Quantitative Macroeconomics - Homework 1

Sebastian A. Roy (QEM)

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Question 1

Part 1

The ratios of $T-S$, NMI and IPP to GDP can be found in Figure 1. The first measure, $(T-s)/GDP$, remains stable over the years (with slightly higher variance between the Great Depression and the end of WW2), oscillating around 0.005. The second ratio, NMI/GDP, noted a sharp fall at the beginning of the '30s - arguably, the crisis hit proprietors' income, who could not fight shrinking prices in a way the cartels and corporations did. It hit all-times peak in 1946 after years of significant rises, which implies that the war-era sole proprietors' income rose faster than the US GDP. As the post-war New Deal was implemented, the ratio began to fall again and continued until the Reaganomics period opened in the '80s. Reagan neoliberal policies boosted NMI growth which lasted until the 2008 recession.

The third measure, IPP/GDP, grew steadily, starting in the '50s. it noted one fall in the beginning of the new millennium in result of the dot-com bubble.

Part 2

Labour share computed with different methodological approaches has been plotted in Figure 2. Each of them displays similar trends (their movements across time are highly correlated), but the naive LS takes usually the smallest value, while LS adjusted for taxes is slightly higher and LS adjusted for taxes and proprietor income is visibly higher from the previous measures by about 5 p.p.

Question 2

Figure 3 depicts answers to the Question 1, but calculated using the pre-1993 BEA methodology. There are no significant differences neither in levels, nor in trends visible.

Question 3

Figure 4 summarises labour share calculations using all three definitions of labour share for the corporate sector only as well as for the whole economy.

Labour shares split into four distinct groups. LS corrected for taxes and proprietors' income in the pre-1993 methodology is the highest, only a little higher than the one calculated in the post-1993 figures. The second highest group consists of LS0 and LS1 in both versions, post- and pre-1993. The third group comprises coprporate LS3, once again in post- and pre-1997 versions. The last group, which takes the smallest values, includes corporate LS1 and LS0, both post- and pre-1993. All the groups show co-movement except for the WW2 period, when labour shares from the two highest groups grew and the ones from the two lowest groups fell.

This leads to two interesting conclusions. First of them is following: labour share - regardless of methodology - is lower in the corporate sector, which implies that wages in the government agencies should be higher than

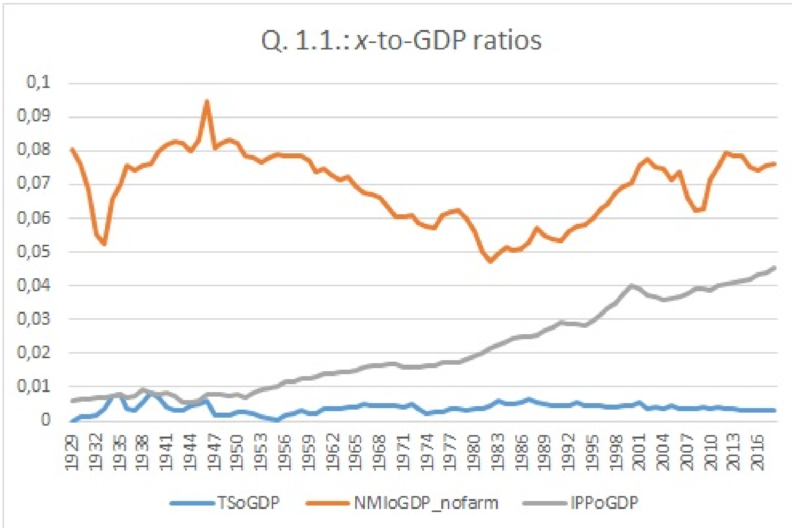


Figure 1: Taxes less subsidies on production and imports, net mixed income and intellectual property products plotted vs GDP

