

Econ 522: Intermediate Macroeconomics, Spring 2018

Chapter 2 Practice Problem Set

1. *Production, Value Added, and Income Based GDP.* The following activities occur during a given year:
 1. A mining company pays workers \$200,000 to mine 75 pounds of silver. The silver is then sold to a jewelry manufacturer for \$300,000.
 2. The jewelry manufacturer pays its workers \$250,000 to make silver necklaces, which the manufacturer sells directly to consumers for \$1,000,000.
 - (a) Using the “production of final goods” approach, what is GDP?
 - (b) What is the value added at each stage of production? Using the “value-added” approach, what is GDP?
 - (c) What are the total wages and profits earned? Using the income approach, what is GDP?
2. *Nominal GDP, Real GDP, and Growth Rates.* Any economy produces three goods: cars, computers, and apples. Quantities and prices per unit for years 2015 and 2016 are as follows:

	Q_{2015}	P_{2015}	Q_{2016}	P_{2016}
Car	10	\$2,000	12	\$3,000
Computer	4	\$1,000	6	\$500
Apple	1,000	\$1	1,000	\$1

- (a) What is nominal GDP in 2015 and 2016? What is the growth rate in nominal GDP?
 - (b) Using 2015 as the base year, what is real GDP in 2015 and 2016? What is the growth rate in real GDP when 2015 is used as the base year?
 - (c) Using 2016 as the base year, what is real GDP in 2015 and 2016? What is the growth rate in real GDP when 2016 is used as the base year?
 - (d) Why are the two output growth rates constructed in (b) and (c) different? Is one more correct than the other?
3. *Deflator and Inflation Rate.* The following table contains measures of nominal and real GDP for the US in 2014-2016. (Numbers are in billions). Use the numbers to calculate the GDP deflator for 2014, 2015, 2016, and the inflation rate for 2015 and 2016.

Year (t)	Nom. GDP	Real GDP	GDP Deflator	Inflation Rate (π)
2014	17,393.1	15,982.3		
2015	18,036.6	16,397.2		
2016	18,566.9	16,660		

4. *Computing the CPI and Inflation Rate.* Assume the CPI basket is composed on 20 pizzas and 10 basketballs. Using the prices in the table below, and a base year of 2013, for each year - compute the CPI for that year and the inflation rate from the preceding year.

Year	P_{pizza}	$P_{\text{basketball}}$
2013	\$10	\$15
2014	\$11	\$15
2015	\$12	\$16
2016	\$15	\$15

5. *Labor Force Statistics.*

Number Employed	152,111
Number Unemployed	7,529
Adult Civilian Noninstitutional Population	254,742

Use the above numbers, reported in thousands from the Bureau of Labor Statistics website for December 2016, to calculate:

- The size of the labor force
- The unemployment rate
- The labor force participation rate