

Homework I
(Submission date: March 13 2025)
(Late submissions will not be evaluated)

1) Suppose the following data applies to the Turkey for the year 2020 (all figures are in billions of TL).

Net income of nonfarm unincorporated business and rent	62
Indirect taxes less subsidies	71
Change in inventories	15
Government current expenditures on goods and services	115
Net income of farm operators from farm production	68
Personal consumption expenditures	385
Export of goods and services	180
Interest and miscellaneous investment income	73
Gross fixed capital investment	120
Personal income tax	75
Income generated by Microsoft in Turkey	130
Social Security contributions	55
Total corporation profits before taxes	80
Undistributed corporation profits after taxes	8
Imports of goods and services	210
Government transfer and indirect payments to individuals	76
Wages, salaries and supplementary labor income	431
Capital consumption allowances (Depreciation)	40
Corporate taxes	35
Income generated by Koç Holding in Russia	350

Using the information given above, compute the following macroeconomic figures. Assume that the items that are not given above are equal to zero. (Show all your work and formulas)

- GDP from the expenditure approach (at market prices)
- GNP from the expenditure approach (at market prices)
- GNP from the income approach (at market prices)
- National Income
- Personal Income
- Disposable Income

2) Econland is a country in which only three final goods are produced: wheat, meat and computer. Information on population, nominal prices and total output for each good in years 2003 and 2010 are given below.

	2003		2010	
	per unit Price (\$)	Output (in millions)	per unit Price (\$)	Output (in millions)
Wheat	4.00	2	6.00	5
Meat	5.50	8	9.00	10
Computer	3.00	11	3.50	13

Note: The population of Econland for years 2003 and 2010 are 15,000 and 20,000; respectively.

- Calculate nominal GDP for 2003.
- Calculate nominal GDP for 2010.
- Calculate real GDP for 2003 and 2010 if the base year is 2003.
- Calculate the growth rate of real GDP between 2003 and 2010 (using 2003 prices).
- Has the standard of living increased or decreased since 2003?
- Calculate real GDP for 2003 and 2010 if the base year YEAR is 2010.
- Calculate the growth rate of real GDP between 2003 and 2010 (using 2010 prices).
- What is the implicit GDP deflator for 2003 and for 2010? (Use 2003 as the base year.)
- What is the implicit GDP deflator for 2003 and for 2010? (Use 2010 as the base year.)
- By what percent has the price level increased between 2003 and 2010? (Use GDP deflators with base year 2003).
- Besides GDP deflator what other price indices are used in measuring inflation?

3) Assume that nominal GDPs in 1990, 2000, and 2010 are 1,600 TL, 2,400 TL and 3,500 TL, respectively. If prices have gone up by 25% from 1990 to 2000, and have gone up by 15% from 2000 to 2010, what are the GDP values of 2010 in terms of 2000 and 1990 prices, respectively?

4) The following values describe the yearly Consumer Price Index (CPI) in a hypothetical economy.

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010
CPI	45	65	80	100	116	132	149	166	173

- What is the rate of inflation in 2002?
- What are the rates of inflation for the years 2003 and 2010?
- Can you determine which year is the base year?
- Change the base year of the index to 2007=100 and compute the index values for years 2003 and 2010 accordingly.
- Is the inflation rate affected when you change the base year?
- Suppose your disposable income was \$4,000 in 2004 and \$ 7,850 in 2010. How would you determine which year was the better?

5) Using the below table, calculate the value added at each stage of the production process.

Production of Bread (in terms of 1000 TL)			Production of Coffee (in terms of 1000 TL)		
Stage of Production	Value of Sales	Value Added	Stage of Production	Value of Sales	Value Added
Wheat farmer	10		Coffee grower	15	
Miller	25		Roaster	35	
Baker	85		Shipper and wholesaler	60	
Grocer	<u>95</u>		Starbucks Coffee in Xland	<u>120</u>	
		total:			total:

6) Label the following as either being a final or intermediate good.

Best-seller books purchased by a bookseller	
Tires purchased by individuals to replace used tires	
Tires purchased by a factory to install on a new car	
Two kilos of tomato purchased by a greengrocer for a dinner	
Dough bought by a housewife to bake a cake for her daughter's birthday	
Dough bought by a chef to bake a cake at his restaurant	
An architect builds a scale model of a house he has designed	
Recycled steel purchased by a steel manufacturer	
A book written by your favorite author purchased by you	