

Seminar in microeconomics – Macroeconomic data, 2nd week

1. ! Mr. Daniel likes eating candies. Last year Mr. Daniel bought 75 packs of unbranded gummi bears for the price of CZK 40 each and 100 packs of popular Lipo candies for a price of CZK 20 each. This year he will purchase 120 packs of gummi bears for CZK 30 each and 90 packs of Lipo for CZK 35 each.

- Assume that the typical consumer basket contains 50 packs of each type. Calculate the nominal costs of a typical consumer for any year, the consumer price index and the rate of inflation.
- Calculate the nominal expenses of Mr. Daniel in each year.
- Taking first year as a base period determine the real expenditures of Mr Daniel in both years.
- Calculate the rate of inflation using the GDP deflator. Why does the value differ from the rate of inflation measured on the question (a)? Which inflation rate is more relevant for assessing changes in Mr. Daniel's cost of living?

2. ! Consider a hypothetical economy, which produces only two goods, cars and laptops:

	Number of laptops sold	Price of laptop	Number of cars sold	Price of car
2000	0.5 millions	6 000	1 milion	12 000
2015	5 milions	2 000	1.5 milion	20 000

Calculate:

- nominal GDP for 2000 and 2015
- real GDP
 - using 2000 prices
 - using 2015 prices
- the total and the average annual inflation rate between 2000 and 2015 using the GDP deflator and the CPI (consumer basket corresponds to the quantities from 2000). Explain why the results differ.
- total and average annual real GDP growth between 2000 and 2015 for both cases in point b). Explain why the results differ.
- ☺ What is the average annual growth rate of real GDP using the Fisher index (chained GDP)?

3. ! Czech Republic had 10,521 thousand inhabitants in 2010. The number of children younger than 15 years was 1,506 thousand, the number citizens above 65 was 1,539 thousand and the number of pensioners was 2,333 thousand. The number of students of secondary schools and universities was 904 thousand. 346 thousand citizens were on parental leave. There were 4,885 thousand employed and 384 thousand unemployed inhabitants.

- What was the unemployment rate, employment rate and the rate of economic activity in the Czech Republic in 2010?
- Assume that 50,000 unemployed people decided to stop looking for a job and live on welfare. How do these rates change?
- ☺ What is the expected impact of the following events on the unemployment rate in the Czech Republic: a reduction in the unemployment benefits, an increase in the retirement age, introduction of tuition fees?

4. ! To which expenditure components of GDP (C, I, G) belong the following transactions? The firm Let Kunovice sells the airplane L23 Super Blanik to:

- Czech Army
- Czech Airlines
- the firm Ryanair
- Miloš Zeman (the president)
- produces the airplane and sells it in the following year

5. ! The Czech farmer Brhel sells wagon of sugar beet to a Czech refinery for CZK 20 million. The destilery produces sugar and sells it to Kofola for CZK 35 million. Kofola uses the sugar for production of Kofola in a bottling plant in the Slovak Republic and the entire batch is then sold in the Slovak Republic for the equivalent of CZK 55 million. How do these transactions affect Czech GDP and GNP and Slovak GDP and GNP?

6. ! Suppose Mrs. and Mr. Slezak buy a new house for CZK 3 million and take mortgage for the entire amount. In the first year, the couple pays CZK 150,000 in mortgage installments. They rent the house for CZK 10,000 per month. By what amount do these transactions increase the annual GDP and how are the transactions divided between consumption and investment? How would the answer change if it was not a new building, but an old house?

7. ☺ In 2010 the GDP per capita was \$47,390 in the United States, \$17,890 in the Czech Republic and \$1,330 in India. Does it mean that the average Czech salary buys 2.6 times fewer goods and services than the average American salary and 13.5 times more goods and services than the average Indian salary?

8. ! How does each of these events affect the real GDP? Do you think that the change in real GDP also reflects the change in welfare?

- a) The storm prevents St. Matthew's fair from happening.
- b) The discovery of a durable type of wheat will increase farmers' harvest.
- c) Increased tensions between unions and employers will start a wave of strikes.
- d) Due to the decline in overall demand in the economy, companies are forced to lay off part of their workforce.
- e) The government approves a law that forbids companies to use old production methods that pollute the environment.
- f) A large proportion of university students interrupt their studies and find a manual job.
- g) The fathers decide to shorten their working hours and spend more time with their children.

9. ☺ If you were to compile a composite indicator that would compare the prosperity of individual countries, which indicators would you include and with what weights?

10. ! The economy of Gondor has an annual inflation rate of 4%, the population growth of 2% and the real GDP growth of 3%. Suppose that in the base year nominal and real GDP is identical and equal to 100, and the number of inhabitants is normalized to 1. Calculate:

- a) what is the percentage change in nominal GDP per decade
- b) what is the percentage change in real GDP per capita per decade
- c) what is the percentage difference between the nominal GDP and the real GDP.

11. ! Describe whether each of the following markets is better characterized by an assumption of elastic or sticky prices. In the case of markets with sticky prices indicate the source of the frictions:

- a) supermarket
- b) stock market
- c) market for computers
- d) pizza delivery
- e) hair salons

12. !/☺ We have the following data for an economy: household consumption expenditure (2342); gross domestic investment (637); export (364); import (430); government purchases of goods and services (296); expenditures of district administrations and municipalities (452); amortization (403); indirect taxes (304); social security contributions (306); undistributed profits of companies (118); corporate income taxes (88); transfer payments (418); tax on personal income (435). What is the GDP, GNP, net national product (NNP), personal income (PI), and disposable personal income (DPI)?

13. ☺ Private expenditures on education are treated as private consumption in the national accounts, public expenditures on education as government purchases. Some economists argue that public expenditures on education should be considered as investment. Why?