

The Value of “Final Products” Counts Only Itself

Today’s Gross Product Is Net Product

By GEORGE REISMAN*

ABSTRACT. The value of final products counts only itself and not the value of so-called intermediate products. The prevailing, contrary belief entails a twofold violation of the laws of mathematics—namely, the impermissible discarding of essential terms of equations and then the addition of the remainders of equations that are mutually exclusive and therefore not properly subject to addition. It follows that in order to count the values of the so-called intermediate products, one must go out and count them, because they are not counted in the value of the final product. Despite prevailing belief, counting the value of intermediate products does not represent “double counting.” The implications of these findings for macroeconomic theory are major and include a radically different approach to the respective roles of saving and consumption in spending and income formation, and recognition of the fact that today’s concept of gross product is actually a concept of net product.

I

Introduction

ACCORDING TO contemporary economics, the value of a “final product,” i.e., a consumer good, such as a loaf of bread, counts not only itself but also the value of all the various “intermediate products,” i.e., the capital goods, that have directly or indirectly contributed to its

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production, such as flour and wheat. Contemporary economics further holds that because the value of the final product already counts the value of the intermediate products, it is a positive error to attempt to count the value of the so-called intermediate products separately from and in addition to the value of the final product. Such a procedure, it claims, constitutes “the error of double counting.”

These views, which are held by almost all contemporary economists, are clearly expressed in the following passages from more than a half-dozen different economics textbooks:

Now, what is the total output at all stages of production? Simply adding the sales receipts of the farmer, the miller, the baker, and the retailer would give a total of \$775. This is clearly too large. It counts the value of the original wheat four times, the value of the flour three times, and the value of bread twice.¹

Merely summing all sales revenues entails *double counting*. For example, if USX’s steel sales are added to Ford’s sales, we count USX’s output twice: when steel is sold to Ford and again when Ford sells new cars and trucks.²

If we merely added up the market values of all outputs of all firms, we would obtain a total that was greatly in excess of the value of the economy’s actual output. The local baker provides an example. If we added the total value of the sales of the wheat farmer, the flour mill, and the baker, we would be counting the value of the wheat three times, the value of the milled flour twice, and the value of the bread once.³

Intermediate goods, which are used up in producing final goods and services, such as the sugar in a candy bar or the energy used to produce steel, are also not counted separately as part of GDP. They are not counted separately because to do so would be to count them twice, as the value of the final goods already includes the value of the intermediate goods.⁴

Goods that are used in the production of other goods rather than being sold to final purchasers, what are termed intermediate goods, are not counted separately in GNP. Such goods show up in GNP because they contribute to the value of the final goods in whose production they are used. To count them separately would be double counting. To give an example, we would not want to count the flour used in making bread separately, then again when the bread is sold.⁵

Intermediate goods are part of final goods, which by definition are goods that undergo no further processing. . . . To avoid double counting, we never count intermediate goods; only final goods are part of GDP.⁶

First, only sales of final goods and services are counted in GDP. To do otherwise would be to double-count. The value of McDonald’s or Burger

King's purchases of raw meat would be added to consumers' purchases of hamburgers and thus be double-counted if all purchases of goods and services in the domestic economy were used to calculate GDP.⁷

To avoid double counting, we take care to include only final goods in GDP and to exclude the intermediate goods that are used up in making the final goods.⁸

GDP does not count intermediate goods (goods used up entirely in the production of final goods) because to do so would be to count them twice. . . . In Table 8-1, we see the difference between total value of all sales and value added in the production of a donut. We also see that the sum of the values added is equal to the sale price to the final consumer. It is the 45 cents that is used to measure GDP, not the 96 cents. If we used the 96 cents, we would be double-counting from stages 2 through 5, for each intermediate good would be counted at least twice—once when it was produced and again when the good it was used in making was sold. Such double counting would grossly exaggerate GDP.⁹

As clearly indicated in the above quotations, the belief that the value of final products already counts the value of the intermediate products and thus that counting the value of the intermediate products separately and in addition represents double counting leads to the exclusion of the value of the intermediate products from measures of GNP and GDP (i.e., gross national product and gross domestic product). To leave no doubt about the matter, as one of the textbooks quoted above states elsewhere: "GDP excludes intermediate goods—goods that are used up to produce other goods. GDP therefore includes bread but not wheat, and cars but not steel."¹⁰

The essential claim contained in the above quotations that is repeated over and over again is that GNP/GDP counts the value of intermediate products *when it counts the value of final products*, i.e., that the value of the intermediate products is fully contained in the value of the final products and therefore need not be counted separately and in addition—that, indeed, to do so would be to double count their value. This view is held by everyone who claims that counting the value of intermediate products separately and in addition to the value of the final products would constitute double counting the value of the intermediate products. It could constitute such double counting only if the value of the intermediate products had already been counted in the value of the final products.

