

IMPROVING THE ANALYTICAL AND DATA FRAMEWORK OF THE GOVERNMENT SECTOR FOR NATIONAL GOALS ACCOUNTING*

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Provision of "market goods" follows the decision rules of traditional microeconomics; pricing and resource allocation for such goods tend towards Pareto optimality. The provision of "collective goods," by contrast, depends on political (or quasi-political) collective decision processes; beneficiaries often receive a share of collective goods free of charge or well below average or marginal (private or social) costs. No inherent tendency towards optimality may be presumed and separate analysis of collective goods becomes an essential part of national goals accounting.

The national-income-accounts (NIA) distinction between personal consumption expenditures (PCE) and government purchases of goods and services corresponds *roughly* to a division between market goods bought by the consumer and a major category of "collective goods" (i.e. "public goods" provided by government). However, a significant proportion of PCE represents "collective goods" paid for by government, business, or nonprofit organizations and provided *on behalf* of the consumer, whereas a part of NIA government purchases represents services paid for by the consumer (i.e. "market goods").

This article develops operationally meaningful distinctions among "market goods," "collective goods," and "tied aid" (a mixed category with market-good and collective-good characteristics). These distinctions are determined by the nature of the *decision processes*—rather than by the characteristics of the beneficiary or the supplier. This classification is related to the national income accounts and major discrepancies are pinpointed. The blurring of the distinction among market goods, collective goods and tied aid is found to be most consequential in the NIA treatment of "education" and "medical care" services. NIA data for these two services are restructured for national goals accounting purposes in order to illustrate both the quantitative importance and the empirical feasibility of classifying benefits by their respective decision processes.

The government sector presents at least two sets of special problems for National Goals Accounting (NGA) within the "individualistic" framework of public finance that provides the basis for most "welfare analyses" in western democratic countries.¹ The first of these relates to the role of government as a provider of public goods and a modifier of private resource allocations; the second relates to its role as an income redistributor. Both roles are exercised largely outside the competitive market mechanism and without recourse to an explicit pricing system.²

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¹For an illuminating differentiation between this "individualistic" approach to public finance and an "organismic" or unitary approach that treats the state as an important and independent element of a collective welfare function, see James H. Buchanan, *Fiscal Theory and Political Economy*, University of North Carolina Press, Chapel Hill: 1960, chapter 1.

²See Carl S. Shoup, *Public Finance*, Aldine Publishing Company, Chicago: 1969, chapter 1.

A major role of government in a modern “free-enterprise” or “mixed” society consists of modifying (i.e. “correcting”) the solutions provided by freely functioning markets, wherever the results would tend to depart persistently from optimality, or would be inadequate or socially unacceptable for these or other reasons. Much of government regulation is justified on these grounds. More often the government’s role of modifying market solutions is carried out either through direct government production of collective goods, or else by inducing the private sector to produce such goods.

Collective goods are provided not in response to individualistic market choices, but rather on the basis of political (or “quasi-political”) *collective decision processes*. Hence, most welfare functions and traditional approaches to macro-economic modelling that derive optimization (often in the form of “Pareto optima”) from “individualistic” market decisions cannot cope properly with this important component of consumer benefits. This is most apparent in the case of what is known in Public Finance as “pure public goods.” These are goods and services which have zero marginal cost and for which consumers need not reveal their true preferences, because nonpaying beneficiaries could not be easily excluded from “consumption”—at least not at a “reasonable” cost (the “free rider” problem).³ Because of the breakdown of the traditional market pricing mechanism, pure public goods (such as national defense or flood control) tend to be provided “free of charge” (i.e. they are financed either through general taxes or through government borrowing). Needless to say, national goals accounting (NGA) problems arising from collective decision processes are far more general than the narrow case of “pure public goods” would tend to indicate.

A second major role assumed by government in a “mixed” economy consists of the *explicit* redistribution of income—from the better-off to the poor, from producers to the retired, etc.—in ways designed to alleviate hardship and improve “equity” as perceived by society. (Other major government functions include economic stabilization policies; international economic relations; and concerns with productivity, research and development, and economic growth. These will not be considered here.)

