

## PREFACE

This book has been a long time in the making. The interest in providing an empirical framework that would correspond to **Marxian** categories dates back to 1972-73, when Anwar Shaikh first discovered Shane Mage's pathbreaking work and developed an alternate schema and an alternate set of estimates based on Mage's own data.

In 1974 Shaikh came across Edward Wolff's working paper on input-output-based estimates of the rate of surplus value in Puerto Rico. This added a new dimension to the problem. Mage's work emphasized the significance of the distinction between productive and unproductive labor, but it was restricted to only the value-added side of national income accounts. On the other hand, whereas Wolff's work was located within the more comprehensive double-entry framework of *input-output* accounts, it did not distinguish between productive and unproductive labor. This led Shaikh to attempt to develop a comprehensive framework for **Marxian** categories which made both distinctions *simultaneously*.

The procedure that emerged in 1975 was essentially the same one used in this book: a mapping between **Marxian** and input-output categories illustrated by means of a continuing numerical example in which both total price (*the* sum of purchasers' prices) and the magnitudes of the aggregate value **flows** (total value and its basic components) were held constant, while the associated money forms became ever more complex as more **concrete** factors were considered. This allowed one to verify, at each stage of the argument, that the overall mapping was correct.

For a short time in the mid-1970s Wolff and Shaikh joined forces, but their paths soon diverged. By 1978 Shaikh had produced a final draft of a paper that **systematically** built up a mapping between **Marxian** and national income account categories, provided measures of the rate of surplus value in the United States, and made some preliminary estimates (for

three sample years) of the size and direction of the net transfer between workers and the state (i.e., of the balance between taxes paid by workers and the social expenditures *directed toward them*) This paper circulated widely, but was never published (although an extended and somewhat different version appeared in Shaikh **1980b**). Instead, Shaikh turned his attention to broadening the framework to encompass input-output accounts and data.

In the late **1970s**, **Ahmet** Tonak also became interested in the estimation of **Marxian** categories. Using the schema of Shaikh's unpublished paper, he produced one of the first systematic estimates of the rate of surplus value in Turkey, published (in Turkish) in 1979. During the early **1980s**, Tonak focused on the United States, extending the sample estimates of the net tax on workers to the whole postwar period, providing his own estimates of variable capital and surplus value, and tracing out the general impact of the net tax on the rate of surplus value. This work **became his Ph.D. dissertation** in 1984, which was the basis for subsequent extensions by Tonak (1987) and Shaikh and Tonak (1987).

During the early **1980s**, our attempts to utilize input-output data were greatly hampered by a lack of computer facilities. Many people were instrumental in helping to overcome these and other related barriers. Michel **Juillard**, <sup>who</sup> **was at the time** working on recasting U.S. input-output and national income account data into a **Marxian** departmental schema, was of invaluable theoretical and empirical help. So too was Katherine Kazanas, whose work focused on the impact of the distinction between production and nonproduction labor for the measurement of productivity. Julie Graham and Don Shakow provided similarly crucial support in the manipulation of the input-output tables. Ernest Mandel and Dimitri Papadimitriou helped secure funding at various points. With the help of Eduardo Ochoa, Paul Cooney, **and** Michel Juillard, Ara Khanjian created an input-output database and used the basic framework to measure and compare money and labor value flows in the United States (Khanjian 1989). All provided great moral and intellectual support throughout.

By the **mid-1980s**, the two of us had begun working together on turning this **project into the present** book. A first draft was produced in 1985, thanks to a grant provided through the generous support of the Hamburg Institute for Social Studies, and the basic results were made available in the same year at a conference supported by Bard College. A second, substantially revised draft was produced in 1989, which was once again extended and **revised** in 1992. **During much of this period**, **Dimitri Papadimitriou** of Bard College and Bernard Rodgers of Simon's Rock College of Bard provided moral and material assistance for our efforts. We owe them a special debt.

From the mid- to late 1970s onward, the various stages of this project have regularly appeared in Shaikh's lectures on advanced political economy. Many graduate students who have been (willingly and unwillingly) exposed to this material over the years have provided both support and criticism which has helped shape the final result.

In addition to those mentioned previously, we note our debts to Peter Brooks, Eitelberto Ortiz, Hector Figueroa, Rebecca Kalmans, and Nezh Güner. Korkut Boratav, Nail Sathgan, and Sungur Savran provided critical feedback on a version of the manuscript, as **did** an anonymous referee for this press. Hakan Arslan, **Matt Noyes**, and **Greg Bongen** were vital to the production of the many charts which adorn this book. We also thank Russell Miller for his contribution to the construction of the index. **Matt Darnell** provided superb editorial assistance in rendering the final product.

Most of all, we wish to express our gratitude to our families for their support and forbearance during this long and difficult task. It is to **Fadime** and **Ali**, and to **Diana**, **Kirsten** and **Lia**, that we owe the greatest debt.

*A.M.S.  
E.A.T.*

## **Introduction**

### **1.1 Approaches to the measurement of national product**

This book aims to provide an alternate foundation for the measurement of the production of nations. The framework developed here is applied to the U.S. economy for the postwar period. The patterns that result are significantly different from those derived within conventional systems of national accounts.

National accounts give systematic empirical form to the structure, patterns, and performance of an economy (Young and Tice 1985). In the modern world, they provide the objective basis for judging the level and progress of the wealth of nations and for identifying the causes of success and failure.

Conventional systems of national accounts include the United Nations System of National Accounts, the United States National Income and **Product Accounts, and various forms of input-output accounts**. It is our contention that these types of accounts seriously distort the levels and trends of the national product, the surplus product, productivity, and other major aggregate economic variables. Because measurement and analysis are inextricably intertwined, our understanding of inter-temporal **and international economic development is correspondingly affected.**

Criticisms of official national accounts are not new. Debates about their purpose and structure have gone on from the very start (Eisner 1988, p. 1611). In recent times, there has been a renewed flurry of questions about their adequacy. Such criticisms come from a variety of quarters, ranging from official agencies such as the United Nations to a variety of Prestigious economists. In Section 2 we address the issues involved.