In opposition to this view, I will argue in what follows that the

value of final products completely and utterly *excludes* the value of intermediate products, i.e., that it does not count their value *at all*, with the result that if GNP/GDP is to consist exclusively of the value of final products, as is held almost universally, then the value of intermediate products is not counted *even once*. And if that in fact turns out to be the case—as I will show indeed that it does—then GNP/GDP as presently conceived and calculated is *not* in fact a concept of *gross* product, but rather is almost entirely a concept of *net* product. In other words, I will show that what is today called *gross* national product or *gross* domestic product is in fact essentially *net* national product (NNP) or *net* domestic product (NDP).

In support of these conclusions I will argue that the proposition that the value of a final product counts the value of the intermediate products that have contributed to its production entails *a twofold violation of the laws of mathematics*. Specifically, it entails (1) *the impermissible discarding of essential terms of equations* and then (2) *the addition of the remainders of equations that are mutually exclusive and thus are not properly subject to addition*.

Once these propositions have been demonstrated, I will go on to argue for the further proposition that GDP/GNP as presently understood is in fact essentially not a concept of *gross* product, but a concept of *net* product. I will show that this conclusion is clearly implied in the use of the concept of value added as the measure of a producer's product.

I will close by presenting my concept of the much enlarged aggregate economic accounting magnitude that would be necessary to succeed in embracing the *gross* product of the economic system—a concept that I call “*gross national revenue*”—and I will demonstrate the relatively simple, straightforward relationship between this new concept and the contemporary concepts of *gross* and *net* product and national income.

II

Examples and Explanations

TO BEGIN TO PROVE my claims, allow me immediately to proceed to a concrete arithmetical example of the kind typically used in econom-

ics textbooks to illustrate the concept of value added and to explain why the sum of values added equals the value of the final product. The example will make crystal clear why the value of a final product counts only itself and does not at all count the value of the intermediate products necessary to its production.

Thus, I assume that a wheat farmer produces \$3 worth of wheat. A flour miller uses this wheat to produce \$5 worth of flour. Finally, a baker uses the \$5 worth of flour to produce a quantity of bread worth \$6. Obviously, we can describe the value of the bread as the sum of the three values respectively added by the baker, miller, and farmer, i.e., as the sum of $(\$6 - \$5) + (\$5 - \$3) + (\$3 - \$0)$, which in turn reduces to the sum of $\$1 + \$2 + \$3$. Let us take the trouble to perform this elementary exercise in Equation (1). Thus,

$$(1) \quad \$6 = (\$1 + \$2 + \$3).$$

My use of parentheses on the right side of Equation (1) is for the purpose of indicating that all three values added are being firmly held together and thus that in this case the value of the bread is used to express the value of the bread. In fact, I wish to repeat Equation (1), this time with the words “value of the bread” appearing directly below, on both sides of the equation, as an immediate verbal comment on the meaning of the equation. Thus,

$$(1) \quad \$6 = (\$1 + \$2 + \$3)$$

the value of the bread = the value of the bread.

Of course, the value of the bread when perceived as this set of values added can be used to highlight the value of the flour or wheat, rather than its own value. Let us take the trouble to do this in Equations (2) and (3).

$$(2) \quad \$6 = \$1 + (\$2 + \$3).$$

$$(3) \quad \$6 = \$1 + \$2 + (\$3).$$

Equations (2) and (3) are identical with Equation (1) except for the placement of parentheses on their right-hand side. In Equation (2) the placement of the parentheses highlights the values added by the farmer and the miller together, while removing the value added by

the baker from the highlighting and thus leaving it unstressed. When these two values added are highlighted together and alone the result, to be sure, is the value of the flour, for the sum of the values added just by the farmer and the miller is the value of the flour.

In Equation (3) the placement of the parentheses highlights only the value added by the farmer, which, of course, is the value of the wheat. The values added by both the baker and the miller stand outside the parentheses and are thus unstressed in this equation.

