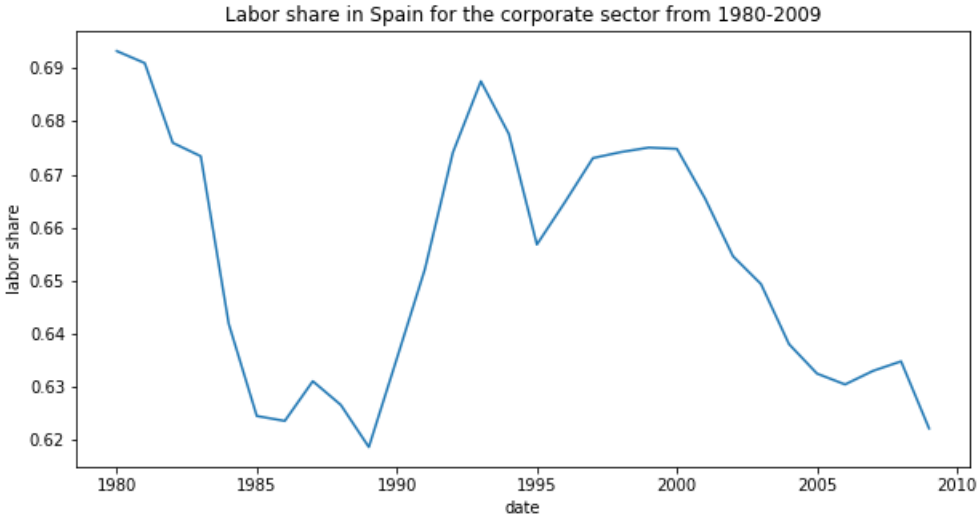
The computation of the labor share with gross domestic product was done as follow. Since our dataset contains net domestic product, I computed to ration of depreciation to net domestic product to all the economy and used it to infer the gross domestic product in the corporate sector. We notice that there is also a decrease in the labor share but it is not as important as in all the economy. There might be a sector that is losing part of it s labor share faster than the corporate sector.

Question 3

For question 3, I used Spanish data collected from AMECO. The labor share is computed as follow: In order to get the proprietors income attributable to labor I compute the gross operating surplus minus the gross operating surplus adjusted for compensation of employees. The variable obtained is clearly attributable to labor. The graph shows a decreasing labor share which is consistent with what we find for the US data.



Indeed it seems that I am underestimating the labor share since it is fluctuating around 0.48 when the US labor share is fluctuating around 0.71. This means that part of Labor income is not taken into acount in this naive estimator. Nevertheless, the labor share seems to be fluctuating around 0.48. Hence, Kaldor facts seem to be satisfied.



The previews graph represents the labor share for the corporate sector. The labor share fluctuates around 0.66 which is 0.18 more than in the graph for all

the economy. Kaldor fact seem to be satisfied since the labor share is constant over time.