

Linking Austrian and Keynesian Economics: A Variation on a Theme

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Abstract

In the spirit of Roger Garrison's attempt to link Austrian economics with Keynesian economics, I created an Austrian-style four-stage model of the economy (gross output, or GO) that links the entire production process with the Keynesian model of final effective demand, or gross domestic product (GDP). As a supplement to GDP, GO can be integrated into textbook national income accounting. My paper concludes that GO is a more comprehensive measure of the economy and better reflects the role of business spending in the economy and the business cycle. It turns out that business spending is larger than GDP and almost twice the size of consumer spending. GO is also substantially more volatile than GDP throughout the business cycle. With the Bureau of Economic Analysis now publishing a quarterly GO statistic along with GDP, GO has become a major focus of economic research and reporting by the financial media.

JEL Codes: A2, E1, E2, M2

Keywords: gross domestic product, gross output, business investment, consumer spending, Roger Garrison

"The Hayekian triangle is comparable in terms of the simplicity/realism trade-off to the Keynesian cross."—Roger Garrison, *Time and Money* (2001, p. 11)

"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."—Dale Jorgenson, J. Steven Landefeld, and William D. Nordhaus, *A New Architecture for the US National Accounts* (2006, p. 5)

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I. Introduction

Austrian and Keynesian economics have been traditionally viewed as diametrically opposed to each other. Ludwig von Mises dismissed Keynesian economics as “entirely fallacious” (Mises [1952] 1980, p. 7; cf. Mises 1966, p. 793). Classical liberal economist William H. Hutt called it “the most serious single blow that the authority of orthodox economics has yet suffered” (Hutt 1979, p. 12). Henry Hazlitt wrote an entire book on Keynes’s *General Theory*, concluding, “I have been unable to find in it a single important doctrine that is both true and original” (Hazlitt [1959] 1973, p. 6). And Murray Rothbard argued that “the Keynesian system is a tissue of fallacies” (Rothbard 1960).

In short, hard-core Austrians argued that integrating Austrian economics into the Keynesian model would be like mixing oil and water, or squaring a circle. It couldn’t be done. The two schools were destined to be two colliding universes.

But then along came Roger Garrison, representing a new generation of American “Austrian” economists who took a more fertile approach. Recognizing that the Keynesian model has largely captured the imagination of the economics profession and been integrated with classical economics into what Paul Samuelson calls the “neo-classical synthesis,” Garrison brilliantly created a series of diagrams to demonstrate the relationship between the time structure of production, Hayekian triangles, and standard “neo-classical” models, including the production-possibility frontier, the loanable funds market, the IS–LM curve, and the Keynesian consumption function (Garrison 2001).

In 1978, Garrison made his first attempt to link Austrian and Keynesian economics in *New Directions in Austrian Economics* (Spadaro 1978). Figure 1 shows how he compared the Keynesian consumption function with the Austrian time structure of production model, known as the Hayekian triangle. Garrison demonstrated how the supply and demand for present goods (consumption) determines the interest rate (i) and the structure of production in the Austrian model (Hayekian model *OTFY*) and then the level of income (Y) in the Keynesian consumption function ($C = a + bY$).

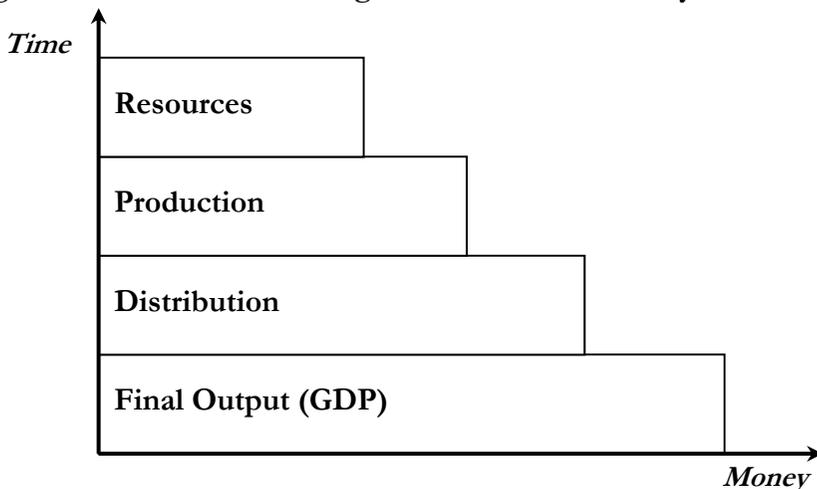
Figure 2 is Garrison’s illustration of the effect of a change in time preference and demand for investment on both models. Consumers decide to spend less and invest more, reducing interest rates (i), causing the Hayekian triangle to become elongated and expanding

II. Austrian and Keynesian Measures of the Economy

I use a similar approach with regard to national income accounting, tying together Austrian and Keynesian macroeconomics in a complementary rather than adversarial way, though the implications are significantly distinct.

