The Role of Subsidies as a Means to Increase Welfare

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1. Introduction

Economics is not a neat science. Economic solutions often lead to dismal outcomes of gainers and losers. Economic policymaking therefore involves a delicate art of balancing tradeoffs so that in the end social wellbeing is enhanced. In particular instances governments may be compelled to compensate the losers in order not to compromise welfare. It is possible that by such intervention, the allocative mechanism may suffer some distortion leading to either market failure, or policy failure, or both[1]. But would that be too much a price to pay if the intervention can bring relief to some?

Economists, since Adam Smith, have had a lot of faith in the allocative power of the market. The free market system is generally thought to work impersonally to allocate resources in a manner such that there are no gainers or losers. In other words, under a free market system, the price mechanism is supposed to lead to situations where demanders of a good or service receive what they want at the price they want, and the suppliers also go home satisfied. The price mechanism allows consumers to cast their votes only for the production of what they want at certain given prices and therefore help to eliminate waste of resources. This type of mechanism is said to be superior to situations in which a Government or a body attempts to intervene in the market in order to administratively allocate resources. But since markets are not necessarily "free", an intervention in the market system may sometimes be necessary to advance the course of a more equitable development.

Subsidy is one such market intervention that can be used to by-pass the market system in the distribution of resources so as to enhance welfare. Its use has however created opposing camps among economists and non-economists, governments and non-governmental organizations, policy-makers and civil society. While one group looks on subsidies as inappropriate tools which distort market structures, impose strain on government fiscal programmes, and harm the environment, the other group thinks of subsidies as essential safety nets in the development process. Needless to say not all in a particular group are on a specific side of the divide.

1 Market failure is when the prices of goods and services do not reflect the true costs of producing and consuming those goods and services. Policy failure is the situation when a policy or policies are inconsistent and militate against the success of other policies.

Using basic economic principles, it is often argued that removal of subsidies can improve economic efficiency and increase economic growth. It is argued that resources are scarce and must be allocated according to market prices (based on marginal costs); and that subsidization can lead to prices that reflect neither true resource scarcity nor the costs of consumption or production. On the other hand, proponents for maintaining subsidies insist that they serve good purposes and their removal would harm the economy. While those for the removal of subsidy based their argument on economic principles rooted in "first best" practices, those who argue for subsidies resort to "second-best" arguments.[2] For the latter group, because of market imperfections, "first-best" solutions although achievable, are no longer desirable.

This paper argues for carefully sifting out the different kinds of subsidies in order to retain those that are more likely to enhance human welfare. There is now a growing consensus that human development cannot just be left to economic principles and theories. Human development is more than market efficiencies and perfections. Human development is more holistic, involving social, political, cultural, and psychological developments. Any decision on enhancing human welfare must, therefore, be made by taking into consideration all these factors. In sorting out useful from debilitating subsidies careful consideration must be taken of factors that enhance human welfare the most.

[2] "First-best" practices are situations under a free and unencumbered market system where prices are allowed to allocate resources such that producers and consumers are satisfied. "Second best" practice comes in when the market is constrained in one way or the other and therefore allocation is not just left to the price mechanism.

2. Defining Subsidies

There are several definitions and types of subsidies. They range from financial transfers to opportunity costs, direct and indirect, overt and covert. In addition to subsidies of conventional and formal type, there is a host of implicit subsidies, especially in the form of externalities.

Formally, subsidies comprise all measures that keep prices for consumers below the market level or keep prices for producers above the market level or that reduce costs for consumers and producers by giving direct or indirect support.

Consider, for example, the case of a poor rice farmer in Liberia. There are several ways in which this farmer can receive subsidies. The Government can decide to construct dams for farm irrigation which will not be directly charged to this farmer; provide high-yielding seedling to him; provide free extension service; set up a marketing agency which takes the produce off the hands of the farmer; or provide credit to him on easy terms. These are all forms of producer subsidies which can lead to lower cost of producing rice by this farmer.