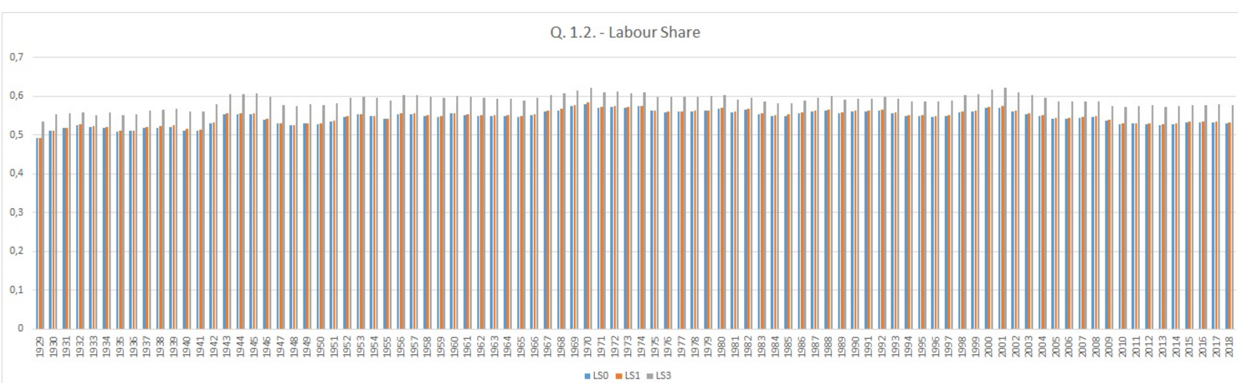
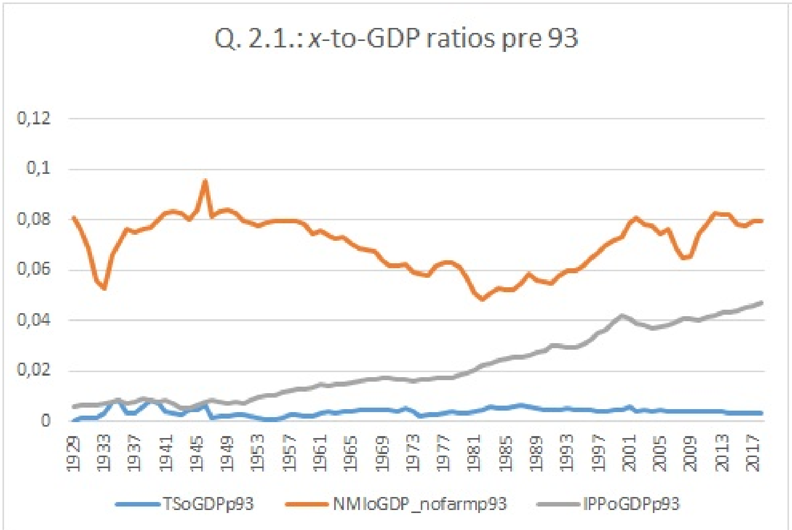
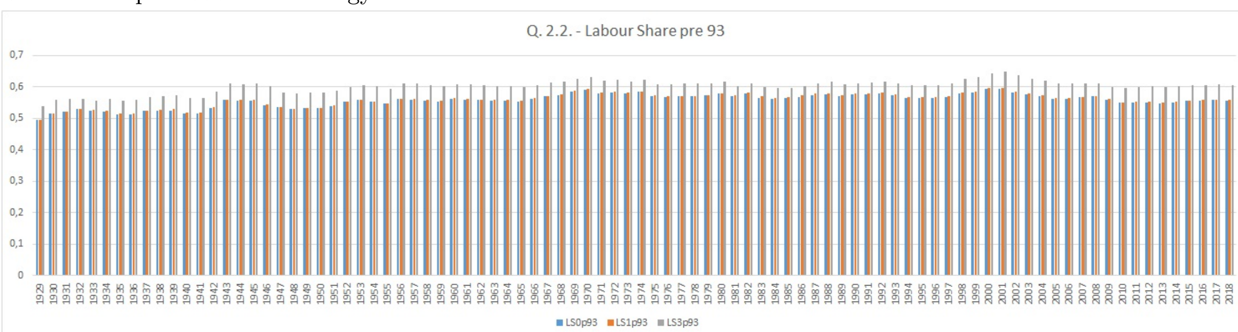


Figure 2: Three measures of labour share



(a) Taxes less subsidies on production and imports, net mixed income and intellectual property products plotted vs GDP in the pre-1993 methodology



