List of Examined Countries[14]

Sub-Saharan Africa:

Mauritius (1992–95)*
Nigeria (1999–2000)*
Zambia (1991–93)*
Zimbabwe (1990–91)*

North Africa and Middle East:

Algeria (1991–93)*
Egypt (1991–94)*
Iran (1992–95)*
Jordan (1990–92 and 1994–99)*
Morocco (1996–99)*
Tunisia (1989–99)*
Yemen (1997–99)*

Europe and Central Asia:

Albania (1992–97)
Belarus (1997–99)*
Hungary (1992–94)*
Poland (1993)
Russian Federation (1994–99)*
Ukraine (1995–99)*

Western Hemisphere:

Colombia (1997–99)*
Ecuador (1997–98)*
Jamaica (1984–93)*
Mexico (1981–91)*
Peru (1990–91)*
Rep. Bolivariana de Venezuela (1989–91)*

South and East Asia and Pacific:

Bangladesh (1991)
India (1994–95)
Indonesia (1998–2000)*
Pakistan (1984)
Sri Lanka (1978–82)*

[14]An asterisk indicates that data on public spending on price subsidies before and after reform are available for the country.

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Appendix 2

The Nature of Price Subsidies

36. A price subsidy reduces the consumer price of a good or service below what it would be in the absence of the subsidy (consumer subsidy) or increases the price received by a producer above its market level (producer subsidy). In practice, consumer subsidies are often implemented with price controls, resulting in shortages of the subsidized item. Producer subsidies, on the other hand, are often administered through producer support prices. When support prices are set too high, there is an oversupply of the subsidized item.

37. Explicit price subsidies are recorded in the government budget as expenditures, although not necessarily under the category "subsidies."[15] Explicit subsidies can take many forms. In the case of a consumer subsidy, a public agency can make direct payments to producers to compensate them for charging lower prices for their output. Alternatively, the government can directly provide goods and services free of charge or at below-market prices through a public distribution system.

38. Implicit price subsidies are not easily identifiable in the government budget, but can show up as (1) losses of the banking system (e.g., owing to below-market interest rates or directed credits); (2) losses of state-owned enterprises, owing to setting prices below cost recovery levels; (3) differential tariffs for various consumers (e.g., by charging industrial users a higher tariff for electricity and water); (4) tax expenditures (e.g., tax exemptions, concessions, and deferrals); (5) below-market procurement prices, which act as a tax on producers and a subsidy for consumers; (6) equity participation in state-owned enterprises without an expectation of a market return or net lending to them at preferential interest rates; (7) regulations that alter market prices or restrict market access (regulatory subsidies); and (8) distribution of

[15]Subsidies paid to consumers, as opposed to producers, are typically classified as transfers in the public sector accounts. Subsidies that are administered by extrabudgetary funds (such as agricultural subsidies in a number of countries) are sometimes not consolidated with the budget.

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donor-provided commodities at below-market prices. All these subsidies affect the government budget, although some (tax expenditures, equity participation, and net lending) more directly than others.

39. A price-subsidy policy can be helpful in pursuing social and economic goals. Price subsidies can be designed to correct market imperfections. For example, the provision of basic education and childhood immunizations free of charge or at reduced tariffs can promote broad-based human and economic development. Subsidies can also be used to address domestic market imperfections in domestic factor and product markets of traded goods. In that case, a subsidy policy is preferable to imposing tariffs (Bhagwati and Ramaswami, 1963). Other price subsidies, such as for basic commodities, can provide food security and improve the well-being of the lowest-income individuals and households in a society. Transitory subsidies may be the only means of cushioning against sharp losses of purchasing power (e.g., following the CFA franc zone exchange reform, and in the wake of the 1997 financial crisis in Indonesia).

40. In practice, price subsidies have also been motivated by other goals, including providing subsidies to nonpoor special interest groups (e.g., in 1999, only 21 percent of kerosene subsidies reached the poorest 30 percent of households in Indonesia).

41. Even when price subsidies achieve their intended objectives, their economic and social benefits have to be weighed against their costs:

- *Explicit and implicit price subsidies burden the government budget* and can aggravate the country's fiscal position. Government spending on subsidies averaged 1.6 percent of GDP in a group of 65 advanced, developing, and transition economies in the mid-1990s.[16] Such spending was relatively high in industrial countries (1.8 percent of GDP), especially in the European Union. On the other hand, in develop-

[16]Data on subsidies are from the United Nation's System of National Accounts (SNA), which defines subsidies as current unrequited government payments to enterprises on the basis of their production, sales, or imports. Thus, the SNA data on subsidies exclude payments to consumers, such as food stamps, which are recorded under transfers, as well as implicit subsidies. The IMF's *Government Finance Statistics* (GFS) uses a similar definition of subsidies as the SNA; however, for most countries, the GFS does not report separately on subsidy payments but instead lumps these outlays together with government transfers.