The measurement of national product lies at the core of all systems of national accounts (Carson and Honsa 1990, pp. 28-9). In this regard, it is

interesting to note that most critics of official accounts accept the basic definitions of production embodied in the official accounts, and seek instead to extend and improve their coverage. Issues of coverage are evidently important. But the definition of production is clearly prior, and this is precisely where we differ from orthodox economists. Thus, while our own criticism is part of the general chorus, it is quite different in character from most of the others, and has different implications.

The basic problem arises from the fact that conventional accounts classify many activities as "production," when in fact they should be classified as forms of social consumption. For example, the military, the police, and private guards protect property and social structure. Civil servants and lawyers administer rules and laws. Traders in commodities and paper circulate wealth or titles to it. It is our contention that such activities are actually forms of social consumption, not production.

Consider the basic difference between production and consumption. Production activity uses up wealth to create new wealth (i.e., to achieve a production outcome). Personal consumption uses up wealth to maintain and reproduce the individual (a nonproduction outcome). In like manner, military, police, administrative, and trading activities use up wealth in the pursuit of protection, distribution, and administration (also nonproduction outcomes). The issue is not one of necessity, because all these activities are necessary, in some form or the other, for social reproduction (Beckerman 1968, pp. 27-8). Rather, the issue concerns the nature of the outcome; protection, distribution, and administration are really forms of social consumption, not production.

At the heart of this discussion is a distinction between *outcome* and *output*. Not all outcomes are outputs. This is evidently the case with personal consumption, whose outcome is the maintenance of the individual, not the production of new wealth. It is our contention that the same reasoning applies to the other social activities listed.

It should be emphasized that the distinction being made is between production and nonproduction activities, *not* between goods and services. We shall see that a substantial portion of service activities (transportation, lodging, entertainment, repairs, etc.) will be classified under production, whereas others (wholesale/retail, financial services, legal services, advertising, military, civil service, etc.) will be classified as nonproduction activities. The real distinction is between outcomes and output. All activity results in outcomes. Some outcomes are also outputs, directly adding to social wealth. But others preserve or circulate this wealth, or help maintain and administer the social structure in which it is embedded. One way to formalize these distinctions is to imagine a list (a vector) of properties associated with every commodity. Some of these characteristics, to use

Lancaster's (1968, pp. 113-18) terminology, would be relevant to the commodity as an object of social use, while others would be relevant to it as an object of ownership. Production would enhance one set, distribution another, and so forth. Needless to say, this extension of Lancaster's "characteristics" approach is different from the conventional neoclassical one.

Our general approach is rooted in the classical tradition, parts of which can be found in Smith, Ricardo, Malthus, Mill, Marx, Sismondi, Baudrillard, and Chalmers, among others (Studenski 1958, p. 20). Although its presentation was incomplete and occasionally inconsistent, it was nonetheless part of "the mainstream of economic thought for almost a century" (Kendrick 1968, p. 20). Only when neoclassical economics rose to the fore was the classical distinction between production and nonproduction activities displaced by the notion that *all* socially necessary activities, other than personal consumption, resulted in a product (Bach 1966, p. 45). With this change, lawyers, private guards, and traders of all sorts came to be counted as adding to national wealth. So too did armies, police, and civil servants.

In his monumental work on the history of national accounts, Studenski has labeled the above transition as the switch from the "restricted production" definition of the classicals to the "comprehensive production" definition of the neoclassicals (Studenski 1958, p. 12).<sup>1</sup> But from our point of view, this change is really a retreat from the "comprehensive consumption" approach of the classicals (who treat many activities as forms of social consumption, not production) to the "restricted consumption" definitions of the neoclassicals (who restrict the definition of social consumption to personal consumption alone). Under the neoclassical definition, an activity is considered a production activity if it is deemed socially necessary. This in turn rests on the conclusion that (at least some) people would be willing to pay for it directly (Bach 1966, p. 45). It follows that, within neoclassical economics, *all potentially marketable activities are considered to be production activities*.<sup>2</sup> The ideological convenience of a

<sup>1</sup> Studenski's treatment of the classical and Marxian traditions is quite superficial. He is so attached to the neoclassical "utility based" concepts of production that he is unable to see the fundamental issue at stake in the distinction between production and nonproduction activities: namely, the difference between total production and total (private and social) consumption (Studenski 1958, pp. 18-22, 24-5).

<sup>2</sup> According to the Bureau of Economic Analysis (BEA), "the basic criterion used for distinguishing an activity as economic production is whether it is reflected in the sales and purchase transactions of a market economy" (cited in Eisner 1988, p. 1612). Eisner (pp. 1616-17) proposes to extend this definition of production to encompass all activities that contribute to economic welfare. Of course, within

definition of production which treats all market activities as productive is obvious.

In spite of its other breaks with neoclassical theory, Keynesian economics did little to change the neoclassical conventions. As a result they are now embodied in all official national accounts of the Western world (although not without challenge, as we shall see).<sup>3</sup>

Although the neoclassical concept of production has dominated the official accounts of the Western world in the twentieth century, until recently quite another concept ruled in (what used to be called) the socialist world: that of the National Material Product. At the heart of this latter approach is the idea that production consists of physical goods alone. From this point of view, the value of the total product consists of what is essentially the final cost of the total physical product: that is, the price charged by the producer plus the costs of repair, transportation, and distribution (UN 1991, p. xxii). The originators of this concept claim to derive it from Marx, but this physicalist notion of the total product is actually rooted in Smith. It is quite explicitly rejected by Marx, as even Studenski concedes (Studenski 1958, p. 22).

