College of Business Administration
Department of Economics
Aggregate Economic Conditions & Analysis
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Assignment I

Question I

An economy consists of two firms and there is no foreign sector. Firm #1 produces $10,000 worth of output. The firm sells $4000 of the output to consumers, $3000 of the output to the government, and $2600 of the output to firm #2 (which uses $1600 of it as an input into its production and $1000 of it as an investment good). The remaining $400 worth of output is unsold at the end of the year and remains in inventory. The firm pays out $3200 to firm #2 ($2100 for intermediate goods used in production and $1100 for goods used for investment), $4000 in wages, $1000 in taxes, sets aside $800 for capital consumption allowance, and has before tax profits (which you can determine).
Firm #2 produces $8000 worth of output. This firm sells $3000 of the output to consumers, $1800 of the output to the government, and $3200 to firm #1 (used as described above). Firm #2 pays out $2600 to firm #1 (as discussed above), $3200 in wages, $800 in taxes, sets aside $600 for c.c.a., and also has before tax profits. Using this information, determine GDP using both approaches (income and expenditure).

Solution

Expenditure Approach

Consumption = $4000 + $3000 = $7000; Government = $3000 + $1800 = $4800; Investment = $1000 + $1100 + $400 (the last is increase in inventories) = $2500

Income Approach

Wages = $4000 + $3200 = $7200; Indirect taxes = $1000 + $800 = $1800; c.c.a. = $800 + $600 = $1400 (used as part of what pays for the investment goods); interest, rent = 0; profits = value added minus expenses = $2100 for firm #1 and $1800 for firm #2 = $3900 total.

Question II:

Suppose GDP is $20,000 in 1990 and $24,000 in 1991. The CPI is 125 in 1990 and 140 in 1991. Compute the inflation rate between the two years.

Express 1991 GDP in 1990 prices (using the CPI to correct GDP for price changes). How much has GDP increased after correcting for price changes. If a family has its income rise by 20% (the same as GDP), is it better off, given the price increase?

Solution

140/125 = 1.12, so inflation is 12%, or prices rise by 15, and 15/125 = .12
1991 GDP in 1990 prices = $24,000 x 125/140 = $21,428.57
Increase in "real" GDP = $1428.57/$20,000 = .0714 or 7.14%
If a family has income go up by 20%, it would usually be better off, unless what it really liked went up in price by more than 20%.

Question III:

For each of the following variable, state if the variable is countercyclical, procyclical or acyclical.

a) Consumption. **Procyclical**
b) Investment. **Procyclical**
c) Government Spending. **Acyclical**
d) Exports, Imports and Net Exports. **Procyclical**
e) Unemployment. **Countercyclical**

Question VI:

Starting from 1959, graph the annual time series of GDP. Also graph the log of GDP. Graph GDP per capita and the log of GDP per capita.

Visit the www.economagic.com web site (USE CONSTANT DOLLARS – REAL GDP)