Response

On the Go: De-Mystifying Gross Output

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I appreciate David Colanders's fairly positive endorsement of gross output, the new quarterly measure of the economy released by the Bureau of Economic Analysis [BEA 2014]. Despite the negative headline and some misgivings in the text, he calls the development of GO a "good idea" and a "better measure [of economic activity] than GDP."

As Colander notes, GO is a macroeconomic tool that I have advocated for years and which is now becoming a reality. GO, the first quarterly macro statistic to be produced since GDP was invented in the 1940s, deserves the attention of all economists. Most textbooks will include GO in their next edition, and many other countries will soon be releasing data of their own. I thank David for being the first economist to discuss its implications in the pages of a professional journal.

Let me respond to Colander's criticisms and suggested improvements of GO.

First, on confusing terminology: I agree that the BEA's use of the term "gross" in gross domestic product and gross output can be misleading to students. In fact, the current definition of GDP by the BEA can be confusing even to professional economists. According to the latest releases, GDP is "the output of goods and services produced by labor and property located in the United States." That sounds awfully similar to "gross output," even though they officially identify GO as "a measure of an industry's sales or receipts, which can include sales to final users in the economy (GDP) or sales to other industries (intermediate inputs)" [BEA 2014].

Colander agrees with my recommendation that the BEA simply add the word "final" in the definition of GDP to help avoid confusion, as in "the *final* output of goods and services ..." This is the standard definition of GDP in the textbooks, "the value of final goods and services."

In this regard, I'm happy to report that, according to the new BEA director, Brian Moyer, the BEA is planning to revise the definition of GDP to make it more accurate.

Second, my own experience suggests that GO is not difficult to grasp. Having taught the relationship between GO and GDP in my macroeconomic classes and textbook, *Economic Logic* [Skousen 2014[2000]], I've found that students, especially in business and finance, find the concepts easy to understand and valuable in acquiring a complete view of economy.

GO and its relationship with GDP can be shown with a simple four-stage diagram (see Figure 1), illustrating how every good and service goes through four stages of production. For example, using a micro example from Taylor [2004, p. 147], a cup of espresso coffee starts with the coffee grower (Stage 1), then to the roaster (Stage 2), then to the shipper and wholesaler (Stage 3), and finally to the coffee house at a coffee house (Final Stage 4). Each stage adds value.

Figure 1. Universal four-stage macro model of the economy.

Source: Skousen [1990: pp. 171, 291–292, 2007: pp. xv, 2014[2000]: pp. 58, 332].

It is an easy transition to a four-stage macro model. We simply aggregate the sales or revenues of all producers over these stages of production.

The value of GO is found by adding up all the revenues/sales at all four stages of production. GDP is the final stage only. Using the BEA data, GO was valued at US\$30 trillion in 2013, while GDP reached \$17 trillion. You can find the quarterly data under “Gross Output by Industry”: <http://www.bea.gov/iTable/iTable.cfm?ReqID=51&step=1#reqid=51&step=51&isuri=1&5114=q&5102=15>.

Thus, we see in this single four-stage macro model the simple relationship between GO and GDP. Just as every firm’s revenues/sales add profit to the bottom line, so GO measures the total value of the production process that generates the finished products and services to be used by consumers, businesses, and government (GDP). Jorgenson et al. [2006] summarized this relationship as follows: “Gross output [GO] is the natural measure of the production sector, while net output [GDP] is appropriate as a measure of welfare. Both are required in a complete system of accounts” (p. 5).

Third, I agree with Colander that gross output may not the best term to describe total economic activity in the economy. I originally used the term gross national output in *The Structure of Production* [Skousen 1990, pp. 191–192], but decided later to change the name to a more descriptive title, gross domestic expenditures or GDE [Skousen 2007], for the same reasons Colander stated: “GDP was not designed to measure market activity” [Colander 2014, p. 455]. GO or GDE is.

What are the advantages of GO or GDE? I see four advantages.

First and foremost, GO is a better indicator of total economic activity [Colander 2014, p. 453, p. 455]. As such, it actually removes confusion that GDP causes.

GDP has created much mischief in the interpretation of economic news. For example, using GDP as “the” single indicator of the economy, the media constantly promotes the claim that “consumer spending drives the economy.” The source of this assertion is GDP data. Since personal consumption expenditures represents around 68 percent of GDP, journalists are regularly making statements such as these: “Household spending generates more than two-thirds of total economic output, so sturdy spending gains should translate into economic growth” [Heubsdorf 2014].

Yet studies from Robert Solow to Greg Mankiw demonstrate that economic growth is dependent mostly on technology, productivity, and capital investment. Retail or consumer spending is not a leading indicator. The 10 leading indicators compiled monthly by the Conference Board are virtually all supply-side driven, such as manufacturers’ new orders, building permits, new orders of non-defense capital goods, yield curve, stock market, and the real money supply. Even the much touted “consumer expectations” index has recently been modified to “index of consumer expectations of business conditions”

Figure 2. Quarterly changes for nominal GDP and GO, 2007–2013.
Source: Bureau of Economic Analysis

(<http://www.conference-board.org>). Most of the questions in the consumer survey are about business conditions.

Second, the business sector is much larger than often reported. Using GO instead of GDP as a measure of economic activity demonstrates that business expenditures, what the IRS calls “gross business receipts” or accountants call business-to-business transactions (B to B), constitutes 52 percent of GO, while personal consumption expenditures adds up to less than 40 percent of GO. Using the most recent first quarter 2014 data, business spending amounted to \$15.7 trillion for the year, while consumer spending came to \$11.9 trillion.