The undifferentiated production categories of the neoclassicals and the overly restricted production concept of the modern physicalists form the two poles of official accounting systems (UN 1990, p. vi). But between this Scylla and Charybdis lies another path, one which it is our purpose to develop and apply.

Independent from theoretical and academic discourse is the language and understanding of practical experience. In this regard, it is quite striking that even though the very concept of nonproduction market activities has been abolished from the theoretical lexicon of orthodox economics, the notion continues to thrive in practical discourse. The Prime Minister of Japan was recently quoted as arguing that American resources were “squandered” on financial and trading activities in the 1980s (Sanger 1992). *Fortune* magazine reports that “representatives of the manufacturing sector indict the legal and financial sectors as highly unproductive” (Farnham 1989, pp. 16, 65; cited by Chernomas 1991, p. 1; emphasis added). **Business economists Summers and Summers (1984, p. 270) report that**

neoclassical economics, the fundamental test of this status is that someone would be willing to pay for the activity — i.e., that the activity is marketable (Bach 1966, p. 45). Hence only those nonmarket activities that are judged to fail this potential marketability test, such as perhaps some portion of government activity, could be deemed unnecessary and hence by definition unproductive. Official accounts do not make such distinctions.

<sup>3</sup> Extended accounts that fall within the orthodox economics tradition are discussed in Section 1.3. Those falling within the tradition of Marxian economics are discussed in Chapter 6.

“the most frequent complaint about current trends in financial markets is that so much talented human capital is devoted to trading paper assets rather than to actually creating wealth” (cited in Chernomas 1991, p. 2; emphasis added).

In like vein, Thurow (1980, p. 88) has argued that while “security guards protect old goods, [they] do not produce new goods since they add nothing to output” (emphasis added), and that military activities are “a form of public consumption” which “use up a lot of human and economic resources” (Thurow 1992, p. 20). The *New York Times* has expressed the same sentiment, noting that “[s]ecurity people — or guard labor, as some economists call them — are proliferating . . . [in] a nation trying to protect itself from crime and violence.” It goes on to quote Harvard University economist Richard Freeman to the effect that if “you go to a sneaker outlet in a not-so-poor neighborhood in Boston, there will be three private guards. . . . We are employing many people who are essentially not producing anything.” (Uchitelle 1989, emphasis added).

The growth of the military and the bureaucracy is endemic in the post-war world, in developed and developing countries alike. Within many parts of the capitalist world in the 1970s and 1980s, the same was true of financial and trading activities. At present in the American economy, guard labor is one of the most rapidly growing forms of employment. Within an orthodox national accounts framework, all such activities are viewed as resulting in additional output. But within a classical framework, because these same activities are viewed as forms of social consumption, their relative growth is seen as serving to absorb an increased portion of the national product and hence lower the share available for investment and accumulation. The difference between the two approaches has an impact not only on the measures of national production, but also on the very understanding of the observed patterns of growth and stagnation. In a world full of burgeoning militaries, bureaucracies, and sales forces, such matters can assume great significance at the most practical level.

As noted previously, conventional national accounts have been criticized from a variety of viewpoints in recent years. We share many of the expressed concerns about the desirability of extending and improving the coverage of such accounts. But our primary concern is with the very definition of production itself, since this lies at the heart of all systems of accounts. In the next two sections, we will briefly trace the history of national accounts and outline the basic structure of various alternative systems of accounts currently under discussion. Section 4 will summarize the essential differences between our approach and those which fall within the tradition of orthodox economics.

### 1.2 Official national accounts

Modern systems of national accounts are actually a set of inter-related accounts that attempt to cover different aspects of the **functionings** of market economies. The most fundamental of these are the production accounts (national-income-and-product and input-output **accounts**), which attempt to measure the creation and use of new national wealth. These in turn may be supplemented by ones that track financial flows in the **economy** (capital **and flow of funds accounts**) or **ones that link production and financial flows to the corresponding stocks** (national balance sheets).

At the heart of any set of national accounts lies some common definition of production activities. To construct production accounts, one must **first distinguish between production and nonproduction activities**, and hence between their corresponding actual or imputed transaction **flows**.<sup>4</sup> All transactions not associated with production activities are excluded from the measure of national product. Because orthodox economics defines production activities very broadly, its definition of nonproduction activities is correspondingly narrow — limited to transfer payments (such as social security, unemployment payments, etc.) and any nonmarket activities deemed to be socially unnecessary.

Given **the actual and** imputed transactions that are deemed to correspond to some definition of production activities, the next step is to choose a particular measure of production. At the most general level is the **total product**, which is the sum of all output produced in a given year. This is the basic measure used in input-output accounts. It can in turn be **decomposed into two elementary components; the portion which is the equivalent of the inputs used** (materials and capital depreciation) in producing the total product; and the remainder, which is **the net product**. It is this latter component which is the focus of **national-income-and-product** accounts.

Since for every receipt there corresponds a payment by someone, there are two sets of actual or imputed money flows associated with any given measure of national product: production-related receipts of the producers, which are used to measure the money value of output; and associated (nontransfer) payments representing purchases of the product by its **various users**.<sup>5</sup> These are the basic elements of a double-entry production

<sup>4</sup> Because national accounts **are** built around transactions, it is necessary to impute a money value transaction to any production activity (e.g., production in the home or payments in kind) which is not mediated by actual money flows (Beckerman 1968, p.9).

<sup>5</sup> Since the object is to measure production, not merely sales, the money revenues of a unit are supplemented by **adding to it the excess of production over sales**

**account. Further detail can then be added by subdividing** the output side into **different types of producing sectors and by subdividing** the use side into **different types of users. Individual accounts can then be constructed** for business, household, government, and foreign sectors.