I now repeat Equations (1), (2), and (3), this time with each one being immediately followed by a verbal comment on its meaning—as that meaning appears to be interpreted by all those who believe that the value of the bread counts its own value, the value of the flour, and the value of the wheat. Thus:

$$(1) \quad \$6 = (\$1 + \$2 + \$3)$$

the value of the bread counts the value of the bread.

$$(2) \quad \$6 = \$1 + (\$2 + \$3)$$

the value of the bread counts the value of the flour.

$$(3) \quad \$6 = \$1 + \$2 + (\$3)$$

the value of the bread counts the value of the wheat.

A moment's consideration will show that the verbal comments on Equations (2) and (3) are mathematically inaccurate. Their error is not that they highlight the value of the flour or the wheat, but that they *ignore essential terms of the equations*, namely, the values left outside the parentheses. Thus an accurate verbal description of Equation (2) is not that the value of the bread counts the value of the flour, but that it counts, i.e., is equal to, the value of the flour *plus the value added by the baker*. In the same way, an accurate verbal description of Equation (3) is not that the value of the bread counts the value of the wheat, but that it counts, i.e., is equal to, the value of the wheat *plus the values added by the baker and the miller*. In other words, 6, the value of the bread, does not count merely 5, the value of the flour, but 5 + 1, which is the value of the bread. And again, 6, the value of the bread, does not count merely 3, the value of the wheat, but 3 + 1 + 2, which is still nothing but the value of the bread.

As soon as the verbal descriptions of the equations are rendered

accurate and no terms of the equations are allowed to float off, as it were, it becomes obvious that in all three equations *the value of the bread counts nothing but the value of the bread.*

The notion that the value of the bread counts anything other than its own value depends on ignoring one or more of the values added in the process of arriving at the value of the bread. If one does not ignore any of these values, the values added to arrive at the value of the bread *always count nothing but the value of the bread.*

Furthermore, Equations (1), (2), and (3), it must be noted, represent alternative, *mutually exclusive* formulations of the same mathematical fact—that is, of the value of the bread. They are simply three different ways of expressing the one and the same value of the bread. Thus one cannot legitimately *add* these three expressions. Six, the value of the bread, is equal *either* to $(1 + 2 + 3)$, i.e., the value of the bread, *or* to $1 + (2 + 3)$, i.e., the value of the flour plus the value added by the baker, which is still just the value of the bread, *or* to $1 + 2 + (3)$, i.e., the value of the wheat plus the values added by the baker and the miller, which again is still just the value of the bread. It is *not* equal to the sum of these three mutually exclusive alternative formulations or to the sum of any portions of these three mutually exclusive alternative formulations.

Yet the addition of mutually exclusive formulations of the value of the bread is the procedure that is followed in arriving at the conclusion that the value of the bread counts the value of the bread *and* the value of the flour *and* the value of the wheat. For after the terms in Equations (2) and (3) that stand outside the parentheses are impermissibly discarded, the remaining elements of these equations must then be added to Equation (1) in order to reach the conclusion that the value of the bread counts its own value *plus* the value of the flour *plus* the value of the wheat. Thus, allegedly,

$$(4) \quad \$6 = (\$1 + \$2 + \$3) + (\$2 + \$3) + (\$3) = \$14.$$

This is the meaning of the claim that the \$6 value of the bread counts itself, plus the \$5 value of the flour, plus the \$3 value of the wheat, i.e., counts \$14.

Ironically, as the preceding analysis and Equation (4) make clear, the accusation of “double counting” should actually be directed at the

prevailing conviction that the value of the final product counts not only itself but also the value of the intermediate products that have contributed to its production. This is because reaching that conclusion requires the double counting of one or more of the values added whose sum equals the value of the final product. As we have just seen in Equation (4), the conclusion that the value of the bread counts itself and the value of the flour rests on counting the values added by the miller and the farmer, namely, \$2 and \$3, respectively, once in the value of the bread *and a second time* (i.e., when forgetting the value added by the baker) to get the value of the flour. The conclusion that the value of the bread counts itself and the value of the wheat, as well as that of the flour, rests on counting the value added by the farmer yet a third time (i.e., when forgetting the value added both by the baker and the miller).

Anyone who believes that the value of a final product counts itself *and* the value of the so-called intermediate products that contribute to its production conceives the value of the final product as more than it is. He or she double counts portions of the values added whose sum equals the value of the final product.

The main truth that emerges from all this is that *the value of final products counts only itself* and not the value of the so-called intermediate products that contribute to their production.

A second main truth, which follows, is that to actually count the value of the so-called intermediate products one must *go out and count them*, because, as I have just shown, they are *not* counted in the value of the final product, and thus, contrary to prevailing belief, counting them most certainly does not represent double counting.