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ing countries, spending on subsidies averaged 0.9 percent of GDP, and in transition economies, 2.3 percent of GDP.[17]

- *Price subsidies reduce allocative efficiency by distorting relative prices.* Consumer price subsidies often are associated with overconsumption or underprovision of the subsidized item, and producer subsidies with excess production. The welfare cost of such price distortions (i.e., the excess burden of price subsidies) increases faster than the rate of subsidization. In addition, price subsidies have been associated with smuggling (e.g., subsidized wheat and wheat flour in Yemen and subsidized petroleum products in Nigeria have all been smuggled out of these countries) and waste (e.g., subsidized bread was used as animal feed in Belarus, Jordan, Ukraine, and the Russian Federation, and wheat flour was used to mark soccer fields in Peru). In some cases, subsidizing of inappropriate commodities has led the poor to consume a less nutritious diet (e.g., in the Dominican Republic, the poor's intake of calories and protein fell when they substituted less nutritious subsidized chicken for rice, beans, and oil plantains). In the European Union, estimates for 1978–95 suggest a net income loss of between 0.3 percent and 2.7 percent of GDP from the Common Agricultural Policy. The inefficiency of this policy is also reflected in its high cost; in 1980, the budgetary cost of transferring $1 to a farmer was, on average, close to $2 (Rosenblatt and others, 1988).
- *The methods used to finance subsidies*—higher taxation or higher deficit financing—*further worsen resource misallocations.*
- *The capture of benefits of subsidies by middle- and upper-income households raises issues of equity and fairness.* Moreover, price controls—used frequently to implement price subsidies—often result in black markets that limit the access of the poor to scarce items.
- *Subsidies for certain activities*—agriculture, energy consumption, and timber exploitation—*can contribute to environmental degradation.* For example, subsidies for certain activities, including cattle raising, under the Polamazonia Program in Brazil in the 1970s adversely impacted the environment in the Amazon (Davis, 1977).

[17]Clements, Rodríguez, and Schwartz (1998) find that a large government, a large external current account deficit, and a relatively large manufacturing sector are associated with a higher level of explicit subsidies.

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Examining the Short-Term Impact of Reducing Price Subsidies on Real Household Incomes: An Illustration

42. This appendix provides two competing pragmatic approaches to estimating the impact of price-subsidy reform on households in the short term.

- Estimate the loss of real household income as the arithmetic mean of the relative price change, using the shares of the consumption items in household expenditures as weights. This amounts to the following:

$$\mathrm{RL} = \sum_i w_i \frac{P_i(1)}{P_i(0)} - 1,$$

  where RL denotes the impact on real household income in percent, w_i is the share of item in household expenditures, $P_i(1)$ is the new (in most cases, higher) price of item i, and $P_i(0)$ the price before the reform of price subsidies. This estimate of the loss of real household income can be illustrated with an example. Suppose the price of subsidized rice rises by 50 percent, and that the weight of rice in the expenditures of poor households averages 30 percent, and that of nonpoor households, 10 percent.[18] Using the above equation, the average impact on the real income of poor households can then be estimated at 15 percent. For nonpoor households, the corresponding loss in real income is smaller—5 percent, on average.

  This estimate provides an upper boundary on the increase in living costs. If households respond to changes in relative prices by shifting away from the item for which the price has increased, the actual loss

[18]Data on household expenditures can be obtained from household surveys.

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will be smaller. The loss will be close to the above estimate if the subsidized item is a basic commodity for which no ready substitutes are available. If there is a perfect substitute, households will react to even a small change in the price of the subsidized item by shifting completely out of that item and into the substitute, suffering no loss in real income. The procedure below recognizes the likelihood of a consumer response.

- Alternatively, *estimate the real loss of household income as the geometric mean of the relative price change, using the shares of the consumption items in household expenditures as weights*. This can be calculated as follows:

$$RL' = \prod_i \frac{P_i(1)^{w_i}}{P_i(0)} - 1.$$

Using the same example as before, the estimated loss of poor households from a rise in the price of rice by 50 percent can be calculated at 13 percent, and for nonpoor households, 4 percent. These estimates reflect the case when households are responsive—but not infinitely so—to changes in relative prices.[19]

43. Which estimate of real-income loss is more appropriate? The above approaches provide a reasonable range within which the correct answer is likely to fall. Which point in this range is most relevant for estimating the desirable level of compensation for price-subsidy reform depends on many factors, including whether the subsidized item is a basic commodity and some substitution possibilities exist. To be more precise, which estimate is more accurate depends on the size of the income effect of the price change versus the substitution effect. What is reassuring, however, is that the difference between the two estimates is typically small for poor households. In the above example, the estimates differ by only two percentage points.

[19]The estimate reflects households who respond to price changes in such a way that the shares of spending on different consumption items in their total expenditures remains constant. This behavior is consistent with preferences that can be described by (a monotonic transformation of) a Cobb Douglas function, which has unitary compensated own-price and cross-price elasticities. Preferences of this type also underlie calculation of the Consumer Price Index in a number of countries, including many components of the CPI for the United States.

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Index Guide to Concepts and Issues[20]

[20]The numbers refer to paragraphs, text boxes, and tables.

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