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Government Subsidies: Concepts, International Trends, and Reform Options

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Abstract

This paper addresses the problems of defining and measuring government subsidies, examines why and how government subsidies are used as a fiscal policy tool, assesses their economic effects, appraises international empirical evidence on government subsidies, and offers options for their reform. Recent international trends in government subsidy expenditure are analyzed for the 16-year period from 1975 to 1990, using general government subsidy data for 60 countries from the System of National Accounts (SNA) and central government expenditure on subsidies and other current transfers for 68 countries from Government Finance Statistics (GFS). The paper reviews major policy options for subsidy reform, focusing on ways to improve the cost-effectiveness of subsidy programs.

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### Summary

This paper addresses issues of defining and measuring government subsidies, examines why and how government subsidies are used as a fiscal policy tool, assesses their economic effects, appraises international empirical evidence on government subsidies, and offers options for their reform. Governments subsidize to achieve different policy objectives, including offsetting market imperfections, exploiting economies of scale, and meeting various social policy objectives. Subsidies can take many forms, including direct government payments to producers or consumers (cash or explicit subsidies); low-interest government loans; intentional or de facto reductions in tax liabilities; government equity participation; government provision of goods and services at subsidized prices; procurement subsidies; and regulatory subsidies. Because subsidies may often not result in explicit, contemporaneous budgetary outlays, the measurement of subsidies and cross-country comparisons of subsidy outlays are problematic.

Empirical work has frequently used a pragmatic approach to measure subsidies, relying on definitions that allow for ready quantification, such as cash or explicit subsidies. The Government Finance Statistics (GFS) and System of National Accounts (SNA) data on subsidies used in this study fall into this category, as they are defined narrowly to include only cash payments to producers for current operations.

Using data for 1975-90, this paper analyzes the subsidization behavior of 60 countries included in the SNA database and 68 countries included in the GFS database. The SNA data show that the subsidy/GDP ratio rose in most regions during the late 1970s, with a declining trend starting in the mid-1980s. Movements in this ratio were heterogeneous within the developing country group during 1975-90. Nevertheless, both small low-income economies and heavily indebted countries reduced subsidies substantially during 1982-90. Meanwhile, the GFS data indicate that subsidy and transfer spending in industrial countries hit its highest levels in the early 1980s, with declining expenditures as a share of GDP for the remainder of the decade. In developing countries, the GFS data track the changes in the SNA figures, with subsidy and transfer expenditure tailing off after peaking in the early 1980s.

The paper finds that subsidies impose substantial burdens on the economy, both in terms of fiscal costs and adverse effects on efficiency. In assessing the fiscal burden of subsidies and options for reform, attention should be focused on increasing transparency, enhancing cost effectiveness, limiting duration, strengthening cost control, and selecting a pragmatic approach to subsidy policies.

## I. Introduction

This paper examines government subsidies in 68 countries during 1975-1990, with the objective of providing a description of patterns and trends. Evidence from recent studies suggests that government expenditures on subsidies remain high in many countries, often amounting to several percentage points of GDP. Subsidization on such a scale implies substantial opportunity costs.

There are at least three compelling reasons for studying government subsidy behavior. First, subsidies are a major instrument of government expenditure policy. Second, on a domestic level, subsidies affect domestic resource allocation, income distribution, and expenditure productivity, and may affect structural and sectoral adjustment by reducing the flexibility of the economy. Third, on an international level, increased international integration--through trade and the proliferation of multilateral and bilateral arrangements--brings about questions regarding the extent to which subsidies cause distortions in international resource allocation by affecting competitiveness.

This paper is structured as follows. Section II addresses issues concerning the definition and measurement of subsidies. Section III examines the use of government subsidies as a fiscal policy tool, and focuses on why and how subsidies are provided, as well as their economic effects. Section IV reviews empirical research on subsidies and discusses international trends and patterns in available subsidy data. Section V provides some thoughts on assessing the economic costs of subsidies and options for policy reform. Section VI concludes. Three appendices discuss data sources and their limitations, provide a detailed review of the results of previous research, and present some disaggregated subsidy data.

## II. Subsidies: Definition and Measurement

### 1. What is a subsidy?

It has sometimes been argued that "the concept of a subsidy is just too elusive" to even attempt to define (Houthakker (1972)), and that the "definition of a subsidy, like that of beauty, varies with the beholder whose eye is focused on the object under scrutiny" (U.S. Congress, House Committee on Agriculture (1972)). Much in the same vein, Break (1972) has suggested that "whereas for most government spending programs it is only the benefits that are elusive and difficult to quantify, for subsidy programs it is frequently both benefits and costs."

As a result, the fairly large body of research on government subsidies uses a variety of concepts to define a subsidy. In the most general terms, a subsidy can be defined as any government assistance, in cash or in kind, to private sector producers or consumers for which "the government receives no equivalent compensation in return, but conditions the assistance on a

particular performance by the recipient" (U.S. Congress, Joint Economic Committee (1972)). It includes government operations that result in producers receiving higher returns than suggested by competitive market outcomes ("producer subsidies"), and consumers obtaining goods or services below their economic cost ("consumer subsidies"). This broad definition extends beyond the more narrow subsidy concepts that are employed in government budgets or national accounts, and it leaves room for a wide range of government activities to be defined as subsidies. <sup>1/</sup> However, such a broad definition is necessary to capture both explicit and implicit subsidy elements that are contained in different forms of government intervention.

While a wide array of government activity may contain subsidy elements, subsidies may be classified on the basis of the following seven categories:

- direct government payments to producers or consumers (cash subsidies or cash grants);
- government guarantees, interest subsidies to enterprises, or soft loans (i.e., low-interest government loans) (credit subsidies);
- reductions of specific tax liabilities (tax subsidies);
- government equity participation (equity subsidies);
- government provision of goods and services at below-market prices (in-kind subsidies);
- government purchases of goods and services at above-market prices (procurement subsidies);
- implicit payments through government regulatory actions that alter market prices or access (regulatory subsidies).

At least four caveats should be kept in mind with respect to this classification. First, the types of subsidies contained within each of the seven categories are not really homogeneous. Tax subsidies, for example, may take on different forms, including those obtained through tax exemptions, tax credits, tax allowances, special rate reliefs, tax deferrals, or the accumulation of tax arrears.

Second, some subsidies may, at least a priori, belong to several different categories. For example, consignment subsidies, that is, grants given to projects that are only repayable should the project turn out to be commercially successful, may, if the project is unsuccessful, be a cash grant, or, when the project is successful, become a credit subsidy when the interest rate is below the market rate.

Third, it leaves ample room for ambiguities and measurement problems. For example, overvalued exchange rates affect market prices and access, and, while they contain subsidy elements (e.g., to those who purchase imported goods), they also entail costs or negative subsidies (e.g., to exporters);

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<sup>1/</sup> For example, this definition does not allow one to make the distinction between subsidies and transfers that is used in government budgets and national accounts.

the full extent of the subsidy element of overvalued exchange rates may be difficult to establish, even on a gross basis. Similarly, even rather simple things, like, for example, the subsidy element of granting specific companies or sectors the right for accelerated depreciation, may easily become cumbersome to calculate.

Fourth, the categories do not capture well intergenerational or multi-period aspects of subsidies, such as the subsidy elements that may be contained in immature social security systems.

To identify a subsidy, it is usually necessary to identify its beneficiaries, or to establish, in principle, who the beneficiaries are. For pure public goods, such as military defense, street lighting, or other goods that are characterized by nonexclusive consumption, it is not possible to identify specific beneficiaries. Regardless of how many beneficiaries there may be, it is impossible to consider something to be a subsidy as long as it is not possible to identify who the beneficiaries are. 1/

Still, there are few goods that are pure public goods, but even when they are, it may sometimes be possible to identify subsidies that arise in the process of producing a pure public good. For example, military defense is a pure public good and hence no subsidy element can be established; but government procurement of defense goods is not a public good, and this may give rise to procurement subsidies.

## 2. How to measure subsidies

There are different ways to measure subsidies, each of which has its own shortcomings. Examples of popular ways to measure subsidies are producer or consumer subsidy equivalents (PSEs and CSEs), budgetary cost (which can be measured either on a gross or net basis), and grant equivalents. 2/

Probably the conceptually most simple way to measure subsidies is to look at their budgetary cost. For example, the net budgetary cost of subsidies could simply be defined as gross budgetary outlays on subsidies minus any cost recovery, for example, through user charges or fees. However, government budgets only provide an incomplete picture of the full

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1/ Even it were possible to identify fully the beneficiaries of pure public goods, it would be difficult to establish the subsidy element or the total benefits derived. In theory, benefits should be measured on the basis of a beneficiary's marginal rate of substitution between the public good and the composite consumption of all other goods. This approach would imply that one would first need to assume that public goods are provided optimally, then decide on utility functions, and finally allocate benefits on the basis of these utility functions. This procedure is, of course, fraught with largely arbitrary assumptions, particularly with respect to the assumed utility functions.

2/ For a discussion of these different concepts, see Appendix II.

extent of subsidy outlays, as they may show subsidies either under the budget category "subsidies," under various other budget categories, or not at all. More specifically, using government budgets for assessing subsidies has three main shortcomings.

First, the budget category "subsidies" does not contain all budgetary subsidies. In government budgets, only cash subsidies are classified as subsidies; other types of subsidies (i.e., credit, tax, equity, in-kind, procurement, and regulatory subsidies) are classified elsewhere in government budgets. For example, tax subsidies show up implicitly as reduced tax revenue, but not explicitly in the budget category "subsidies;" loans to state enterprises are frequently classified as "net lending" rather than subsidies, even when they have little prospect to be repaid, or are used to cover operating deficits of these enterprises.

Second, government budgets do not contain many types of operations that create subsidies. Hence, a significant part of subsidy operations is carried out "off budget." Regulatory subsidies, for example, usually benefit one population group at the expense of another group. For instance, controlled consumer prices for basic consumer goods may benefit consumers at the expense of producers, without necessarily having a direct and immediate budgetary impact. Also, some subsidy operations, such as payments to cover operational losses of state enterprises, have often been kept "off budget." Finally, national government budgets do not contain subsidization operations carried out through international organizations. For example, subsidy expenditures of the European Union that are carried out in the context of the common agricultural policy and are paid from the common budget are not included in the national budgets of European Union member countries. These operations are substantial: between 1973 and 1986, for example, expenditure by the European Agricultural Guidance and Guarantee Fund (EAGGF), which is the financial arm of the Common Agricultural Policy of the European Union, rose from ECU 4.1 billion to ECU 22.5 billion (0.7 percent of aggregate GDP of European Union member countries) (Rosenblatt et al. (1988)). <sup>1/</sup>

Third, budgets do not show the full economic impact of current subsidy practices. For example, controlled consumer prices may have an immediate budgetary impact or not, depending on whether producers are reimbursed by the government for the difference between the free market price and the controlled consumer price. In many cases the budgetary impact may be delayed, even though, eventually, it will occur. For example, utility companies may be forced to sell electricity at artificially low prices, but then, at some point in time, may need "loans" from the government to cover their operating losses. In countries where the banking system is subject to considerable government interference, such loans to state enterprises are

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<sup>1/</sup> It is unclear whether subsidies provided through the European Union were a substitute for national subsidies, as overall budgetary subsidies of European Union member countries also increased during that period (see Appendix III, Table 13).



often given through banks. These directed lending operations to state enterprises usually have an adverse effect on bank profitability. It may be possible to roll over these loans, and thereby avoid giving explicit budgetary subsidies for some time. However, such policies are not sustainable, and usually leave behind a trail of bank restructuring and bad debt consolidation, and enterprise restructuring and reform.

Even a single implicit subsidy may assume significant quantitative proportions. For example, around 1993, tax arrears (a tax subsidy) amounted to between 5 and 10 percent of GDP in the Visegrád countries--the Czech and Slovak Republics, Hungary, and Poland (Schaffer (1995)). As the payment of tax arrears may not always be immediately enforced (in part because governments are usually reluctant to pursue firms into bankruptcy), and since inflation erodes the real value of taxes that are paid late, the cost of tax arrears to the budget is difficult to measure and can easily mushroom.

Observed subsidies, particularly when they largely rely on government budgets, typically measure but a fraction of the full extent of subsidization that exists in an economy at any point in time. But since it is almost impossible to know the full extent of subsidization, the available subsidy data have usually been confined to what can readily be observed and quantified. This approach is also used to compile subsidy data for the two major cross-country sources for data on subsidies, the IMF's Government Finance Statistics (GFS), and the United Nations' System of National Accounts (SNA).

Both GFS and SNA define subsidies as unrequited government payments to producers for current operations, plus the losses on sales of departmental enterprises, that is, government units that are engaged in commercial activities, such as a government printing office. GFS and SNA data on subsidies have three main shortcomings.

First, they only report cash subsidies. Hence, all other types of subsidies (i.e., those that fall in the six other categories that were established above) are excluded. For instance, free public education, a classical example of an in-kind subsidy, or tax holidays for investors, a classical example of a tax subsidy, are not recorded as subsidies.

Second, they only provide information on subsidy recipients, not beneficiaries. However, the subsidy recipients are often not the ultimate beneficiaries. For example, state enterprises that incur losses on account of controlled output prices may receive government subsidies, but the ultimate beneficiaries may be consumers (who pay lower prices), not the enterprises (which can only maintain low prices because the government covers their losses).

Third, they only provide information on payments to producers, and exclude from subsidies all payments to consumers that allow these consumers to obtain goods and services at prices below cost, like, for example, food

stamps. All payments to consumers are lumped together under transfers to households, regardless of whether they constitute a subsidy or not. For example, pension payments, which are not a consumer subsidy, are classified as "transfers to households," as well as expenditures on food stamp programs, which constitute a consumer subsidy.

