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Principles of Economics

Study Questions – Deflator

A hypothetical economy produces on two final goods and services: bread and haircuts. Here is some data for 1992-1995

| | price per haircut | quantity of haircuts |
|------|-------------------|----------------------|
| 1992 | \$9 | 21 |
| 1993 | \$9.50 | 22 |
| 1994 | \$10 | 25 |
| 1995 | \$12 | 26 |

| | price per bread | quantity of breads |
|------|-----------------|--------------------|
| 1992 | \$0.90 | 200 |
| 1993 | \$0.95 | 220 |
| 1994 | \$1.00 | 150 |
| 1995 | \$1.05 | 260 |

Calculate this nation's nominal GDP, real GDP, GDP deflator, and annual inflation rates. Use 1994 as base year.

Answers to Study Questions – Deflator

A hypothetical economy produces only two final goods and services: bread and haircuts. Here is some data for 1992-1995

| | price per haircut | quantity of haircuts |
|------|-------------------|----------------------|
| 1992 | \$9 | 21 |
| 1993 | \$9.50 | 22 |
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Calculate this nation's nominal GDP, real GDP, GDP deflator, and annual inflation rates. Use 1994 as base year.

Answers:

$$\begin{aligned} 1992 \text{ nominal GDP} &= (9 \times 21) + (.90 \times 200) = 369 \\ 1993 \text{ nominal GDP} &= (9.50 \times 22) + (.95 \times 220) = 418 \\ 1994 \text{ nominal GDP} &= (10 \times 25) + (1.00 \times 150) = 400 \\ 1995 \text{ nominal GDP} &= (12 \times 26) + (1.05 \times 260) = 585 \end{aligned}$$

$$\begin{aligned} 1992 \text{ real GDP} &= (10 \times 21) + (1.00 \times 200) = 410 \\ 1993 \text{ real GDP} &= (10 \times 22) + (1.00 \times 220) = 440 \\ 1994 \text{ real GDP} &= (10 \times 25) + (1.00 \times 150) = 400 \\ 1995 \text{ real GDP} &= (10 \times 26) + (1.00 \times 260) = 520 \end{aligned}$$

$$\begin{aligned} 1992 \text{ GDP deflator} &= 100 \times (369/410) = 90 \\ 1993 \text{ GDP deflator} &= 100 \times (418/440) = 95 \\ 1994 \text{ GDP deflator} &= 100 \times (400/400) = 100 \\ 1995 \text{ GDP deflator} &= 100 \times (585/520) = 112.5 \end{aligned}$$

$$\begin{aligned} 1992\text{-}1993 \text{ inflation rate} &= (95 - 90) / 90 = .05555555, \text{ or } 5.55555555\% \\ 1993\text{-}1994 \text{ inflation rate} &= (100 - 95) / 95 = .052631, \text{ or } 5.2631\% \\ 1994\text{-}1995 \text{ inflation rate} &= (112.5 - 100) / 100 = .125, \text{ or } 12.5\% \end{aligned}$$