

year	cpi
1973	44.4
1974	49.3
1975	53.8
1976	56.9
1977	60.6
1978	65.2
1979	72.6
1990	130.7
1991	136.2
1992	140.3
1993	144.5
1994	148.2
1995	152.4
1996	156.9
1997	160.6
1998	163.1

Find Inflation For each year

$$\% \Delta = \frac{(T_2 - T_1)}{T_1} \times 100$$

5. Calculate the following given the following information about the economy in 1975, 1985, and 1995:

$$\text{Real} = \frac{\text{nominal}}{\text{Price Level}}$$

$$\% \Delta = \frac{(T_2 - T_1)}{T_1} \times 100$$

Price Level

	1975	1985	1995
Nominal GDP(in billions of dollars)	1,630.6	4,180.7	_____
GDP deflator(index, 1992=100)	42.2	78.6	108
Real GDP(in billions of 1992 dollars)	_____	_____	6,756.48

- Nominal GDP in 1995.
- Real GDP in 1992 dollars in 1975 and 1985.
- Rise in prices from 1975 to 1985.
- Growth in nominal output from 1975 to 1985.

6. Answer each of the following questions about nominal output, real output, and inflation:

$$\% \Delta \text{ real} = \% \Delta \text{ nominal} - \text{inflation}$$

- Nominal output increased from 6.5 trillion to \$6.9 trillion from 1993 to 1994. The GDP deflator rose over that some year by 2.3%. By how much did real output increase?
- Real output increase from \$4.9 trillion to \$5.1 trillion from 1992 to 1993. The GDP deflator rose over that same year by 3%. By how much did nominal output increase?
- Real output decrease from \$4.8 billion in 1990 to \$4.7 billion in 1991. Nominal output rose by 2%. By how much did the price level rise from 1990 to 1991?

Annual Rate of
Year Average Inflation

year	cpi	inflation rate
1973	44.4	
1974	49.3	11.0%
1975	53.8	9.1%
1976	56.9	5.8%
1977	60.6	6.5%
1978	65.2	7.6%
1979	72.6	11.3%
1990	130.7	5.4%
1991	136.2	4.2%
1992	140.3	3.0%
1993	144.5	3.0%
1994	148.2	2.6%
1995	152.4	2.8%
1996	156.9	2.9%
1997	160.6	2.4%
1998	163.1	1.6%

$$\% \Delta = \frac{(T_2 - T_1)}{T_1} \times 100$$

5. Calculate the following given the following information about the economy in 1975, 1985, and 1995:

Price Level
 Nominal GDP (in billions of dollars)
 GDP deflator (index, 1992=100)
 Real GDP (in billions of 1992 dollars)

1975	1985	1995
1,630.6	4,180.7	7297
42.2	78.6	108
3862.56	5318.96	6,756.48

$$\text{Real} = \frac{\text{Nominal}}{\text{Price Level}} = \frac{6756.48}{1.08} = \frac{N}{1.08}$$

1.08×6756.48

in percent form

a. Nominal GDP in 1995.

b. Real GDP in 1992 dollars in 1975 and 1985.

$$\text{Real} = \frac{\text{Nominal}}{\text{Price Level}} = \frac{1630.6}{.422} ; \frac{4180.7}{.786}$$

c. Rise in prices from 1975 to 1985.

$$\% \Delta = \frac{(T_2 - T_1)}{T_1} \times 100 = \frac{(78.6 - 42.2)}{42.2} \times 100 = 86.2\%$$

d. Growth in nominal output from 1975 to 1985.

$$\% \Delta = \frac{(T_2 - T_1)}{T_1} \times 100 = \frac{(4180.7 - 1630.6)}{1630.6} \times 100 = 156.4\%$$

6. Answer each of the following questions about nominal output, real output, and inflation:

$$\% \Delta = \frac{(T_2 - T_1)}{T_1} \times 100 \rightarrow \frac{(6.9 - 6.5)}{6.5} \times 100 = 6.15\%$$

a. Nominal output increased from 6.5 trillion to \$6.9 trillion from 1993 to 1994. The GDP deflator rose over that same year by 2.3%. By how much did real output increase?

$$\% \Delta \text{ Real} = \% \Delta \text{ Nominal} - \text{inflation}$$

$$2.3\% = 6.2\% - 2.3\%$$

b. Real output increase from \$4.9 trillion to \$5.1 trillion from 1992 to 1993. The GDP deflator rose over that same year by 3%. By how much did nominal output increase? 7.1%

$$\frac{(5.1 - 4.9)}{4.9} \times 100 = 4.1\%$$

$$\% \Delta \text{ Real} = \% \Delta \text{ Nominal} - \text{inflation}$$

$$4.1\% = N - 3\%$$

c. Real output decrease from \$4.8 billion in 1990 to \$4.7 billion in 1991. Nominal output rose by 2%. By how much did the price level rise from 1990 to 1991? 4.1%

$$\% \Delta \text{ Real} = \% \Delta \text{ Nominal} - \text{inflation}$$

$$-2.1\% = 2\% - \text{In}$$

$$\frac{(4.7 - 4.8)}{4.8} \times 100 = -2.1\%$$