There are some small differences between GFS and SNA data that are explained in some detail in Appendix I. For example, the GFS reports subsidies on the basis of budget execution data, while the SNA uses national income accounts data. <sup>1/</sup> In theory, GFS and SNA subsidy data could be used interchangeably, once corrected for the slight differences in definition. In practice, however, differences arise because (i) GFS data are reported on a cash basis, whereas SNA data are reported on an accrual basis; (ii) SNA data reflect the general government, whereas GFS data are largely confined to the central government since few countries report general government data on government subsidies. In addition, it should be noted that GFS data for subsidies per se are available for relatively few countries; much more common is for countries to report combined subsidy and transfer payments (including pensions), which accounts for the large difference between the SNA subsidies and GFS subsidies and transfers figures.

### III. Subsidies as a Fiscal Policy Tool

#### 1. Why subsidize? <sup>2/</sup>

There are a large number of explanations as to why governments use subsidies as a policy tool. Houthakker (1972), for example, has argued that at least some of it may have to do with logrolling, or vote trading. While pointing out that this is unlikely to result in an efficient allocation of resources, he suggests that it may nevertheless have political benefits since, "as we all know from birthdays and Christmas Eves, the exchange of gifts, even of rather useless gifts, frequently helps to stimulate good fellowship and a sense of community" (Houthakker (1972)).

From an economic perspective, the main purpose of subsidies is to reallocate resources, that is, to alter economic activity to achieve an outcome that is "more desirable" from what would occur otherwise. Hence, arguments for subsidies are often based on some concept of efficiency or economic justice. But even when subsidies generate a more desirable outcome, it does not mean that the entire value of the subsidy is corrective in nature, or that the particular type of subsidy used for a given purpose is best among the available policy alternatives.

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<sup>1/</sup> Recall that in national income accounts, GDP at market prices equals GDP at factor cost minus subsidies plus indirect taxes.

<sup>2/</sup> This section draws heavily on Ford (1990), and Ford and Suyker (1990).

Economic arguments for using government subsidies generally fall into three main categories:

- offsetting various market imperfections;
- exploiting economies of scale in production;
- meeting social policy objectives, including, for example, protecting the poor, changing the distribution of income, and increasing or retaining employment.

The case for using government subsidies to offset various market imperfections is straightforward, as it is geared toward increasing efficiency. The argument applies to a case where markets do not allocate resources to their most efficient use, usually because the owners of these resources cannot reap their full return. In theory, a second-best policy tool, such as subsidies, may offset market imperfections. For example, free rider problems usually lead firms to underinvest in research and development (R&D) activities; subsidizing firms to undertake R&D activities would be one way to overcome this problem. Similarly, informational asymmetries can be viewed as an example of a market imperfection. Informational asymmetries, for example between borrowers and lenders of funds, can lead to market interest rates above the social rate of return. This would imply that socially profitable undertakings will not be implemented. A possible remedy is credit subsidies, provided, for example, through subsidized interest rates.

Similar arguments can be used to subsidize enterprises in order to obtain economies of scale in production. For example, when foreign-owned firms have a cost advantage because of their larger size, a government subsidy could allow a domestic firm to expand and overcome its initial competitive disadvantage, and, therefore, compete successfully in the long run. In theory, this could shift enough profits to the domestic firm (that can, in turn, be taxed) to justify the cost of the subsidy.

In both of the cases described above (offsetting market failures and obtaining economies of scale), successful subsidization means that the government is able to "pick winners." Picking winners requires good analytical capacities, an in-depth knowledge of different industries and activities, and accurate foresight. In the case of R&D, for example, this would require knowing the likely future rates of return to different research projects. In the case of increasing international competitiveness by exploiting economies of scale, the government would need to evaluate the long-run costs and benefits of subsidizing different industries, and assess the long-term prospects for each competing activity. <sup>1/</sup> Furthermore, the analysis must consider the possibility that other countries retaliate; such "beggar-thy-neighbor" trade policies can exacerbate international trade

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<sup>1/</sup> For an exposition on the difficulties in applying strategic trade policy, see, for example, Krugman (1994).

tensions and lead to a counterproductive spiral of offsetting subsidies between trading partners.

Social policy objectives, such as a more equal distribution of consumption, provide important reasons for subsidies. Often, however, these goals are not accomplished or at least not accomplished at minimum cost. For example, many economies maintain generalized food subsidies in the form of fixed prices for essential staple goods as a social safety net device. Generalized food subsidies have the advantage of not generating "exclusion" errors, since nobody is excluded from receiving the benefit. At the same time, they generate "inclusion" errors, and therefore substantial waste, as many unintended beneficiaries (those who do not need the subsidy, or, more generally, the nonpoor) also benefit from the policy. In addition, they may easily generate a whole range of adverse supply effects.

In general, to have a chance of being successful, it is necessary (but not sufficient) that subsidy policies avoid generating rent-seeking behavior and be driven by economic, not political, considerations. Frequently, however, subsidies may benefit well-placed groups and distort incentives, which puts the desired resource allocation effects into doubt.

## 2. How countries subsidize

A given policy objective can usually be pursued through many different policy tools. Subsidization objectives are no different. Subsidies are intended to benefit specific groups of beneficiaries, but the extent to which they do frequently depends on how the subsidy is provided.

Bread subsidies, which exist in many countries, may be used to illustrate these points. The intended beneficiaries of bread subsidies are consumers, but the subsidy may be paid to either consumers or producers, and if it is given to producers, it may either be directed at inputs or outputs, or be given in the form of general operating support.

For example, consumers may receive coupons that they can apply toward bread purchases; bakeries which receive these coupons would submit them to the government for reimbursement. The size of the reimbursement would have to be close to the market value of the bread the coupons purchase in order for bakeries to continue to accept the coupons and supply bread in exchange. Alternatively, the government may fix the market price of bread at an artificially low level. To avoid undesired side effects, like, for example, a supply crunch or a black market for bread, the government must provide subsidies to bread producers, for example in the form of cash subsidies to bakeries that incur losses on account of controlled output prices. Alternatively, the government may provide support to these bakeries by requiring banks to provide loans to them. This would shift the burden of subsidization to the banking system, which is unlikely to be sustainable.

The government may also provide bread subsidies by subsidizing the inputs for producing bread (e.g., wheat or wheat flour). This may translate

into lower consumer prices or higher profit margins for bread producers or both, and the extent to which the subsidy reaches the intended beneficiaries will depend on supply and demand conditions, and the market structure. Of course, input subsidies can be provided in different ways. A transparent way would be to pay a cash subsidy to producers for each unit of input purchased. Two examples of less transparent ways to subsidize are to sell, through a state enterprise, wheat to flour mills at a price below cost, or to give flour mills access to foreign exchange at a preferential exchange rate (e.g., via the central bank) to import wheat themselves. In these two cases, the subsidies are unlikely to show up in budget, but they contribute to the government's quasi-fiscal deficit and have deleterious effects on the balance sheets of the state institutions involved. Finally, bread can be subsidized through producer price controls and export quotas on wheat and wheat products. In this case, an implicit tax is imposed on producers to match the implicit subsidy enjoyed by consumers. 1/

### 3. Economic effects of subsidies

The short-term economic effects of subsidies are closely linked to how they are provided. In the short run, subsidies may not be borne immediately by the government budget, bypassing any immediate burden on taxpayers or households. Ultimately, however, subsidies must be paid for. Therefore, it is important that subsidies are effective (i.e., reach their intended target group) and achieve a given objective at minimum cost (in terms of budgetary outlays and any economic distortions the subsidies may cause).

In practice, subsidies are often ineffective and costly, regardless of whether they directly affect public expenditures (for example, cash subsidies or implicit subsidies that are hidden in other expenditure categories or provided through quasi-fiscal operations) or not (as in the case of tax or regulatory subsidies).

The economic effects of subsidies usually go beyond their explicit or immediately visible budgetary or quasi-fiscal cost. By severing the link between consumer prices and production costs, subsidies result in an inefficient allocation of resources if they are imposed on a competitive market where market imperfections or the opportunity of exploiting economies of scale do not justify their existence. 2/ These inefficiencies in resource allocation can also result in lower growth, as economic resources, such as capital and labor, are diverted from areas where their marginal productivity is highest.

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1/ These price controls are not optimal from the consumer's standpoint, given their impact on production, and therefore consumption, and the foregone consumer surplus associated with lower production and consumption.

2/ For an elaboration on the standard microeconomic analysis of the effects of subsidies on resource allocation, see, for example, Hyman (1993).

Subsidies often have effects that are unintended by policymakers. Two examples may illustrate this point. Price subsidies generally affect the quantities demanded. For instance, introducing subsidies for imported foodstuffs that lower the consumer price for these goods may require a large increase in imports to avoid shortages; this, in turn, will also affect the availability of foreign exchange. Generalized subsidies for normal goods waste resources because they are not targeted, but they may also have distributive effects that are quite different from those intended by policymakers. For instance, price controls on agricultural products that lower the price below the competitive market equilibrium, will, in all likelihood, result in shortages if imports are not allowed to fill this gap. The shortage will provide opportunities to earn economic rents to well-placed groups that have privileged access to the product at its controlled price. The poor--presumably the group that the price control seeks to protect--may frequently not be in a position of having privileged access to the subsidized product at its controlled price. The net result may be that, on average, consumers end up paying a price that is higher than the competitive market price, with the benefit of the price control policy accruing to traders. <sup>1/</sup>

But even when economic rents are not present, subsidies may have unintended distributional effects. For example, if the supply of local housing is totally inelastic, housing subsidies may just increase land prices, without providing any benefit to home buyers (Ford (1990)).

#### IV. Empirical Evidence On Subsidies <sup>2/</sup>

##### 1. Previous research

Previous research on government subsidies has often originated in national administrations, and mostly been driven by concerns that subsidies and other special benefit programs were spinning out of control. For example, Break (1972), in a study prepared for the Joint Economic Committee of the U.S. Congress, noted that "subsidy advocates have both a natural propensity and a remarkable ability to disguise the amounts of money involved in their programs." Similarly, Houthakker (1972), also writing for the Joint Economic Committee of the U.S. Congress, argued that subsidy programs need attention because political inertia and vested interest created by the subsidy programs tend to preserve such programs long after their initial justification (if indeed there was one) has disappeared. Putting it more bluntly, and probably echoing public sentiment, a recent

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<sup>1/</sup> With sufficient competition among traders--provided that traders can directly (albeit illegally) purchase the controlled product from producers--the resulting equilibrium price may approximate the free market price.

<sup>2/</sup> See Appendix II for a more elaborate discussion of major recent studies.

article concluded that "where there are subsidies, there will be fraud" (The Economist (1994)).

Indeed, government subsidy practices have been an important public concern in many countries, developing and industrial countries alike. In the U.S., for example, efforts to reevaluate and control subsidy programs on a broad basis date back to the early 1970s, as evidenced by the studies commissioned by the U.S. Congress (U.S. Congress, Joint Economic Committee (1972); U.S. Congress, House Committee on Agriculture (1972)). Similarly, the German government is required to publish detailed periodic assessments of government subsidy practices in Germany (Bundesministerium der Finanzen (1991, 1989, 1987, 1985, and nine earlier reports)). However, subsidy programs have also been a matter of concern in many developing countries, as evidenced, for example, by the many detailed analyses on government subsidy practices in India. <sup>1/</sup>

These studies on national subsidy practices have been supplemented by cross-country studies by national administrations, such as the studies by Webb, Lopez, and Penn (1990), and Roberts and Trapido (1991) for the United States Department of Agriculture (USDA), and the various background papers that have accompanied these works (e.g., Roningen and Dixit (1989)).

Beginning in the 1980s, a number of international institutions turned their attention to the subsidy practices of their member countries. At least to some extent, this was the result of having noted that the gradual elimination of trade barriers could result in increased direct government support to their domestic industries (Gönenç (1990), Snape (1991)). Examples of recent comparative works are the extensive surveys by the Commission of the European Communities (CEE) (1989, 1990, 1992), the European Free Trade Association (EFTA) (1986, 1990), and the OECD (1983, 1990), but there has also been much research activity in other institutions, notably the World Bank and the IMF. <sup>2/</sup> This research activity has been accompanied by various background papers, such as those of Bruce (1990), Grossman (1990), and Winters (1990) for the OECD, or the study by Hufbauer (1989) for EFTA. It also resulted in a number of papers that use the data generated in international organizations, examples being the recent studies by Eales (1989), Tigner (1989), and Peraldi (1990) that have come in addition to a growing body of independent comparative research (Hufbauer and Shelton Erb (1984), Pinstруп-Andersen (1988), Goldsworth (1989), and Gerritse (1990)).

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<sup>1/</sup> See, for example, Asha (1986), Gulati (1989), Mundle and Rao (1991), and Jha (1991).

<sup>2/</sup> See Myers and Brondolo (1986), Jimenez (1989), and Mayo and Gross (1989), for examples of recent cross-country studies originating in the World Bank, and Tait and Heller (1982), Heller and Diamond (1990), Holzmann (1991), and Mackenzie (1991) for examples of recent studies originating in the IMF.

## 2. International patterns and trends

Using data availability over 1975-90 as the only criterion for country selection, 60 countries were chosen from the SNA database and 68 countries from the GFS database. 1/ Table 1 provides data on SNA general government subsidies and GFS central government subsidies and other current transfers as a share of GDP, for different categories of countries. 2/ The SNA data suggest that subsidy expenditure differed sharply across country groups. The socialist economies of Eastern Europe had the highest subsidy outlays, and spent, on average, 9.4 percent of GDP on subsidies during 1975-90, compared to a worldwide average of subsidy expenditure of 2.5 percent of national output. Industrial countries averaged higher subsidy expenditure than developing countries, with the nations of the European Union (EU) spending more than other industrialized nations.

