

Imagine yourself as the owner of a movie theater. At the end of the year when calculating your revenues you find that each year you are earning more income from your business but you also notice that the prices you are having to charge for tickets, popcorn and soda keep rising. How can you know how much of your revenue increase has come from selling more tickets and concessions or how much of it is from increased prices? By using the concept of the GDP deflator, you can calculate the real income of your theater economy. Use the following formulas:

Nominal Revenue (GDP) = (Good A: Price x Quantity Sold + Good B: Price x Quantity Sold)

Real Revenue (GDP) = (Good A: Price (Base Year) x Quantity Sold) + (Good B: Price (Base Year) x Quantity Sold)

$$\text{GDP Deflator} = \frac{(\text{Good A: Price (Current Year)} \times \text{Quantity Sold}) + (\text{Good B: Price (Current Year)} \times \text{Quantity Sold}) + \dots}{(\text{Good A: Price (Base Year)} \times \text{Quantity Sold}) + (\text{Good B: Price (Base Year)} \times \text{Quantity Sold})}$$

Rate of Inflation: $\{(\text{Year 2 Deflator} / \text{Year 1 Deflator}) - 1\} \times 100\%$

Movie Theater	Year One	Year Two	Year Three	Year Four
Ticket Price(xQ)	\$5.00 (x2000)	\$5.50 (x1800)	\$6.50 (x1600)	\$7.00 (x1500)
Popcorn (xQ)	\$3.00 (x1200)	\$3.25 (x1200)	\$4.00 (x1000)	\$4.25 (x1000)

*(xQ) = quantity sold throughout the year.

1. Start by calculating the nominal revenues of the movie theater (the price of each good times the quantity sold) for each year.

2. Convert the nominal revenue figures into real revenue by converting all prices back to their year one level.

3. Using your knowledge of the GDP deflator calculate a deflator for nominal revenues of your theater versus real revenues (use year one as the base year=100).

4. Calculate the rate of inflation between each year.

5. Summarize your findings in a short paragraph. Some things to think about while writing, a.) Were the increases in revenues the result of increased output (i.e. higher ticket sales, popcorn sales etc.) or were they the result of price inflation? b.) How could the inflation of prices be misleading to the theater owner regarding how well their theater business is doing?