In *The Structure of Production* (Skousen [1990] 2015, chapter 6), I created a universal four-stage model of the economy, demonstrating the relationship between the entire production process (what may be termed the “make” economy) and final output (the “use” economy), as figure 3 shows.

Figure 3. A universal four-stage model of the economy



Source: Skousen (1990) 2015, introduction to the third printing.

This four-stage model combines the Austrian and Keynesian models. Spending at all four stages of production represents the Austrian perspective and is measured by gross output (GO); final output, stage four, represents the Keynesian perspective and is measured by gross domestic product (GDP).

Let me offer more background and perspective on GO and GDP.

III. The Role of GDP in the Economy

GDP is the standard neoclassical measure of the economy. It attempts to measure the value of final output: finished goods and services purchased by consumers, business, and government in a single calendar year. The Bureau of Economic Analysis (BEA) at the

US Department of Commerce estimates GDP in both real and nominal terms every quarter.

In this sense, GDP represents the final stage of the production process. It grew out of a Keynesian perspective on national income accounting. Simon Kuznets, a Russian-American economist at the National Bureau of Economic Research and a Harvard professor, developed the first GDP statistics in the 1940s after attempting to measure national income in the 1930s (Kuznets 1934). In chapter 3 of *The General Theory*, John Maynard Keynes claimed that the most important factor in income determination was final “effective demand,” which “depends on the amount of the proceeds which the entrepreneurs expect to receive from the corresponding output” (Keynes 1936, p. 24).

Kuznets (1937) captured the essence of Keynes’s formula by adding together the value of final purchases by individuals, companies, and the government in a single measure that he called gross national product (GNP). Following the Bretton Woods conference in 1944, GNP (now GDP) became “the single most important benchmark measure of how an economy is doing” (Coyle 2014, p. 42).

Mathematically, the basic formula of income determination (Y) consists of the standard textbook equation:

$$Y = C + I + G + NX.$$

IV. What Drives the Economy?

GDP fits nicely into the Keynesian framework and policy prescription. According to Keynesian thinking, final consumer demand determines the size and direction of the economy (Keynes 1936, p. 46). As economist Hyman Minsky summarized the Keynesian approach, “The policy emphasis should shift from the encouragement of growth through investment to the achievement of full employment through consumption production” (Minsky 1982, p. 113).

GDP supports the Keynesian model. By ignoring total spending at all stages of production and focusing on final output only, GDP downplays the size and importance of the “make” economy: that is, the supply chain and intermediate stages of production needed to produce all those finished goods and services.

This narrow focus of GDP has created much mischief in the media, government policy, and boardroom decision-making. For example, journalists are constantly overemphasizing consumer and

government spending as the driving force behind the economy, rather than the supply side: saving, business investment, and technological advances.

Using 2014 BEA data for the United States, consumer spending represents 68 percent of GDP, followed by 18 percent for government spending. As a result, students, business leaders, and the media perpetuate the Keynesian notion that consumer spending drives the economy. Since consumption represents two-thirds of “the economy,” and government spending is second in size, they conclude that any slowdown in retail sales or government stimulus is necessarily bad for the economy. Private investment comes in a poor third at 16 percent (net exports makes up the difference at –2 percent).

So, for example, the *New York Times* reported, “Consumer spending makes up more than 70% of the economy, and it usually drives growth during economic recoveries” (Rampell 2010). Or as the *Wall Street Journal* stated a few years ago, “The housing bust has chilled consumer spending—the largest single driver of the U.S. economy” (Timiraos 2011).

In short, by focusing only on final output, GDP underappreciates the role businesses and entrepreneurs play in raising capital and moving the intermediate products along the production process toward final use. It’s as though the manufacturers and shippers and designers aren’t fully acknowledged in their contribution to overall growth or decline.

V. Enter Gross Output, A Supply-Side Austrian Measure of the Economy

However, if we use gross output (GO) as a broader measure of the economy, we get an entirely different perspective on what drives the economy.

