Quiz

1. According to the Penn World Table (PWT) data, the wage share or the labor share of income in France has been almost perfectly constant for 30 years, from 1987 until 2017.

Figure 1. Wage share in France from 1987 to 2017. Source: PWT.

Assume that the French economy is perfectly competitive and the production technology in France is

$$Y\left(K,L\right)=aK^{1-b}L^{b}.$$

1. Derive the profit maximization conditions for

$$Π=PY\left(L,K\right)-WL-RK.$$

1. Find the labor share and the capital share.
2. According to the wage share data in France, what do you think $b$ approximately should be?
3. What is the profit share in France according to your results?
4. Suppose that the production technology is

$$Y=\left(K^{s}+L^{s}\right)^{\frac{1}{s}}.$$

Assume that the economy is perfectly competitive.

1. Find the labor share of income. (Hint: MPL/APL).
2. Assume that APL is falling over time. If the labor share is increasing over time, what should be the sign of $s$? Negative or Positive or Indeterminate?
3. Write a short, intuitive, and non-mathematical description of your result. In other words, briefly discuss why $s$ is negative or positive or indeterminate.