Conventional production accounts come in two basic forms: **national-income-and-product accounts (NIPA)** and **input-output (IO)** accounts. Since the former are only concerned with the final use of the **product**,<sup>6</sup> they focus solely on the net product.<sup>7</sup> This is split into personal consumption, government purchases, private investment, and net exports on the use side; and wages, profits, and taxes on the revenue side. Input-output accounts go one step further, in that they keep track of the whole product.\* By including the portions of the product used as inputs by **various** industries, they are able to illuminate the structure of interindustrial production relations in addition to capturing the main aggregates of **NIPA**. It is because of their greater coverage that we use them as our theoretical foil in the development of our own accounting framework.

Both **NIPA** and **IO** accounts focus solely on production-related flows. As such, they leave out two important aspects of the overall economic picture: transactions that are not directly related to production; and stocks of real and financial wealth.

**Financial accounts attempt to correct for the first limitation by expanding the coverage of financial flows beyond those directly tied to production.**

(this item can be negative, of course). To balance the accounts, the same amount is treated as a (positive or negative) payment by the unit to itself, for "unintended inventory investment." This is typically merged into gross investment expenditures.

<sup>6</sup> Because the goal of **NIPA** is to measure the **net** product, they must exclude the portion of total product which is the equivalent of inputs used up in the year's production. To do otherwise would be double counting. But if the **goal** is to measure the total product, as is the case with input-output accounts, then obviously it would be undercounting to ignore input use. There is nothing sacrosanct about the net product as a measure.

<sup>7</sup> The proper measure of net product within conventional accounts is net national product (NNP). But since depreciation measures are frequently unreliable, **production accounts commonly leave depreciation (capital consumption) in the measure of net product** (in value added on the revenue side, and in investment on the use side). This gross-of-depreciation measure of net product is called gross national product (GNP) if it refers to the net production of the nationals of a country (including those who live **abroad**), and is called gross domestic product (GDP) if it refers to net production within a nation.

<sup>8</sup> **It is useful to note that the total product is a more general and useful measure than the net product.** Two nations with the same net product per unit labor can have different input requirements. Focusing on the net product alone would then be quite misleading when considering national productivity, employment and resource use, etc.

**Capital finance accounts** such as those associated with the **United Nations System of National Accounts** (described hereunder) focus on the sources and uses of funds for capital transactions (transactions which affect stocks of financial and real assets). Flow-of-funds (FOF) accounts, which are associated with the U.S. **NIPA**, track the sources and uses of funds for both capital transactions and current transactions (**production-related flows** as well as transfer payments) (Ruggles 1987, p. 380). They show the financial interrelationships among economic units, and can be viewed "as a direct extension of [NIPA] . . . into the financial markets" (Ruggles and Ruggles 1982, p. 10).

**National balance sheets** address the second limitation of production accounts by linking flows to changes in **stocks**.<sup>9</sup> This allows one to build a comprehensive picture of national wealth encompassing **nonreproducible assets** (land, natural resources), reproducible assets (business fixed capital and inventory stocks, stocks of consumer durables, stocks of monetary metals), and net external claims on foreign tangible and financial assets (Goldsmith 1968, p. 52).

To be fully useful, the production, financial, and balance sheet accounts should be integrated into one another. Although this has not yet been done for official U.S. accounts, it has been more or less accomplished in the **United Nations System of National Accounts (UN/SNA)**. For this reason, and for the sake of comparability with other nations (almost all of whom use the UN/SNA), the United States is expected to change over to the UN/SNA by the mid-1990s (Carson and Honsa 1990, p. 20).

The UN/SNA are more comprehensive than the U.S. accounts, because **they constitute an integrated system that uses consistent definitions and classifications** to link together NIP and IO national production accounts, financial accounts, and balance sheets. There are also some notable differences between the classification systems of the two sets of accounts. The UN/SNA focuses on gross domestic product (GDP), not gross national product (GNP). GDP measures net production within a nation while GNP measures net production by nationals of a country (including those who live abroad), and the differences can be significant for some countries. The UN/SNA also **distinguishes** between government consumption and investment (the latter being the change in nonmilitary government equipment and structures). Under discussion are issues concerning the treatment of research-and-development expenditures and of natural resources and the environment (see the remarks on Eisner and Repetto in **Section 1.3**). Revisions of the UN/SNA are currently under way, but substantial changes are not expected (Carson and Honsa 1990, pp. 21-30).

<sup>9</sup> For instance, positive net investment adds to the stock of fixed capital, and positive household savings adds to the stock of household financial assets.

### 1.3 Extended national accounts for the United States

Although the various official U.S. accounts are not integrated, much work has been **done by individual** researchers on linking production flows with balance-sheet stocks, and on expanding the coverage of production accounts **themselves to** encompass both nonmarket and nonlegal activities. In addition, there has been considerable discussion of a more adequate treatment of natural resources and environmental issues.

**Ruggles and Ruggles (1982, pp. 1, 17) attempt to extend U.S. NIPA** by improving their treatment of various individual items and by linking **stocks and flows**. In the former domain, they split both household and government expenditures into current and capital components (capital expenditures being defined as the net acquisition of durable equipment **and structures**), **list imputed values in separate accounts, and attempt to** allocate transactions in a more accurate way (e.g., owner-occupied housing expenses are allocated to the household sector rather than to unincorporated business enterprises).<sup>10</sup> But their main concern is to integrate stock and flow accounts in such a way as to link up with already existing capital stock estimates of the Bureau of Economic Analysis (**BEA**), which are now broadened to include stocks of household and government durables, and the financial flow-of-funds accounts of the Federal Reserve Board. They end up with larger measures of NNP (net national product) and GNP, because they add in "net imputed income from consumer durables" (which increases both NNP and GNP) and imputed "depreciation allowances" on consumer and government durables (which increases GNP). They also obtain a much larger estimate of national savings and investment, because they count changes in the stocks of consumer and government durables as part of savings and investment. This is a common feature of all extended accounts, as we shall see. Denison (1982, pp. 60, **62-3**) argues against such procedures, on the grounds that the resulting adjusted measures of GNP, NNP, and national savings are less meaningful than the conventional **NIPA** measures.