In *The Structure of Production*, I proposed that the BEA measure sales or revenues at all stages of production, which I called gross output. I argued that GO would more accurately portray the relative importance of spending by consumers, business, and government (Skousen [1990] 2015, pp. 191–92).

Gross output fills in a big piece of the macroeconomic puzzle and serves as an important macroeconomic tool. It establishes the proper balance between production and consumption, between the “make” and the “use” economy, between aggregate supply and aggregate demand. And it is more consistent with growth theory.

What is gross output? It is an attempt to measure total sales volume at all stages of production, what the BEA calls the “make” economy. Most importantly, it includes all business-to-business (B2B) transactions that GDP leaves out of the supply chain. According to the BEA, gross output exceeded \$30 trillion in the second quarter of 2014. It was almost twice the size of GDP (\$17 trillion).

GDP is the standard yardstick for measuring the value of final goods and services purchased by consumers, business, and government in a year, what we call the “use” economy. Now we have a way to measure the “make” economy every quarter, too.

GO does not replace GDP, but is complementary. As economists Dale Jorgenson, Steve Landefeld, and William Nordhaus state, “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” (Jorgenson, Landefeld, and Nordhaus 2006, p. 5).

VI. The BEA Makes an Announcement: A Supply-Side Austrian Triumph

It took nearly a quarter of a century for the government to recognize GO’s critical importance. In the 1980s, gross output statistics were published every five years as part of the input-output (I-O) tables developed by economist Wassily Leontief. According to Leontief, the I-O accounts required examining the “intervening steps” between inputs and outputs in the production process, “a complex series of transactions . . . among real people” (Leontief [1966] 1986, pp. 4–5). I-O data created the first estimates of gross output. However, GO was not emphasized as an important macroeconomic tool. Leontief focused on the inner workings between industries, not aggregate GO.

In the 1990s, the BEA began updating “gross output by industry” on an annual basis, but the data were still two to three years behind. Since the publication of *The Structure of Production* (Skousen [1990] 2015) and *Economics on Trial* (Skousen 1991), I advocated the release of GO data on a quarterly basis, similar to GDP. Without quarterly reporting, GO data remained out of date and largely ignored by economists and the media. It needed to be updated on a timely basis to be taken seriously.

Then on April 25, 2014, everything changed. Under the direction of Steve Landefeld, the BEA began publishing GO on a quarterly basis along with GDP (BEA 2014a). “Gross Output by Industry” is now a quarterly data series as part of the US national income

accounts. Go to www.bea.gov, then to “Quarterly GDP by Industry,” then click on “Interactive Tables: GDP by Industry,” then click the button labeled “begin using the data” and refer to the tables for “Gross Output by Industry.”

It won't be long before other countries follow suit. The United Kingdom has recently begun publishing a “total output” statistic on an annual basis, and economists are now seeking to measure GO in Argentina and other countries.

This is a great news, a major supply-side Austrian triumph twenty-five years in the making. It resulted in a lead editorial in the *Wall Street Journal* (Skousen 2014a) and prominent commentary in *Barron's* (Epstein 2014), *Global Asia* (Hanke 2014), and other publications. Professor Roger Leroy Miller's latest edition of *Economics Today* (2015, pp. 180–81) includes a discussion of GO, and other textbooks are planning to do so. David Colander was the first to write about it in an academic journal, the *Eastern Economic Review* (Colander 2014), followed by my rejoinder (Skousen 2015). Steve Forbes editorialized, “Gross output, long advocated by Mark Skousen, will have a profound and manifestly positive impact on economic policy and politics” (Forbes 2014).