On the other hand rice is one of the main staples in Ghana. The Government of Ghana receives rice from the United States as food aid to supplement the small local production. This rice is sold at substantially lower price than the locally produced rice. Poor local production conditions aside and taking into consideration transportation costs from the US to Ghana, it is quite evident that consumers of American rice in Ghana do receive huge subsidies.

Although, analytically very useful, the above definition has the elements that sow the seeds of controversy in the treatment of subsidies. Is the market “fair”? Do prices truly reflect the cost of production? Are all costs, implicit and explicit, direct and indirect adequately covered in the cost of production?

Implied also in the formal definition of subsidy is the existence of a form of financial transfer. Indeed, the definition of subsidies as in Article 1 under the General Provisions in the Agreement on Subsidies and Countervailing Measures under the WTO interprets subsidy only in the financial sense. This is not always the case. There are hidden subsidies for which no compensations are made. Drivers are never asked to compensate anyone for polluting the atmosphere nor do farmers compensate anyone for polluting the ecosystem through the spraying of their crops. Neither do industrialists offer any compensation for polluting water bodies with their toxic by-products. These are referred to by economists as externalities and should count as implicit subsidies, even though they are not dispensed by a government department through actual financial transfer. They carry the same economic, social and environmental baggage as many financial subsidies.

A much broader definition of subsidies would include the cost of an activity which is not borne by the source, but by another agent who does not benefit from the activity.

But there are difficulties even in this general definition of subsidy. Literacy and good health promote development and growth. So if a government provides subsidy to health and education so that its population becomes more productive, the individual as well as the government benefits.

3. The Effect of Subsidies Today

Subsidies are generally introduced to mitigate a possible imbalance in the allocation and use of resources. Thus if, for example, by virtue of poor endowment of natural and/or human resource, a rural farmer is unable to produce enough to feed his family, his production process can be enhanced by subsidizing the cost of his inputs. In the earlier example of the rice farmer in Liberia, the irrigation, cheaper credit, provision of marketing facilities and so on, are all intended to lower the cost of production of rice by this farmer. Thus the direct impact of the subsidy will be an increase in the level of farm income to the rural farmer. But since the Government of Liberia would have had to fund all these inputs, then a budgetary provision would have been made. This may mean that money that otherwise may have been used for provision of health or education or some social amenities in the village would have been diverted to support the rice production (i.e., the opportunity cost of the fiscal outlay for subsidizing rice production). Further, the irrigation may have some environmental effects on the village (i.e., negative externalities). Consequently, in examining the full effect of the subsidies on rice production, both the direct and the indirect effects should be taken into consideration.

It must also be noted that the effect of subsidies can extend beyond the beneficiaries it was initially intended for, sometimes even beyond geographic boundaries. Agricultural subsidies in Europe reverberate to Africa and the developing world. It is sometimes impossible to capture the full impact of the subsidy because of measurement problems.

Agriculture is one area for which subsidies have been argued for. In almost all countries the poor and the vulnerable are predominantly located among the rural farming households. Thus a case is made to subsidize agriculture in order to enhance farm income and enhance welfare. But are agricultural subsidies of the United States and Europe welfare enhancing?

The European Union (EU) spends over €40 billion to subsidize agriculture annually in direct transfers. This is ostensibly to increase agricultural production and help their farmers compete on the world market. However, there is little evidence of this huge subsidy really creating a welfare enhancing environment among EU farmers. In 2000, about 78 percent of EU farmers received less than €5000 per year in direct aid, while less than 2000 of Europe's 4.5 million farmers shared a total of €1bn – all of them large-scale intensive farming systems. In other words, most of the farmers received very little of the aid. Meanwhile the distribution of the benefits across Europe is very uneven: In Portugal, approximately 95 percent of farmers received less than €5000, compared with 43 percent in the UK. Moreover, 380 of the UK's landowners and large-scale agricultural businesses received aid in excess of the €300,000 per farmer. Clearly, EU's agricultural policies cannot be said to be welfare enhancing and it concentrates subsidies in the hands of its richest agricultural landowners.

