AGRICULTURE PRODUCTION SUBSIDIES IN DEVELOPED COUNTRIES: WHICH WAY OUT FOR DEVELOPING COUNTRIES?

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Abstract

Developing countries participation in the world economy has declined alarmingly over the past 50 years in terms of GDP, exports and foreign investment. The Uruguay Round agreement on Agriculture (URAA) 2 brought world agricultural production and trade under a rules-based regime that not only governs market access, but also domestic support and export subsidies in the form of subsidies in the agricultural sector.

In the developing countries, where agriculture is even more important, the biggest concern is with the effects on world markets of subsidized production and exports in OECD countries. Agriculture is the backbone of the economies of many African countries. Agricultural exports account for a large share in total exports from these countries. Developed countries are known for giving agricultural production subsidies to farmers. These subsidies always depress world market prices rendering products from Africa and other developing countries uncompetitive. The general objective of this paper is to examine the effects of agriculture production subsidies in developed countries on agricultural performance in developing countries. The paper reveals that agriculture production subsidies hamper agriculture production in developing countries. The paper reveals that the subsidies should be reduced and agriculture production be left for the developing countries in the global economy.

Introduction

Developing countries participation in the world economy has declined alarmingly over the past 50 years in terms of GDP, exports and foreign investment. The decline of Africa's importance in the global economy is much sharper in terms of relations with the rest of the world than straight economic activity (African Economic Outlook, 2002). International trade policies and government intervention through subsidies and indirect forms of support influence agricultural production choices such as type of crop or livestock, mode (technology and inputs), and quantity.

Such trends can result in global effects in trade level, industry structure, and production location, which in turn may affect the state of the environment. The adoption of the US Farm Bill and the launch of negotiations on agriculture in the Doha Round has brought the issue of agricultural subsidies to the forefront of trade policy discussions (Andersen, 2000). Agricultural trade liberalization is one of the most sensitive of all trade issues since agriculture has been integrated in the multilateral trade regime during the Uruguay Round negotiations. The Uruguay Round agreement on Agriculture (URAA) 2 brought world agricultural production and trade under a rules-based regime that not only governs market access, but also domestic support and export subsidies in the form of subsidies in the agricultural sector. OECD countries continue to provide high levels of support and protection to their agricultural sectors, as much as USD 327 billion or 1.3% of OECD GDP in 2000 (OECD, 2000). For most developing countries, agriculture is a dominant sector and improved market access could provide a springboard for export-led growth in many of them. In the developing countries, where agriculture is even more important, the biggest concern is with the effects on world markets of subsidized production and exports in OECD countries.

In particular, there is concern about their local markets being undermined by the disposal of surplus production. Agriculture is the backbone of the economies of many African countries. Agricultural exports account for a large share in total exports from these countries. In Kenya for example, although the contribution of agriculture to gross domestic product (GDP) has declined form 40 percent in 1963 to only 24 percent in 2002, the sector continues to...
be dominant in the economy and a major contributor to economic growth. The sector generates about 60 percent of the country's foreign exchange and provides employment to about 70 percent of the total population (Odhiambo, Nyangito, Nzuma, 2003). Agricultural sector also provides food requirement for the nation and the bulk of the raw materials required in the industrial sector. Because agriculture is a major sector of the African economies, its performance directly mirrors that of the overall economy. Many developing countries are involved in world trade, which involves the sale of agricultural produce and purchase of capital equipment. The world trade organization (WTO) is gearing up for a ministerial meeting in Mexico this September that could further liberalize and increase trade in agricultural produce. A large part of the poor in developing countries live in agricultural areas and therefore their livelihoods depend either directly or indirectly on agriculture. There is a direct link between the economic importance of agriculture in developed countries and the situation developed countries (Courier, 2003).

This is because agricultural policies in the developed world have effects on international trade - in particular by depressing world market prices for agricultural products. For example, if a developing country produces agricultural products and can export these products to world markets, and finds that it can sell them only at a low price that of course does not help that country to overcome poverty. Developed countries are known for giving agricultural production subsides to farmers. These subsidies always depress world market prices rendering products from Africa and other developing countries uncompetitive. However, these subsidies which induce undue advantage to farmers in developed countries are funded by taxpayers money, which is justified by their sound fiscal stance relative to developing countries which wallow in huge deficit regimes. For example, Kenya has been running chronic fiscal deficits in the last three decades except in 1996 and 2000.