III

Gross Product as Net Product

THE FACT THAT the prevailing concept of gross product totally excludes intermediate products, i.e., does not count them at all, not even once, implies that the prevailing concept of gross product is actually not a concept of gross product. For intermediate products are in fact produced and certainly must be counted *once*—somewhere—in any genuine concept of gross product. The prevailing concept of gross

product's claim to be a concept of gross product rests on the belief—now shown to be mistaken—that the intermediate products *are* counted, albeit in the final product. Now, however, we have seen that the contemporary concept of gross product makes no allowance of any kind whatever for intermediate products, because the value of final products counts absolutely nothing at all but itself.

Indeed, I will now demonstrate that the prevailing concept of gross product is not only not a concept of gross product but is in fact a concept merely of *net* product.

I apprehend that the product—the *gross* product, if one will—of a baker is bread; that of a flour miller, flour; and that of a wheat farmer, wheat.

I recognize, of course, that in producing bread, one consumes flour, and that in producing flour, one consumes wheat (which is why, for the production of bread to continue, the production of flour and wheat must continue as well as the production of bread).

Now the *gain*, or *net* product, entailed in the production of bread can legitimately be viewed as the bread produced minus the flour consumed in producing it. (The flour, of course, must be understood as representing all the previously produced means of production consumed in the production of bread.) Similarly, the gain or net product entailed in the production of flour can legitimately be viewed as the flour produced minus the wheat consumed in producing it. And finally, the gain or net product entailed in the production of wheat can properly be viewed as the wheat produced minus whatever previously produced products must be consumed in order to produce it, which, for the sake of avoiding a practically infinite regress, we can disregard and take to be zero when it suits us.

The sum of these various net products, of course, turns out to be bread alone, i.e., the final product alone. This is because bread minus flour, plus flour minus wheat, plus wheat minus zero, equals bread—i.e., every product produced is subsequently consumed in the production of another product, except for the final product, which in its nature of being final is not consumed in any further production. That is, in the calculation of aggregate net product, every product produced appears as both a plus and an equivalent minus, except for the final product, which appears with a plus sign only.

Now what I have shown to be the net products of the baker, the flour miller, and the wheat farmer, contemporary economics conceives to be their actual, gross products. It believes that what a baker produces—his actual, gross product—is *not* bread, but bread minus flour; that what a flour miller produces is *not* flour, but flour minus wheat, and that what a wheat farmer produces is *not* wheat, but wheat minus fertilizer and the like.

These propositions follow inescapably from contemporary economics' use of the concept of "value added" as the measure of gross product. The value added by a baker would be the appropriate measure of his gross product only if what he produced were not bread, but bread minus flour. The value added by a flour miller would be the appropriate measure of his gross product only if what he produced were not flour, but flour minus wheat. And the value added by a wheat farmer would be the appropriate measure of his gross product only if what he produced were not wheat, but wheat minus fertilizer. Unfortunately for contemporary economics, the products of these producers are real physical entities, not abstractions, not conceptual product differences. Ignoring them does not eliminate their existence but only serves to invalidate the thinking of those who do so.

It is not necessary to leave to implication alone contemporary economics' belief that what a producer produces is not his or her actual product but the difference between the product and the previously produced means of production he or she consumes in producing it. Now and then, explicit statements by contemporary economists can be found clearly acknowledging that this is what they believe. One such instance appears in the first of the textbooks quoted previously:

A farmer produces \$100 worth of wheat, which is sold to a flour miller. The milling company, by adding labor and capital inputs to this raw material, produces flour which it sells for \$150. A baking company uses this flour to produce \$225 worth of food. . . .

How much has the milling company produced? Not its sales revenue of \$150, since \$100 of this was really produced by the farmer. The milling company's output is the sales value of its product minus its purchases from the preceding stage of production. We call this the value added at the milling stage, which in this example is \$50.^{11,12}

What is present in contemporary economics' conception of production is an intellectual shortcut that represents a fundamental flaw. Namely, instead of going to the trouble of recognizing that producers produce their actual gross products and consume previously produced means of production in order to do so, and then distinguishing the concept of net product as the difference between the actual gross product and this—productive—consumption, contemporary economics jumps immediately to the net product and insists that it constitutes the sum and substance of production. The unfortunate result is a concept of gross product that is actually a concept of net product. It leaves out of account what is probably the far greater part of actual production and actual spending for goods and services and reduces macroeconomics largely to the study just of the production of consumer goods and services and consumer spending—i.e., of final products and the spending to buy them alone.¹³

IV

The Implications of GNR

THE IMPLICATIONS OF this article for macroeconomic theory are major. They include, among other things, a radically different approach to the respective roles of saving and consumption in spending and income formation.¹⁴ As far as pure aggregate economic accounting goes, however, the changes, while radical, are also quite simple and, in fact, fully consistent with the central relationship that national income equals net product, i.e., consumption plus net investment.