The tax-transfer mechanism (i.e. the use of taxes to finance transfer programs) is the government’s main tool for redistributing income among members—or, more often, among groups of members—of society. Many current government transfer programs in the United States have complex qualifying criteria, user constraints and matching requirements. (For example, *food stamps* are available mainly to welfare recipients and other qualifying low-income groups; they may be used only for food purchases; until recently, their matching requirements were based on a complex “sliding scale.”) In some of these mixed cases, the intrusion upon private-sector markets (and, hence, the “distortion” of individualistically derived resource allocation) is similar in effect to the provision of “collective

³For a discussion of *pure* public goods, see Richard A. Musgrave, *The Theory of Public Finance*, McGraw-Hill Book Company, Inc., New York, Toronto, London: 1959; chapter 1; Paul A. Samuelson, *The Pure Theory of Public Expenditure*, *Review of Economics and Statistics*, Vol. 40 (November 1958), pp. 329–331; Albert Breton, *A Theory of the Demand for Public Goods*, *Canadian Journal of Economics and Political Science*, Vol. 32 (November 1966), pp. 455–462.

goods.” But even *pure* transfer payments, such as Social Security retirement benefits—i.e. unconstrained transfers of resources from taxpayers to nonpaying recipients—raise difficulties for national goals accounting.

Such *pure* transfers do not interfere with, or distort, individualistic market choices (since all consumers continue to “vote” freely in the market with their dollars). However, the income redistribution will affect resource allocation through changes in the quantities and types of goods consumed (e.g. the retired spend more on health care and less on clothing than the working population). Moreover, it is likely to affect the distribution of resources between current consumption on the one hand and savings and capital formation on the other, thus modifying future economic growth. For these reasons, the resource-use effects of transfer payments should be assessed *explicitly* in order to determine the policy impact of government on the economic system.

Ongoing research by this author addresses itself to the conceptual and empirical aspects of these two sets of problems. Results related to the first set of problems are summarized in this article. First, operationally useful definitions of “collective goods” and “public goods” are developed as the basis for separating political (or quasi-political) collective decision processes from traditional market choices. A “mixed” category of “tied aid” is also established in this connection. Then, the relationship between these categories and the traditional treatment of “personal consumption expenditure” and of “government purchases of goods and services” in national income accounting is explored. Finally, some empirical results for the broad functions of “education” and “health care” are summarized in order to demonstrate both the feasibility and the quantitative significance of accounting separately for collective goods, tied aid, and market goods.

1. DISTINGUISHING “COLLECTIVE GOODS,” “PUBLIC GOODS” AND “TIED AID” FROM “MARKET GOODS”

Pure public goods are too rare, but externalities are too common, to serve as the sole basis for defining a concept of “public good” that is operationally meaningful and useful to policy makers.⁴ Faced with this problem, Steiner suggested that a public good be defined as “any publicly induced or provided collective good.”⁵ Thus viewed, “public goods” are that *subset* of “collective goods” that involves government decision making and “intrusion” into the private sector. “Collective goods,” in general, may then be defined as goods that are supplied in response to a collective decision or demand and, hence, in either larger quantity or better quality than the private market would produce.⁶

⁴In addition to national defense and flood control cited earlier, “law and order” is among the few services that qualify as pure public goods. (E.g. see R. Dorfman, General Equilibrium with Public Goods, In J. Margolis and H. Guitton, eds., *Public Economics: An Analysis of Public Production and Consumption and their Relations to the Private Sector*, Macmillan, 1969.

⁵Peter O. Steiner, Public Expenditure Budgeting, in Alan S. Blinder, Robert M. Solow, George F. Break, Peter O. Steiner, and Dick Netzer, *The Economics of Public Finance*, The Brookings Institution, Washington, D.C.: 1974, esp. p. 247. In this connection, see also Musgrave, op. cit., pp. 42–46.

