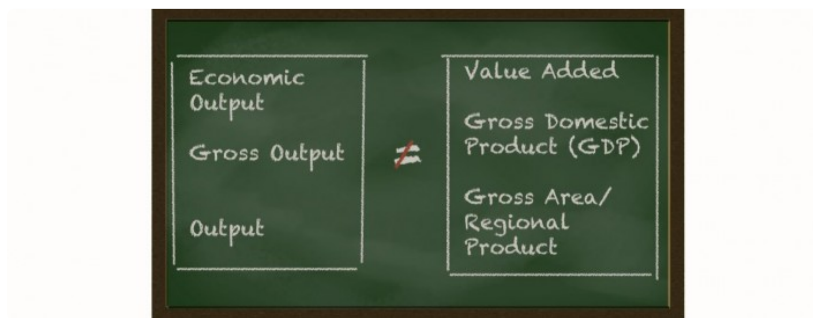




Asa S. Hopkins
Docket 7970, Second Remand Rebuttal
Exhibit Rebuttal D



What's the difference between Economic Output and GDP?

September 26, 2014 / in Economic Development / by Paul

Question: If an impact study identifies an increase in economic output of \$1.0 million, is that the same as a \$1.0 million increase in the gross domestic product?

Answer: No. If you thought the answer was yes or weren't certain, I assure you, you're not alone. I find that many people believe economic output and gross domestic product are the same thing or just aren't sure what we're even talking about. If you understand the following rough explanation, you'll be ahead of 90% of the public in comprehending economic impact studies.

The graphic below illustrates some alternate terms for the two concepts we're discussing. Economic output is sometimes referred to as gross output or simply output. As stated before, economic output is different from GDP. Gross domestic product is a measure of "value added" at

the national level. The concept of gross domestic product at the local level is sometimes referred to as gross area product or gross regional product. Going forward, I will use the terms economic output vs. value added because it will prove to be more intuitive.

The two concepts are similar in the sense that both economic output and value added are measurements of economic productivity in a set area over a set period of time. The measurements are often taken with respect to a given stimulus (like a new firm or a change in taxes) and used to analyze its impact on the defined economy.

So how are they different?

Economic output measures the value of all sales of goods and services. This sounds simple enough but in this way, it is the sum of the final purchases and intermediate inputs, therefore resulting in the double counting of intermediate purchases.

For example, a furniture manufacturer buys wood from a saw mill for \$100 and adds value to it by producing a piece of furniture which is then sold for \$300. Economic output would total \$400—the value of all sales in the chain of activity. The value of the wood is therefore counted twice—once as an intermediate good for the furniture manufacturer and again in the value of the furniture.

Value added focuses only on additional value of goods and services produced, thus is defined as economic output less intermediate inputs. By subtracting the goods that already passed through the market once and are now being used as a component of a new product, the assessment is more strictly defined compared to economic output.

Value added = Gross output – Intermediate Inputs

The value added in the previous example totals only \$300 (as opposed to \$400 economic output). This is because value added subtracts the sale of the purchased wood (intermediate input) of \$100 from the total sales price of \$400, resulting in value added of \$300.

It's easy to imagine how this difference between economic output and value added can become really substantial when you consider the sale of a good that is composed of lots of pre-manufactured goods, for example a car that is an assemblage of tires, windshields, GPS systems, light bulbs, etc. If we were to mistakenly compare the economic output of one car manufacturer to the value added of another, we would be comparing apples to oranges and therefore have a wrong interpretation of the analysis.

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