There are several other sets of alternate accounts, the most important of which is from Eisner (1985, 1988). In an important article, Eisner (1988) surveys six proposed extensions of **NIPA**, including his own and that of Ruggles and Ruggles.

Eisner begins by noting how crucial it is to have adequate definitions of production, primary incomes, intermediate and final output, and **investment** and consumption. On the issue of production, he proposes extending the definition to cover nonmarket production (e.g. in households)

<sup>10</sup> Carson and Jaszi (1982, p. 58) note that Ruggles and Ruggles's definition of the household sector includes soldiers, prisoners, people in sanitariums, etc.

and illegal production (drugs, gambling, prostitution), pointing out that it would make international comparisons much more meaningful (Eisner 1988, pp. 1613-14). On the other hand, he rejects the notion that "leisure time" be counted as a production activity, even though most other extended accounts do add a very large imputation for the value of leisure time to their measures of national output. Finally, he points out (p. 1622) that since extensions of the production measure to nonmarket activities require corresponding imputations on the income side (as the two sides must balance), extended accounts tend to give a radically different picture of the distribution of income (real and imputed) between capital and labor, employed and unemployed, and so forth. For instance, in official GNP accounts for 1966, the share of labor income is 82.6% and of capital income 24.3%. In the extended accounts of Jorgenson and Fraumeni (1987), because of imputations for the "services" of household durable goods and for the value of household production and leisure time, the total (real and imputed) income of households is raised over fivefold! Thus in the Jorgenson-Fraumeni accounts the labor share appears as 93% and the property share as a mere 7% (Eisner 1988, p. 1672, table S.4).

On the question of investment, Eisner argues in favor of counting the net changes in consumer and government durables as part of aggregate investment (as do Ruggles and Ruggles). He notes that various researchers also include in investment one or more of the following: changes in the value of land; expenditures for the development and discovery of natural resources; research and development (R & D) expenditures; and expenditures on health, education, training, and information (human capital). As he shows, such adjustments cause enormous changes in the measure of gross investment and national product. Finally, if one accepts the Haig-Simon-Hicks definition of income as that which can be consumed without changing real wealth, then real income, savings, and investment must all include an adjustment for the net monetary revaluations in stocks. This can add a sharply fluctuating component to the measure of national product (Eisner 1988, pp. 1622-5).

From our point of view, one of the most intriguing aspects of Eisner's survey is his discussion of the treatment of police, fire protection, guard, and national defense activities. Recall that we classify all such activities as nonproduction activities. As such, we would exclude them from the total product and hence also from the net product. Eisner argues that they should be treated as intermediate inputs rather than final product, citing Kuznets to the effect that such activities constitute "the mere cost of maintaining the social fabric, a precondition for net product rather than the net product itself" (cited in Eisner 1988, p. 1617; see also Beckerman 1968, pp. 11-12, 23-4, 27-8). This means that they would be counted as production activities and would add to the total product, but would

not enter into the net product. It is interesting to note that Mage (1963; p. 66) adopts a similar approach.<sup>11</sup>

We would also view these activities as costs of maintaining the social fabric. But we treat them as nonproduction activities instead of as intermediate inputs into production. How then would one decide between the two approaches? To begin with, we note that the normal definition of an input into production is something that enters directly into the production process, such as steel into the production of an automobile. In this sense, an activity such as national defense would surely not qualify as a production input.

The other possibility is to view national defense as an indirect input into the total product, on the grounds that it serves to maintain the social fabric. But to say that something is an indirect input is only to claim that it is a necessary part of the overall process of social reproduction: by serving to maintain the social fabric, national defense constitutes what Kuznets calls a "precondition" for other social activities. This does not imply, we would argue, that it is thereby an input into production. First of all, national defense is just as much a precondition for personal consumption as it is for production. To put it the other way, it is just as little an input into production as it is into personal consumption. Second, once we introduce the notion of preconditions, personal consumption is even more important than national defense as a precondition of production? Is personal consumption then also to be treated as an intermediate input into production?<sup>12</sup> To answer in the affirmative would vitiate the very distinction between consumption and production. Conversely, if we are to maintain this distinction then we must be able to say that production and consumption have different (albeit necessary) outcomes, and that the outcome of consumption is not an output. In this same sense, the outcome of national defense is not an output either. This is why we argue that national defense, like personal consumption, is a nonproduction activity.<sup>13</sup> And since, like consumption, it uses up resources in pursuit of a nonproduction goal, we label it as a form of social consumption.

In his survey of conventional extended national accounts,<sup>14</sup> Eisner examines six alternative systems: those of Nordhaus and Tobin (NT), Zolotas

<sup>11</sup> Mage (1963, pp. 61-8) argues that nonproduction activities in general should be treated as part of intermediate input (constant capital in the sense of Marx).

<sup>12</sup> Indeed, production is a precondition for personal consumption and national defense.

<sup>13</sup> Eisner (1988, p. 1617) expresses uncertainty on just this issue when he asks "Is eating itself intermediate to the creation and maintenance of human capital?"

<sup>14</sup> It is worth noting that this debate is not new; Marx (1963, pp. 161, 172) remarks on exactly this point.

<sup>15</sup> Eisner makes no mention of the national and international Marxian literature that we survey in Chapter 6.



(Z), Jorgenson and Fraumeni (JF), Kendrick (K), Ruggles and Ruggles (R), and Eisner (E). The latter two have already been discussed in some detail. In what follows, we will focus on the major characteristics of these types of accounts.