Meanwhile the effects of the EU subsidies have more adverse consequences away from its shores. The efforts of rural farmers in Africa and other developing areas of the world are being undermined by the EU agricultural policies.
For example, EU's support to sugar producers has serious consequences on poverty alleviation in Mozambique. Mozambique is one of the world's poorest nations with about 80 percent of its population living in the rural areas where farming is the predominant activity. Sugar is a major export crop for this poor African country, and it is also the largest source of employment. Mozambique is said to be one of the most efficient producers of sugar in the world in terms of climatic conditions and unit cost, compared to the EU which is one of the highest-cost producers. But because of the subsidies, the EU is the second largest producer of sugar in the world with a lot of influence on world prices. Thus, agricultural subsidies in Europe as a whole have a negative welfare effect within and outside its borders.

But inefficient Europe aside, Mozambique would still have to contend with superior production techniques from Brazil. This makes a case for subsidies to help Mozambican farmers have better production at more competitive prices. This is a typical example of a case-by-case determination of the appropriateness of a subsidy.

But certainly agricultural subsidies in the developed world cannot be all bad. Subsidies to research and development into better farming techniques have improved welfare the world over. Better farming techniques and increased production have led to relief of famine in places in Africa and Asia.

An even much stronger case can be made for subsidies in the energy sector. In the United States a lot of subsidy goes to the energy sector. A Renewable Energy Policy Report published in 2000, reports a 50-year cumulative Federal subsidy to wind, solar and nuclear energy at about 150 billion US dollars. Of this amount about 95 percent of it went to support nuclear technology. This has led to a lopsided technological development in nuclear energy at the expense of the renewable energy element – wind and solar. There is need for increased support to development of better techniques for renewable energy.

In most developing countries, the most useful subsidies are in the provision of health and educational services. In Ghana, for example, under a 'Compulsory Education Law' enacted in 1961, primary education was made free and compulsory. For secondary and tertiary education, the Government also provided tuition free. Schools, which initially were established by private units, particularly the churches, were absorbed into the public system to be supported by the government. Similarly, health services were made available to the public at heavily subsidised rates. Furthermore, provision of water and electricity enjoyed huge subsidy from the government. These subsidies took a heavy toll on the public budget, and have been the root cause of the economic malaise that the country has found itself in. Since about the mid-1960s, the country has firmly lodged itself in structural deficit, with ever dwindling revenues and ever expanding expenditures.

Nevertheless, most Ghanaians could never have been able to afford education were it not for these subsidies. Today Ghana boasts of a high calibre educated class.

Misplaced subsidies can also be found in developing countries. Ghana is a low-income oil importing country, needing energy for growth and development. The country has one oil refinery which is state-owned and over a period of 40 years has seen deterioration in equipment and reduction in its efficiency. The Government of Ghana heavily subsidizes petroleum products. In 2003, subsidies to petrol amounted to about 200 million US dollars, equivalent to the donor receipts by the country for that year. Petrol in Ghana was cheaper than bottled water. Effectively, Ghana used all of its donor receipts for that year to subsidize petrol. Clearly, this is not welfare enhancing as the cheap petrol encouraged the misuse of the product by private cars. This is one case in which sifting of subsidies is called for. When the Government of Ghana decided to remove the subsidies in order to ease the budgetary burden, care was not taken and both production and the poor suffered. Most haulage trucks which cart food from the farming communities to the cities use diesel fuel which was not isolated by the Government for continued support. This meant that fares for transporting food went up with a serious impact on the rate of inflation. Thus by the blanket removal of the subsidies on petroleum products, the Government of Ghana lost hold on macro stability which it had fought hard to achieve. Furthermore, kerosene which is used more by the poor could also have been singled out for support. By failing to do that the poor were further marginalized through the removal of the subsidies on petroleum products.

4. ***Role for Subsidies in Increasing Human Welfare***

Subsidies can be put to bad use as well as to good. Subsidies are generally well-intentioned and can promote economic growth and enhance human welfare. There is therefore the need to carefully sift through the different kinds of subsidies so as to retain the useful ones. One must not, as it were, throw away the baby with the bath water.

