

In-class Exercise: Measuring the Macroeconomy

Directions: Work in groups of up to four people and answer the following questions. All papers will be collected, but only one member’s paper will be randomly selected and graded and all members of the group will receive the same grade.

By signing below, you agree that the following work represents the efforts of everyone in the group, and you are willing to accept as your own grade for the group project the grade earned from this representation of your group’s work. Every member must agree to these terms to earn a non-zero grade for this assignment.

_____ Signature Group Member 1	_____ Print Name	_____ Date
_____ Signature Group Member 2	_____ Print Name	_____ Date
_____ Signature Group Member 3	_____ Print Name	_____ Date
_____ Signature Group Member 4	_____ Print Name	_____ Date

1. Define **Nominal Gross Domestic Product (GDP)** and **Real GDP**. Explain which should be of more interest in economics and why.
2. List and define the five expenditure components of real GDP.
3. Describe the difference between a **stock** variable and a **flow variable**. For each of the following, state whether it is a stock or a flow: real GDP, consumption, investment, capital stock, deficit, debt, saving, wealth.
4. Define the **consumer price index (CPI)** and the **GDP deflator**. What do these measure?

5. Suppose an economy produces only veggie burgers and vegetarian chili, and the prices and quantities that prevailed for the last two years were given by,

	2015		2016	
	Price	Quantity	Price	Quantity
Veggie Burgers	\$8	12	\$9	15
Veggie Chili	\$10	14	\$12	16

(a) Compute nominal GDP for 2015 and 2016.

(b) Use 2015 as a base year and compute real GDP for 2015 and 2016.

(c) Compute the growth rate of production from 2015 to 2016.

(d) Compute the growth rate of nominal GDP from 2015 to 2016. Why is that absolutely meaningless? Never compute that again!

- (e) Compute a measure of the price level for 2015 and 2016, using 2015 as a base year. What measure did you use?
- (f) Define **inflation**. Compute the inflation rate from 2015 to 2016, using 2015 as a base year.
- (g) Suppose in 2015 you earned \$10.00 per hour working full time. In 2016 you earned \$12.00 per hour working full time. What was the growth rate of your nominal (i.e. unadjusted) wages? In terms of purchasing power of wages and based on the growth of *nominal* wages, do you think you earned more in 2015 or 2016? Explain.
- (h) Define the **real wage**. Again suppose you earned \$10.00 per hour in 2015 and \$12.00 per hour in 2016. Use your answers above to compute your real wage for 2015 and 2016. Did you earn more in 2015 or 2016? Is your answer consistent with your answer to the previous question?

6. Suppose the country of LoompaLand has a non-institutionalized, civilian adult population of 10,000. Of these people (Oompa Loompas, actually), 5,500 are employed at Willy Wanka's Chocolate Factory; 1,000 are employed as chocolate industry spies by Sluggworth's Chocolates; 1,500 are employed as vocalists in the local music industry; another 500 Oompa Loompas are looking for jobs, but are not yet employed; and 700 Oompa Loompas are not employed, but are not looking for jobs because they became frustrated and gave up trying to find a job. The remaining 800 Oompa Loompas are retired.
- (a) Define the **labor force**. How many Oompa Loompas are in the labor force in LoompaLand?
- (b) Define the **labor force participation rate**. Compute the labor force participation rate for LoompaLand.
- (c) Define the **unemployment rate**. Compute the unemployment rate for LoompaLand.
- (d) Define **discouraged worker**. How many discouraged workers are there in LoompaLand?