Within the group of developing countries, Middle Eastern and North African countries, on average, had more than double the subsidy outlays relative to GDP of Asian, African, and Western Hemisphere countries. Table 1 reveals a number of interesting trends in subsidy expenditures during 1975-90. 3/ The pattern experienced in many regions was rising subsidy expenditure until the early 1980s, and a downward trend thereafter. Especially sharp declines in subsidy spending were experienced during 1988-90, particularly in Eastern Europe. For the country sample as a whole, the subsidy/GDP ratio declined from a peak of 3.0 percent in 1981 to 2.1 percent in 1990.

Trends in subsidy expenditure varied substantially across country groups. For the industrial nations as a whole, the SNA subsidy/GDP ratio reached its peak in 1983 at 3.2 percent, after having risen from 2.9 percent in 1975; by 1990, however, this had declined to just 2.7 percent of GDP. The changes in spending in the EU were more dramatic, as the subsidy/GDP ratio rose by almost a full percentage point from 1975 through 1984, but with a decline in this ratio from 1985 through 1989. In the developing economies, the subsidy/GDP ratio reached its peak in 1980, and fell erratically afterwards.

Movements in the subsidy/GDP ratio, however, were quite heterogeneous across developing countries. In Africa, for instance, subsidies appear to have hit their nadir in the early 1980s, and have been rising since then--precisely the time period during which other developing countries

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1/ Data from national authorities were also used to supplement the GFS and SNA data. See Appendix I for a further description of the data.

2/ These GFS and SNA data should be interpreted with due caution, as differences in measured subsidy outlays across different countries may reflect differences in how subsidies are provided (e.g., explicitly through the budget or implicitly through noncash means), rather than actual disparities in the level of subsidization.

3/ Also see Table 13 for individual years.



Table 1. SNA Subsidies and GFS Subsidies and Other Current Transfers as Percent of GDP, 1975-90 <sup>1/</sup>

	SNA			GFS		
	1975-90	1975-82	1983-90	1975-90	1975-82	1983-90
<b>Geographic groups</b>						
Industrialized countries	2.98	3.02	2.94	20.74	19.85	21.64
European Union	3.49	3.40	3.57	23.56	22.39	24.72
Developing countries <sup>2/</sup>	1.60	1.74	1.46	5.44	5.29	5.58
Africa	1.57	1.53	1.61	4.47	4.44	4.50
Asia	1.19	1.24	1.14	4.31	4.09	4.52
Middle East and						
North Africa	3.40	4.12	2.68	9.94	10.68	9.20
Western Hemisphere	1.02	1.06	0.97	6.37	5.82	6.93
Eastern Europe	9.42	12.02	8.44	19.95	22.16	19.40
Total	<u>2.53</u>	<u>2.59</u>	<u>2.48</u>	<u>11.16</u>	<u>10.71</u>	<u>11.61</u>
<b>Economic groups</b>						
Small, low income economies	1.75	2.04	1.46	3.48	3.73	3.23
Heavily indebted countries	1.60	1.76	1.43	6.64	5.98	7.31
Fuel exporters	2.63	2.90	2.35	6.67	7.62	5.72
Market borrowers	1.82	2.14	1.50	7.38	7.15	7.61
Official borrowers	1.94	2.23	1.66	4.61	4.92	4.30
Diversified borrowers	1.63	1.67	1.59	4.70	4.23	5.17

Source: Tables 13 and 14. Also see Table 12 for country group classifications of individual countries.

<sup>1/</sup> GFS data comprise both subsidies and other current transfers, which, among others, includes social security spending. SNA data only comprise subsidies.

<sup>2/</sup> The aggregate category "Developing countries" does not include Israel and South Africa, although these two countries are included in their respective geographical country groups.

(especially in the Middle East and North Africa) were reducing outlays. Both small, low-income economies and heavily indebted countries reduced subsidies substantially during 1983-90, although subsidy expenditure in these countries were significantly below the averages for developing economies at the onset of the debt crisis. Given these divergent trends among country groups, at first glance it does not appear that world economic conditions are the dominant factor in explaining trends in subsidy expenditures as a share of GDP.

The GFS data in Table 1 reveal somewhat different patterns and trends for government subsidies and transfers than just described for the SNA subsidy data. The data give evidence of the large share of GDP and central government outlays devoted to transfers in industrialized economies. <sup>1/</sup> The industrialized countries spent more than twice as much of GDP on subsidies and transfers than any other country group, except Eastern Europe.

The GFS data indicate that subsidy and transfer spending in the industrial countries was some 1.8 percent of GDP higher in 1983-90 than 1975-82. This stands in sharp contrast to the SNA data on subsidies, which show a slight decline in industrial country subsidy outlays in 1983-90 compared with 1975-82. <sup>2/</sup> Nevertheless, both the SNA and GFS data appear to share a common long-run trend, with expenditures peaking in the early 1980s and declining slightly thereafter. In the developing economies, a similar pattern is evident, with subsidy and transfer expenditure as a share of GDP hitting its highest levels in the early 1980s but tailing off throughout most of the remaining years in the decade. In Eastern Europe, GFS-measured outlays on transfers plus subsidies declined during 1981-90, but not as much as the fall in subsidies alone, which suggests that transfers rose over the period as a fraction of GDP.

Unlike the SNA data on subsidies, the GFS data indicate that spending on combined subsidies and transfers, for many country groups, are somewhat sensitive to the business cycle. The GFS series shows sharp upward spikes in spending during the economic downturn in 1982 and the slowdown of growth in 1990 in the industrial countries. This most likely reflects the countercyclical nature of transfer payments. While this is to be expected in the industrial countries, it is surprising to see a similar effect in the developing countries as well.

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<sup>1/</sup> Available GFS data for the time period 1985-90, for example, indicate that industrial countries spent on average 12.14 percent of GDP on transfers to nonprofit institutions and households, compared to an average of 0.96 percent of GDP in Africa; 1.69 percent of GDP in Asia; 7.23 percent of GDP in the Middle East and Africa; and 2.70 percent of GDP in the Western Hemisphere.

<sup>2/</sup> Some caution should be used in directly comparing the GFS and SNA data, given differences in country coverage and the fact that the GFS data only cover central government outlays.

Table 2 provides data on subsidies and transfers spending as a share of central government expenditure, and reveals that these outlays have tended to increase as a share of central government spending during 1975-90. The sharpest increases were experienced in the industrial countries, where the share of spending devoted to subsidies and transfers rose by over 5 1/2 percentage points between 1975 and 1990. In the developing economies, the share of spending devoted to subsidies and transfers has fallen slightly since the mid-1980s, as it has in Eastern Europe.

Table 3 provides information on individual country expenditure on subsidies (SNA definition) and subsidies and transfers (GFS definition), all relative to GDP. Also, the table shows the ranking of each country, as well as the standard deviation divided by the mean, which gives an indication of how much subsidy spending has tended to fluctuate within countries relative to mean values from year to year.

The share of GDP absorbed by subsidies varied widely across countries; according to the SNA data, spending ranged from a high of 17.2 percent of GDP in Hungary to a low of less than 0.1 percent of GDP in Nicaragua and Paraguay. Table 3 indicates that 8 of the 10 countries devoting the highest share of GDP to subsidies, according to the SNA data, are in Europe and Eastern Europe (Ireland, Norway, Sweden, Greece, Luxembourg, Belgium, Hungary, and Poland), with the two exceptions being Israel and Egypt.

The GFS data present a fairly similar picture: 6 of the 10 countries with the highest subsidy/GDP ratio, on the basis of the SNA data, are also among the 10 biggest subsidizers according to the GFS data. The country ranking shows that some countries are ranked rather similarly in both data sets, while others are ranked rather differently. For example, Norway is ranked 6th in both sets; and Hungary is ranked first in the SNA data set and second in the GFS data set. But rankings can also be very different. For example, the Netherlands are ranked first in the GFS data set, but only 20th in the SNA data set; this may be due to high expenditures on social security compared to other countries, as well as a relatively smaller degree of intervention via cash subsidies. The reverse case also exists. Egypt, for example, is ranked number 5 in the SNA data set, but is number 19 in the GFS data set; this is the result of extensive subsidization (relative to other countries) and rather small social expenditures. <sup>1/</sup> Nevertheless, GFS and SNA data are highly correlated, with an overall correlation coefficient of 0.65 for 1975-90, which would suggest that subsidies and transfers are not, generally, close substitutes.

Changes in SNA subsidy payments from year to year are not necessarily correlated with movements in the GFS data for subsidies and transfers. For those countries that are contained in both data sets (56 countries), the coefficient of correlation between the SNA and GFS time series ranged from

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<sup>1/</sup> For further analysis of subsidy expenditure in Egypt see, for example, Fouad (1991).

Table 2. GFS Subsidies and Transfers as Percent of Central Government Expenditures and Net Lending, 1975-90

	1975-90	1975-82	1983-90
Geographic groups			
Industrialized countries	54.22	53.33	55.11
European Union	54.19	53.31	55.08
Developing countries <u>1/</u>	19.98	19.41	20.55
Africa	15.20	15.10	15.31
Asia	16.99	16.60	17.38
Middle East and North Africa	24.54	24.16	24.91
Western Hemisphere	26.93	25.78	28.07
Eastern Europe	49.63	50.78	49.20
Total	<u>31.90</u>	<u>31.25</u>	<u>32.54</u>
Economic groups			
Small, low income economies	13.33	13.47	13.19
Heavily indebted countries	28.33	28.12	28.54
Fuel exporters	20.01	20.18	19.84
Market borrowers	24.56	23.75	25.38
Official borrowers	14.25	14.30	14.20
Diversified borrowers	19.39	18.24	20.53

Source: Table 15.

1/ The aggregate category "Developing countries" does not include Israel and South Africa, although these two countries are included in their respective geographical country groups.

Table 3. Country Rankings for Average SNA Subsidy and GFS Subsidy and Transfer Expenditures as a Share of GDP, 1975-90 <sup>1/</sup>

	Rankings		Averages		Standard Deviation/Mean	
	SNA	GFS	SNA	GFS	SNA	GFS
Australia	42	16	1.35	17.00	0.17	0.08
Austria	19	10	2.95	22.45	0.05	0.04
Belgium	10	4	3.86	29.74	0.12	0.06
Benin	47	...	1.13	...	1.26	...
Botswana	56	36	0.23	6.92	0.60	0.29
Brazil	31	26	1.99	11.73	0.44	0.09
Cameroon	46	60	1.17	2.05	0.95	0.43
Canada	26	24	2.18	13.44	0.17	0.08
Chile	...	20	...	14.82	...	0.18
Colombia	50	38	0.75	6.24	0.24	0.15
Costa Rica	48	40	0.87	6.15	0.45	0.28
Cyprus	34	33	1.82	7.67	0.38	0.13
Denmark	16	9	3.19	23.93	0.06	0.09
Egypt	5	19	7.10	16.59	0.41	0.29
Fiji	...	55	...	2.99	...	0.39
Finland	15	15	3.22	19.70	0.11	0.05
France	22	7	2.69	26.75	0.10	0.05
Gambia, The	...	63	...	1.89	...	0.36
Germany	30	18	2.08	16.80	0.06	0.04
Ghana	40	59	1.40	2.37	0.39	0.34
Greece	8	22	4.23	14.65	0.32	0.59
Guatemala	...	65	...	1.57	...	0.30
Hungary	1	2	17.17	37.26	0.18	0.07
Iceland	17	29	3.18	10.49	0.17	0.10
India	21	37	2.80	6.40	0.26	0.14
Iran	37	48	1.45	5.07	0.42	0.32
Ireland	3	8	7.51	26.60	0.13	0.11
Israel	4	14	7.35	20.61	0.39	0.12
Italy	14	...	3.28	...	0.09	...
Japan	44	31	1.24	9.09	0.17	0.06
Kenya	...	53	...	4.03	...	0.21
Korea	49	42	0.80	5.88	0.42	0.13
Luxembourg	9	3	4.16	30.25	0.15	0.06
Malawi	...	61	...	1.93	...	0.13
Malaysia	...	49	...	4.93	...	0.26
Malta	39	23	1.42	14.57	0.84	0.11
Mauritius	52	34	0.64	7.62	0.60	0.21
Mexico	27	50	2.15	4.46	0.25	0.41
Morocco	23	51	2.66	4.25	0.38	0.27
Netherlands	20	1	2.88	38.10	0.18	0.05
New Zealand	38	11	1.45	21.39	0.63	0.12
Nicaragua	60	47	0.01	5.09	0.68	0.57
Norway	6	6	6.35	28.07	0.10	0.07
Pakistan	33	52	1.88	4.12	0.32	0.38
Panama	58	46	0.13	5.22	0.38	0.20
Papua New Guinea	57	44	0.16	5.70	0.56	0.39
Paraguay	59	64	0.01	1.77	0.79	0.29
Peru	...	56	...	2.55	...	0.22
Philippines	55	67	0.38	1.09	0.73	0.42
Poland	2	12	8.66	21.06	0.52	0.26
Portugal	11	17	3.72	16.97	0.27	0.09
Singapore	...	66	...	1.53	...	0.46
Solomon Islands	...	45	...	5.70	...	0.19
South Africa	36	32	1.70	7.89	0.24	0.07
Spain	29	21	2.11	14.71	0.24	0.26
Sri Lanka	35	35	1.76	7.15	0.50	0.25
Swaziland	...	58	...	2.39	...	0.27
Sweden	7	5	4.51	28.94	0.11	0.10
Switzerland	41	...	1.37	...	0.07	...
Syrian Arab Republic	24	...	2.51	...	0.71	...
Tanzania	51	54	0.70	3.43	0.78	0.33
Thailand	53	62	0.57	1.89	0.47	0.29
Tunisia	18	30	3.06	10.14	0.31	0.17
Turkey	45	43	1.22	5.77	0.35	0.37
United Kingdom	28	13	2.14	20.62	0.29	0.06
United States	54	25	0.50	12.06	0.24	0.04
Uruguay	32	27	1.97	11.28	0.25	0.16
Venezuela	43	39	1.27	6.23	0.29	0.31
Yugoslavia	25	57	2.43	2.40	0.13	0.29
Zaire	...	68	...	1.02	...	0.41
Zambia	12	41	3.65	5.91	0.35	0.27
Zimbabwe	13	28	3.52	10.65	0.32	0.25

Sources: GFS database; SNA database; national authorities; and authors' calculations.