⁶This definition is similar to Steiner’s, but it places greater emphasis on the collective decision process as the distinguishing characteristic of collective or public goods. (See also Musgrave, op. cit., esp. pp. 14–15.)

In this connection, it is worth noting that the demand for collective goods can be rationalized economically in most cases on the basis of significant *positive externalities* or “spillovers.” (E.g. education benefits not only the students, but also their friends and even the electorate at large.) However, the demand for collective goods may depend at times on a “perceived” social merit that cannot be equated closely with a specific “spillover.”⁷ Moreover, collective goods, as defined here, are not an “all or nothing” proposition, i.e. they need not be a separately identifiable “bundle” of goods or services. Collective and market goods may be, and often are, provided jointly.

Thus, not only group health insurance provided by an employer but also the subsidized portion of private college education that is financed by gifts and endowment income is a *collective good*. (The portion of college education financed by tuition fees, by contrast, represents the student’s purchase of education—a “market good.”) Similarly, workers’ compensation insurance provided by employers as a result of government legislation is a *public good*. Note in this connection that the *decision-making unit* (in this case, the government) is the determining factor—and not the supplier or the recipient of the service.⁸ The definition of public and collective goods used—with its emphasis on a combination of “spillovers” and collective decision making—implies that all collective goods are goods which do not correspond to the traditional economic “market solutions” and, hence, cannot be analyzed by purely economic “optimization models” (such as, say, the personal utility and profit-maximizing kind).

Some economists have argued that, at least in theory, externalities that may give rise to collective or public goods could be “internalized” in such a way that market solutions would remain both applicable and efficient.⁹ In principle, such “internalizing” of externalities could achieve efficient solutions through contracts or bargaining, regardless of whether the “injured party” pays the “injuring party” in order to induce it (through a “subsidy”) to change its market decision, or whether the “injuring party” is forced to compensate the “injured party” (through a tax). In practice, such informal “internalizing” is feasible only where a small number of parties is affected. Even in these cases, it is not likely to be efficient because injuries or benefits “revealed” in bargaining strategies may exaggerate the true private injuries or benefits. Moreover, most practical cases of spillovers affect a sizable number of beneficiaries and/or injured parties and make informal bargaining impractical, if not prohibitive. Thus, collectively derived solutions that differ from market solutions become both necessary and desirable.¹⁰

⁷In this connection, see Musgrave, *op. cit.*; especially his discussion of “merit wants” (pp. 13–14).

⁸Workers’ compensation insurance must be purchased by both private and public employers; it may be provided either by a private or a public insurance carrier.

⁹This line of reasoning is derived from the “Coase theorem,” first presented by Ronald Coase, *The Problem of Social Cost*, *Journal of Law and Economics*, October, 1960; reprinted in William Breit and Harold M. Hochman (eds.), *Readings in Micro-Economics*, Holt, Rinehart and Winston, New York, 1968, pp. 423–456.

¹⁰For an excellent discussion of the limitations of “bargaining” as a means of achieving efficient solutions, see Gordon Tullock, *Private Wants and Public Means; An Analysis of The Desirable Scope of Government*, Basic Books, New York, 1970, chapter 3. The literature on collective decision making and its relation to economic solutions is vast, varied, and without general consensus. The following may serve as an incomplete and eclectic sampling: Duncan Black, *On the Rationale of Group Decision-*

In addition to public goods, another set of government intrusions upon the market deserves to be distinguished for national goals accounting: “Tied aid.” “Tied aid,” as defined here, consists of “transfer payments” (i.e. payments without any “quid pro quo”) that are issued either *to* or *on behalf of*, the consumer as payment for a specific set of goods or services. What distinguishes such “tied aid” from public goods is that the timing and quantity (if not the quality) of the benefit is determined by the consumer on the basis of market decisions—not by the government on the basis of collective decision. Tied aid may cover either the entire cost of the benefit (in which case it results in consumers’ market choice at zero price), or only part thereof.