(b) Three measures of labour share in the pre-1993 methodology

Figure 3: Answers to Question 1 using the pre-1993 methodology

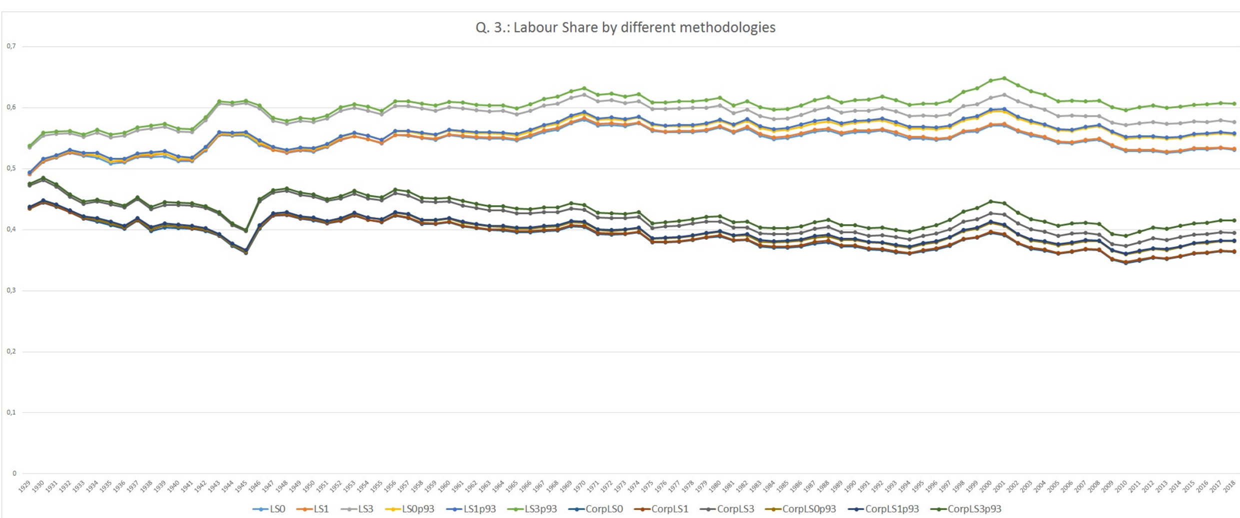


Figure 4: Corporate and overall labour share by different methodologies

in private companies. Secondly, corporate labour share fell during the WW2, in contrary to the overall labour share.

Question 4

Return on capital is plotted in the Figure 5. Six methodologies have been used, namely, all three definitions of labour share, each of them using post- and pre-1997 GDP values. However, us of pre- or post-1997 data does not provide significant changes. The only important difference comes from choosing labour share with two corrections (for taxes and proprietors' income). Those rates of return are lower.

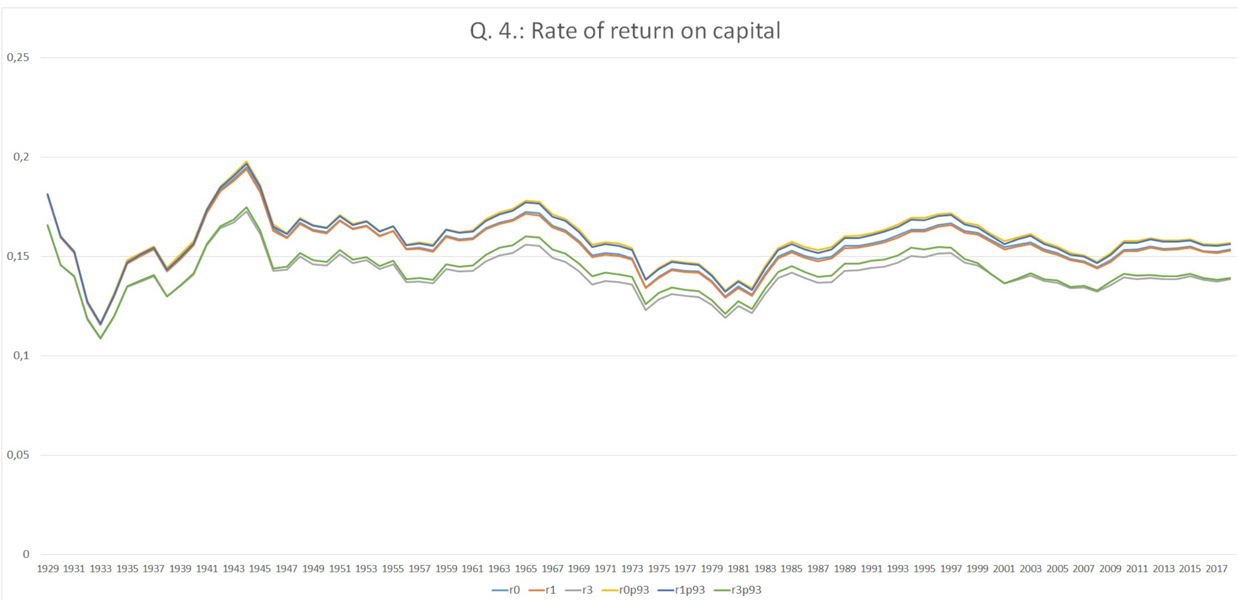


Figure 5: Return on capital by different methodologies