

For the first problem set I chose to analyze Switzerland and Thailand. The reason for my choice is that I am familiar with the Swiss economy and for my exchange studies I would like to know more about the Thai economy and how it differs from the Switzerland.

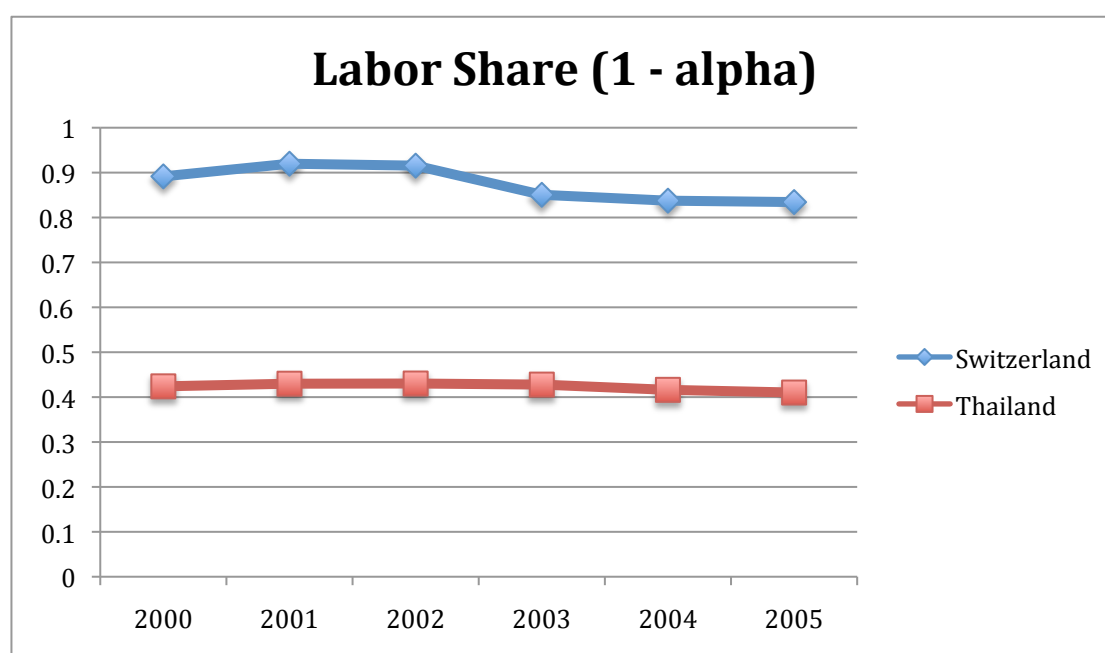
Question 1

Compute the average labor share for your countries. Do you find significant differences in the factor allocation of income between the rich and the poor country?

I computed the labor share of Switzerland and Thailand using following equation:

$$1-\alpha = (\text{wages \& earnings}) / (\text{total national income}) \in [0,1]$$

I used the national income statements of both countries. I got statements for Thailand from 2000 onwards and for Switzerland between 1965 and 2005, so I computed the six common years.



The labor shares are pretty constant over the whole period. Switzerland's share is about twice as high as Thailand's. I interpret this difference first to the fact that most Swiss people hold stocks instead of direct ownerships of firms and stocks are reported as private earnings in the Swiss income statement. Thai people on the other hand have, as far my knowledge reaches, huge private ownerships of family businesses which are reported separately in the income statement.

The second reason could be that Swiss labor is more productive, meaning that the Swiss workforce is more educated and specialized than the Thai workforce is. That makes sense since Switzerland is a very small country and people are rarely employed in the agriculture sector. Switzerland furthermore has very specialized industries such as consulting businesses, technology firms (such as ABB, Novartis and La Roche) and research centers (such as FIT and CERN). Thailand on the other hand has a big agricultural sector where the people's knowledge does not need to be as high as in the high-tech sector.