As a rule, tied aid is provided as a public alternative to a public good. It tends to be reserved for benefits that have large spillovers and that are considered in the public interest. Considerations of “equity” and income redistribution tend to play a major role in government decisions to provide tied aid. In the national income accounts, most tied-aid programs are classified as transfer payments along with general, unrestricted transfers to individuals. (In the United States, the one major exception is Medicaid, a government health care program for the poor, which is treated as a health care *purchase* by state and local governments.) But the concept of tied aid, as defined here, is really a cross between public good and general income transfer, representing a blending of public funding and private choice.

Medicare, the U.S. health care program for the retired, is a perfect example of tied aid. It is a tied or restricted transfer payment—the benefits go mainly to retired sick persons and are financed by payroll taxes. The cost of the program depends on the specific amount of service consumed by “covered” consumers which is determined by the market decisions of these consumers. Payment may be either directly to the consumers, or else on their behalf to the attending physician or the hospital. This tied aid is similar in many respects to a public good, such as, say, national health insurance or free public clinics for the aged. However, the latter two would probably result either in actuarial funding (probably out of general revenue) or a lump-sum allocation for operating costs. In neither case would public expenditure be linked in a direct “market-type” fashion to the quantity and quality of the service actually “purchased” (even though not paid for) by the consumer.

The term “tied aid” is recommended here in preference to “tied transfer,” because some tied aid is classified in the national income accounts as a government purchase (rather than a transfer payment). In the United States, Medicaid—the poor person’s “Medicare”—is the most prominent example. (To qualify, one has to meet certain low-income criteria and the program is funded out of general

Making, *Journal of Political Economy*, Vol. 55, February, 1948, pp. 23–34; Howard R. Bowen, *Toward Social Economy*, Rinehart & Company, Inc., New York, 1948; K. Arrow, *Social Choice and Individual Values*, John Wiley & Sons, Inc., New York, 1951; Clifford Hildreth, *Alternative Conditions of Social Ordering*, *Econometrica*, Vol. 21, No. 1, January, 1953, pp. 81–94; James M. Buchanan, *Social Choice, Democracy and Free Markets*, *Journal of Political Economy*, Vol. 62, No. 2, April 1954, pp. 114–123; Musgrave, *op. cit.*, chapter 6; James Buchanan and Gordon Tullock, *The Calculus of Consent*, University of Michigan Press, Ann Arbor, 1962; and James S. Coleman, *The Possibility of a Social Welfare Function*, *American Economic Review*, December 1966, pp. 1105–1122.

revenues rather than out of payroll taxes.) From a purely economic point of view, the sharp distinction between Medicare as an income transfer program and Medicaid as a government purchase makes little sense. Hence, for national goals accounting the uniform treatment of both programs as “tied aid”—a cross between income transfer and public good—seems more satisfactory, reflecting as it does the mixture between public funding and private choice.

2. MARKET GOODS VERSUS “COLLECTIVE GOODS” AND “TIED AID” IN NATIONAL INCOME AND NATIONAL GOALS ACCOUNTING

Once the importance of the distinctions between “market solutions” on the one hand, and “collective solutions” and “mixed solutions” (tied aid) on the other, is recognized, it becomes desirable to restructure existing national income accounts (NIA) data to conform to these national goals accounting concepts. The existing national income accounts—as a result of their historic development and their traditional macroeconomic applications—do not adhere consistently to these important distinctions. In fact, the NIA data on personal consumption expenditures—and some data on government purchases as well—are structured in a way that makes it extremely difficult to derive the distinctions with regard to decision-making processes, or market versus collective solutions, proposed here for national goals accounting. One obvious difficulty in this respect arises from the merging, in NIA personal consumption expenditures, of current expenditures of nonprofit institutions (which include financing from gifts, endowment income, and government aid) with genuine consumer expenditures. The ensuing distortion of consumer spending is largest for education. It appears to be relatively modest in the case of medical care—where employer fringe benefits contribute a far greater distortion—and is of little importance for most other categories.