<sup>1/</sup> Data for the years 1975-80 are not available for the Eastern European countries included in this study (Poland, Hungary, and Yugoslavia). The reported averages reflect the 1980-90 period.

-0.81 (South Korea) to 0.96 (Poland). For 26 countries the coefficient of correlation is positive and statistically significant; for 8 countries a negative and statistically significant relationship holds, implying that there were some offsetting movements between other current transfers and subsidies. For the other 22 countries, there was no statistically significant relationship between the SNA and GFS data for the 1975-90 period. A negative coefficient of correlation would, for example, result when cash subsidies to enterprises (included in both SNA and GFS data) decrease, while social payments to households (only included in the GFS data) increase to more than offset the decrease in subsidies to enterprises.

The data on the standard deviation/mean ratio indicate a wide divergence across countries (Table 3). For the entire SNA country sample, the average value of this measure of volatility is 0.36. Developing countries show more variation in subsidy spending (0.49) than the industrial countries (0.20), reflecting the greater progress of the developing countries in reducing subsidies from their peak levels of the early 1980s. GFS data on subsidies and transfers tend to show less variability relative to their mean values over the 1975-90 time period than the SNA data, although the absolute change in this spending (as measured by standard deviations) is greater.

In general, total cash subsidy expenditures do not seem to be influenced by trends in international commodity prices. This may suggest that the range of cash subsidy programs is probably too broad to be influenced by a single price. For example, using SNA data for 56 countries for 1975-90, econometric tests revealed that only 7 countries (Brazil, Canada, Cyprus, Egypt, Poland, Nicaragua, and Turkey) had a positive and statistically significant relationship (at the 0.10 confidence level) between oil prices and the subsidy/GDP ratio. Similarly, only 3 countries (Brazil, Cyprus, and Iceland) showed a positive and statistically significant relationship between wheat prices and the subsidy/GDP ratio. 1/

## V. Reform Options

From an economic perspective, subsidies can only be justified under very specific circumstances; in most cases where subsidies have been used, they would be difficult to justify on purely economic grounds. In practice, subsidy programs are often costly in terms of their fiscal and quasi-fiscal burdens and the distortions they cause in resource allocation,

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1/ These results are based on simple OLS regressions of the subsidy/GDP ratio on a constant and the price, in U.S. dollars, of petroleum and wheat, respectively, separately for each country, with the appropriate corrections made to address serial correlation. The results of these regressions should be interpreted with caution, due to possible bias caused by omitted variables, and the fact that calendar year data on commodity prices may not always correspond to the fiscal year data used for subsidies.

and not very effective in reaching their intended target group of beneficiaries. It is usually difficult to measure the overall burden on the economy of government subsidies, and to exercise effective control over subsidy programs, as subsidies are provided in a variety of forms. Direct payments to consumers and producers are only a small fraction of overall subsidies provided by governments.

In assessing the economic burden of subsidies and options for reform, attention should be focused on the following five areas:

Increasing transparency. Transparency is desirable both from public and private perspectives to identify the benefits, beneficiaries, and costs of individual subsidy programs. When these cannot be readily identified, subsidy control and reform will be hampered. Often, there exists a tendency to provide subsidies through extra-budgetary instruments, such as government marketing boards, parastatal agencies, and specific extra-budgetary funds. Sometimes, governments may reduce transparency unintentionally. For example, in transition economies, such as Poland, governments have made drastic reductions in cash subsidy payments to state enterprises, also to impose hard budget constraints; but subsidies consequently resurfaced in an implicit form as tax arrears (Schwartz (1994)).

To increase transparency, subsidies should preferably be provided in the form of cash, and directly by the government budget. When subsidies are provided in any other form than cash or by institutions outside of the central government, transparency usually suffers. For example, consider the case of housing subsidies that are provided through state-owned financial institutions in the form of subsidized interest rates for housing loans. Those who stand to gain or lose under such a system are hard to identify, because these programs are ultimately financed by a combination of budgetary transfers or net lending to the institutions that provide the low-interest loans, higher interest rates in other sectors of the economy, and reduced profit margins for financial institutions. In addition, the recipients of a subsidized housing loan often may not readily recognize the benefits of the program. A better alternative would be to use cash subsidies, that is, lump-sum payments that cover a fraction of the housing cost, and are provided directly from the budget to the beneficiary. This would provide a clear and explicit picture of the amounts involved, which, in turn, provides a basis for judging the affordability and desirability of the subsidy.

However, increasing transparency can only be a first step in reforming subsidies, as transparency in itself is not a remedy, even though it may have beneficial side effects when it brings to the open costs and benefits of subsidy programs. In the housing loan example just used, the ultimate beneficiaries of the program may actually be the landowners who benefit from higher land prices. If the housing loan initially creates an excess demand for land, landowners would almost certainly siphon off part of the subsidy provided to home buyers. Therefore, enhanced transparency would be just a first step for being able to identify beneficiaries and analyze the fiscal costs of subsidies.

Enhancing cost effectiveness. Not all subsidies are bad subsidies. However, to be "good," subsidies have to be effective (that is, reach their intended target group), and achieve their objective at minimum cost in terms of their fiscal burden and efficiency losses. For example, generalized subsidy programs for normal goods, which promise to supply unlimited amounts of the subsidized goods to anyone who wishes to buy them, usually meet the first criterion but not the second and the third, that is, they are effective in that they reach their target group, but they are often highly distortive and come at a considerably greater cost than necessary. A common feature of such schemes is that the nonpoor receive a greater absolute subsidy per capita than the poor, although, relative to income, the subsidy amount received by the nonpoor is smaller than that received by the poor (World Bank (1990)).

It is often possible to reduce the cost of existing subsidy programs while still attaining the same policy objectives. 1/ Take, for example, the case of a generalized subsidy that is intended as a social safety net device. In most cases, generalized subsidies can be replaced with targeted cash transfers to reach vulnerable groups such as pensioners, the unemployed, and families supporting a large number of children. This will not only reduce the budgetary cost of social protection, but also reduce the distortions associated with subsidies. If cash transfer instruments are not available, then food coupons, allowing a limited quantity of consumption per person, may be a viable option for reducing social protection costs. Even when subsidies are not targeted by income or categorical group, savings may be obtained by setting consumption quantities for the coupon program equal to the consumption level of poor groups. This will avoid the regressive incidence of benefits (in absolute terms) often associated with generalized subsidies. 2/ The distortionary effects of food subsidies can also be minimized if coupons are denominated at the full market value of the commodities in question, rather than offering the right to purchase the commodities at a subsidized price. If generalized subsidies are to be maintained as a social protection instrument, targeting can be achieved by subsidizing inferior goods.

Experience has shown that making use of means-testing, self-targeting, or categorical targeting of recipients usually does not significantly reduce the effectiveness of subsidy programs (for example, by creating exclusion errors), but increases efficiency and reduces the fiscal burden compared to generalized subsidies. Means-testing on the basis of income or wealth, or any other individual assessment mechanism, may often be impractical, particularly when it requires significant organizational, administrative, and logistical capacities. However, simple means testing, for example on the basis of self-reporting and without systematic verification of income,

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1/ For further elaboration, see, for example, Chu and Gupta (1993), Grosh (1994), and Expenditure Policy Division Staff (1995).

2/ See Grosh (1994) for a review of several studies on the incidence of food subsidies by income group.



has often been shown not to be overly inaccurate, particularly when it can be combined with elements of self-targeting and low benefit levels (Grosh (1994)). Sophisticated means testing is usually only advisable when benefit levels are high, the potential applicants literate and in the formal sector, and the basic administrative and organizational apparatus already in place. Social worker evaluations and proxy means tests, which calculate eligibility on the basis of a series of variables that may include housing characteristics and location, family structure, occupation, education, gender of household head, and ownership of durable goods, may often be practical alternatives to simple or sophisticated means testing.

In general, self-targeting mechanisms, which essentially rely on the opportunity cost of time used for obtaining benefits, social stigma, and subsidization of products that only the poor are likely to want, should be used as part of any subsidy program, whenever feasible. Still, it has to be kept in mind that self-targeting can at least potentially discourage participation among the poor and lower the net benefit that a subsidy program bestows (Grosh (1994)).

Limiting duration. Concerns for the duration of any particular subsidy program arise because economic agents alter their behavior in order to capture the benefits of subsidy programs. Beneficiaries may also resist exclusion from subsidy programs when their circumstances change. It is this behavior that, over time, renders many subsidy programs ineffective and excessively costly. <sup>1/</sup> Therefore, effective subsidization over time requires periodic reassessments of the rationale for the subsidy, and, if needed, revision, retargeting, or elimination. For example, some countries have used subsidies to increase the use of underutilized production inputs, such as fertilizers in agricultural production. An increased demand for the subsidized input would indicate that it is time to reduce or eliminate the subsidy. For some subsidy programs, duration should clearly be limited from the outset. Subsidies to encourage infant industries or to cushion the undesirable effects of a price shock, for example, should be declared temporary from the very beginning. Some countries have begun to limit from the outset not only individual subsidy programs, but also the life of institutions that provide these subsidies.

Strengthening cost control and cost recovery. To improve cost control, it is imperative first to know exactly what these costs are. When subsidies are provided directly from the government budget, it is easier to gauge these costs. Once the costs of individual subsidy programs are known, in a second step then, cost control could be enhanced. Often, this may be accomplished by frequent program reviews and improved targeting. However, it may sometimes also be possible to control costs by improving pricing policies, for example by introducing cost recovery measures. For example, some countries provide irrigation services to farmers for free or at below-

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<sup>1/</sup> If economic agents respond instantaneously, then the effectiveness of a subsidy is reduced in the initial period as well.

cost. Irrigation services are often provided in the form of a generalized subsidy, implying that they are available to both poor and rich farmers alike. Introducing full-cost user charges for all farmers would raise revenues and reduce costs. While the demand for irrigation services by rich farmers is unlikely to decline much, the demand for irrigation services by poor farmers could be kept up by transferring part of the revenues from user charges back to the poor farmers. Cost-recovery policies can, of course, also be implemented for other subsidies (e.g., government-provided agricultural fertilizers), and for various types of social spending, for example in health and education.

Selecting a pragmatic approach. Subsidy programs must be consistent with the institutional and administrative capabilities of the government in question. Implicit subsidies are usually more difficult to administer and control than explicit subsidies, because their fiscal burden is not as readily apparent to policymakers. Hence, to improve administration and control, subsidy programs should be made as explicit as possible. In some cases it may only be possible to phase out or reform subsidy programs over a number of years. For example, some countries heavily subsidize university education while paying less attention to primary education. Furthermore, they subsidize institutions, rather than students. A pragmatic approach to reform could seek gradually to shift away from subsidizing universities as institutions and toward subsidizing primary school students via direct student loans.

## VI. Conclusions

Governments provide subsidies to achieve different policy objectives, including offsetting market imperfections, exploiting economies of scale, and meeting various social policy objectives. Subsidies can take many forms, including direct government payments to producers or consumers (cash or explicit subsidies), low-interest government loans (credit subsidies), various types of reductions in tax liabilities (tax subsidies), government equity participation (equity subsidies), government provision of goods and services at subsidized prices (in-kind subsidies), government purchases of goods and services at above-market prices (procurement subsidies), and different types of regulatory actions that alter market prices or access (regulatory subsidies).

Measuring subsidies is complicated, as each of the various available options has its own shortcomings. A popular way of measuring subsidies is to look at their budgetary cost. However, many subsidies do not result in explicit and contemporaneous budgetary costs. This occurs for two main reasons. First, subsidies may be provided implicitly, as in the case of tax relief for certain producers. Second, the budgetary impact of these subsidies is delayed, as in the case of a below-cost energy tariff that may eventually (but not necessarily immediately) necessitate a budgetary payment to the energy company to cover operating losses.

Measuring subsidies is particularly problematic in a cross-country context, simply because what can readily be observed or inferred may only be a small fraction of what is actually spent, and this fraction may differ from country to country. More by necessity than by choice, empirical work has often relied on rather pragmatic subsidy definitions that allow for ready quantification, as in the case of cash subsidies. This is also the case for two popular data sources on subsidies, the IMF's GFS and United Nations' SNA, which define subsidies rather narrowly as cash payments to producers for current operations.

The SNA data on subsidies (to producers) reveal that the subsidy/GDP ratio rose in most regions during the late 1970s, with a declining trend starting in the mid-1980s. Movements in the subsidy/GDP ratio were quite heterogeneous among developing countries during 1975-90; in Africa, for instance, subsidies appear to have hit their nadir in the early 1980s, and have been rising since then--precisely the time period during which other developing countries (especially in the Middle East and North Africa) were reducing subsidy outlays. Both small low-income economies and heavily indebted countries reduced subsidies substantially during 1982-1990.