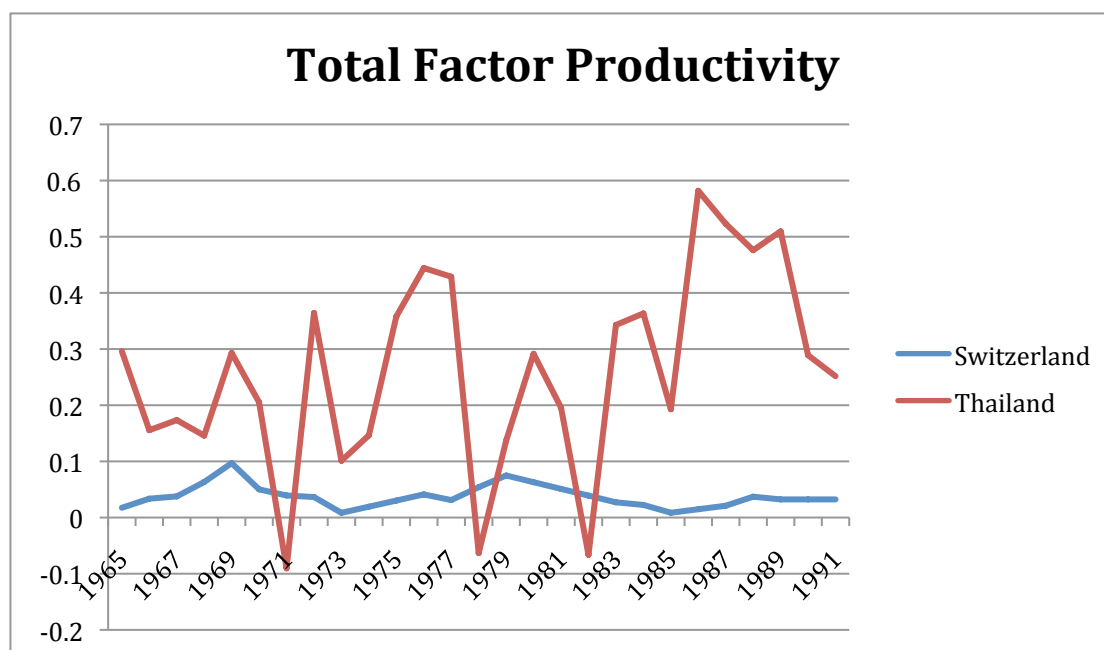
Questions 2

Based on your estimated labor shares, compute productivity series A_t for each country. Compute annual growth rates of GDP per worker, capital per worker, and output, and provide a percentage decomposition of output growth into contributions from capital and productivity. Are there significant differences in the average contribution of capital accumulation to output growth between the two countries?

I calculated A_t using the following formula:

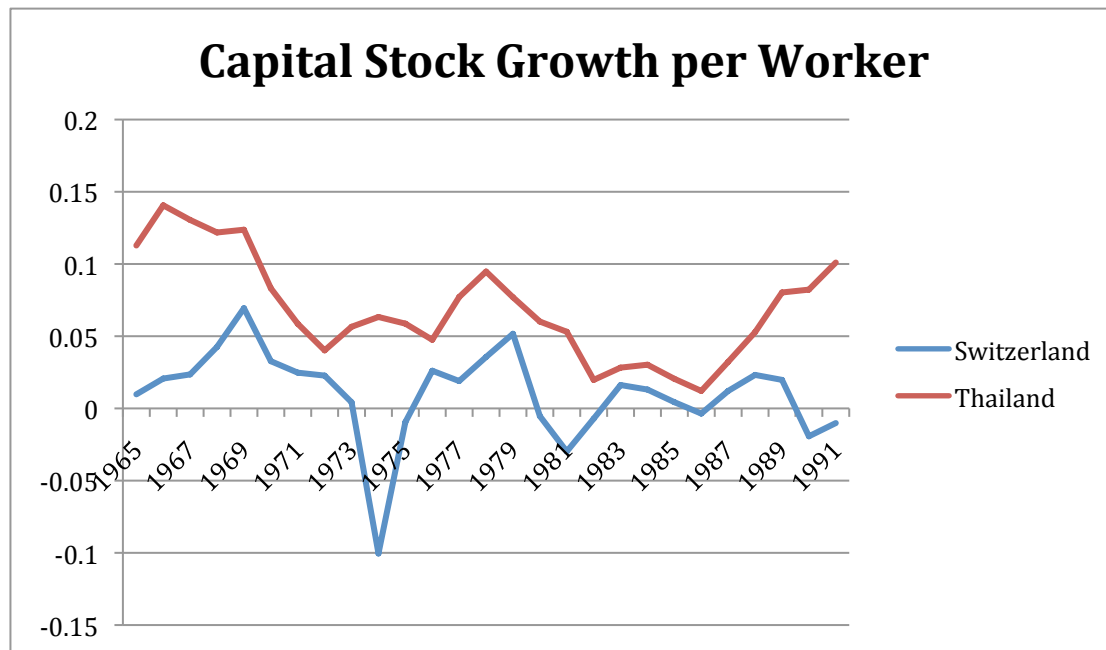
$$A_t = y_t / (k_t^\alpha)$$

For alpha I took the average numbers calculated in question 1. I used annual data from 1965 to 1992 for the other numbers. Since in some years the capital growth of Switzerland was negative, Excel could not calculate the numbers, due to a mathematical error. I therefore used the previous and the following numbers and calculated the mean.



Interestingly, Thailand has a much higher TFP than Switzerland does. Furthermore it is changing a lot and even going below zero. Eventhough I am quite sure I used the right formulas and reliable data, these results don't seem right to me.

The next graph shows the annual capital growth or in other terms the contribution of capital to GDP growth.



This graph surprises me very much! The growth of capital in Switzerland and Thailand correlate; only the levels of growth are different. This does not surprise since Swiss GDP is much lower than Thai GDP. But the directions of capital growth in both countries are very similar.

Question 3

Based on the information you have gathered, evaluate whether the growth performance of each of your countries is in line with the “stylized facts of economic growth.” Which are the most significant deviations from the stylized facts?

I will use Nicholas Kaldor’s stylized facts to answer this questions. These facts are given as follows:

1. The shares of national income received by labor and capital are roughly constant over long periods of time
As question 1 shows, alpha is quite constant over time, so this point is fulfilled by both countries.
2. The rate of growth of the capital stock is roughly constant over long periods of time
Both countries, surprisingly, show strong variations of the growth in capital stock. Switzerland’s stock is sometimes even negative. This point is thus not fulfilled by both countries.
3. The rate of growth of output per worker is roughly constant over long periods of time
The first graph below shows that the growth of output per worker in both countries is not constant over time and varies much. This point is not fulfilled by both countries.
4. The capital/output ratio is roughly constant over long periods of time
As the second graph below shows, the ratio is not constant over time. Surprisingly, it increases more in Switzerland than in Thailand. Thailand instead has a more or less constant or slightly increasing ratio. Thus, only Thailand fulfills this point.
5. The rate of return on investment is roughly constant over long periods of time
I have no data on this point.
6. The real wage grows over time
Since real GDP growth per worker is positive for both countries in most years we can assume that the real wage is growing at a similar rate. This point is fulfilled by both countries.