In principle, orthodox economics defines production activities as all those that affect the welfare (welfare as utility) of individuals in a nation (Kendrick 1968, p. 24).<sup>16</sup> In practice, however, official accounts are built largely around market activities, supplemented by imputations for the “services” furnished by owner-occupied buildings, services furnished without payment by financial intermediaries, and some small imputations for farm products consumed on farms and food furnished to employees, et cetera (Eisner 1988, p. 1620).<sup>17</sup> Thus one of the central tasks of conventional extended accounts is to revise and expand the measure of production in a manner consistent with the underlying core of economic theory (p. 1616).

The differences among the various accounts arise solely from the specifics of this process. In particular, whereas most authors seek to measure production in terms of activities that contribute to economic welfare, a few “seek explicitly to measure” welfare itself (Eisner 1988, p. 1627, n. 15). Thus Nordhaus and Tobin, as well as Zolotas, reduce the measure of national product by their estimates of “regrettables and disamenities” (Eisner 1988, p. 1670, table 1).

Certain themes are common to almost all accounts. Most would add the imputed value of household activities and of illegal market production to their estimates of the national product, if good data were available (Eisner 1988, p. 1670, table 1).<sup>18</sup> Our own approach would be similar,

<sup>16</sup> Eisner (1988, p. 1617) states that “we are looking for all economic activity related to welfare.” Tobin remarks that “we do have to admit that there are lots of problems in the utility criterion of welfare that we economists love so well” (cited in Eisner 1988, p. 1619, n. 8).

<sup>17</sup> Orthodox accounts treat owner-occupied housing as a source of utility-generating “services” whose value is estimated by imputing a rental value to such housing. In 1986, this (fictitious) imputed value is listed as \$305 billion. In addition, in order to treat financial firms in exactly the same way as other “producers” (as opposed to admitting that they are nonproduction firms), it is necessary to create an imputed flow of “services furnished without payment” by them. This amounts to \$71 billion in 1986. The implications and alternate treatments of such issues are discussed in Chapter 3.

<sup>18</sup> Ruggles and Ruggles (1982, p. 5) exclude “housewife’s services and do-it-yourself activities” on the grounds of the difficulty of obtaining “accurate and valid measurements.” Illegal activities suffer from this problem to an even greater extent. As Carson (1984, p. 33) notes, the relative size of the underground economy varies considerably across countries, and even within any one country. For the United States, for instance, the estimates range from a low of 4% of GNP to a high of 34%.

except that we would distinguish between production and nonproduction activities, and also between capitalist and noncapitalist activities – just as we do in the case of legal market activities (see Chapter 2).

A second common characteristic of extended accounts is that they strive to integrate the treatment of sectoral wealth stocks with corresponding production-flow accounts. However, in attempting to do this, conventional accounts adopt the business sector as their basic model. In business, purchases of plant and equipment are capital investments that yield returns (profits) in subsequent years. On the (false) premise that the salient characteristic of business fixed capital is its durability,<sup>19</sup> extended accounts treat stocks of consumer durables (houses, Cars, shoes, clothing, equipment, and furnishings) and government durables (building and equipment) as household and government “capital,” respectively (Eisner 1988, p. 1653). Of course, unlike business capital, there is no actual profit indeed, no revenue at all – attached. It therefore becomes necessary to impute a stream of “services” to household and government durables, and add these imputed amounts to the measure of national product.<sup>20</sup> Official accounts already carry out such imputations for owner-occupied housing, in which private homeowners are treated as unincorporated businesses renting out their homes to themselves for fictitious sums of money (BEA 1980, p. 47). Most extended accounts follow a similar procedure for so-called intangible capital, cumulating health and education expenditures to derive a stock of “human capital” and cumulating business research and development to get a stock of business “intangible” capital (Eisner 1988, p. 1670, table S.I). As a corollary, it becomes necessary to shift all household and government expenditures on durables, health, and education from the category of current expenditures to a newly created category of capital “investment” expenditures.

As far as we are concerned, the conventional treatment conflates two distinct issues. On one hand, they are quite right to stress the importance of keeping track of the stocks of household and consumer wealth, and of integrating the formation of these stocks into corresponding flows of revenue. On the other hand, we would argue that it is wrong to treat mere durable goods as if they were equivalent to business capital, and even worse to impute fictitious profits to such goods. The capital stock of a business is part of a profit-making venture, and comprises not only

<sup>19</sup> The reduction of the concept of capital to a merely durable good obscures the difference between a capital good and a consumption good. It is also inadequate as a description of capital itself, since profit in no way depends on the durability of an investment (huge profits are routinely made on short-term financial capital).

<sup>20</sup> Gross imputed services of household and government durable goods are calculated as imputed depreciation on the stock of these goods, plus a gross imputed return on these same stocks (Eisner 1988, p. 1626).

**durable items** (plant, equipment, and durable financial assets) but also **nondurable items** (inventories of materials and work in progress as well as **short-term financial assets**). It is because money is tied up as capital — be it in the form of durable goods or short-term financial assets — that the possibility of profit arises. The substantial profits made in speculation and trade make it clear that the durability of the investment is a completely secondary matter.

The goods of a household, both durable and nondurable, are part of **the consumption circuit; those of the government are part of social administration**. To reduce business, household, and government stocks to mere durable goods is to negate the differences between capitalist enterprise, personal consumption, and social **administration**.<sup>21</sup> To impute fictitious gross profits to the latter two only compounds the problem. In a **similar vein, while it is perfectly proper to assess the skill and knowledge** of the population, and perhaps even to cumulate the total cost of acquiring these attributes, it is not appropriate to treat the resulting measure of imbedded cost as yet another stock of “capital.”

Business R & D expenses and exploration costs are a different matter; they **are** a part of the circuit of capital. The question here is whether they should be reclassified as fixed investment expenditures (rather than current costs or circulating investment), and then cumulated to form some stock of intangible business capital. **In** this regard, it is useful to note that K & D and similar expenses are, after all, exploratory expenditures which may or may not bear fruit. By treating them as current costs, businesses already take account of the expense when it is incurred. And if they do bear fruit at some time in the future, the resulting capital investment is counted when **it is made, as are any associated profits if they in turn appear**. An artificially constructed stock of intangible R & D capital is therefore redundant.

