Extra Reading 5 : Price Inflation

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This seems like something you might study in a Macroeconomics class. What we will study in a Microeconomics class is how price inflation affects our available choices.

Inflation : In English, inflation would mean increase of something.

Price Inflation : Increase in prices. Causes behind price inflation could be the rise in money supply. (Don't worry, we won't be analyzing money supply). Understand this, though, if prices fall, we call it deflation. Typically, inflation is represented in percentage terms. Eg: Today, one bottle of soda costs $1. Tomorrow the same bottle is sold for $1.50. We will say, price of a bottle of soda has inflated by 50%, or there is 50% inflation in the price of a bottle of soda.

So what happens if there is a price inflation? You can afford less than what you could before inflation.

Eg: Yesterday you could buy a lb. of potato for $4. Today, the price of a lb. of potato is $6. So, if you still have only $4 in your pocket, you can buy with the $4, only 4/6 lb. of potato; as you can see, what you can afford goes down. You **purchasing power** falls.

Let's analyze a two good case. Figure A.

1. Your **budget constraint(old) : 50X + 30Y = 300**. So your income is $300. Price of 1 unit of X is $50 and price of 1 unit of Y is $30. You can afford a maximum of 6 units of X(if you spend all your money on X) or you could afford a maximum of 10 units of Y(if you spend all your money on Y), or any other combination of (X,Y) in your choice set.
2. Now suppose, the prices double. So inflation is 100%. Thus, 1 unit of X costs $100, and 1 unit of Y costs $60. Your income stays the same. So your **budget constraint(new): 100X+60Y = 300**. You can afford a maximum of 3 units of X or a maximum of 5 units of Y.
3. Due to inflation, the trapezium ACDB is no longer a part of your Budget Set. So what has inflation done? It has changed your feasible choice set. Has it **changed** your optimum choice of X and Y? **YES**. Previously, you would choose a point on AB as your optimum choice. Now, you choose a point on CD as your utility maximizing optimum choice. Naturally, the point on CD would lie on a lower indifference curve(for the types of indifference curves we have considered), compared to the point on AB. Inflation just lowered your utility.
4. Let us look at this a little more carefully. On your OLD budget constraint, if you wanted to spend all your money on good Y, you would spend $300, and buy 10 units of Y. With the inflation in effect, you can't buy 10 units of Y any more; since it is now not longer affordable. But what if you really wanted to buy 10 units of Y? Well, now with the inflation, 1 unit of Y costs you $60. So 10 units of Y would cost you $600. Unfortunately, you only have $300 in your pocket.
5. **QUESTION:** If your government wanted to make sure that you can still afford 10 units of Y, how much money should your government pay you? In other words: *What is the **minimum** amount the government needs to pay to ensure you can **at least** afford the bundles on your old budget line or in your old budget set?* In countries such as India, this is typically done to help people who face inflation; there it is called "Dearness Allowance". You can simply see the following: You have $300 in pocket. You need $600 to afford the 10 units of Y. So government needs to pay you $600-$300 = $300. In fact, if the government wanted you to be able to afford any point on the

OLD budget constraint <u>after</u> price inflation, it would need to give you $300 extra, such that your income would be $300 + $300 = $600. Why?

6. Because of this:

OLD Budget constraint = **50X + 30Y = 300.** Price inflation of 100% means prices double. So multiply both sides by 2 and you have **100X + 60Y = 600.** Look at the prices: they are the inflated prices. Look at the income : It is $600; exactly $300 more than your previous income. If <u>both</u> prices go up by the same multiplied amount(factor), then your choice set is unchanged if your income goes up by the same multiplied amount(factor). So when we doubled prices and made the choice set smaller, instead if we also doubled income, the choice set would be unchanged. The basic idea is that keep the constraint exactly same. And things are fine. If you are still not convinced, plot

SUPPORTED Budget constraint : **100X + 60Y = 600.** You will lie on the old budget line and this will include your old choice set AB0.

Price inflation - both goods

FIGURE   **A**

7. What happens if only the price of X doubles, but price of Y is unchanged?
   OLD Budget constraint = **50X + 30Y = 300**
   NEW Budget constraint **100X + 30Y = 300**
   Well your budget line twists instead of shifting down.(Figure B). Triangle ABD is no longer a part of your budget set.
8. Now, *what is the **minimum** amount your government needs to pay you to ensure you can **at least** buy the bundles on the old budget line on in your old budget set*? The method is similar to

before. Notice, the price of X has gone up. So if the government can make sure you afford the maximum amount of X you could buy previously, that would be it.

Old budget line : Maximum X I could afford : $300/$50 = 6 units.

At the new prices, this 6 units of X would cost : 6 * $100 = $600. So the government needs to pay me at least $600-$300 = $300 extra, to ensure I can afford atleast the bundles on my old budget constraint or my old budget set. So, if the government gave you $300 extra, your SUPPORTED budget constraint: **100X + 30Y = 600**. So basically, the compensation from the government creates my supported budget line, which makes at the very least, all the bundles from my pre-inflation OLD choice set affordable to me.

 Don't believe me? Plot

SUPPORTED budget constraint: **100X + 30Y = 600** and see your old budget set AB0 lies inside it.

9. In this example, something interesting happened. Now, with the government support, you can buy more of Y if you spend all your money on Y. Before inflation, maximum Y you could buy on OLD budget constraint : $300/30 = 10.

Now, with the SUPPORTED budget constraint you can buy a maximum Y of $600/30 = 20.

Price inflation - one good

FIGURE   **B**