Fringe benefits give rise to another important departure from individual consumer choices (but in the national income accounts they get merged with genuine consumer purchases that reflect individual consumer decisions). Most fringe benefits provided by private employers are classified as “other labor income” (which is part of NIA “personal income”). Hence, services flowing from these fringe benefits (such as group health insurance) become part of personal consumption expenditures and are merged with genuine consumer purchases (for medical care). Clearly, the quality and quantity of these benefits—classified here as “collective goods”—is not determined by individual “market purchases” by the consumers. Workers’ compensation (a public good) is one type of fringe benefit that results in a particularly complex treatment in the U.S. national income accounts. If workers’ compensation is provided by a private insurance carrier, the benefits become part of “other labor income” and, hence, of “personal income”; if it is provided by a public insurance carrier, the benefits are treated as a “transfer payment.” In both cases, spending out of workers’ compensation enters identically into “personal consumption expenditures.” (If an employer transfers his workers’ compensation from a private to a public carrier, total labor income is reduced and transfer payments are increased. Genuine employment costs and consumer benefits are—of course—totally unaffected.)

There exist, of course, significant linkages between collective goods on the one hand, and market goods on the other. Consumers usually can and do adjust their personal expenditure patterns to take account of the availability of collective goods. Collective goods are not—or, at least, never should be—provided as a replacement of (or even a complement to) identical or similar private goods unless such substitution reduces unit cost and increases efficiency.¹¹ Thus, whenever provision of collective goods is economically justified, the benefits tend to enhance the real income of their recipients. Through substitutions in personal consumption patterns, some of these real income gains will be diverted to other market goods and services. But such “fungibility” provides, at best, a somewhat tenuous adjustment in final consumption patterns. (For example, a worker may reduce his coverage of private health insurance in response to group health insurance; but a low-income earner who had bought no private health insurance cannot divert any “income in kind” from his group insurance benefits to other goods and services.) Thus, the distinction between market goods and market choices on the one hand, and collective goods and collective decision making on the other, remains of fundamental importance despite market linkages through fungibility.

Fungibility also modifies and diffuses the initial or apparent effect of tied aid on resource use. (For example, tied aid for health care, through its real-income effect, may increase expenditures of the recipient for food or recreation.) But tied aid deserves additional consideration here because—unlike general transfer payments—it affects not only the income distribution but also “intrudes” on private market choices.

In the national income accounts of the United States, the most important examples of a tied aid are Medicare and Medicaid. Medicare benefits—or rather that portion of them that is not covered by personal contributions to supplementary medical insurance (SMI)¹²—resemble a public good because the government foots the bill—but the benefits are triggered by *consumer decisions* (e.g. to check into a hospital for treatment). Similar in nature is Medicaid—a health-care program for the poor that is largely financed by the Federal government but is state-administered.

Yet, in the national income accounts, Medicare expenditures are a part of “personal consumption expenditures” for health care (and thus are treated as a “market good”), whereas Medicaid expenditures are a part of “government purchases” (and hence are treated as a “public good”).

The lack of distinction among genuine market goods, collective or public goods, and tied aid results in other analytically troublesome classifications in the U.S. national income accounts. For example, the “government purchases” account includes with publicly funded government purchase of education and

¹¹E.g. see Tullock, *op. cit.*

¹²Medicare, exclusive of SMI, is financed through a component of the Social Security payroll tax. Hence, it represents a transfer from the working population to the (mostly retired) beneficiaries of Medicare. Contributions for SMI are paid by the beneficiaries themselves and represent a consumer purchase of service. The uncovered portion of SMI costs are again a transfer paid out of general tax revenues.

health care parts that are clearly “market goods” purchased and paid for by the consumer. Thus, when students (or their parents) pay tuition to state colleges and universities, or when the sick pay health and hospital charges to state and local hospitals, these payments are recorded in the national income accounts as “nontax receipts” (like revenue from hunting and fishing licenses) and not as consumer purchases of market goods. As the balancing entry on the product side of the accounts, the government is presumed to purchase a public service (i.e. “public” education or health care).

