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## VI THE DISTINCTION BETWEEN CONSUMERS' OUTLAY AND CAPITAL FORMATION

### 1 THE NATIONAL PRODUCT, CONSUMERS' OUTLAY AND CAPITAL FORMATION

IN SECTION I we noted that the two comprehensive totals subsumed under the term 'national product' could be defined at the production, distribution or consumption phases of economic circulation. The apportionment of the national product at the production phase, that according to industrial origin, and at the distribution phase, that according to type of income and income payment, have already been discussed. We now consider its apportionment at the stage of consumption. But first we must redefine national product in order to draw distinctions made possible by the available data. The third set of definitions in Section I, which equated national product to the value of goods consumed by individuals plus savings of individuals and enterprises, is not satisfactory for the present purpose because it suggests a distinction drawn at the point of actual consumption of goods by individuals, a distinction which the lack of data prevents us from following; and because it analyzes national product partly on the goods level and partly on the flow-of-funds level.

If only the goods content is considered, economic activity appears as a continuous flow of commodities and services that change their form and enter one another in a successive alternation of consumption and production. The reference of the concepts of net and gross national product to this continuous flow implies the introduction of some fixed point, at which the measurement is made and the net and gross value of goods gauged. Commodities and services that reach this point may be considered finished and at their destination, and it is their value that largely determines the magnitude of the national product.

As suggested in the third set of definitions of national product in Section I, this point is fixed at the level at which commodities and services are in the form and at the place that render them immediately available for use by the individuals who comprise the nation. It is this use by the final consumers, i.e., the households<sup>19</sup> of the nation that

<sup>19</sup> This term as used here and subsequently also includes larger groups of consumers, i.e., hospitals, homes for aged, dormitories, hotels, restaurants.

provides the fixed point of reference at which the continuous flow of economic goods may be viewed and their volume measured. True, the national product for any given time unit is not fully accounted for by the flow of finished goods to their destination, i.e., by commodities and services ready for use by final consumers and reaching their hands. Some portion of the nation's economic activity may result in an increase in the stock of finished commodities in hands other than those of final consumers and in the stock of unfinished commodities; or, if we take into consideration the international aspects of the economy, in a movement of commodities and services abroad. But these are the only other elements in the national product, which may thus be redefined as equal to: (a) the value of finished commodities and services reaching their destination; (b) changes in stocks of all finished commodities not at their destination (in circulation) and of all other commodities; (c) the net change in claims against foreign countries, this item representing the fullest measure of the net product flowing out of the country's boundaries.

The difference between net and gross national product in terms of this definition lies in the scope of item (b), changes in stocks of commodities. When net national product or national income is considered, this item covers *net* changes in stocks of commodities in the hands of enterprises, whether they are raw materials, semifinished products, finished commodities, or fixed capital equipment. When gross national product is considered, the item covers net changes in stocks of raw materials, semifinished products and finished products in the hands of enterprises; but in the case of fixed capital equipment *gross* rather than *net* changes in stocks are taken, i.e., we include the gross addition to the volume of such equipment in existence at the beginning of the time unit, without any allowance for its current consumption. And again, as mentioned above, fixed capital equipment, in both concepts, includes residential real estate whether owned by corporations or individuals.

The distinction between consumers' outlay and capital formation follows this new set of definitions naturally. In the case of net national product or national income, item (a) represents consum-

ers' outlay, and the sum of items (b) and (c) represents net capital formation. For gross national product, item (a), which is identical in scope with item (a) for national income, represents consumers' outlay; and the sum of item (b), now different, and item (c), the same in both concepts, represents gross capital formation. The difference between net and gross national product is thus made to persist in the difference between net and gross capital formation, the concept and volume of consumers' outlay remaining the same in both national product totals.

Two aspects of the distinction just drawn between consumers' outlay and capital formation deserve notice. First, the distinction is significantly different from that between consumption and additions to the stock of wealth. In the latter, consumption represents actual consumption by ultimate consumers, and not as in the case of consumers' outlay, their acquisition of finished products. Correspondingly, additions to stock is a broader category than capital formation, since it includes, besides the contents of the former, changes in stocks of finished commodities in the hands of ultimate consumers. Interesting as the apportionment between consumption and additions to the stock of wealth would have been, there are no data available to measure it on a continuous and satisfactory basis.