GFS data, which cover both subsidies and other current transfers, indicate that these outlays in the industrial countries reached their peak in the early 1980s, and declined slightly thereafter. In developing countries, the GFS data track the changes in the SNA data, with subsidies and transfers rising until the early 1980s, but tailing off throughout most of the remaining years of the decade.

Subsidies impose substantial burdens on the economy, both in terms of fiscal costs and adverse effects on efficiency. In assessing the fiscal burden of subsidies and options for reform, attention should be focused on increasing transparency, enhancing cost effectiveness, limiting duration, strengthening cost control, and selecting a pragmatic approach to subsidy policies.

The Data: Sources and Limitations

The data used in this study were taken from two main sources: The IMF's Government Finance Statistics (GFS) database and the United Nation's System National Accounts Statistics (SNA) database. IMF staff estimates were used in some years to reduce the number of missing observations.

Conceptually, there are no substantial differences between the GFS and SNA definition of subsidies. The GFS defines government subsidies as all unrequited, nonrepayable government transfers on current account to private industries and public enterprises (GFS (1986)), and, among others, also include the cash operating deficits of departmental enterprise sales to the public. More precisely, but essentially not very differently, the SNA defines government subsidies as:

*"current unrequited payments that government units, including non-resident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods and services which they produce, sell or import. They are receivable by resident producers or importers. In the case of resident producers they may be designed to influence their levels of production, the prices at which their outputs are sold or the remuneration of the institutional units engaged in production. Subsidies are equivalent to negative taxes on production in so far as their impact on the operating surplus is in the opposite direction to that of taxes on production. Subsidies are not payable to final consumers, and current transfers that governments make directly to households as consumers are treated as social benefits. Subsidies also do not include grants that governments make to enterprises in order to finance their capital formation, or compensate them for damage to their capital assets, such grants being treated as capital transfers" (Inter-Secretariat Working Group on National Accounts (1993)).*

In practice, that is gauging the data that are available, there exist significant differences between the GFS and SNA. These result from three main differences that are shown in Table 4.

First, while the SNA data only include payments to private and public enterprises and exclude payments to households, the available GFS data, for most countries, do not distinguish between subsidies and other current transfers. For example, in the GFS database, only 7 out of 68 sample countries provided a disaggregation of subsidies and other current transfers during 1985-90. Hence, compared to SNA subsidy data, GFS subsidy data also include current transfers, that is, nonrepayable and unrequited payments to households for current purposes (social benefits). It should be noted that GFS data at the central government level--those utilized for this study--also include transfers to other levels of government (e.g., state and local government).

Table 4. Definition and Coverage of GFS and SNA Data Used

	GFS	SNA
Definition of subsidies	Government subsidies are all unrequited, nonrepayable government transfers on current account to private enterprises, or to unincorporated public industries and public enterprises.	Government subsidies are all government grants on current account to private enterprises and public enterprises when clearly intended to compensate for losses resulting from the price policies of the government.
Data used	Subsidies and other current transfers	Subsidies
Recording basis	Cash	Accrual
Transactions covered	Subsidies and other current transfers that involve cash payments.	Subsidies that involve cash payments (on an accrual basis).
Institutional coverage	Consolidated central government, i.e., the central government budget and central government units with their own budget (e.g., social security institutions).	General government.
Remarks on data used	Includes subsidies and other current transfers, which comprises subsidy payments, transfers to other levels of national government, transfers to nonprofit institutions and households (which includes social benefits) and transfers abroad. It excludes all transfers for capital purposes (i.e., operations that permit the recipient to acquire capital assets, compensate him/her for the damage or destruction of capital assets, or increase his/her financial capital).	Does not include other current transfers. Does not include grants that governments make to enterprises in order to finance their capital formation or compensate them for damage to their capital assets.

Second, there is a difference in the way data are recorded in the GFS and SNA. While GFS data are recorded on a cash basis, SNA data are recorded on an accrual basis and also include imputed transactions that involve in-kind payments pertaining to (but not necessarily taking place in) the current period.

Third, GFS and SNA data have a different institutional coverage. The GFS data are only available for the consolidated central government; subsidy data for the rest of the general government are only available for a few countries. The consolidated central government covers central government units that are part of the general central budget, and central government units with their own budgets, for example, social security funds. In contrast, the SNA data are for the general government and also include transactions with supranational organizations (like, for example, agricultural subsidies received from the Commission of the European Union).

For the purpose of this study, SNA data are preferable to GFS data. Roughly speaking, the available SNA data are more representative of the extent of subsidization than the available GFS data, which, as it aggregates subsidies and other current transfers, are more an indicator of the influence of the central government over social and economic matters. Generally, there is a difference in the rationale behind subsidies and other current transfers: given that other current transfers also reflect social benefits given to households, they are more part of the general process of redistributing income, whereas subsidies reflect the government's policy objectives with regards to different economic activities. Also, as the GFS data are confined to the consolidated central government, they are influenced by the degree of centralization and fiscal responsibilities assigned to different levels of government.

However, while they include all sectors of the economy, both SNA and GFS data sets only cover cash subsidies. This is problematic, particularly since various subsidization tools are often close substitutes. Hence, a comparison of cash subsidies alone does not provide a good picture of the overall degree of subsidization in the economy. Recent studies that have used a broader definition of subsidies (albeit for a smaller set of countries and sectors) have shown that non-cash (implicit) subsidies account for a large share of total subsidies (CEE (1990)): for example, while, on average during 1981-86, Greece and Denmark had similar levels of overall subsidies (an annual average of about ECU 1 billion during 1981-86), Greece

provided 95 percent in the form of cash grants, while in Denmark this was only 44 percent. 1/

In sum, both SNA and GFS data sets have their advantages and disadvantages relative to the data sets used in other studies. The advantage of both data sets is that, in principle, they cover all sectors of the economy in all countries. The disadvantage of both data sets is that they only cover explicit (cash) subsidies, and, hence, exclude all implicit (noncash) subsidies. In addition, the GFS data set has the disadvantage that it cannot distinguish between subsidies and other current transfers, which implies that various large categories of transfers, such as transfers to households (social benefits), cannot be separated from subsidies.

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1/ In the CEE study (CEE (1990)), which is largely confined to the manufacturing sector but employs a broad definition of subsidies, subsidies in Greece and Denmark during 1981-86 averaged 2.5 and 1.3 percent of GDP, respectively. In the SNA data set, which includes all sectors but is confined to cash subsidies, subsidies in Greece and Denmark, during the same time period, amounted to 5.0 and 3.1 percent of GDP, respectively (see Table 7).

Previous Research: Review and Comparison

A. Alternative sources of information and their general comparability

Starting in the early 1980s, various multilateral organizations began to launch major surveys on government subsidies in order to increase transparency and identify national practices that were of likely interest to their member countries. The outcome of these efforts was a number of major surveys, including three surveys on "state aids" by the Commission of the European Communities (CEE (1989, 1990, 1992)), periodic surveys on "government aids" by European Free Trade Association (EFTA (1986, 1990)), two surveys on "industrial support policies" by the Organization for Economic Cooperation and Development (OECD (1990, 1992)). In the case of the OECD, these surveys have been accompanied by a number of studies by OECD staff that use some of the same data. 1/

The surveys by major multilateral institutions are complemented by various reports by national administrations. In most cases these reports were largely intended to analyze the country's own subsidization practices, but they sometimes contain comparisons of own practices with those of other countries, like for example the periodic reports by the German Ministry of Finance (1991, 1989, 1987, 1985, and 9 previous reports). In some cases, the reports by national administrations were produced with the intention of providing a cross-country comparison of national subsidization practices, such as the various reports originating in the USDA. 2/

In general, all these surveys and studies provide useful alternative sources of information (ASIs), and the results may be compared to those contained in the SNA and GFS databases. Table 5 presents an overview on the coverage of the main ASIs. A comparison between these and the SNA and GFS data used in this study is complicated by several differences, particularly in the types of transactions that are covered, sectoral coverage, measurement basis, time periods covered, and country coverage. In addition, some ASIs present information in a way that does not allow for inter-country comparisons.

As regards the transactions covered, most alternative sources of information rely on a broader definition than the "cash" definition of subsidies used by the SNA and GFS. For example, the CEE (1989, 1990, 1992), EFTA (1986, 1990), and OECD (1990, 1992) all include, in addition to cash subsidies, subsidies arising from soft loans, government guarantees, and equity subsidies. In addition, tax subsidies are included in the CEE (1989, 1990, 1992) and OECD (1990, 1992) studies.

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1/ See, for example, Ford (1990), Ford and Suyker (1990), and Gönenç (1990).

2/ See, for example, Webb, Lopez, and Penn (1990), or Roberts and Trapido (1990).



Table 5. Summary of Coverage in Various Databases and Recent Studies

Organization or Database	Transactions Covered	Sectoral Coverage	Measurement Basis	Institutional Coverage	Period Covered	Country Coverage
SNA database	Cash subsidies (accrual basis)	All	Gross cost to government	General government	1975-90 <sup>1/</sup>	UN member countries
GPS database	Cash subsidies and other current transfers (on a cash basis)	All	Gross cost to government	Consolidated central government	1975-90 <sup>1/</sup>	IMF member countries
CEE (1989)	Cash subsidies, soft loans, guarantees, equity subsidies, tax subsidies	Manufacturing, agriculture, fisheries, coal, inland waterways, railways	Net grant equivalent	General government	1981-86	EU member countries excluding Spain and Portugal
CEE (1990)	Cash subsidies, soft loans, guarantees, equity subsidies, tax subsidies	Manufacturing, agriculture, fisheries, coal, inland waterways, railways	Net grant equivalent	General government	1981-86 1986-88	EU member countries excluding Spain and Portugal in 1981-86
CEE (1992)	Cash subsidies, soft loans, guarantees, equity subsidies, tax subsidies	Manufacturing, agriculture, fisheries, coal, inland waterways, railways	Net grant equivalent	General government	1986-88 1988-90	EU member countries
EFTA (1986, 1990)	Cash subsidies, soft loans, guarantees, equity subsidies	Manufacturing, energy, mining, fisheries	Net cost to government	General government	1980-84 1985-89	EFTA member countries
OECD (1990)	Cash subsidies, soft loans, guarantees, equity subsidies, tax subsidies	Manufacturing	Gross government expenditure	General government <sup>2/</sup>	1982-86	OECD member countries

Table 5 (concluded). Summary of Coverage in Various Databases and Recent Studies

Organization or Database	Transactions Covered	Sectoral Coverage	Measurement Basis	Institutional Coverage	Period Covered	Country Coverage
OECD (1992)	Cash subsidies, soft loans, guarantees, equity subsidies, tax subsidies	Manufacturing	Net cost to government	General government <u>2/</u>	1986-89	OECD member countries
USDA (Webb, Lopez, and Penn (1990))	Cash subsidies, differences between free-trade prices and domestic prices, indirect transfers	Agriculture	Consumer subsidy and producer subsidy equivalents	General government <u>2/</u>	1982-87	27 countries plus European Union

1/ For the purpose of this paper.

2/ Level of government taken into account varies depending on the country.

However, while the set of transactions covered in the GFS and SNA is narrower than in the ASIs, the subsidy levels shown in some ASIs is surprisingly low. In the EFTA study, for example, for the 6 EFTA countries and for the 1981-86 time period, subsidies reported by the SNA exceed those in the EFTA study by between 4 times (Austria) and 35 times (Switzerland) (Table 6). <sup>1/</sup>

As regards the sectoral coverage, most ASIs include in their definition of subsidies only payments to producers, and exclude all transfer payments, such as transfer payments to households (which, for practical purposes, were included in the GFS data used in this study). An exception are the consumer subsidy equivalent (CSE) calculations in the various studies on agricultural subsidies originating in the USDA (e.g., Webb, Lopez, and Penn (1990), and Roberts and Trapido (1990)). Given these similarities of restrictions, the ASIs only cover specific sectors (e.g., industry, agriculture), whereas the GFS and SNA data cover all sectors.

The more narrow sectoral coverage (compared to GFS and SNA) may explain at least part of the surprisingly low subsidy levels that are found in some ASIs. For example, the EFTA study which was just mentioned above, only considers subsidies to industry (manufacturing, energy, fisheries, mining), but excludes subsidies to agriculture. The CEE surveys (1989, 1990, 1992) only contain national agricultural subsidies, but exclude those awarded to individual member countries under the common agricultural policy (CAP). CAP subsidies are provided through the common European Union budget, which, in turn, is financed by member states. <sup>2/</sup> The CEE surveys also exclude other subsidies that could be potentially large in magnitude, like, for example, subsidies to infrastructure, procurement subsidies, all subsidies to energy (except for coal, which is included), subsidies to transport (except for railways and inland waterways, which are included) (CEE (1992)).

As regards the measurement basis, most ASIs, just like GFS and SNA, focus on the recipients of subsidies rather than the ultimate beneficiaries. Nevertheless, the various ASIs try to address the inherent problems of the gross expenditure concept used in the GFS and SNA. In practice, it was not always possible to apply one and the same measurement concept to all subsidy programs, and, hence, a number of compromises had to be made.

The EFTA surveys (1986, 1990), for example, use the concept of "net cost to the government," as compared to the gross data of the SNA. EFTA's "net cost" concept differs from the GFS and SNA concept in that it takes into

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<sup>1/</sup> The years 1981-86 were selected because data for these years were available in all studies. Choosing an earlier or later time period would not lead to substantially different conclusions.