Eisner lists several other major modifications specific to particular authors. A significant number (NT, Z, JF, K) expand their measures of total output by a large amount representing the estimated output of leisure time; since leisure contributes to utility, it is appropriate within neoclassical economics to view it as a production activity (Eisner 1988, p. 1626).<sup>22</sup>

<sup>21</sup> It is interesting to **note** that even though many other countries count some part of **government durables** as a stock of capital, military durables are **specifically excluded** (Ruggles and Ruggles 1982, p. 12). Thus durability per se is evidently not sufficient as a definition of capital.

<sup>22</sup> Relative to the official BEA measure of GNP, the estimated additional product attributed to leisure time is very large: 48.7% for Z in 1965 (Eisner 1988, p. 1636, **table Z.1**), **96.6% for K in 1984** (p. 1646, **table K.6**), **101.5% for NT** (p. 1632, **table NT.2**), and 115.5% for JF in 1982 (p. 1638, **table JF.1**, which shows **\$4,200.7 billion** for the JF estimate of the 1982 value of total time spent in household production and leisure, from **which the leisure component can be estimated using the Kendrick estimates** of the two components in Eisner 1988, p. 1646, **table K.6**).

**A number of authors (JF, R, E) also add a large and volatile** component representing **the effects of price changes on the value of household, government, and business stocks of wealth, on the grounds that the appropriate “Haig-Hicks-Simon concept of income [is] that which can be consumed while keeping real wealth intact” (p. 1624)**. Eisner argues in favor of this procedure, even though it entails “a significant conceptual departure from conventional accounts, which focus on the direct output of current productive activity,” and even though it creates a large component that exhibits **“some sharp year-to-year variations”** (p. 1625). Scott (1990, p. 1175) argues against this procedure on both theoretical and practical grounds, noting in passing that if revaluations were counted as part of income and output flows then one would have to conclude “that the U.S. national income was negative during October 1987” (the month of the stock market crash). **Finally, as we have already noted, some authors (NT, Z, E) shift police, fire protection, defense, and guard activities from the final product to intermediate input; NT directly subtract other “regrettables and disamenities.”**<sup>23</sup> Both procedures serve to lower the measure of final product.

Figure 1.1 presents the various estimates of gross final product which flow from the six conventional extended accounts, relative to the official BEA measure of GNP, as summarized by Eisner (1988, p. 1673, table S.5) for the mid-1960s. Also included are our own estimates, as developed in subsequent chapters of this book.

Two things are notable in Figure 1.1. First, all the estimates, including our own (ST), are larger than the official measure of GNP. In the case of the six conventional extended accounts, this is due to the fact that virtually all authors include estimates of the value of housework **and of the “services”** of household and government durable goods, and that most **also** include quite large estimates for the value of leisure. As for our own estimates, we find that our basic estimate of market production is smaller than GNP. But when we supplement this with Eisner’s estimate of housework, in order to make the coverage somewhat similar to that of other extended accounts,<sup>24</sup> the resulting figure is about 21% larger than GNP.

The **second striking feature** of the estimates in Figure 1.1 is their **great range of variation: from a low of 112% of the official measure of GNP (Ruggles and Ruggles) to a high of 468% (Jorgenson and Fraumeni)**. In

<sup>23</sup> Regrettables include the previously discussed items of national defense, police, etc., as well as costs of commuting to work and road maintenance, all on the grounds that these are instrumental expenditures that do **not directly enter utility** but are (regrettably) necessary for activities which do. Disamenities represent costs of pollution, litter, congestion, noise, etc. (Eisner 1988, pp. 1627-8).

<sup>24</sup> We have already argued against the notion of adding the “services” of durables or the value of leisure time to the measure of the product.

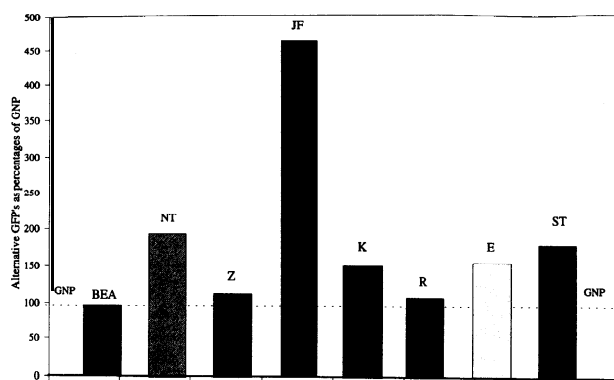


Figure 1.1, Alternate measures of GFP. Key: NT = Nordhaus and Tobin for 1965; Z = Zolotas for 1965; JF = Jorgenson and Fraumeni for 1966; K = Kendrick for 1966; R = Ruggles and Ruggles for 1969; E = Eisner for 1966; ST=Shaikh and Tonak for 1966. The ST estimate is from Table 5.4, supplemented by the addition of Eisner's (1988, p. 36) estimate of the value of housework (\$267.9 billion in 1966). Source: Eisner (1988, p. 1638, table S.5).

the JF case, this is almost entirely due to a particularly large estimate of the value of leisure, and to a huge addition for investment in human capital (Eisner 1988, p. 1638, table JF.1).<sup>25</sup>

Many of these account extensions involve significant changes in the components of the production accounts (Eisner 1988, p. 1626). For instance, the treatment of expenditures on household durables as investment involves shifting their purchases from consumption to (household) investment. Similar effects obtain for government purchases on durables, and for expenditures on health and education (investment in human capital). The net result is to radically alter the size, ratios, and even the meanings of categories such as consumption and investment.