Clearly, in these and many other cases, the NIA classification identifies “public good” with *publicly provided* good. For national goals accounting, however, the nature of the *choice* and the *decision process*, rather than classification by apparent *purveyor of service*, should be the distinguishing criterion.¹³ Viewed in this way, the consumer’s decision to buy higher education, whether from a private or a state college, is a *market decision* involving considerations of quality and cost and choices among slightly differentiated products.¹⁴

3. CONVERTING NIA EXPENDITURES FOR EDUCATION AND MEDICAL CARE TO NATIONAL GOALS ACCOUNTING CATEGORIES OF MARKET GOODS, COLLECTIVE GOODS AND TIED AID

Analytically useful NGA distinctions among market goods, collective goods and tied aid have been outlined here and the blurring of such distinctions in the national income accounts has been documented. Two important questions remain to be answered: (1) Is it feasible empirically to derive these NGA categories from the existing NIA data (supplemented by other sources as need be)? (2) Are the resulting differences between such NGA accounting and traditional NIA accounting of sufficient magnitude and importance to warrant such an effort? The empirical work summarized in Tables 1 and 2 suggests that the answer to both questions is affirmative.

Estimates were developed by NGA categories of market goods, collective goods and tied aid for 1972–73 for “Education” and for “Medical Care”—the two consumer functions for which the NGA categories differ most drastically from national income accounting.¹⁵ The estimates and reclassifications covered NIA “personal consumption expenditures” as well as “government purchases of goods and services.”

Personal consumption expenditures (PCE) for “education,” as defined in the national income accounts, averaged \$12.1 billion in 1972–73. When an estimated \$0.9 billion in outlays for textbooks are added (Table 1, item 6)—these are submerged in outlays for “books and maps” which are included in the national income accounts under “recreation”—PCE for education rises to \$13.0 billion.

¹³In this connection, see also Musgrave’s discussion of “provision for public goods” (op. cit., pp. 14–15).

¹⁴Needless to say, the subsidized or “endowed” portion of the cost of the private college represents a “quasi-public” or “collective good.”

¹⁵The 1972–73 average was chosen because these are the years covered by the latest Consumer Expenditure Survey of the U.S. Bureau of Labor Statistics—a reference which is used in another part of the author’s NGA research (not summarized here).

TABLE 1
EXPENDITURES ON EDUCATION BY NATIONAL INCOME ACCOUNTS AND NATIONAL GOALS
ACCOUNTING CLASSIFICATIONS, AVERAGE OF 1972 AND 1973
(\$ Million)

	National Goals Accounting (NGA) Classifications			Total
	Tied Aid (Paid by Govern- ments)	Collective Goods (on Behalf of Consumers)	Market Goods (Paid by Consumers)	
National income accounts ("NIA") and related classifications				
I. Education Provided by Private Sector (NIA "Personal Consumption Expenditures")				
1. Total NIA consumption expenditures, by payer	\$1,126	\$3,804	\$8,046	\$12,976 ^a
2. Current expenditures of nonprofit elementary and secondary schools				3,427
a. Paid for by gifts, investment income and government transfer payments to these schools		1,043		
b. Paid for by student fees			2,384	
3. Current expenditures for higher education				5,258
a. Paid for by gifts, investment income and government transfer payments to nonprofit institutions		1,679		
b. Tuition scholarships by state and local governments	1,126 ^b			
c. Paid for by student fees			2,453	
4. Fees paid to commercial, business, trade and correspondence schools and for educational services not elsewhere classified			2,326	2,326
5. Expenditures by foundations		1,082		1,082
6. Textbooks			883	883
II. Education Provided by Public Sector (NIA "Government Purchases of Goods and Services")				
7. Total	0 ^c	64,500	3,438	67,938
8. Elementary and secondary schools		48,120		48,120
9. Higher education				15,848
a. Net government purchases: (9)-(9b)		12,410 ^c		
b. Tuition and related educational charges paid to state and local governments			3,438	
10. Other		3,970		3,970
11. Total education provided by private and public sectors: (1)+(7)	1,126	68,304	11,484	80,914

^aTextbooks (item 6) have been added.