It is not always easy to distinguish a welfare maximizing subsidy from one that is not. To help distinguish between the two, economists differentiate between four types of subsidies and their consequences.

The first group, referred to as Pigouvian subsidies, named after a famous economist A.C. Pigou, are those that directly increase efficiency by encouraging activities with positive (rather than negative) externalities. These involve transfers that are likely to directly enhance welfare. For example, afforestation is good in itself: it prevents soil erosion, flooding, and can halt desertification; and thus has direct gains to society.

The second group of subsidies however offer gains to society very much like the Pigouvian, but mostly with the intention of promoting the use of the best of alternatives. Indirect subsidies are those that improve the environment by encouraging the production of (relatively) clean goods that are close substitutes for goods with harmful externalities. Although not the most efficient policy, such subsidies may be appealing in the presence of political or administrative obstacles to direct regulation. For example, subsidies for public transport can reduce the pollution and congestion costs of cars. Also, subsidies for solar power plants and wind farms will more likely promote use of more environmentally friendly sources of energy than fossil ones.

Third, are the production-reducing subsidies, which directly discourage productive activities with harmful externalities. For example under the Conservation Reserve Program and Wetland Reserve Program in the U.S., farmers are paid not to produce on land in environmentally sensitive areas, such as habitat for endangered species.

Lastly, there are the group of perverse subsidies that do not benefit anyone and that are generally environmentally unfriendly. The environmentally unfriendly subsidies, unlike the above subsidies, compound rather than alleviate environmental problems. For political or other reasons, these subsidies are quite pervasive. For example fossil fuel combustion, the major cause of air pollution, is typically encouraged in developing countries by direct energy subsidies and under-pricing of electricity. Agricultural subsidies in the OECD countries can increase land clearance and lead to loss of wildlife, forests and public amenities. They also increase the derived demand for chemical fertilizers and pesticides. Throughout the world farmers are charged well below the marginal social cost of irrigation supply, thereby exacerbating problems of salinization and water-logging. Subsidies for mining and timber harvesting on public lands are also common, especially in developing countries.

Analytically, it can be shown that a Pigouvian subsidy (as well as indirect subsidies) can be decomposed into a revenue-financing and tax-interaction effect, in addition to the primary welfare effect. The revenue-financing effect is the welfare cost of financing the subsidy by increasing the distortionary labour tax (relative to increasing a lump sum tax). The tax-interaction effect is the welfare gain from the increase in labour supply, induced by the increase in the real household wage when the price of the subsidized consumption good falls. It can then be shown that even though, in general, the revenue-financing effect exceeds the tax-interaction effect, the optimal level of subsidy is still positive because of the primary welfare effect.

There is the tendency for people to emphasize the drawback of financing subsidies through distortionary taxation, as they fail to recognize the advantage from the tax-interaction effect. Under plausible parameters the revenue-financing and tax-interaction effects can be larger than the primary welfare gain. Therefore these studies can be misleading not only about the overall welfare effect of such subsidies, but also about the sign of the welfare effect (positive or negative). This general point for example applies to the evaluation of subsidies for goods and services that are important especially to people with low incomes, such as health care, agricultural commodities and low-income housing.

Production-reducing subsidies are effectively a tax on production combined with a lump sum transfer. That is, they raise the relative price of consumption goods, and therefore the tax-interaction effect reinforces rather than offsets the revenue-financing effect. For these subsidies, marginal environmental benefits have to be above a threshold amount before any level of subsidy is welfare-improving.

As regards the other perverse subsides, many studies claim that they lead to a double cost, because they exacerbate environmental externality problems, and increase the revenue requirement from distortionary taxes. However these studies overstate the overall costs, because the subsidy produces an efficiency gain through the tax-interaction effect, which can offset much of the latter cost.

Because perverse subsidies are dominant, the usual arguments against subsidies in general are based on such subsidies, particularly their distortionary impact. The distortionary arguments rest on the principles that if markets are working perfectly and are free, then it is “best” if resource allocation is left to market forces. This is known as the “first-best” position. Markets, however, are not perfect and are hardly free – imperfect information, resource constraints, a dominant buyer or supplier can all corrupt the workings of the market. In such situations, it is no longer desirable to leave allocation to market forces. Such situations present a “second-best” alternative, when some intervention such as introduction of subsidies may help allocate resources better.