To understand the reconciliation of my approach to aggregate economic accounting with the conventional approach, I ask the reader simply to come along with me for a few moments and trace the implications of starting with what can be called gross national revenue (GNR), which is to be understood as equal to the sum of all business sales revenues plus wage payments.¹⁵ From this magnitude, which is far larger than GNP/GDP, and commits all the alleged sins of “double counting,” it is a very short, simple step to national income. All one need do to reach national income is subtract from GNR the magnitude of business costs—i.e., the totality of all the costs that appear in

business income statements for the period of time in question. Such subtraction reduces sales revenues to profits and the sum of sales revenues plus wages, i.e., GNR, to profits plus wages, i.e., to national income.¹⁶

The consequences on the expenditure side are especially interesting. GNR is equal to the sum of two sorts of expenditure: *consumption expenditure*, which is to be understood as expenditure that is not for the purpose of making subsequent sales, and *productive expenditure*, which is expenditure for the purpose of making subsequent sales. Obviously all revenues are expenditures, and all expenditures are either for the purpose of making subsequent sales or not for the purpose of making subsequent sales. What I call consumption expenditure can be taken as synonymous with final expenditure, while what I call productive expenditure can be taken as synonymous with intermediate expenditure.

When the very same costs that are deducted from sales revenues to arrive at profits are deducted from productive expenditure, the result is net investment. This result can be seen from the fact that productive expenditure embraces expenditure for plant and equipment, expenditure on account of inventory and work in progress, and expenditure for items that are not capitalized either as fixed assets or as inventory/work-in-progress. (These last are expenditures that typically show up in business income statements under the heading "Selling, General, and Administrative Expense"; namely, outlays for such things as advertising, lighting and heating, and executives' salaries. They can be described as expensed expenditures, i.e., expenditures that, not being capitalized, would appear as equivalent costs in a business income statement in the instant in which they are made.)

At the same time, costs embrace depreciation cost, cost of goods sold, and, like productive expenditure, expenditures not capitalized either as fixed assets or as inventory/work-in-progress, i.e., expensed expenditures.

The difference between productive expenditure for plant and equipment and depreciation cost is, of course, net investment in plant and equipment, just as it is in contemporary national income accounting. The difference between productive expenditure on account of inventory/work-in-progress and cost of goods sold is net investment

in inventory. (This last is because the productive expenditures on account of inventory/work-in-progress are debits or pluses to the inventory/work-in-progress account, while cost of goods sold represents credits or minuses to the inventory/work-in-progress account. The difference between the sum of the pluses and the sum of the minuses is the net change in inventory/work-in-progress, i.e., net investment in inventory.)

Net investment in inventory is something that contemporary national income accounting frequently refers to, but never attempts to relate to *gross* investment in inventory. This is because such gross investment—i.e., the actual spending on account of inventory/work-in-progress—is expenditure of the kind that is not supposed to have any independent existence, according to prevailing belief. In reality, of course, net investment in inventory is exactly what I have just described it as being, namely, the difference between productive expenditure on account of inventory/work-in-progress and cost of goods sold.

The final subcategory both of productive expenditure and of costs, namely, expensed expenditures, constitutes a case in which minuend and subtrahend are equal and thus the subtraction of the one from the other nets to zero. Because of this, net investment, understood as the difference between productive expenditure and costs, equals the sum of net investment in plant and equipment and net investment in inventory/work-in-progress.

To express the relationship between the expenditure side of GNR and contemporary GNP/GDP, one could say that after adding depreciation allowances to national income to arrive at GNP/GDP, as is done now, one must go on to add cost of goods sold to today's "gross investment." This raises gross investment from gross investment in plant and equipment plus net investment in inventory, to gross investment in plant and equipment plus gross investment in inventory—call it gross, gross investment. Finally, if one adds expensed expenditures to gross, gross investment, the latter is raised to the full magnitude of productive expenditure. This, together with consumption expenditure, of course, equals GNR.