**Figure 1.1 Fiscal deficits in Kenya, 1963 to 2000.**

![Graph showing fiscal deficits in Kenya, 1963 to 2000](image)

*Source Basic Data: International Financial Statistics, IMF (various issues)*

Figure 1.1 shows the weak fiscal position of Kenya, which cannot justify subsidizing farm produce destined for world markets. This is an example of developing countries, which run huge budget deficits coupled with low economic growth that cannot justify subsidization of agriculture production. Agriculture plays a critical role in the national economic growth and development. This role is reflected in among others, employment and foreign exchange creation and overall contribution to the GDP. The sector's contribution to GDP in Kenya has progressively declined from 37 percent of GDP in early 1970s to about 25 percent at the end of 2000. Several factors have been identified as the source of decline. These include decreased farm sizes, inadequate use of appropriate technology, unreliable rainfall, poor marketing infrastructure, limited access to credit, high cost of farm inputs including...
agriculture machinery, poor market information and Early Warning Systems (EWS) and lack of land use policy have resulted in low productivity (Republic of Kenya, 2002). Besides, the agricultural sector performed exceptionally well in the early years of independence, its performance in recent years has been dismal.

From an average growth rate of about 6 percent in the 1962-72 period, the sector dramatically declined to below 2 percent in the 1990s. Liberalization of the economy took place in the early 1990s. It is therefore possible to link poor agricultural performance to liberalization, which indeed allows cheap and highly subsidized products to be sold in the market hence gagging out local production. The general objective of this paper is to examine the effects of agriculture production subsidies in developed countries on agricultural performance in developing countries. The specific objective is to establish the existence of causality and its direction.

The Agricultural Sector in Kenya

Agriculture is the mainstream of the Kenyan economy accounting approximately 25 percent of the Gross domestic product, and employing approximately 70 percent of the national labour force. Besides the sector being important, its contribution to the economy as measured by GDP has steadily declined over the years (Table 1).

Table 1: Agriculture A Share of GDP (1990 - 2001)

<table>
<thead>
<tr>
<th>Year</th>
<th>Agricultural GDP £m (Cons. 1982 prices)</th>
<th>Total GDP £m (1982 =P)</th>
<th>%GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1,192.04</td>
<td>4,223.63</td>
<td>28.2</td>
</tr>
<tr>
<td>1991</td>
<td>1,178.93</td>
<td>4,311.50</td>
<td>27.3</td>
</tr>
<tr>
<td>1992</td>
<td>1,134.83</td>
<td>4,332.22</td>
<td>26.2</td>
</tr>
<tr>
<td>1993</td>
<td>1,088.49</td>
<td>4,342.79</td>
<td>25.1</td>
</tr>
<tr>
<td>1994</td>
<td>1,110.29</td>
<td>4,474.58</td>
<td>25.0</td>
</tr>
<tr>
<td>1995</td>
<td>1,173.32</td>
<td>4,690.13</td>
<td>25.0</td>
</tr>
<tr>
<td>1996</td>
<td>1,225.35</td>
<td>4,907.59</td>
<td>25.0</td>
</tr>
<tr>
<td>1997</td>
<td>1,240.05</td>
<td>5,022.54</td>
<td>24.7</td>
</tr>
<tr>
<td>1998</td>
<td>1,256.08</td>
<td>5,112.60</td>
<td>24.6</td>
</tr>
<tr>
<td>1999</td>
<td>1,271.25</td>
<td>5,185.10</td>
<td>24.5</td>
</tr>
<tr>
<td>2000</td>
<td>1,244.80</td>
<td>5,172.82</td>
<td>24.0</td>
</tr>
<tr>
<td>2001</td>
<td>1,259.80</td>
<td>5,234.85</td>
<td>24.0</td>
</tr>
</tbody>
</table>

Source: Statistical Abstract, 2002

The methods of production in Kenya's agriculture, like elsewhere in the developing world, differs widely by the kind of system. Large-scale production uses capital intensive while small-scale production uses labour intensive methods. This has implications on productivity especially for the small-scale production where a marked decline has been observed. The high cost of inputs such as fertilizers coupled with the prevailing high poverty has depressed productivity in small holder farms. A major factor in agricultural production in Kenya is labour, agriculture production remains labour intensive (Odhiambo, Nyangito, Nzuma, 2003). Arable land is the other important factor in
agricultural production, which has expanded very slowly relative to labour implying that the land-labour ratio has declined. Among the main inputs in agricultural production in the country are fertilizers, pesticides and other chemicals, seeds, and machinery.