<sup>2/</sup> In national budgets, these contributions are usually recorded as transfers to international organizations, not as subsidies. For a further discussion on the subsidization mechanisms under the CAP, refer to Rosenblatt et al. (1988).

account all repayments, gains, or results of recovery operations. For example, under a gross concept, the full amount of government spending on equity participation could be considered a subsidy. In contrast, under the net concept, equity subsidies are calculated as the difference between the cost of government borrowing and any dividends received; reductions in the value of equity capital (e.g., write-offs) are added to cost; losses or gains on sales of shares are taken into account. 1/

The subsidy definition used in the CEE surveys is similar to EFTA's definition: in theory, the concept of "net grant equivalent" is used. In practice, this results in a mixed bag of assessment methods. For example, the subsidy element of loans awarded under an exchange rate guarantee scheme was calculated as the benefit of the scheme to the recipient. However, in cases where this information could not be calculated it was substituted by the financial losses to the government under the scheme; for simple export financing schemes, the net cost of the scheme was used.

The various studies originating in the USDA (e.g., Webb, Lopez, and Penn (1990)) are based on producer and consumer subsidy equivalents (PSEs and CSEs) for individual commodities in the agricultural sector. The PSE (CSE) measures the value of transfers from government policies to producers (consumers). In practice, the PSE of a given subsidy scheme is just the sum of all subsidies resulting from price support schemes, direct income transfers, and all other budgetary support (net). 2/ An advantage of the PSE over alternative measures is that it captures both the transfers from government expenditure and the transfers from price distortions. Still, by equating expenditures with benefits, it also falls short of providing a beneficiary-based evaluation of subsidies. 3/

As regards time periods and countries covered, the ASIs focus on a shorter time period and fewer countries than what is available in the GFS and SNA databases. However, since there is full overlap with GFS and SNA

1/ For further detail see EFTA (1986), pp. 16-17.

2/ In general, the PSE for a specific good can be calculated as  $Q*(P_d - P_w) + D + I$ , where  $Q$  denotes the output volume produced,  $P_d$  and  $P_w$  are domestic and world market prices (expressed in domestic currency), respectively,  $D$  denotes direct government subsidy payments (cash subsidies),  $I$  denotes other budgetary support (e.g., indirect transfers through marketing support and other non-cash subsidies, net of any fees or levies paid). Sometimes, the PSE is measured as a "Percentage PSE," which simply implies dividing the above expression by  $Q*P_d + D$  and shows the degree of government support relative to the total cash value of production. This approach was chosen in the publications originating in the USDA.

3/ In addition, the "percentage PSE" calculations presented in the studies originating in the USDA do not lend themselves to a comparison with other ASIs, mainly because they are limited to agriculture, carried out on an individual commodity basis, and because they measure the degree of subsidization only relative to the overall value of the specific commodity.

data regarding the time periods and a significant overlap regarding the country coverage, it is fairly easy to extract from the GFS and SNA those time periods and countries needed for comparison.

Still, the information contained in some ASIs does not lend itself to cross-country comparisons. Particularly the two OECD (1990, 1992) surveys report their findings in a way that makes it impossible to compare national support levels: levels of subsidy expenditures in individual OECD member countries are not shown, and, instead, only growth rates of real subsidy expenditures and the weights of specific subsidy components in the total subsidies of a specific country are provided. Similarly, the various studies by OECD staff (e.g., Ford (1990), Ford and Suyker (1990), and Gönenç (1990)) also present data in a way that does not allow one to identify levels of subsidization. When studies that originate in the OECD provide information of the levels of subsidization, they are entirely based on OECD national accounts data which, in principle, are the same as the SNA data.

Compared to the OECD surveys that intentionally refrain from comparing levels of subsidization, the various EFTA and CEE surveys were prepared with the explicit intention to compare subsidization practices across countries. Still, there are ample warnings with regard to the comparability of results across countries in both the CEE and EFTA surveys. As pointed out in EFTA's 1986 survey, "differences in budgetary practices imply that comparisons between countries are not necessarily straightforward" (EFTA (1986)). Still, while recognizing these flaws, both the EFTA and CEE surveys suggest that the data presented should give a reasonable basis for comparing the amount of government subsidies.

The main shortcoming of all available data sources, not only the data contained in the SNA and GFS databases, is their focus on specific sectors and types of subsidies. However, given the task at hand, this is unavoidable.

Nevertheless, the results of some of the ASIs are surprising. For example, the low levels of subsidization in the EFTA survey are difficult to understand, particularly when compared to the SNA data which are already based on a rather narrow definition of subsidies (Table 6). Given existing definitional differences, the low subsidization levels in the EFTA surveys may either be interpreted as implying that the majority of subsidies are outside of the industrial sector (for example, in agriculture) or that the net cost to government is small compared to the gross cost, which is unlikely.

OECD national accounts data, which were substituted in Table 6 for the OECD survey data since the latter do not give subsidization levels, coincide almost exactly with SNA data, as should be expected. The only country for which there is a substantial (and inexplicable) difference is Belgium. Similarly, the data reported by the German Finance Ministry (BMF), which are in turn based on OECD national accounts data, largely coincide with the SNA data, with the major exceptions being Belgium, France, Italy, and the

Table 6. Subsidy Levels in Six Recent Studies and Surveys, 1981-86

(Averages for 1981-86, in percent of GDP)

	SNA	GFS	CEE	EFTA	OECD <u>1/</u>	BMF <u>2/</u>
Australia	1.7	17.8	...	...	1.7	...
Austria	3.0	23.1	...	0.8	3.0	3.0
Belgium	4.0	31.0	4.1	...	1.5	1.4
Canada	2.5	12.6	...	...	2.5	2.5
Denmark	3.1	25.5	1.3	...	3.1	3.2
France	2.9	27.8	2.7	...	2.9	2.2
Finland	3.2	19.9	...	0.4	3.2	...
Germany	2.0	17.4	2.5	...	2.0	2.0
Greece	5.0	18.6	2.5	...	5.0	...
Iceland	3.1	11.2	...	0.1	3.1	...
Ireland	7.3	29.8	4.0	...	7.3	...
Italy	3.6	28.4	4.0	...	3.6	2.8
Japan	1.3	9.5	...	...	1.3	1.3
Luxembourg	4.7	31.6	6.0	...	4.7	...
New Zealand	1.5	21.7	...	...	1.6	...
Netherlands	3.0	40.2	1.5	...	3.0	1.8
Norway	6.0	27.0	...	0.8	6.0	6.0
Portugal	4.2	18.3	...	...	4.2	...
Spain	2.3	16.4	...	...	2.5	...
Sweden	4.9	29.4	...	1.0	4.9	4.9
Switzerland	1.4	12.6	...	--	1.3	1.4
Turkey	1.5	6.9	...	...	1.5	...
United Kingdom	2.1	21.9	1.8	...	2.1	2.1
United States	0.6	12.4	...	...	0.7	0.6

Sources: SNA: U.N. (1992 and earlier issues); GFS: IMF (1992 and earlier issues); CEE: Commission of the European Communities (1990); EFTA: European Free Trade Association (1986, 1990); OECD: Ford and Suyker (1990); BMF: Bundesministerium der Finanzen (1989).

1/ The data reported here refer to OECD national accounts statistics; OECD subsidy data using the concepts of gross government budget expenditures (GGBE) and net cost to government (NCG) have not been published in a way that would allow identifying levels of subsidization relative to GDP.

2/ Based on OECD data.

Netherlands, for which the BMF shows substantially lower subsidization levels than either the SNA or the OECD.

The CEE surveys produce results that are also somewhat compatible with the SNA data, notwithstanding the broader subsidy definition used in the CEE surveys and the narrower sectoral coverage. For example, for 1981-86, 3 of the 4 EU countries with the highest level of subsidies relative to GDP, according to the CEE (1990) survey (Belgium, Luxembourg, and Ireland) are also among the top 4 in the SNA database. Similarly, 3 of the 4 EU countries with the lowest level of subsidies relative to GDP during 1981-86 (the U.K., the Netherlands, and Germany) are also among the bottom 4 EU countries in the SNA database (Table 7). Both the rank order and the subsidy levels reported in the CEE (1990, 1992) surveys and the SNA database are, generally, of a similar order of magnitude. For 1981-86, subsidy to GDP ratios in the SNA database range from 0.8 times the level reported in the CEE (1990) study (Germany and Luxembourg) to twice the level (the Netherlands and Greece); for 1986-88 the range is 0.8 times (Germany) to 3 times (Ireland and Denmark); for 1988-90 it is 0.9 times (Germany) to 3.5 times (Ireland).

Table 7. Subsidies in the European Union: Comparison of CEE and SNA Data  
(Averages for 1981-86, 1986-88, and 1988-90, In Percent of GDP)

	CEE Data			SNA Data		
	1981-86	1986-88	1988-90	1981-86	1986-88	1988-90
Belgium	4.1	3.2	2.8	4.1	3.5	3.2
Denmark	1.3	1.0	1.1	3.1	3.2	3.4
France	2.7	2.0	1.8	2.9	3.0	2.4
Germany	2.5	2.7	2.4	2.0	2.2	2.1
Greece	2.5	4.5	3.1	5.0	5.7	5.3
Ireland	4.0	2.7	2.0	7.3	8.0	7.0
Italy	4.0	3.1	2.9	3.6	3.3	2.9
Luxembourg	6.0	4.0	4.0	4.8	4.4	3.8
Netherlands	1.5	1.3	1.3	3.0	3.7	3.2
Portugal	...	1.5	2.2	4.2	3.1	2.4
Spain	...	2.7	1.8	2.4	2.3	2.6
United Kingdom	1.8	1.1	1.1	2.2	1.5	1.2

Sources: CEE (1990, 1992), and SNA database.

The direction of change in subsidization levels is more often the same in the two sources of information than it is not. For example, during 1981-90, the direction of change in the level of subsidies (relative to GDP) is the same in 7 of 10 countries. Only for Denmark, Germany, and the Netherlands do the CEE survey data suggest a slight decrease in the level of subsidies relative to GDP during 1981-90, whereas the SNA database records a slight increase.

B. Subsidization objectives

While the SNA and GFS data provide little information on the policy objectives for government subsidies, various studies and surveys have tried to categorize the different objectives. While, again, categories and measurement differ, there are 5 broad policy objectives that are generally considered: support for research and development activities (R&D), support to small and medium enterprises (SME), trade-related subsidies, sectoral support (usually to declining industries, e.g., steel, coal mining, and shipbuilding), and regional development.

Tables 8 and 9 show the policy objectives of government subsidies according to the CEE (1990, 1992), EFTA (1990), and OECD (1992) surveys.

According to the CEE survey, 6 of the 12 EU countries maintained the same main policy objective during 1981-90 (Germany, Ireland, Italy, Luxembourg, Spain, and the U.K.), while the other 6 countries switched their major policy objectives at least once. For 5 of the 6 countries that maintained their major policy objective throughout the 10-year time period, regional support was the dominant objective of government subsidies.

However, while regional purposes were the overall dominant policy objective of providing subsidies in EU member countries, sectoral objectives became increasingly important during the 1980s. While, during 1981-86, subsidy practices in no EU member country were dominated by sectoral objectives, during 1988-90, sectoral objectives dominated subsidization practices in three countries (Denmark, Portugal, and Spain), and, by the end of the decade, it was clearly the second-most important subsidy policy objective behind regional objectives. Hence, it is difficult to follow the CEE (1992) conclusion that there has been "a shift away from sector-specific interventions to more horizontal and regional support," which is furthermore celebrated as a welcome trend: the CEE's own data does not seem to allow for this conclusion.

The OECD survey shows a rather similar pattern. Apart from "other objectives" which in the OECD study combines crisis aid, general investment aid, and employment training support, and was the dominant subsidization objective in 8 OECD member countries during 1986-89, regional support was the main objective for providing government subsidies in 5 OECD member countries (Canada, Finland, Germany, Ireland, and Italy). This was followed by R&D support, which dominated the subsidy agenda in 4 countries (Denmark, Iceland, Japan, and the Netherlands), and sectoral objectives, which



Table 8. Policy Objectives of Government Subsidies in the European Union  
(In Percent of Total Subsidies)

		R&D	SME	Trade	Sec- toral	Region- al	Other
EU Total	1981-86	9	6	16	16	37	16
	1986-88	11	9	11	20	39	10
	1988-90	10	10	11	20	38	11
Belgium	1981-86	13	14	11	11	21	30
	1986-88	9	25	13	9	21	23
	1988-90	13	25	14	4	21	23
Denmark	1981-86	41	1	28	2	7	21
	1986-88	51	1	22	--	9	17
	1988-90	35	1	14	38	3	9
France	1981-86	4	1	41	25	5	24
	1986-88	10	6	28	41	9	6
	1988-90	17	11	36	25	9	2
Germany	1981-86	22	8	2	5	55	8
	1986-88	18	8	2	4	60	8
	1988-90	12	7	2	11	61	7
Greece	1981-86	7	4	53	16	20	--
	1986-88	6	4	32	20	39	--
	1988-90	1	10	22	5	15	47
Ireland	1981-86	3	3	20	30	44	--
	1986-88	5	6	37	14	39	--
	1988-90	4	8	38	9	42	--
Italy	1981-86	2	7	10	21	44	16
	1986-88	5	10	7	11	55	12
	1988-90	4	10	6	15	55	10
Luxembourg	1981-86	5	14	5	--	57	19
	1986-88	6	21	3	--	56	14
	1988-90	8	21	2	--	61	8
Netherlands	1981-86	11	30	4	23	18	14
	1986-88	24	36	2	4	15	19
	1988-90	35	31	1	11	12	10
Portugal	1981-86	...	...	...	...	...	...
	1986-88	2	3	2	24	5	64
	1988-90	1	--	--	78	5	16
Spain	1981-86	...	...	...	...	...	...
	1986-88	8	2	1	78	3	8
	1988-90	9	5	1	67	5	13
U.K.	1981-86	16	4	21	15	34	10
	1986-88	11	10	10	24	37	8
	1988-90	8	12	15	20	34	11

Sources: CEE (1990, 1992), and calculations by the authors.