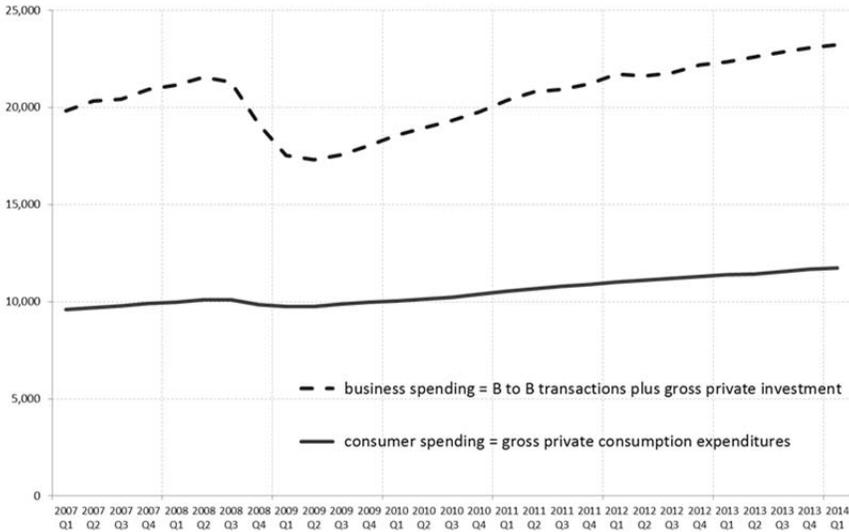
VII. The Many Benefits of GO

Gross output offers a broader picture of the economy. As Landefeld declared at a press conference, GO offers a “unique perspective” and a “powerful new set of tools of analysis.” Colander considers GO a “good idea” and a “better measure [of economic activity] than GDP” (Colander 2014). I consider the adoption of gross output on equal footing with GDP as perhaps the most significant advance in national income accounting since World War II.

Gross output offers many benefits. First, it provides a more accurate picture of what drives the economy. Using GO as a more comprehensive measure of economic activity, consumer spending turns out to represent less than 40 percent of total yearly sales, not 68–70 percent as commonly reported. Spending by businesses (all B2B sales—the value of intermediate production and private business investment) is substantially larger, representing over 50 percent of economic activity. That's more consistent with economic growth theory, which emphasizes productive saving and investment in technology on the producer side as the drivers of economic growth. Consumer spending is largely the effect, not the cause, of prosperity.

Figure 4 demonstrates how business spending is substantially larger than consumer spending in the economy.

Figure 4. US business spending vs. consumer spending, 2007–2014, nominal value in \$ billions

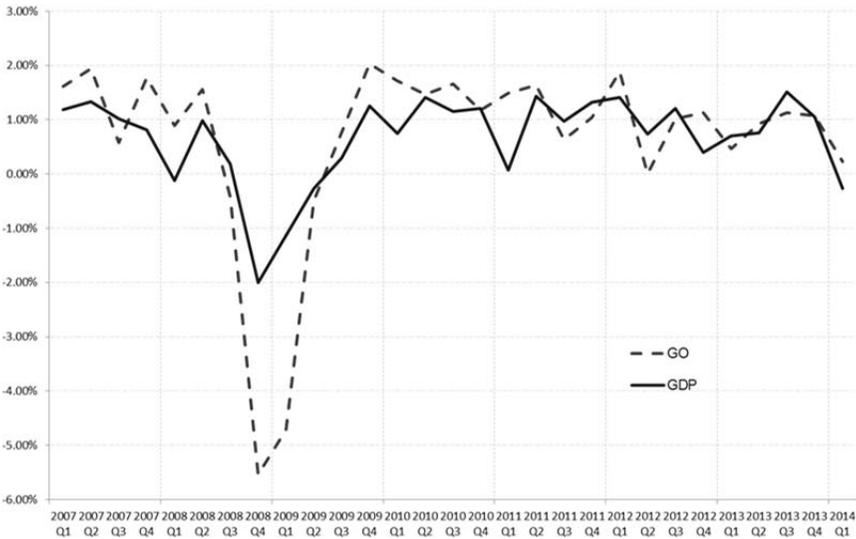


Source: Author’s calculations based on nominal GDP and GO data from BEA.gov and monthly wholesale and retail receipts data from the US Census Bureau. Image by Ned Piplovic.

Second, GO is significantly more sensitive to the business cycle. During the 2008–09 Great Recession, nominal GDP fell only 2 percent (due largely to countercyclical increases in government), but GO collapsed by 6 percent, and intermediate inputs by 10 percent. From 2009 to 2014, nominal GDP increased 3–4 percent a year, but GO advanced by more than 5 percent a year. GO acts like the end of a waving fan. (See figure 5.)

In the first quarter of 2014, GO was relatively stable compared to GDP, which declined in nominal and real terms. GO data suggested that the US economy was still recovering. Indeed, GDP moved back up significantly in the second quarter of 2014.

Figure 5. Quarterly changes for nominal GDP and gross output (GO), Q1 2007–Q1 2014



Source: Author’s calculations based on nominal GDP and GO data from BEA.gov and monthly wholesale and retail receipts data from the US Census Bureau. Image by Ned Piplovic.

VIII. Definition and Limitations of Gross Output

The BEA defines gross output 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 2014a). It does not include financial transactions or used goods, “except for the margin, if any, associated with the sale” of assets and used goods (BEA 2014b).