Second, in the distinction between consumers' outlay and capital formation, item (b) is restricted to changes in stocks of *commodities*, and thus excludes any possible changes in stocks of intangible property. Obviously, enterprises may consume commodities and services in order to enhance good will, the preference demand for their product, or some valuable rights, and not all of this consumption may be reflected in the value of finished commodities flowing to ultimate consumers. Moreover, individuals may purchase currently produced services not for consumption in the general process of living but in order to improve themselves as economic producers. Both cases represent a diversion of the current product of the economy from flow to ultimate consumers as ultimate consumers, and should properly be included under item (b) of the definition, and thus enter capital formation. But the data available for the measurement of these items in capital formation are lacking, their segregation is theoretically difficult, and they are thus necessarily included in consumers' outlay when its magnitude is obtained by subtracting capital formation, directly measured, from the national product. It may be said, however, that the

items are relatively small; and that in the second of the two the demarcation between purchases of ultimate consumers as consumers and their purchases for the purpose of increasing their personal capacity as producers is inconsistent with the concept of national product used in this report.

The statistical study, whose results make possible the apportionment of the national product between consumers' outlay and capital formation, aimed at a direct measurement of capital formation; the volume of consumers' outlay given in the tables below has been obtained by subtraction. Since the measurement of capital formation required a more explicit definition of the concept than that given above, a more detailed discussion of the measures of capital formation is needed before the estimates themselves and the apportionment between consumers' outlay and capital formation can be clearly understood.

## 2 METHODS OF ESTIMATION AND THE CLASSIFICATION OF COMMODITIES

In estimating the annual volume of gross and net capital formation as defined above, two methods are possible. One, the change-in-stock method, proceeds to establish at some time within each year the stock of commodities as defined under (b) for net national product. Then by a process of subtraction, the net change in the stock can be obtained, and the addition of the net change in claims against foreign countries yields directly the volume of net capital formation. If to this volume is added the estimated current consumption of fixed capital equipment (inclusive of residential real estate) the total represents gross capital formation.

The other method combines the flow-of-goods method with the change-in-stock method, the former accounting for quantitatively the most important part of the final estimates. It begins with the measurement of the flow of commodities, rather than of the stock in existence. In the current flow of various commodities and services it attempts to segregate those which, because of their technical nature, are bound to constitute a gross addition to the stock of fixed capital equipment in the hands of their users. Provided such a segregation can be made, the resulting total will account for the bulk of gross capital formation. The items missing would be the net change in claims against foreign countries and the net change in stocks of finished and unfinished commodities, ex-

clusive of fixed capital equipment at its destination. With these two additional items provided, the sum will cover gross capital formation fully. From this sum is subtracted the current consumption of fixed capital equipment to obtain net capital formation.

This combination of the two methods, actually followed in the study of capital formation, de-

mands first of all a careful classification of commodities to make possible the segregation of the net output without duplication, except that involved in the consumption of fixed durable equipment; and then the segregation, within the net output, of those commodities that must be a part of capital formation. The commodity classification used is given in detail below. It is designed to

### CROSS-CLASSIFICATION OF COMMODITIES

(for definition of terms used see footnote 20)

#### A CONSUMERS' GOODS

##### I Perishable

###### 1 At Destination

a Finished—bread, coal used by households, etc., in hands of households

b Unfinished—none

###### 2 In Circulation

a Finished—same as under AI-1a, but in hands of producers and distributors

b Unfinished—raw materials, fuels, supplies so far as they are used for production, transportation and distribution resulting in AI-1a

##### II Semidurable

###### 1 At Destination

a Finished—shoes, clothing, etc., in hands of households

b Unfinished—none

###### 2 In Circulation

a Finished—same as under AII-1a, but in hands of producers and distributors

b Unfinished—raw materials, fuels, supplies, used for production, transportation and distribution resulting in AII-1a

##### III Durable

###### 1 At Destination

a All finished—passenger cars, jewelry, furniture in hands of households

aa Residential buildings

bb All other

b Unfinished—none

###### 2 In Circulation

a Finished—same as under AIII-1a, but in hands of producers and distributors

b Unfinished—raw materials, fuels, supplies, used for production, transportation and distribution resulting in AIII-1a

#### B PRODUCERS' GOODS

##### I Perishable

None

##### II Semidurable

None

##### III Durable

###### 1 At Destination

a Finished—industrial, farm machinery, buildings, trucks, etc., in hands of business units who will use them

b Unfinished—none

###### 2 In Circulation

a Finished—same as under BIII-1a, but in hands of producers and distributors

b Unfinished—raw materials, fuels, supplies, etc., used for production, transportation and distribution resulting in BIII-1a

**20 Durable Commodities**—Commodities that, without marked change and retaining their essential physical identity, are ordinarily employed in their ultimate use over a long period (for purposes of this study more than three years). Examples: a building; a steam engine or dynamo; an automobile or truck; a bed, table or chair.

**Non-durable Commodities**—Commodities that, without marked change and retaining their essential physical identity, are ordinarily employed in their ultimate use over a short period (for purposes of this study less than three years). Non-durable commodities are further classified into:

**Semidurable Commodities**—Commodities that, without marked change and retaining their essential physical identity, are ordinarily employed in their ultimate use for from six months to three years. Examples: automobile tires, clothing, shoes.