A study by the World Bank (1979) stipulates that a large majority of the very poor in the developing countries lives in rural areas, where most of them are engaged in agriculture. It further says that the effects of poverty from trade policy might be expected to depend above all on their impact on rural poverty and the agricultural sector, particularly on landless labourers, people operating very small farms, inhabitants of depressed and backward regions. The study argues that pro-trade policies lead to better overall growth results in that they will have some net effect in the direction of increasing a great demand for agricultural output and thus driving up prices, which will stimulate supply. International trade contributes to growth and development in a developing country in a number of ways. First, it expands output and provides additions to incomes through demand for local natural resources, which might have otherwise gone unused. It permits a developing economy to specialize, based on its relatively abundant resources, while importing goods and services that would be very expensive or impossible to produce locally. Thus through trade, the country can potentially obtain more of each type of output than it could produce for itself. Benefits from trade are also based on economies of scale (advantages from large-scale production). Poor countries offer only tiny markets for most agricultural products, so that a developing country will be impoverished by the high unit costs if it tries to produce a little of each product for its inadequate home market. Such a country stands to gain enormously by importing many or most of the goods that can be produced cheaply only on a large scale, and by building its agricultural industries partly around exports, so that a larger scale of production can be attained. Study by the World Bank (1986) estimate fertilizer use of 600,000 metric tones per year. In Kenya, the average annual consumption of fertilizer for the period 1965 - 2001 is about 7,000 metric tones per year where its use per hectare was 20 kilograms. Although with liberalization it was expected that fertilizer market would increase, evidence is available for the contrary (Allgood and Kilungu 1996).

Theoretical Framework

The farmer is assumed to be a firm, which, by choosing its inputs and output, has the sole goal of achieving maximum economic profits, i.e. the firm seeks to make the difference between its total revenues and its total economic costs as large as possible. This stems from the fact that the farmer is both the owner and manager of the firm and the major objective therefore would be to maximize profits from the proceeds as opposed to sales maximization (Gachanja, 1997). The profit-maximizing price taking farmer determines the desired level of output and inputs depending on the prices of output and inputs. Assuming the farmer is faced with a well behaved profit function which is non decreasing in output price, non increasing in input prices, and homogeneous of degree one in both input and output prices, this profit function can be stated as:

$$\pi(p, w) = \text{Max}\{py - C(w, y)\}$$

which could directly be stated as:

$$\pi(p, w) = \text{Max}\{py - wx\}, x > 0, y \geq 0$$

Where:

- $P$ is the profit maximizing output price
- $Y$ is the output produced.
- $W$ is a vector of input prices.

The Hotelling's lemma states that, if a profit junction is well behaved, then there exists a unique profit maximizing supply function, which is the first partial derivative of the profit function with respect to the output price. Therefore, if the farmer's profit function above is well behaved, then the supply function will be given by:
Empirical Model

Past studies reviewed suggest that the supply of agricultural produce by the farmer is a function of output and input prices i.e. (world market price, prices of fertilizer, pesticides and other agricultural inputs), farm size, quantity of output produced and subsidies. In a nutshell, however, quantity of agricultural produce/output supplied by the farmers in developing countries to the world market is determined by

\[ S = f \left( p, w, \phi, r \right) \] (3.1)

3.1 is the supply function

Where

- \( S \): Agricultural output supplied
- \( P \): Vector of output prices
- \( W \): Vector of input prices
- \( f \): Vector of subsidies extended to the farmers in developed countries
- \( f \): Vector of subsidies extended to the farmers in developed countries
- \( r \): Weather conditions

The model can then be specified as

\[ S = \alpha_1 + \alpha_2 + \alpha_3 W + \alpha_4 \phi + \alpha_5 \gamma + \epsilon \] (3.2)

The apriori signs of the coefficients are

\( \alpha_1, \alpha_2, >0, \alpha_3, \alpha_4, \alpha_5, <0 \)

The variable \( g \) is a dummy variable which is \( g = 0 \) and \( g = 1 \) for favorable and unfavorable weather for agriculture production. Equation 3.2 can be estimated using output and input price indices, subsidies and rainfall.

Conclusion

Consistent time series data on agricultural production compensation is lacking. This has indeed impeded the empirical arm of this particular study. Besides, much can be said on the contentious issue of agricultural subsidies in the developed countries. This paper aimed at establishing the detrimental effects of subsidies on agricultural production in developing countries. Enough evidence exists on this issue, especially from the reviewed literature.

Recommendations

- Developing countries must demand an agreement that brings them into the world trade system.
- Past trade agreements have postponed the process of reform in developing countries and delayed the benefits of a more open economy.
- Developing countries need help meeting health, safety and quality standards; enhancing investment in rural roads; expanding access to appropriate technology, land and credit; and improving marketing and production systems in order to realize the benefits of trade.
- Developing countries must also put agriculture first in their own development efforts, the government should fully support agriculture in any possible means (not subsidization).
- Though contentious and maybe the government have signed trade agreements, protecting the local products can be a better option in the long-run

References