Since writing *Structure*, I discovered that the BEA’s gross output also excludes most sales at the wholesale and retail level. Wholesale and retail trade figures are included in GO as “net” or value added only. The National Income and Product Accounts (NIPA) Handbook argues that because “there is no further transformation of these goods . . . to the production process, they are excluded from wholesale/retail trade output” (BEA 2014b).

This is a serious omission, amounting to over \$7 trillion in business spending in 2014. If you want to measure all economic activity, including the cost of distributing finished goods, you need to include gross wholesale and retail trade figures. They are legitimate B2B transactions.

Therefore, in the second printing of *Structure of Production* in 2007, I created my own aggregate statistic, gross domestic expenditures (GDE), which includes gross sales at the wholesale and retail levels and is therefore significantly larger (more than double GDP). I estimate 2014 GDE at over \$37.5 trillion, 25 percent higher than GO and 120 percent more than GDP.

Using GDE as a measure of total new economic activity, we come to the startling conclusion that consumer spending actually represents only about one-third of the US economy, not two-thirds as typically reported. This finding is consistent with leading economic indicator statistics and with employment data. As I demonstrated in chapter 9 of *Structure* and the introduction to the second printing, virtually all the economic leading indicators are in the earlier stages of production. Even the much publicized “consumer confidence index” has recently been changed to “average consumer expectations for business conditions.”¹

The structure of employment also fits better with GO data. Only about 20 percent of the workforce is involved in the retail and leisure industries. The vast majority of workers are employed in mining, manufacturing, and professional services attached to the business community.²

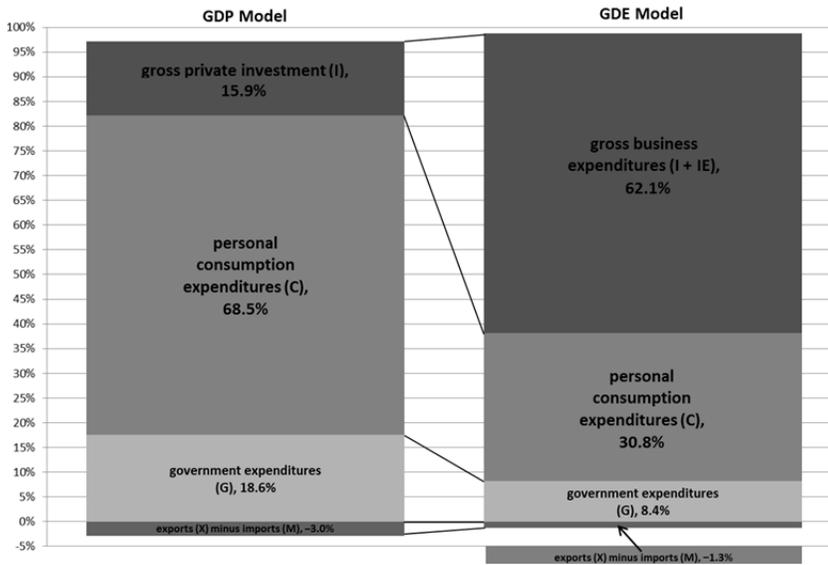
Steve Hanke (2014) says GO is a reflection of Say’s law, a supply-side statistic, while GDP is a symbol of Keynes’s law, a demand-side number. The difference is stark. If you use supply-side GO as the proper measure of economic activity, business investment is the most important sector. But if you rely on Keynesian GDP, consumer spending and government stimulus are the most important factors (see figure 6).

In a sense, the Keynesians, Austrians, and supply-siders can all claim victory, since the government now uses both numbers to describe the direction of the economy. GO is a measure of the “make” economy, while GDP represents the “use” economy. Both are essential to understanding how the economy works.

¹ For more information, go to www.conference-board.org.

² For more information, go to “Employment by Major Industry Sector” at www.bls.gov.

Figure 6. Comparison of business, consumer, and government spending using GDE (Austrian) and GDP (Keynesian) models, 2014



Source: Author's calculations based on nominal GDP and GO data from BEA.gov and monthly wholesale and retail receipts data from the US Census Bureau. Image by Ned Piplovic.

IX. Controversies over the New Statistics

There are several objections to the use of GO and GDE. Economists are especially fixated over the perceived problem of “double counting” with GO and GDE. Certainly GO and GDE do involve double counting when commodities are sold repeatedly as they go through the supply chain. Why not just measure the value added at each stage rather than double or triple count? they ask. GDP eliminates double counting and measures only the value added at each stage.