^bBecause of lack of adequate data, some scholarships that cover books and living expenses as well as tuition, and cash payments to students attending state colleges, are included, but tuition-only scholarships paid to state colleges are excluded.

^cBecause of lack of adequate data on tuition-only scholarships paid by government to state colleges, this tied aid could not be isolated from government purchases (where it is contained at present).

Sources: Data are averages for calendar years 1972 and 1973 from *Survey of Current Business*, July, 1976, p. 34, Table 2.6; p. 37, Table 3.4; p. 40, Table 3.14; and estimated by the author and Mark Wehle. (Details on estimating procedures and back-up tables available from the author on request.)

TABLE 2
 MEDICAL CARE EXPENDITURES BY NATIONAL INCOME ACCOUNTS AND NATIONAL GOALS
 ACCOUNTING CLASSIFICATIONS, AVERAGE OF 1972 AND 1973
 (\$ Million)

	National Goals Accounting ("NGA") Classifications			Total
	Tied Aid (Paid by Govern- ments)	Collective Goods (on Behalf of Consumers)	Market Goods (Paid by Consumers)	
National income accounts ("NIA") and related classifications				
I. Medical Care Provided by Private Sector (NIA "Personal Consumption Expenditures")				
1. Total NIA consumption expenditures	\$7,700	\$21,139	\$35,919	\$64,758
2. Employer payments				20,564
a. For private group health insurance		16,929		
b. For medical benefits and administrative cost under public and private workers' compensation		2,919		
c. For administrative cost of private income-loss insurance		716		
3. Medical benefits paid by hospital and supplemental medical insurance ("Medicare")				9,160
a. Net Medicare benefits paid by government: (3)-(3b)	7,700			
b. Personal contributions for supplementary medical insurance (Medicare premiums)			1,460	
4. Gifts and investment income of nonprofit hospitals		346		346
5. Medical benefits under automobile liability insurance on commercial vehicles		229		229
6. Other "direct" payments by the consumer			34,459	34,459
II. Medical Care Provided by the Public Sector (NIA "Government Purchases of Goods and Services") ^a				
7. Total	7,700	16,086	4,834	28,620
8. Health and hospitals				17,911
a. Net government purchases of health and hospital services: (8)-(8b)		13,077		
b. Hospital and health charges paid to state and local governments ^b			4,834	
9. Medicaid benefits	7,700			7,700
10. Veterans' hospitals and medical care		2,520		2,520
11. Medicare administrative cost		489		489
12. Total medical care provided by private and public sectors: (1)+(7)	15,400	37,225	40,753	93,378

(see footnotes opposite)

Government purchases of education, as derived from the national income accounts, amounted to another \$67.9 billion, for a grand total of \$80.9 billion (see Table 1, item 11, last column).

Out of the \$13.0 billion of PCE for education, market goods paid for by consumers are estimated to have accounted for only \$8.0 billion. Nonprofit institutions contributed an estimated \$3.8 billion in educational benefits funded by gifts, investment income and transfer payments to these institutions (items 2a, 3a, 5); and tied aid from governments provided additional educational benefits estimated at \$1.1 billion (item 3b). This tied aid of \$1.1 billion consisted of tuition-only scholarships from state and local governments, paid either directly to the students or else paid on behalf of students to nonprofit institutions.¹⁶

Of the total \$67.9 billion recorded as NIA government purchases for education, \$3.4 billion represent "consumer purchases," i.e. market goods paid for by tuition and related educational charges, mostly to state colleges and universities. (In the national income accounts, these tuition payments are recorded as "nontax receipts" of state and local governments.)