What is particularly interesting about this, greatly enlarged, view of net investment is that it shows that when attempts are made to portray

total spending as the sum of consumption expenditure plus net or gross investment, it turns out that most spending in the economic system is concealed under the heading of investment. Net investment, and even gross investment, is, in effect, merely the visible portion of an iceberg when it comes to the relationship between the spending that is seen and the spending that remains concealed beneath the surface. This, of course, is in full contradiction of such doctrines as the Keynesian multiplier analysis, for it shows that the demand for capital goods and for all the labor employed by business firms is present only in productive expenditure, which depends on saving—i.e., on abstention from consumption—not in consumption expenditure.¹⁷

Further and far more significant implications of recognizing the existence of productive expenditure as separate and distinct from consumption expenditure for such major matters as the theory of profit and the theory of capital accumulation must await future discussion.¹⁸

V

Summary and Conclusion

THE VALUE OF FINAL PRODUCTS counts only itself and not the value of any “intermediate products” in addition. Although the value of a final product can be expressed in alternative ways, reflecting the values added by all of the producers directly or indirectly responsible for its production, with each alternative formulation stressing value additions representing the value of this or that intermediate product, the value of an intermediate product never stands alone: it is always accompanied by one or more other value additions that when added to the value of the intermediate product make it equal the value of the final product. Thus, the value of final products always ends up counting only itself. The prevailing, contrary belief entails a two-fold violation of the laws of mathematics—namely, the impermissible discarding of essential terms of equations, and the addition of the remainders of equations that are mutually exclusive and thus not properly subject to addition.

The fact that the value of final products counts only itself leads to the conclusion that today’s concept of gross product is actually a

concept merely of *net* product. This conclusion is confirmed by contemporary economics' use of the concept of "value added" as the measure of gross product and by occasional explicit statements by contemporary economists that what a producer produces is not his or her actual product but the difference between the product and the previously produced means of production he consumes in producing it.

The implications of this discussion for macroeconomic theory are major. They include a radically different approach to the respective roles of saving and consumption in spending and income formation. As far as pure aggregate economic accounting goes, however, the changes, while radical, are also quite simple and, in fact, fully consistent with the central relationship that national income equals net product, i.e., consumption plus net investment. However, it turns out that when attempts are made to portray total spending as the sum of consumption expenditure plus net or gross investment, most spending in the economic system is concealed under the heading of investment. This, of course, is in full contradiction of such doctrines as the Keynesian multiplier analysis.

Notes

1. Reynolds (1985: 80). The claim here is that wheat would be counted once as wheat, a second time as flour, a third time as bread sold at wholesale, and a fourth time as bread sold at retail. Similarly, flour would allegedly be counted once as flour, a second time as bread sold at wholesale, and a third time as bread sold at retail. The bread sold at wholesale, of course, would allegedly be counted once as bread sold at wholesale and a second time as bread sold at retail.

2. Byrnes and Stone (1995: 178). Emphasis in original.

3. Lipsey et al. (1993: 485).

4. Mishkin (2000: 17).

5. Froyen (1986: 16).

6. Taylor (1985: 168).

7. Ekelund and Tollison (2000: 506).

8. Samuelson and Nordhaus (1998: 86).

9. Miller (2000: 172). See above, note 1.

10. Samuelson and Nordhaus, *op. cit.*, p. 85.

11. Reynolds, *op. cit.*, p. 80. This passage is all the more remarkable in that the author first clearly states that "[t]he milling company . . . produces

flour which it sells for \$150” and then in the next paragraph proceeds to flatly contradict this statement by describing the company’s net product as though it were its gross product.

12. Since he claims in the second sentence of this paragraph that a wheat farmer produces \$100 worth of flour, it would be interesting to learn if Prof. Reynolds would be willing to argue in connection with a hypothetical antitrust action that flour milling is an industry containing as many separate producers as wheat farming—indeed, a few more: all the wheat farmers plus the flour millers.

13. The treatment of newly purchased plant and equipment represents a significant exception to the reduction of the concept of gross product to net product. This exception, however, represents a logical inconsistency, as has been recognized by Ackley (1961: 29).

14. See Reisman (1996: 682–708).

15. For the sake of simplicity, I ignore interest and rent. GNR, of course, can easily be restated as GDR (gross domestic revenue).

16. The reader is asked to keep in mind the exclusion of interest and rent for the sake of simplicity.

17. For elaboration, see Reisman, *op. cit.*, pp. 705–08. Capital goods are to be understood as goods purchased for the purpose of making subsequent sales.

18. On these subjects, see Reisman, pp. 473–85, 622–42, 719–894.

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