**Perishable Commodities**—Commodities that, without marked change and retaining their essential physical identity, are ordinarily employed in their ultimate use less than six months. Examples: bread, cigarettes.

**Commodities at Destination**—Commodities that have reached either the household or the producing units wherein they find their ultimate use. Examples: bread in the household larder; truck in hands of firm using it.

**Commodities in Circulation**—Commodities that are still in process of production, transportation or distribution and have not as yet reached the units wherein they find their ultimate use. Examples: clothing in department store; coal in factory bin.

**Finished Commodities**—Commodities, whether durable or non-durable, in the form in which, without significant alteration, they are employed in their ultimate use. Examples: shoes, furniture, machinery.

**Unfinished Commodities**—Commodities that, whether ultimately durable or non-durable, are not yet in the form in which they are employed in their ultimate use. Examples: raw cotton; structural steel beams.

## DISTINCTION BETWEEN CONSUMERS' OUTLAY AND CAPITAL FORMATION

facilitate the measurement of gross capital formation but it also includes some classification of commodities that enter consumers' outlay.

The classification refers to commodities alone, not to services, or rather only to services that have been embodied in new commodities. But one group of services is of some importance in measuring capital formation, viz., services performed in connection with existing finished durable commodities (usually at destination) that neither result in the production of a new finished commodity nor constitute non-durable current maintenance. Such services are typified by a substantial alteration of an existing building; or a substantial repair or reconstruction of an engine already produced and installed. They may be interpreted as constituting additions to stocks of commodities rather than as representing consumers' outlay, and

should therefore be considered in the more detailed definition of the scope of capital formation.

### 3 VARIANTS OF THE DISTINCTION BETWEEN CONSUMERS' OUTLAY AND CAPITAL FORMATION

In the light of the preceding discussion and with the help of the commodity classification we can now outline more comprehensively the composition of consumers' outlay and of capital formation, and describe several possible variants of this distinction. Beginning with the variant that conforms most closely to the apportionment defined in the discussion, we proceed to some modifications of this apportionment.

#### VARIANT I

(corresponding to definitions given above and describing most closely the apportionment actually measured)

##### GROSS

GCF I—Gross Capital Formation=

- 1 flow of finished producers' durable commodities and residential buildings to final domestic users (BIII-1a plus AIII-1aa)  
and
- 2 net changes in stocks of all commodities in the classification, except AI-1a, AII-1a, AIII-1a, and BIII-1a  
and
- 3 net change in claims against foreign countries

CO I—Consumers' Outlay=

GNP I (gross national product as defined in this report) minus GCF I=  
flow to ultimate domestic consumers of all finished commodities except residential buildings (AI-1 plus AII-1 plus AIII-1bb)  
and  
the value of all services not embodied in new commodities

##### NET

NCF I—Net Capital Formation=

GCF I minus current consumption of producers' finished durable commodities and residential buildings (i.e., of BIII-1a and of AIII-1aa)

CO I—Consumers' Outlay=

NNP I (net national product as defined in this report) minus NCF I=  
GNP I minus GCF I

It may be suggested that consumers' durable finished commodities, other than residential buildings, should be treated in the same fashion as the latter, i.e., as fixed capital equipment yielding income. This would expand the concept of gross capital formation to include the flow of the whole group of consumers' durable commodities, but would demand as well a broader concept of na-

tional product than that used in this report. This broader concept would include not only income from residential buildings but also from the use of other consumers' durable commodities at their destination. The distinction between consumers' outlay and capital formation that results from this change in concept is Variant II.

*Consumers' Goods*—Commodities and services that, whether finished or unfinished, are, when finished and at their destination, used by households or large ultimate consuming units. Examples: flour, bread, raw wool, clothing.

*Producers' Goods*—Commodities and services, whether finished or unfinished, that are, when finished and at their destination, used by business agencies in the process of production. Examples: industrial machinery; steel used therein.

NATIONAL INCOME AND CAPITAL FORMATION

VARIANT II

GROSS

GCF II—Gross Capital Formation=

GCF I plus flow of consumers' durable commodities other than residential buildings (AIII-1bb) to ultimate domestic consumers

CO II—Consumers' Outlay=

GNP II minus GCF II, where GNP II, the new concept of gross national product, is equal to GNP I plus net income originating in the use of AIII-1bb plus current consumption of AIII-1bb. Hence CO II=CO I plus (net income originating in the use of AIII-1bb plus current consumption of AIII-1bb minus flow of AIII-1bb to their ultimate users). If AIII-1bb is purchased only for replacement of current consumption, CO II is larger than CO I by the net income accruing from use of AIII-1bb

