

Chapter 19: #28-33 all

28. small nation and big forest

worth of trees: \$200

↳ \$100 → \$150 lumber

↳ \$100 → \$250 bookshelves

\$600 = GDP

28) Better analysis:

\$200 Trees $\xrightarrow{\text{labour}}$ \$200 logs

\$100 logs $\xrightarrow{\text{labour}}$ \$150 cut lumber

\$100 cut lumber $\xrightarrow{\text{labour}}$ \$250 furniture

Total Output: \$250 furniture

\$50 unused lumber

\$100 unused logs

GDP = \$400

29. Bank + prime interest rate: best year

(a) lender: 1970 - low inflation, low interest

(b) borrower: 1970 - low inflation, low interest

when interest + inflation is high → no borrowers

no borrowers = bad for banks

Lender best year 1981: you would make 8.6% real

Borrower best year 1974: you are borrowing at -0.2% real

30. Mortgage loan

(a) borrower: 2001 - low interest rate, low inflation rate

7.0 - 2.8 = 4.2% ✓ correct

(b) lender: 1984 - high interest rate, low inflation rate

12.4 - 4.3 = 8.1% ✓ correct

31. Calculate Per capita GDP

Ethiopia:

- Population: 55 M

- GDP: \$80

Costa Rica

- Population: 4 M

- GDP: \$90

per capita: \$2250

formula

$$\text{GDP per capita} = \frac{\text{GDP}}{\text{population}}$$

$$\text{GDP per capita} = \frac{8,000,000,000}{55,000,000} = 145.4545 \quad \checkmark \text{ correct}$$

$$\text{GDP per capita} = \frac{9,000,000,000}{4,000,000} = 2250 \quad \checkmark \text{ correct}$$

Costa Rica has a higher per-capita GDP ✓

32. Rise in Percentage: Denmark GDP capital raise between 1980-2000

1980:

- GDP: \$10 B

- Pop: 5.1M

$$\text{GDP per capita} = \frac{\text{GDP}}{\text{population}}$$

$$= \frac{70,000,000,000}{5,100,000}$$

$$\text{GDP/cap.} = 13725.4902$$

2000:

- GDP: \$160 B

- Population: 5.3 M

$$\text{GDP per capita} = \frac{\text{GDP}}{\text{population}}$$

$$= \frac{160,000,000,000}{5,300,000}$$

$$= 30188.6792$$

percentage rise formula

$$\text{PR} = (\text{new value} \div \text{old value} - 1) \times 100$$

$$= \frac{30188.6792}{13725.4902} - 1 \times 100$$

$$= 2.1994 - 1$$

$$= 1.1994 \times 100$$

$$\text{PR} = 119.94\%$$

✓ Correct. Their GDP per-capita rose by 120%

33. Czech Republic: GDP per capita

GDP: 1,800 B koruny → \$72,000,000,000

- 25 koruny / US dollar

Population: 20 M

$$\frac{1,800,000,000,000 \text{ koruny}}{25 \text{ koruny}} \Bigg| \frac{1 \text{ US dollar}}{25 \text{ koruny}} = 7.2 \times 10^{10}$$

$$\frac{72,000,000,000}{72,000,000,000}$$

$$\text{GDP per capita} = \frac{\text{GDP}}{\text{population}}$$

$$= \frac{\$72,000,000,000}{20,000,000}$$

$$\text{GDP per capital} = \$3600$$

✓ Correct. 3600 USD/person