There are several reasons why this double or triple counting should not be ignored and is actually a necessary feature in the production process. First, the commodity or resource often changes physically and spatially at each stage of production. Coffee beans are gathered, roasted, ground, and brewed at different stages, requiring sufficient capital to finance the whole process.

Second, as accountants and financiers know, a business cannot operate or expand on the basis of value added or profits only. It must raise the capital necessary to cover its gross expenses: wages and

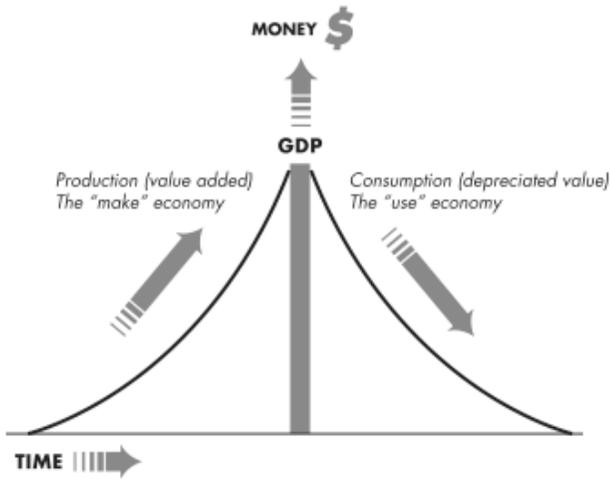
salaries, rents, interest, capital tools and equipment, supplies and goods-in-process. B2B transactions are the very *raison d'être* of business, the critical factors in moving the production process along the supply chain toward final use. GO and GDE reflect this vital business decision-making process at each stage of production.

Can publicly traded firms ignore sales or revenues and only focus on earnings when they release their quarterly reports? Wall Street would rightly object to this narrow focus. Aggregate sales or revenues are an important measure for an individual firm and should not be counted in the national income accounting. In sum, while it should be excluded from GDP, gross business expenditures at all stages should be included in GO.

Another objection involves outsourcing and mergers and acquisitions. Companies that start outsourcing their products will cause an increase in GO or GDE, while companies that merge with another company will show a sudden decrease, even though there may be essentially no change in final output (GDP). That's a legitimate issue, and economists should take into account these dynamic changes in the economy. Similar problems occur with GDP. When a homeowner marries the maid, the maid may no longer be paid and therefore her services may no longer be included in GDP. Black-market activities often fail to show up in GDP data as well. Certainly, if a significant trend develops in outsourcing or merger and acquisition activity, it will be reflected in GO or GDE statistics, but not necessarily in GDP. There is no perfect measure of the economy, but further investigation may be necessary to see how serious the imperfections may be.

X. A General Model of the Economy

In conclusion, GO or GDE should be the starting point for measuring aggregate spending in the economy, as it measures both the “make” economy (intermediate production) and the “use” economy (final output). It complements GDP. To see how GO can be incorporated in standard national income accounting and macroeconomic analysis, see the fourth edition of *Economic Logic* (Skousen [2000] 2014b). In chapter 3, I created the following diagram (figure 7) to describe the production (“make”) and the consumption (“use”) sides of the economy, with GDP measuring final output. The “make” side adds value during the production process, and the “use” side involves the using up of the finished product or service.

Figure 7. Two sides of the economy

Source: Skousen (2000) 2014b, p. 66.

XI. Conclusion

In many ways, the adoption of gross output is part of a whole new way of analyzing the economy, a *Weltanschauung* developed throughout the structure of production. Instead of focusing solely on final output (GDP), economists and the media should analyze the whole production process (GO or GDE), from raw commodities to finished retail products. We should count B2B transactions, not just business to consumer sales.³ The consumer price index isn't the only price index worth noting, but analysts should take into account relative prices: the relationship between commodity, producer, and consumer prices. Reporters should look beyond "the" unemployment rate, and see what is happening to the structure and growth of employment and unemployment in various sectors. Good financial experts don't just take note of "the" interest rate (usually the ten-year Treasury rate), but also the yield curve: the difference between short-term and long-term rates. They should look at trends in various sectors of the stock market, and not just the Dow Jones Industrial Average. The structure of the economy matters.

³ I have begun publishing a B2B index that measures business (B2B) spending every quarter, in sync with the BEA's quarterly release of "Gross Output by Industry" statistics. B2B spending turns out to be larger than GDP and almost twice the size of consumer spending in the US economy. It also may be a good forecaster of the direction of the economy.

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