

## Macroeconomics – Homework 1

Due to 10.3.2015, at the beginning of the lecture

1. Consider an economy that produces and consumes bread and automobiles. In the following table are data for two different years.

Good	2000		2010	
	Quantity	Price	Quantity	Price
Automobiles	100	\$ 50,000	120	\$ 60,000
Bread	500,000	\$10	400,000	\$ 20

- Using 2000 as the base year, compute the following statistics for each year: nominal GDP, real GDP, the price deflator for GDP, and a fixed-weight price index (CPI).
  - How much did prices rise between 2000 and 2010? Compare the answers given by the GDP deflator and the CPI. Explain the difference.
  - Suppose you are a senator writing a bill to index Social Security and federal pensions. That is, your bill will adjust these benefits to offset changes in the cost of living. Will you use the GDP deflator or the CPI? Why?
2. Suppose that the GDP of the Czech Republic is 60% of the GDP of Eurozone. By how many percent should the Czech economy growth rate exceed the growth rate in Eurozone to reach the GDP of Eurozone in 10 ten years?
3. Economies in country A and B started at the same level of real GDP. After 50 years, the real GDP in the country A rose with average annual rate of growth 2% and in the country B 4%.
- How much did the real GDP rise in country A and country B?
  - How many times is the real GDP higher in country A than in country B?
  - Suppose that at the beginning the size of the population in country A was the same as in country B. Population growth during the 50 years was in country A 3% and in country B 1%. How much did the real GDP per person rise in country A and country B?
  - How many times is the real GDP per person higher in country A than in country B?
4. Suppose that a country experiences a reduction in productivity – that is, an adverse shock to the production function.
- What happens to the labor demand curve? Use a diagram of the labor market.
  - How would this change in productivity affect the labor market – that is, employment, unemployment, and real wages – if the labor market is always in equilibrium?
  - How would this change in productivity affect the labor market if unions prevent real wages from falling?