NET

NCF II—Net Capital Formation=

GCF II minus current consumption of all producers' and consumers' finished durable commodities at destination=

NCF I plus flow of AIII-1bb minus current consumption of AIII-1bb

CO II—Consumers' Outlay=

NNP II minus NCF II, where NNP II, the new concept of net national product or national income, is equal to NNP I plus net income originating in the use of AIII-1bb

Repairs and alterations of already existing durable finished commodities, whether they are producers' or consumers', are important for the measurement of capital formation only if we assume that the results are durable and hence would not be consumed within the same time unit as they are produced, or immediately following. If these activities are included, it may be assumed

that the concept of both capital formation and national product as defined in Variants I and II already allow for the income resulting from these repairs and alterations, past and present. Considering these repairs and alterations in their application to Variant II, we obtain a new and the most comprehensive variant.

VARIANT III

GROSS

GCF III—Gross Capital Formation=

GCF II plus value of repairs and alterations of existing finished durable commodities

CO III—Consumers' Outlay=

GNP II minus GCF III, on the assumption that GNP II already includes net income originating from results of repairs and alterations, past and present, and current consumption of results of repairs and alterations, past and present

NET

NCF III—Net Capital Formation=

GCF III minus current consumption of all durable commodities, including the part assumed to be provided for by repairs and alterations

CO III—Consumers' Outlay=

NNP II minus NCF III, on the assumption that NNP II already includes net income originating from results of repairs and alterations, past and present

This schematic presentation of the three variants indicates briefly the composition of consumers' outlay and of capital formation under various assumptions. The values of all the items are taken at cost to those particular groups which, for the

purposes of definition and measurement, are the ultimate holders and recipients of the commodities. Thus the flow of finished commodities and services to final consumers is evaluated at the cost to them. The net changes in stocks of commodities

are measured at their cost to those who hold them.

Our study has yielded estimates of gross capital formation corresponding to the first two variants, and an approximation to gross capital formation corresponding to the third variant. But the data on the current consumption of finished durable commodities or on results of repairs and alterations, provided by Solomon Fabricant in his study of capital consumption, make possible an evaluation of net capital formation only in accordance with Variant I. Similarly, from the national income estimates we can measure net and gross national product only in accordance with the concepts used in this report, i.e., corresponding to Variant I. For

this reason neither net capital formation as described in Variants II and III, nor consumers' outlay corresponding to these variants, can be measured. In Sections VII-IX we discuss primarily the distinction between consumers' outlay and capital formation and the analysis of these two parts of the national income product, all as described in Variant I. But in Section VII estimates of gross capital formation in accordance with Variant II are also presented, and in Appendix C some data making possible an approximation to gross capital formation in accordance with Variant III are provided.

## VII APPORTIONMENT OF GROSS NATIONAL PRODUCT BETWEEN GROSS CAPITAL FORMATION AND CONSUMERS' OUTLAY

### I GROSS CAPITAL FORMATION—CHARACTERISTICS OF THE ESTIMATES

THE totals of gross capital formation in the United States for 1919-35, presented in Table 10 in two variants, correspond in coverage to the composition of gross capital formation given in the outline of Variant I and Variant II. There were, however, some reinterpretations of the theoretical definition, and some departures from it, the latter caused by the exigencies of the available data.

As defined above, gross capital formation in either Variant I or II excludes all repairs and alterations. But in one industry, viz., construction, there is a considerable volume of alteration and rebuilding activity whose result is tantamount to new construction. It seemed illogical to include new construction and to exclude these substantial alteration jobs which with respect both to the cost and durability of results are little different from new construction. Accordingly, such substantial alterations of construction units as called for building permits were treated as new construction and are included in the estimates of the volume of construction appearing in Table 10 and subsequently. Other repairs and alterations were excluded, but their volume, so far as data were available, was estimated (see Appendix C, Table VII).

Parts sold for replacement in finished durable commodities at their destination raised a similar problem. Here again, especially in the case of machinery and equipment used in the process of production, parts may be conceived as having a life as long as or not much shorter than the commodity when new; and the total of many machines may be treated as a combination of parts since they are ordinarily replaced part by part until the framework is the only original piece that survives. It therefore appeared advisable to expand the concept of producers' finished durable commodities to include parts sold for replacement. The case seemed much weaker for parts of consumers' durable commodities; they have consequently been treated as unfinished.

We may now consider how the availability or lack of data affected the estimates given in Table 10. The flow of movable commodities, producers' and consumers' taken together, is reasonably complete, covering all manufactured commodities (as reported in the Census of Manufactures) and whatever finished durable commodities flow directly from agriculture and mining. The item omits the insignificant volume of durable commodities produced in the service industries. The volume of construction, inclusive of such alterations and repairs as call for building permits, is based upon a comprehensive estimate prepared for nonfarm res-