In sum, business spending is substantially larger than consumer spending.

By incorporating GO in the textbooks and releasing GO data on a quarterly basis, the media will be encouraged to use GO as the best measure of economic activity, and will hopefully avoid the naïve view that consumer spending is the primary source of a higher standard of living.

Third, GO is a better indicator of the business cycle than GDP. For example, during the 2008–2009, nominal GDP fell only 2 percent, hardly reflecting the depth of the Great Recession. Nominal GO fell over 5 percent. GO also tends to rise faster than GDP during periods of prosperity or recovery (see Figure 2).

Fourth, GO may be a better forecaster, as Colander [2014, pp. 453–454] suggests. First signs of a recession or recovery may take place in the early stages of production. I am testing this hypothesis now.

HISTORICAL BACKGROUND OF GO

Colander mentions the history of GO. Let me give a little more background. My original work, *The Structure of Production* [Skousen 1990] was built on the shoulders of two

giants, Wassily Leontief and his development of input–output tables [Leontief 1966], and Friedrich Hayek and his Austrian stages-of-production model [Hayek 1935]. Both won Nobel prizes for their work in these areas.

Hayek made no attempt to measure his “triangles”; his *Prices and Production* was a purely theoretical work. Leontief’s development of input–output tables was a major advance in putting numbers on individual industries, and showing the “hierarchy of interindustrial dependence,” but he showed little interest in an aggregate figure such as GO as a macroeconomic tool [Leontief 1966, pp. 14–15, 162]. His I–O data was compiled every 5 years, and only in the 1990s, after *Structure* was published, did the BEA begin measuring “Gross Output by Industry” on an annual basis. Even then, it was 2–3 years behind, and few economists or journalists paid attention. Now all that is changing with the up-to-date quarterly data being published.

A NEW WAY TO LOOK AT THE ECONOMY

Finally, as to whether GO is a “revolutionary” way to measure the economy and a “big deal,” as Steve Forbes suggests, consider the following: (1) GO is the first quarterly macro statistic to be produced by the BEA since the development of GDP and (2) the GO model reverses the order of importance of the drivers of the economy. Using the standard GDP model, consumer spending drives the economy; using the new GO model, business investment drives the economy. The GO model is more consistent with economic growth theory.

At a press conference held in April, 2014, at the BEA, Steven Landefeld, the director of the BEA that spearheaded the new series of “gross output by industry,” declared that the quarterly GO data offers a “unique perspective” and a “powerful new set of tools of analysis.”

In terms of a new view of the economy, CNBC’s economic commentator Kudlow [2006] best summarizes my thesis: “Though not one in a thousand recognizes it, it is business, not consumers, that is the heart of the economy. When businesses produce profitably, they create income-paying jobs and thus consumers modernize and update all their tools, structures, and software. Capital formation is the key to worker productivity and consumer prosperity. Visionary entrepreneurs, those who discover new technologies or innovate those that exist, must be financed with capital. In the longer term, capital-induced productivity increases lead to greater wage gains and enhanced consumer spending power”.

In a broader sense, this intertemporal structural approach to macroeconomics may be viewed as a major shift in perspective: economists should look at the inner workings of the “make” economy, not just the “use” economy; they should emphasize not only the Consumer Price Index, but the Commodity Price Index and the Producer Price Index. Rather than focus on just one interest rate (the 10-year Treasury yield), they should look at the yield curve, or multiple interest rates such as T-bills and 30-year mortgage rates. Instead of looking only at “the” unemployment rate, they should examine the unemployment and employment data in various industries and the length of time it takes laid off workers to find a job. The stock market is more than a single “index” like the Dow Jones Industrial Average or the Nasdaq, but a series of industries and sectors. Lastly, economists should look at the early stages of production in GO for clues about the business cycle, not just the spending patterns of consumers, producers, and government in the “use” economy (GDP).

Some may see this new approach as an example of complexity economics. I see it as a new dawn, or what Jorgenson, Landefeld, and Nordhaus call a “new architecture” of macroeconomics.

References

- Bureau of Economic Analysis. 2014. *New Quarterly Statistics Detail Industries' Economic Performance*. April 25, <http://www.bea.gov/newsreleases/industry/gdpindustry/2014/gdpind413.htm> (accessed April 25, 2014).
- Colander, David. 2014. Gross Output: A New Revolutionary Way to Confuse Students about Measuring the Economy. *Eastern Economic Journal*, 40: 451–455.
- Hayek, Friedrich A. 1935. *Prices and Production*, 2nd edn., London: George Routledge.
- Heubsdorf, Ben. 2014. Consumer Spending Rises and Inflation Slow. *Wall Street Journal* (September 30), p. A2.
- Jorgenson, Dale W., J. Steven Landefeld, and William D. Nordhaus. 2006. *A New Architecture for the US National Accounts*. Chicago: National Bureau of Economic Research/University of Chicago Press.
- Kudlow, Larry. 2006. On Jobs, Tax Cuts, and the Democrats. *National Review Online* (September 5).
- Leontief, Wassily. 1966. *Input-Output Economics*. New York: Oxford University Press.
- Skousen, Mark. 1990. *The Structure of Production*. New York: New York University Press.
- . 2007 Introduction to the Paperback Edition. in *The Structure of Production*. New York: New York University Press.
- . 2014 [2000] *Economic Logic*, 4th edn., Washington DC: Capital Press.
- Taylor, John B. 2004. *Economics*. Boston: Houghton Mifflin.