Thus, according to the NGA estimates summarized in Table 1, total consumer purchases of education "market goods" amounted to \$11.5 billion; "collective goods" (mostly public goods) accounted for \$68.3 billion; and "tied aid," for another \$1.1 billion.

Corresponding estimates for "Medical Care" are summarized in Table 2. Total personal consumption expenditures (PCE) for "Medical care," as defined in the national income accounts, averaged \$64.8 billion a year in 1972-73. Government purchases of medical care, as derived from the national income accounts, amounted to another \$28.6 billion, for a grand total of \$93.4 billion.

¹⁶Separate data on government tuition scholarships paid directly to state and local colleges and universities are not available from the national income accounts; in fact, the NIA accounting procedure results in merging and including these scholarships with government purchases of education. Hence, this component of tied aid could not be isolated here.

Note: An undetermined part of hospital and health charges paid to state and local governments (item 8b) comes not directly from consumers but from parts of employers' payments for private group health insurance and for medical benefits under workers' compensation, of total Medicare benefits, and of medical benefits under automobile liability insurance on commercial vehicles (items 2a, 2b, 3 and 5). Parts of these last four items actually belong in panel II rather than panel I. This does not affect the totals in item 12 but introduces offsetting distortions into items 6 and 8b and into the subtotals in items 1 and 7.

^aExcludes some government purchases of medical goods and services included elsewhere in the government sector of the national income accounts, but not separately identifiable. Among the most important items excluded for this reason are Defense Department hospital and medical care, including care of dependents; and Medicaid administrative costs.

^bIn the national income accounts, this item is treated as a nontax receipt; its counterpart is a government purchase of health and hospital services. Here, it is treated as a market purchase by consumers, i.e. *paid for* by the consumer. See also Note, above.

Sources: Data are averages of 1972 and 1973 from *Survey of Current Business*, July, 1976, p. 34, Table 2.6; p. 37, Tables 3.4 and 3.6; p. 39, Tables 3.11 and 3.12; p. 40, Table 3.14; p. 53, Table 6.13; A. M. Skolnik and S. R. Dales, "Social Welfare Expenditures, Fiscal Year 1976," *Social Security Bulletin*, January, 1977, p. 5, Table 1; and estimates by the author and Mark Wehle. (Details on estimating procedures and back-up tables available from the author on request.)

Out of the \$64.8 billion of PCE for medical care, market goods paid for by the consumer are estimated to have accounted for only \$35.9 billion. Of the remaining \$28.8 billion, \$21.1 billion represented collective goods; while tied aid accounted for another \$7.7 billion.

Employee fringe benefits from business, government and nonprofit institutions represented the bulk of all collective goods, \$20.6 billion (item 2), with employer payments to private group health insurance plans accounting for \$16.9 billion (item 2a).

Medicare expenditures accounted for the \$7.7 billion of "tied aid" (3a); the remaining \$1.5 billion in Medicare SMI benefits (3b) is treated here as a "market good," since it is paid by the consumer as an *optional payment* for additional medical coverage.

Of the total \$28.6 billion recorded as NIA government purchases of medical goods and services, \$4.8 billion represents consumer purchases paid as hospital and health charges to state and municipal hospitals; another \$7.7 billion are Medicaid payments classified here as tied aid (item 9). Thus, out of the total \$28.6 billion NIA government purchases for medical care, only \$16.1 billion represent provision of public or collective goods, as defined here.

Thus, according to the NGA estimates summarized in Table 2, consumer purchases of medical care "market goods" amounted to \$40.8 billion. Another \$37.2 billion of medical care was provided by "collective goods," and "tied aid" accounted for \$15.4 billion.

These figures clearly indicate that the identification of NIA personal consumption expenditures with genuine consumer purchases of "market goods," as well as the interpretation of NIA government purchases as "collective goods" would be grossly misleading in any national goals accounting framework. Better analytical concepts and corresponding empirical estimates are both desirable and feasible.