Table 9. Policy Objectives of Government Subsidies in the OECD and EFTA  
(In Percent of Total Subsidies)

	R&D	SME	Trade	Sec- toral	Reg- ional	Other
OECD: (averages for 1986-89)						
OECD average	10	4	15	8	18	45
Australia	24	4	17	40	7	8
Austria	8	3	6	1	3	79
Belgium	30	22	--	1	--	47
Canada	1	2	2	25	56	14
Denmark	50	--	18	26	6	--
Finland	11	--	14	6	53	16
France	6	2	29	34	6	19
Germany	19	6	14	14	39	8
Iceland	36	--	17	18	--	29
Ireland	7	--	3	--	53	37
Italy	1	2	7	13	76	1
Japan	38	35	20	2	2	3
Netherlands	50	1	3	12	24	10
New Zealand	--	--	23	--	2	75
Norway	8	4	15	24	19	38
Portugal	4	--	1	8	--	87
Spain	5	1	1	75	--	18
Sweden	12	2	14	12	23	37
Switzerland	8	--	81	--	7	4
Turkey	--	8	46	1	4	41
United Kingdom	10	9	24	3	24	30
United States	9	4	14	--	10	63
EFTA: averages for 1985-89						
EFTA average	9	1	3	17	19	51
Austria	4	1	--	4	2	89
Finland	13	1	11	--	47	28
Iceland	12	--	6	46	--	36
Norway	8	--	5	23	23	41
Sweden	10	3	1	27	22	37
Switzerland	37	4	14	--	27	18

Sources: EFTA (1990), OECD (1992), and calculations by the authors.

dominated in three countries (Australia, France, and Spain).

The EFTA survey is fairly consistent with the other two surveys, in that "other objectives" (which, in the case of EFTA, means general subsidies, employment subsidies, enterprise-specific subsidies, and structural adjustment and rescue operations) and regional objectives also dominate the subsidization agenda.

In comparing the three surveys, it seems that it is in the "other" objectives where the differences are particularly large. In all three surveys, these other objectives include general subsidies, which are probably the least targeted ones. While in the OECD and EFTA surveys these other subsidies loom large, averaging 45 and 51 percent of total subsidies respectively, the CEE survey shows these subsidies as being relatively small, that is, no more than 16 percent of the total during 1981-86, and declining.

Another interesting aspect of the three surveys are the results regarding the classical economic objectives of subsidization, that is, market failure, and the existence of economies of scale in production, that is, a situation where unit production costs fall as the volume of output rises. <sup>1/</sup> R&D expenditures and support for SMEs to overcome initial competitive disadvantages, particularly versus foreign-owned firms, are probably most closely associated with these so-called economic objectives of subsidies. Other types of subsidies, particularly regional and sectoral support policies, may often contain a large number of elements that cannot readily be associated with efficiency objectives.

While the CEE survey suggests that there has been a slight increase in the share of total subsidies devoted to these economic objectives, from 15 percent of the total during 1981-86 to 20 percent during 1988-90, all three surveys agree that they are still relatively minor compared to the other objectives, amounting to no more than 10 and 9 percent of the total in the OECD and EFTA studies, respectively. Nevertheless, the three surveys suggest that in Denmark, Iceland, the Netherlands, Japan, Switzerland, R&D received the major share of subsidies, even though in Denmark sectoral objectives did overtake R&D as the major policy objectives in the late 1980s.

### C. Subsidization tools

Cash subsidies, the only type of subsidy considered in the SNA database, are the most important component of total subsidies in the CEE, EFTA, and OECD surveys. According to the CEE surveys (CEE (1990)), on average during 1981-88, EU countries gave 58 percent of total subsidies to manufacturing industries in the form of cash grants (CEE (1990)). According to the EFTA surveys, 52 percent of all subsidies by EFTA member countries during 1984-87

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<sup>1/</sup> See, for example, Ford (1990) for a discussion.

were made in the form of cash grants (Ford and Suyker (1990)). Finally, the OECD survey (OECD (1992)) suggests that, during 1986-89, 54 percent of all subsidies by OECD member countries were given in the form of cash grants.

All surveys showed significant differences in the use of cash subsidies across countries. For example, for 1986-88, the CEE survey (CEE (1990)) suggests that Greece provided 88 percent of all subsidies to manufacturing in the form of cash subsidies, while Portugal provided only 26 percent of all subsidies in that form (Table 10). Similarly, during 1984-87, the EFTA (1990) suggests that Switzerland and Finland each provided over 70 percent of all subsidies in the form of cash grants, while Austria and Iceland provided less than 30 percent of all subsidies in the form of cash grants (Table 11). Finally, according to the OECD (1992), Canada, Iceland, Italy and the Netherlands gave over 90 percent of all subsidies in the form of cash grants, while Belgium, Spain, and the U.S. provided less than 10 percent of all subsidies in the form of cash grants.

The CEE surveys suggests that, during 1981-86, cash subsidies were the preferred subsidization tool in 7 out of 10 EU countries (Belgium, Greece, Ireland, Italy, Luxembourg, the Netherlands, and the U.K.); tax reductions were the preferred subsidization tool in Germany, and soft loans were the preferred tool in Denmark and France (Table 10). In addition, government guarantees were used heavily in Belgium, and equity participation was relied on heavily in Italy. No data are available for Spain and Portugal, which were not EU members at the time. During 1986-88, cash subsidies became the preferred subsidization tool in 10 out of 12 EU countries. The other two countries, Germany and Portugal, provided subsidies mostly in the form of tax reductions.

The EFTA surveys provide a rather similar picture of the preferred tools of subsidization. While subsidy definitions and the scope of EFTA surveys are different from the CEE surveys, <sup>1/</sup> during 1984-87, 4 of the 6 EFTA countries (Finland, Norway, Sweden, and Switzerland) provided government subsidies largely in the form of cash subsidies; the remaining 2 countries provided subsidies either largely in the form of equity participation (Austria) or in the form of guarantees (Iceland) (Table 11).

The OECD surveys show that the use of different subsidization tools varies significantly across its member countries. Using the more recent survey (OECD (1992)), that estimates subsidies in terms of their net cost to government, 13 of 22 OECD member countries (Australia, Canada, France, Iceland, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Sweden, and the U.K.) preferred cash subsidies as the dominant subsidization tools during 1986-89; in 4 countries (Finland, Germany, Turkey, and the U.S.) tax subsidies were used as the preferred tool for providing subsidies, in one country (Austria) equity subsidies were the

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<sup>1/</sup> For example, the EFTA study is based on net costs instead of gross costs, and it excludes tax concessions.

Table 10. Subsidization Tools Applied to the Manufacturing Industries in European Union Countries 1/

(Period Averages, In Percent of Total Subsidies)

		Cash sub- sidies	Tax reduc- tions	Equity sub- sidies	Soft loans	Tax defer- rals	Guar- antees
Belgium	1981-86	61	3	12	14	--	10
	1986-88	61	11	6	12	--	10
	1988-90	55	27	5	5	--	8
Denmark	1981-86	44	--	--	53	--	1
	1986-88	70	--	--	29	--	1
	1988-90	59	3	--	37	--	--
France	1981-86	26	5	6	49	9	7
	1986-88	33	12	18	15	4	19
	1988-90	28	16	11	14	3	26
Germany	1981-86	32	54	--	7	6	1
	1986-88	30	55	--	6	8	1
	1988-90	26	61	--	7	3	1
Greece	1981-86	95	--	--	--	--	5
	1986-88	88	--	9	--	--	3
	1988-90	44	17	18	11	--	11
Ireland	1981-86	68	17	9	4	--	2
	1986-88	52	37	6	1	--	4
	1988-90	50	44	2	--	3	26
Italy	1981-86	48	31	19	2	--	--
	1986-88	54	36	7	3	--	--
	1988-90	53	40	5	2	--	--
Luxembourg	1981-86	62	16	3	19	--	--
	1986-88	68	9	5	18	--	--
	1988-90	75	5	2	16	--	1
Netherlands	1981-86	62	26	--	13	--	--
	1986-88	64	30	--	6	--	--
	1988-90	66	27	--	4	--	3
Portugal	1981-86	...	...	...	...	...	...
	1986-88	26	60	12	2	--	--
	1988-90	34	3	59	4	--	1
Spain	1981-86	...	...	...	...	...	...
	1986-88	78	--	19	2	--	1
	1988-90	78	--	10	11	--	1
U.K.	1981-86	81	2	7	7	2	1
	1986-88	69	3	16	7	3	2
	1988-90	78	4	8	3	6	1

Sources: CEE (1990, 1992).

Table 11. Subsidization Tools Applied in EFTA and OECD Member Countries

(In Percent of Total Subsidies)

	Cash sub- sidies	Tax sub- sidies	Equity sub- sidies	Soft loans	Guaran- tees	Mixed instru- ments
EFTA member countries (averages for 1984-87)						
Austria	21	...	68	11	...	--
Finland	72	...	15	12	...	1
Iceland	27	...	--	33	...	40
Norway	61	...	11	27	...	1
Sweden	55	...	--	27	...	18
Switzerland	77	...	--	14	...	9
OECD member countries (averages for 1986-89)						
Australia	64	19	--	--	--	17
Austria	22	6	55	3	4	11
Belgium	7	25	7	--	--	60
Canada	94	--	--	--	2	4
Denmark	33	--	--	11	--	57
Finland	28	39	2	--	8	23
France	42	17	16	3	22	1
Germany	38	43	2	1	15	2
Iceland	100	--	--	--	--	--
Ireland	84	12	--	--	2	2
Italy	94	--	--	--	4	2
Japan	23	19	--	22	17	20
Netherlands	91	--	2	7	1	--
New Zealand	77	23	--	--	--	--
Norway	61	6	6	--	16	13
Portugal	55	20	--	--	--	26
Spain	7	14	--	1	--	78
Sweden	37	15	1	18	10	19
Switzerland	14	--	--	--	78	8
Turkey	17	70	1	10	--	2
United Kingdom	55	--	24	--	15	5
United States	7	89	--	4	1	--

Source: EFTA member countries: Ford and Suyker (1990); OECD member countries: OECD (1992); and authors' calculations.

preferred tool, and in 3 countries (Belgium, Denmark, and Spain) so-called mixed instruments dominated among the various subsidization tools (Table 11). The OECD study also suggests that countries may rapidly switch between different subsidization tools. For example, in Belgium during 1986-88, tax subsidies amounted to less than 1 percent of all subsidies, while in 1989 they amounted to 100 percent. A priori, however, such drastic shifts in individual magnitudes would seem implausible, and, barring the lack of details in the OECD study, it is not clear whether this reflects a shift in policy or data inadequacies.

While the surveys by the CEE, EFTA, and the OECD suggest that cash subsidies are the preferred subsidization tool, and that, overall, the relative magnitude is similar in EU, EFTA, and OECD member countries, for individual countries the surveys often provide a quite different picture of the use of individual instruments. For example, the EFTA (1990) survey suggests that during 1984-87, on average, Switzerland provided 77 percent of all subsidies in the form of cash grants, while Iceland only provided 27 percent of all subsidies in the form of cash grants. In contrast, the OECD (1992) suggests that during 1986-89, on average, Switzerland provided only 14 percent of all subsidies in the form of cash grants, while Iceland provided 100 percent in the form of cash grants. Similarly, the CEE (1990) suggests that during 1986-88, on average, Spain provided 78 percent of all subsidies in the form of cash grants, while the OECD (1992) suggests that during 1986-89, on average, Spain provided only 7 percent of all subsidies in the form of cash grants.

How accurate and comprehensive are the available data? Clearly, different data sources often provide a wide range of estimates for subsidies, depending on measurement and coverage. A single best source of data does not exist. Ford and Suyker (1990) report that in Germany in 1986, for example, estimates on the extent of subsidization ranged from 2.2 percent of GDP (national accounts) to 6.1 percent of GDP (estimate by economic research institutes), with the Government's own periodic reports suggesting an overall total of 3.7 percent of GDP (BMF (1989)). Similarly, in India, national accounts show that total subsidies in 1987 amounted to about 3.5 percent of GDP, while an alternative estimate (Mundle and Rao (1991)) suggests that, in the same year, subsidies to the rural sector alone amounted to a minimum of 6.0 percent of GDP. Other available estimates (Asha (1986) or Gulati (1989)) also show levels of subsidization that significantly exceed the national account estimates.

Certainly, the SNA or GFS definitions of subsidies, with their focus on cash grants, do not capture the large range of implicit subsidies, which, as the two examples show, may be significant. Neither, however, do the CEE, EFTA, or OECD surveys present a complete picture, be it because of their focus on certain sectors, short time periods, or because of their exclusion of certain types of subsidies that may be quantitatively important. Also, all the surveys and studies considered here suffer from the fact that subsidies are measured on a country by country basis, which overlooks the fact that producers may also obtain subsidies directly from multilateral

institutions. These payments may be substantial, as in the case of transfers to agricultural producers in the European Union, which in 1987 alone amounted to ECU 54 billion (Webb, Lopez, and Penn (1990)) 1/, more than the annual GDP of Greece.