Environmental and resource issues are much less discussed in these extended accounts (Ruggles and Ruggles 1982, p. 5; Eisner 1988, pp. 1622-

<sup>25</sup> JF's estimate of the value of housework and leisure is itself almost 1 1/2 times as large as official GNP, while their measure of investment in human capital is almost 3 times as large as GNP and almost 18 1/2 times as large as the official measure of gross private domestic investment (Eisner 1988, pp. 1637-8, table JF.1).

3). It is well known that official conventions can lead to very inconsistent results. The degradation of the environment is not counted as reduction in income or wealth. If industry cleans up its own mess, the expenditure is counted as an intermediate input and hence output is not affected. But if government cleans it up, this expands the measure of net output because government expenditures are considered to be purchases of final goods and services. Finally, if households incur medical expenses as a consequence of environmental problems, their expenditures raise the measure of consumption and hence of the final product (Repetto et al. 1989, p. 16).

Although such issues are beyond the scope of the present book, it is interesting to note that within our accounting schema the above anomalies would not appear. Neither the cleanup expenditures by industry or government, nor the medical expenditures by consumers, would be counted as production activities. Indeed, like all nonproduction activities, they would use up resources in responding to the environmental problem. As for the environmental degradation itself, this could be counted as a reduction in the stock of (environmental) wealth.

In any case, there exists no consensus on the appropriate treatment of environmental issues within any system of accounts.<sup>26</sup> But it is possible to address the somewhat more manageable issue of resource depletion. Eisner (1988, pp. 1622-3) suggests that the improvement or exhaustion of natural resources be treated on a par with any other investment. Economic activity that increases the value of land or natural resources would be counted as investment, and activity that exhausts them would be counted as depreciation. Repetto et al. (1989, pp. 22-4) propose a similar scheme, in which the change in the physical stock of resources, valued at average prices over the period, is added to net national product (as net investment or disinvestment). Such a procedure would reduce the measured net national product when income is derived essentially from the depletion of resources.<sup>27</sup>

#### 14 Toward an alternate approach to national accounts

In spite of the complexity and sophistication of the various extended accounts surveyed here, it is important to note that they all share

<sup>26</sup> Of the six extended accounts surveyed, only Nordhaus and Tobin attempt to address this issue directly, in the form of their deduction for "regrettables and disamenities." But this is a rather ad hoc treatment, and as Eisner (1988, p. 1627, n. 15) points out, it crosses over the line between the measurement of production (creation of objects of utility) and utility or disutility itself.

<sup>27</sup> Unlike Eisner, Repetto et al. (1989, pp. 23-4) would not count the monetary revaluation (the change in the monetary value of a given physical stock) in the measure of income and product.

certain critical characteristics. First, they are intended to be extensions, not alternatives, to the conventional accounts that form their core (Eisner 1988, p. 1616). Second, like the conventional accounts around which they are built, the “theoretical constructs they are presumed to serve” (p. 1612; Repetto 1989, p. v) are those of neoclassical economics. Third, at the core of all national accounts lie the production accounts (Carson and Honsa 1990, pp. 28-9). Fourth, the neoclassical concept of production embodied in conventional production accounts is a very elastic one, encompassing not only all results of potentially marketable human labor, but also the “services” of durable goods and even the “benefits” of leisure time. At the other extreme we **find** the restricted concept of production embodied in the National Material Product system of the formerly socialist bloc. Here, the core accounts are focused on the production and distribution of physical goods.

The system we develop falls between these two polar extremes. On one hand, our production encompasses both goods and services. Indeed, the vast bulk of the traditionally defined service sector falls within our definition of production activities. On the other hand, we do not identify all activities as production: trading, military, police, and administrative activities are treated as forms of social consumption, not production. At the heart of the matter is a distinction between outcomes and outputs. The outcomes of nonproduction activities may be socially desirable results, but they are not outputs.

Our system has **its roots** in the classical tradition. The classical economists were deeply concerned with the factors that regulate the growth of the wealth of nations. Once it was recognized that some activities were actually forms of social consumption, not production, two crucial implications followed. First, an increase in employment need not signal an increase in production; on the contrary, it might signify an increase in social consumption. Second, an increase in the share of social consumption in net output is a decrease in the social savings rate, and this tends to reduce the rate of **growth of the system (see Chapter 7).**<sup>28</sup>

<sup>28</sup> If we write net output as  $Y = C + I$ , where  $C =$  personal and social consumption and  $I =$  net investment, then the social savings rate is  $s = (Y - C)/Y = I/Y$ . An increase in the relative share of social consumption is then a decrease in the social savings rate, and hence a direct reduction in the Harrodian warranted rate of growth  $g^* = s/v$ , where  $v =$  the ratio of capital to normal capacity output. In a depressive situation in which the actual growth rate is below the warranted rate, the two might move in opposite directions. In normal growth, however, the actual growth rate will fluctuate around the warranted rate (i.e., capacity utilization will fluctuate around normal levels), so that a decrease in the social savings rate will lower the latter by lowering the former. See Chapter 7 for further analysis and data.

From this perspective, a deficit-financed increase in (say) military expenditures may indeed stimulate an increase in aggregate demand, output, and employment in the short run. But, insofar as it expands the share of social consumption, it will tend to reduce the rate of growth of the system. The short-run gain will therefore be **achieved** at the expense of a long-run loss that will eventually outweigh it.<sup>29</sup>

The location of the dividing line between production and nonproduction activities has other implications as well. We will find that it changes the very measures of net product, surplus product, consumption, investment, and productivity. The observed trends of these and many other critical variables are also quite different from those in conventional **accounts**. As a result, one may achieve a very different understanding about the progress of the U.S. economy and the determinants of its postwar growth.

<sup>29</sup> The short-run stimulatory effect may, in the Keynesian sense, raise the level of output. But the decline in the propensity to save will reduce the rate of growth, and eventually the new level of output will be lower than what it would have been at the old rate of growth. See Chapter 7 for further details.