Governments have social responsibility to see to fair distribution of resources to all citizens. When market imperfections exist, it is the right of governments to use subsidies to palliate those that are ill-advantaged. For example, in a low-monetized economy, subsidies can achieve more efficient social policy - it may be easier to slash food staple prices to consumers than to make social transfers.

When determining what category a specific subsidy falls into, one needs to take account of the context and weigh costs and benefits that may not be easily measurable in economic terms. Take, for instance, subsidies on fossil fuel which pollutes the environment and yet billions of dollars are spent on subsidizing such products. Countries in the prime of their development need energy of all sorts to run productive machinery. Thus, subsidizing oil may be a political decision which may quicken the pace of development and in the medium to long run enhance economic growth and development. Of course, one should balance out the direct and indirect effects before introducing the subsidy, and review these effects as the context changes – such as the level of economic development or the access to alternative energy sources.

There are also instances when the introduction of subsidies is at variance with the perceived objective of Government policy. In Ghana, several attempts are made by government to improve the lives of the poor. Water is a basic necessity of life and hence treated water is heavily subsidized by government. However, only a few people (about 59 percent of urban households and 40 percent of rural communities) have access to treated water. Thus while the non-poor enjoy subsidized treated water in their homes, the poor buy water at exorbitant prices from private vendors.

5. Conclusion

There are more points of agreement on the issue of subsidies than the debate portrays. In looking at disagreements on economic policy with respect to poverty and distribution Ravi Kanbur of Cornell University observed that much of the reason for the disagreements lies in differences in perspective and framework on three key features characterizing assessments of economic policy: Aggregation, Time Horizon, and Market Structure. One could have made a similar observation on the disputes surrounding the policy of subsidies, mutatis mutandis.

Aggregation: Those who oppose subsidies in general view its institution and consequences in more aggregate terms than those who favour subsidies. For instance, governments in both developing and developed countries subsidize their energy sectors heavily. This is because cheap energy is essential to the development process. Social and industrial mechanization depend on cheap energy source. But most of the energy comes from non-renewable sources and they hurt the environment. In the US, for example, fossil fuel and nuclear energy take virtually all the subsidy provided to the energy sector. Because of the environmentally unfriendly nature of these sources of energy, most people conclude that subsidies are bad. A careful sifting out and disaggregation of the sector will reveal that more subsidy to the renewable energy sources such as solar and wind can lead to more positive welfare and environmentally friendly effects.

Time Horizons: Those in favour of subsidies look at “medium term” horizon defined more as a period of support in which the welfare gains remain positive. Acknowledging that the welfare enhancement of subsidies is context-dependent, they emphasise the need to review subsidies as circumstances change. For those who oppose subsidies, the focus is on the short and the long-runs. Most subsidies are looked on as distortionary in the short run leading to long-run abuse.

Market Structure: Much of the economic argument against subsidies is rooted in perfectly competitive behaviour. This is countered by the fact that the real world is faced with market power and other market imperfections which make the “first best” solutions untenable and create a rational for subsidies.

It is time for economists and non-economists, governments, politicians and civil society to recognize that there can be good as well as bad subsidies. Current international disciplines on subsidies are based on trade distortion. But trade distortion is not the most relevant criteria for assessing the contribution of subsidies to increase welfare. Yet, subsidies impact human livelihoods much more broadly than just trading interests. This means that we need more sophisticated processes to balance different interests (e.g. those of Mozambican sugar cane growers against those of Brazilian ones) and strike the tough compromises that are unavoidable as subsidies invariably benefit some and harm others:

Ultimately economics cannot alone provide the answer to what subsidies are useful. The answer depends on what values societies give to poverty reduction, nature conservation, reducing domestic or international inequalities etc. To deal with this, it will require legitimate political processes. It is important to separate out carefully the grains from the chaff. It is important to keep in mind that appropriateness of a subsidy depends on “space and time”.