Clearly, to the extent that countries use various subsidy tools as close substitutes, the inclusion or exclusion of certain instruments could have a significant effect on the measurement of subsidies. For SNA-based studies, substitution between subsidy tools is probably a more serious problem than it is for more broad-based studies. For example, to the extent that governments consider cash grants and implicit subsidies to be substitutes, SNA based studies not only underestimate the full extent of subsidization, but are also bound to provide a distorted picture of trends in subsidization policy when governments can readily switch back and forth between direct and indirect instruments.

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1/ About 96 percent of these transfers to producers are the result of price intervention schemes, 3 percent result from income support payments, and 1 percent from infrastructure support and marketing assistance.



Table 12. Countries and Country Categories Considered in this Study

<u>Industrial Countries</u>	<u>Africa</u>	<u>Asia</u>	<u>Western Hemisphere</u>	<u>Middle East and North Africa</u>	<u>Eastern Europe</u>	<u>Market Borrowers</u>	<u>Official Borrowers</u>	<u>Diversified Borrowers</u>
Australia	Benin (S)	Fiji (G)	Brazil	Cyprus	Hungary	Brazil	Botswana	Benin
Austria	Botswana	India	Chile (G)	Egypt	Poland	Chile	Cameroon	Costa Rica
Belgium	Cameroon	Korea	Colombia	Islamic Rep. of Iran	Yugoslavia	Israel	Egypt	Cyprus
Canada	The Gambia (G)	Malaysia (G)	Costa Rica	Israel		Korea	Gambia	Fiji
Denmark	Ghana	Pakistan	Guatemala (G)	Morocco		Malaysia	Ghana	Guatemala
Finland	Kenya (G)	Papua New Guinea	Mexico	Syrian Arab Rep. (S)		Mexico	Malawi	India
France	Malawi (G)	Philippines	Nicaragua	Tunisia		Panama	Mauritius	Kenya
Germany	Mauritius	Singapore (G)	Panama	Turkey		Papua New Guinea	Morocco	Paraguay
Greece	South Africa	Solomon Islands (G)	Paraguay			Guinea	Nicaragua	Philippines
Iceland	Swaziland (G)	Sri Lanka	Peru (G)			Peru	Pakistan	Syrian Arab
Ireland	Tanzania	Thailand	Uruguay			Singapore	Swaziland	Republic
Italy (S)	Zaire (G)		Venezuela			Thailand	Tanzania	Zimbabwe
Japan	Zambia					Uruguay	Zambia	
Luxembourg	Zimbabwe					Venezuela	Zaire	
Malta								
Netherlands		Heavily	Small Low					
New Zealand		Indebted	Income	Fuel				
Norway		<u>Countries</u>	<u>Economies</u>	<u>Exporters</u>				
Portugal								
Spain		Brazil	Benin	Cameroon				
Sweden		Chile	Gambia	Egypt				
Switzerland (S)		Colombia	Ghana	Islamic Rep. of Iran				
United Kingdom		Mexico	Malawi	Mexico				
United States		Morocco	Pakistan	Venezuela				
		Peru	Sri Lanka					
		Philippines	Tanzania					
		Uruguay	Zambia					
		Venezuela	Zaire					

Note: Classification system based on that used for the World Economic Outlook (WEO).

(G) indicates that data are only available under the GFS definition of subsidies and transfers.

(S) indicates that data are only available under the SNA definition of subsidies.

Table 13. SNA Subsidies as Percent of GDP, 1975-1990

Country Categories	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Average
<i>Geographic groups</i>																	
Industrialized countries	2.89	2.92	3.01	3.12	3.07	2.99	3.07	3.11	3.15	3.13	3.06	3.03	2.96	2.88	2.65	2.67	2.98
European Union	2.89	3.13	3.37	3.60	3.56	3.48	3.61	3.59	3.73	3.80	3.77	3.73	3.67	3.58	3.13	3.17	3.49
Developing countries <sup>1/</sup>	2.12	1.57	1.56	1.51	1.75	1.94	1.80	1.69	1.51	1.56	1.53	1.46	1.42	1.42	1.45	1.37	1.60
Africa	2.37	1.41	1.58	1.46	1.40	1.61	1.09	1.46	1.01	1.26	1.54	1.69	1.70	1.93	1.72	2.01	1.57
Asia	1.44	1.20	1.27	1.63	1.26	1.12	1.00	1.03	1.16	1.16	1.13	1.07	1.11	1.05	1.26	1.16	1.19
Middle East and North Africa	4.78	3.97	3.79	2.79	4.30	4.45	5.00	3.86	3.54	3.79	3.16	2.54	2.29	2.12	2.12	1.86	3.40
Western Hemisphere	0.96	0.94	0.90	0.97	0.95	1.25	1.33	1.20	1.24	0.98	0.95	0.93	0.98	0.94	1.00	0.74	1.02
Eastern Europe	...	...	...	...	...	12.73	13.01	10.32	9.81	9.48	9.70	9.80	9.42	7.93	6.60	4.80	9.42
Total	<u>2.52</u>	<u>2.30</u>	<u>2.34</u>	<u>2.29</u>	<u>2.42</u>	<u>2.99</u>	<u>3.03</u>	<u>2.79</u>	<u>2.70</u>	<u>2.70</u>	<u>2.64</u>	<u>2.56</u>	<u>2.49</u>	<u>2.38</u>	<u>2.23</u>	<u>2.11</u>	<u>2.53</u>
<i>Economic groups</i>																	
Small, low income economies	3.43	1.73	1.89	1.92	1.95	2.16	1.34	1.87	1.44	1.22	1.38	1.49	1.31	1.83	1.49	1.56	1.75
Heavily indebted countries	2.07	1.66	1.55	1.51	1.47	1.94	2.07	1.84	1.83	1.50	1.45	1.44	1.41	1.35	1.44	1.02	1.60
Fuel exporters	3.55	2.32	2.02	2.10	3.25	3.62	3.56	2.83	2.60	2.46	2.38	2.28	2.41	2.02	2.17	2.50	2.63
Market borrowers	2.08	2.22	2.29	1.86	1.92	2.13	2.54	2.10	2.17	1.89	1.58	1.34	1.42	1.28	1.35	0.99	1.82
Official borrowers	3.06	1.88	1.77	1.71	2.28	2.73	2.27	2.13	1.68	1.63	1.65	1.69	1.63	1.77	1.58	1.62	1.94
Diversified borrowers	2.15	1.68	1.65	1.39	1.74	1.69	1.57	1.46	1.30	1.72	1.75	1.57	1.55	1.58	1.62	1.64	1.63

Source: SNA database, and national authorities. See Table 12 for the classification of countries into country groups.

<sup>1/</sup> The aggregate category "Developing countries" does not include Israel and South Africa, although these two countries are included in their respective geographical country groups.

Table 14. GFS Subsidies and Transfers in Percent of GDP, 1975-1990

Categories	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Average
<b>Geographic groups</b>																	
Industrialized countries	18.00	18.24	18.84	19.52	19.79	20.42	21.34	22.61	22.35	21.89	21.72	21.64	21.48	21.20	20.86	21.95	20.74
European Union	20.03	20.40	20.96	21.42	21.87	23.25	24.78	26.40	25.60	25.25	25.18	24.68	24.60	23.96	23.68	24.85	23.56
Developing countries <sup>1/</sup>	5.21	5.04	4.85	4.88	4.96	5.37	5.59	6.44	5.82	6.08	5.63	5.63	5.39	5.52	5.38	5.19	5.44
Africa	4.27	4.35	4.26	4.12	4.00	4.58	4.46	5.51	4.56	5.04	4.78	4.69	4.37	4.21	4.15	4.16	4.47
Asia	3.90	3.68	3.56	4.00	4.16	4.48	4.35	4.60	4.42	4.34	4.50	4.55	4.69	4.48	4.68	4.51	4.31
Middle East and North Africa	12.35	11.22	10.70	9.90	10.11	9.92	10.79	10.43	10.01	10.72	9.78	9.03	8.31	9.08	8.48	8.18	9.94
Western Hemisphere	4.94	5.46	5.16	5.23	5.19	5.73	6.60	8.22	7.48	7.46	6.59	6.83	6.68	7.02	6.72	6.68	6.37
Eastern Europe	...	...	...	...	...	...	23.78	20.54	20.20	19.73	19.15	20.16	20.97	20.22	18.07	16.71	19.95
Total	<u>9.92</u>	<u>9.88</u>	<u>9.94</u>	<u>10.14</u>	<u>10.25</u>	<u>11.26</u>	<u>11.79</u>	<u>12.54</u>	<u>12.06</u>	<u>12.04</u>	<u>11.68</u>	<u>11.66</u>	<u>11.50</u>	<u>11.45</u>	<u>11.01</u>	<u>11.43</u>	<u>11.16</u>
<b>Economic groups</b>																	
Small low-income countries	3.48	4.10	3.42	3.31	3.68	3.72	4.10	3.43	4.05	2.81	3.07	2.88	3.04	3.25	3.56	3.56	3.66
Heavily indebted countries	6.64	3.52	5.30	6.11	5.87	5.59	6.10	6.81	8.50	8.17	7.73	7.24	6.90	7.22	6.88	7.12	7.18
Fuel exporter	9.33	7.29	7.03	6.52	6.88	7.02	7.21	9.67	7.37	7.37	5.89	5.39	5.40	5.95	5.24	3.19	6.67
Market borrowers	6.07	7.09	6.71	6.36	6.54	7.24	8.05	9.11	8.11	7.76	7.46	7.33	7.34	7.33	7.73	7.79	7.38
Official borrowers	5.52	4.79	4.58	4.10	4.43	4.85	4.93	6.13	4.75	5.16	4.32	4.43	3.89	4.72	3.84	3.29	4.61
Diversified borrowers	3.86	4.21	3.82	4.08	3.82	4.41	4.44	5.20	5.20	5.80	5.57	5.63	5.61	4.71	4.65	4.18	4.70

Source: National authorities and Government Finance Statistics database. See Table 12 for the classification of countries into country groups.

<sup>1/</sup> The aggregate category "Developing countries" does not include Israel and South Africa, although these countries are included in their respective geographical country groups.

Table 15. GFS Subsidies and Transfers as Percent of Central Government Expenditures and Net Lending, 1975-1990

Categories	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Average
<b>Geographic groups</b>																	
Industrialized countries	50.82	51.49	52.60	53.33	53.93	54.43	54.49	55.58	54.90	54.37	53.98	55.20	54.95	55.49	55.67	56.33	54.22
European Union	51.17	51.54	52.83	52.99	53.21	54.29	54.55	55.86	54.21	54.00	54.56	55.35	55.28	55.21	55.48	56.53	54.19
Developing countries <sup>1/</sup>	19.85	19.73	18.57	18.04	18.70	19.33	19.10	21.92	20.72	21.95	20.55	20.07	19.74	20.57	20.37	20.45	19.97
Africa	15.00	15.27	14.72	13.80	14.20	15.41	14.76	17.61	16.89	17.37	16.37	14.79	13.74	14.66	14.30	14.35	15.20
Asia	17.58	16.63	16.33	15.69	16.98	17.01	15.86	16.74	16.51	17.22	17.11	16.45	17.69	18.19	18.48	17.43	16.99
Middle East and North Africa	26.20	23.17	22.95	23.05	23.76	23.26	24.31	26.61	23.36	26.99	25.78	23.82	23.71	26.28	25.15	24.21	24.54
Western Hemisphere	25.79	27.24	24.12	23.88	23.96	25.11	25.86	30.25	28.62	29.72	26.73	28.06	27.18	27.16	27.56	29.56	26.93
Eastern Europe	...	...	...	...	...	48.92	53.27	50.15	51.11	50.19	47.01	44.72	50.45	53.69	49.24	47.18	49.63
<b>Total</b>	<u>30.84</u>	<u>30.82</u>	<u>30.43</u>	<u>30.36</u>	<u>30.95</u>	<u>31.53</u>	<u>31.47</u>	<u>33.62</u>	<u>32.55</u>	<u>33.19</u>	<u>32.15</u>	<u>32.17</u>	<u>31.91</u>	<u>32.63</u>	<u>32.63</u>	<u>33.09</u>	<u>32.27</u>
<b>Economic groups</b>																	
Small low-income economies	14.54	12.78	12.96	11.87	13.77	14.50	12.44	14.91	12.32	13.25	11.73	10.83	12.50	15.20	14.24	15.42	13.33
Heavily indebted countries	26.78	32.06	26.44	25.50	26.13	27.99	28.01	32.01	29.79	30.52	27.39	27.91	27.92	27.04	28.13	29.62	28.33
Fuel exporter	21.57	17.72	19.10	18.74	20.62	20.20	19.50	24.01	21.99	23.98	19.98	16.55	18.58	20.10	21.15	16.39	20.01
Market borrowers	21.64	24.58	21.90	21.56	23.35	25.22	24.59	27.13	25.12	25.22	24.10	24.18	24.76	25.22	26.64	27.80	24.56
Official borrowers	15.54	13.65	13.47	12.75	13.85	14.55	14.03	16.57	15.19	15.99	14.00	13.15	12.94	15.78	13.88	12.69	14.25
Diversified borrowers	17.88	19.40	17.89	17.02	16.56	17.44	18.45	21.28	21.46	22.74	22.22	21.91	20.98	18.76	18.78	17.43	19.39

Source: Government Finance Statistics database. See Table 12 for the classification of countries into country groups.

<sup>1/</sup> The aggregate category "Developing countries" does not include Israel and South Africa, although these two countries are included in their respective geographical country groups.

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