

Econ. 4431. Macroeconomic Policy Midterm exam (with answers) There are three sections. Please read the instructions at the beginning of each section. Total Time allowed: 2 hours. Good luck!

Section 1. Answer both questions. Each is worth 20 points

1.1 Nike (a US company) produces a pair of shoes in China paying a local worker \$10. The shoes are then exported from China to a French retailer for \$50 (so Nike makes a profit of \$40) and the French retailer sells them in France to Nicolas Sarkozy for \$100. Compute the impact of these transactions on the following variables: US GDP, GNP and Current Account, China GDP, GNP and Current Account, France GDP, GNP and Current Account.

The total value produced is 100. GDP tells you where it is produced: 50 in China and 50 in France. GNP tells you who is earning the income associated to it: 10 goes to China (the wages) 40 to US (profits of Nike) and 50 to the Germany (the margin of the retailer), and CA tells you the flows of money from one country to the other.

US GNP : 40 US GDP: 0, US CA:40 China GDP: 50 China GNP: 10, China CA: 50-40=10 France GDP: 50 France GNP: 50, France CA=-50

1.2 Consider two countries that have similar saving rate, similar technology and similar depreciation rate of capital. The first country (country A) has a low capital per worker and the second (country B) has a high capital per worker. Use the logic of the Solow model to assess:

- a) Which one has a higher income per worker now?
- b) Which one would you expect to grow faster in the future?

Since income per worker is increasing in capital per worker the country with the higher capital per worker will have higher income per worker now.

Since the two countries are similar they will have the same steady state i.e. they will converge to the same long run value of capital per worker. But since the country with lower capital starts form a lower level it will grow faster in the future.

Section 2. Answer 4 of the following 5 questions. Each is worth 15 points

2.1 Qualitatively assess how the following changes are going to affect CPI inflation and GDP deflator inflation in the US: increase in the price of US produced cars, increase in the price of cars imported from Japan, increase in the production of luxury (i.e. very expensive) cars.

Increase in price of US produced cars: increase CPI inflation and GDP def inflation Increase in price of imported cars: increase CPI inflation but not GDP def inflation Increase in production of luxury goods, does not affect CPI but increases GDP def inflation

2.2 Briefly explain (with the use of the Solow Model) what is a poverty trap. (A clear graphical analysis is sufficient). Suggest a policy that can get a country out of a poverty trap.

Standard poverty trap graph. A massive inflow of capital from abroad

2.3 In Gopheria GDP per capita is 60000 Gophers (the currency used in Gopheria), in the US GDP per capita is \$40000. The market exchange rate between the Gopher and the dollar is 2 Gophers per one dollar. The price of a given basket of goods and services in Gopheria is 20000 Gophers and the price of the same basket in US is \$20000. Using market exchange rates to compare the GDP per capita, which country is better off? How your answer changes if you use PPP?

Using market exchange rates to convert Gophers into dollars income per capita in Gopheria is \$30k so below US. Using PPP Gopherians can afford 3 baskets while US can only afford two so Gopherians are better off.

2.4 Hugo Chavez (The president of Venezuela) hires Mckinsey to do a structural reform of the country. This leads to an immediate 10% increase in efficiency (TFP) in Venezuela (but no further changes in TFP). Assess (qualitatively) the effects of the reform on the level of GDP, investment, returns to capital and GDP growth in Venezuela. Do you think that the long run effect on GDP will be larger or smaller than 10%. Briefly motivate your assessments.

Answer If TFP increase 10% this would generate, on impact, roughly a 10% increase in GDP, as TFP increases the efficiency of every factor of production. But the increase in TFP would also increase returns to capital and thus would increase investment and hence capital stock. This would generate positive GDP growth rate (in addition to the initial 10%) so that the long run effect of the reform on TFP will be larger than 10%

2.5 Some economists argue that US right now is under the danger of the "twin deficits" i.e. simultaneous large government deficits and large current account deficit. Explain why a large government deficit can lead to a large current account deficit but also explain why this is not

necessarily the case i.e. under what conditions you would observe a large government deficit without a corresponding CA deficit?

Use the equation that relates S(p) + S(g) = I + CAIf government deficit is high the government saving S(g) is low so, keeping everything else constant, CA should fall. Notice though that if S(g) falls a CA deficit will not take place if either private saving S(p) increases or Investment I falls

Section 3. Answer 2 of the following 3 questions. Each is worth 10 points

3.1 Suppose that the income distribution in a given country has a Gini index of 0. What are the 90/50 and the 50/10 ratios for that country?

They are both 1. If the Gini is 0 then everybody is making the same income hence income at the 90th the 50th and the 10th quantiles are the same hence the ratios are 1.

3.2 Chile produces a lot of copper and the world price of copper relative to other goods is increasing over time. Do you agree with the statement that Chile's real GDP computed using base year method underestimates Chile's true value creation? Briefly explain why

Yes using the base year method increases in the price of copper are not reflected in GDP but the true value creation of GDP should include the fact that copper is over time a more valuable good.

3.3 You are pondering whether to invest in a country A or country B fund. The two countries look very similar with exception that country A has just signed an agreement with a very populous neighbor which will generate a large migration flow of workers into country A. On the basis of this information which fund would you pick? why?

Ceteris paribus returns to capital are higher in a country in with lower capital per worker and so they are expected to be higher in country A, because the immigration will lower capital per worker. Since, as an investor, you are interested in the returns to capital you should pick country A. Another way of seeing this is that wages are going to be lower in the country with high immigration so conditions for capital are more favorable.