

Finance 30220
Quiz #3

Name _____

Section _____

- 1) Suppose that we have the following information on prices and production levels in the US:

	<i>Manufacturing</i>		<i>Services</i>	
	Price	Quantity	Price	Quantity
January 2007	\$50	400	\$20	200
January 2008	\$55	350	\$30	240

- a) Using 2008 as the base year, calculate nominal and real GDP for 2007 and 2008.

Nominal GDP

$$2007: (\$50)(400) + (\$20)(200) = \$24,000$$

$$2008: (\$55)(350) + (\$30)(240) = \$26,450$$

Real GDP

$$2007: (\$55)(400) + (\$30)(200) = \$28,000$$

$$2008: (\$55)(350) + (\$30)(240) = \$26,450$$

- b) Using your answers to (a), calculate a variable weight price index for 2007 and 2008.

$$2007: (\$24,000/\$28,000) = .857 \text{ (or, 85.7)}$$

$$2008: (\$26,450/\$26,450) = 1 \text{ (or, 100)}$$

- 2) We know that in the latest GDP report, real GDP (in 2000 \$s) for 2008Q4 was equal to \$11,599B. We also have some historical data for real GDP:

Year	Real GDP
2000Q4	\$9,887B
1950Q4	\$1,849B

Use the data to separate real GDP for 2008Q4 into its trend and cycle components.

First, calculate average annual growth from 1950Q4 to 2000Q4 (50 years)

$$\frac{\ln(9887) - \ln(1849)}{50} = .033 \text{ (3.3\% annual growth)}$$

Now, extrapolate the trend to 2008Q4 (8 years)

$$9,887e^{(.033)(8)} = 12,874$$

Therefore, we have the following for 2008Q4:

$$12,874 = \text{Trend}$$

$$(11,599 - 12,874) = -1275 \text{ (-9.9\%)} = \text{Cycle}$$