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Government Intervention in Pakistan's Wheat and Cotton Sectors: Concepts, Policies and Implications

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Abstract: This study was designed to introduce Producer Subsidy Equivalent (PSE) and Subsidy Ratio to Producers (SRP) to gauge government intervention in wheat and cotton sectors and draw policy implications for possible adjustments in policies and future strategy. The quantitative analysis of PSEs and SRP reveals overall transfers from wheat and cotton producers to society. The analysis depicts Pakistan's stronger position toward WTO trade liberalization in wheat and cotton sectors. Pakistan would not need to change any of its policies and would benefit from trade liberalization due to expansion of cotton and wheat production when world prices for rise as a result of the reduction of support in other countries.

Key words: Government intervention, PSE, SRP, wheat, cotton

Introduction

Pakistan's government intervention in agriculture is a complex web of contradictory policies particularly its support of agricultural production, taxation of agricultural exports and its consumer subsidy on food and fiber. It is generally believed that these policies have inflicted substantial social costs on economy by misallocating of resources, accumulating huge budget and trade deficits (Chaudhry, 2001). Government has already been started reducing distortions in the economy through structural adjustment for alleviating huge budget deficits and improve management and production efficiency (Khan, 2001).

The recent trends of trade liberalization have seriously affected Pakistan's terms of trade and it seems that such global market forces are becoming major determinants of pattern of agricultural production and trade in future. The World Trade Organization (WTO) agreement on agriculture during Uruguay Round (1986-94) requires both developed and developing countries to reduce protection and support to agriculture over an agreed period of time to establish free and fair agricultural trade under WTO. More recently, WTO agreement on agriculture asks for major reductions in tariff on agriculture, domestic support and export subsidies. Being a signatory of the WTO, the government of Pakistan will have to phase out its reduction of protection and support to agriculture and must be prepared to compete in the changed world trading markets.

This study is a spadework to introduce concepts and techniques to gauge government intervention in agriculture, predict possible adjustments in Pakistan's agriculture and draw policy implications for future strategy of production and trade.

Materials and Methods

The Producer Subsidy Equivalents (PSEs) and Subsidy Ratio to Producers (SRP) analysis are used to gauge government intervention in Pakistan's cotton and wheat sectors for harvesting years 1997-98 to 2001-02 (Anonymous, 1999 and 2001). Productions cost estimates are based on the data of the Agricultural Prices Commission (APCom). However, the data was supplemented by domestic and border prices of inputs and outputs to get representative budgets for the selected crops. Wheat is the major staple food in Pakistan and its share in total food grains production has been average 74 percent and in value added among major crops by 30 percent. Cotton is the major cash crop of Pakistan and accounts for 11.7 percent of value added in agriculture and 2.9 percent of GDP (Anonymous, 2001a).

Analytical framework: Applied economists use a variety of quantitative indicators to gauge policy effects of government intervention in agriculture. They use border prices as shadow prices because these prices would prevail in the free market settings. The divergence between market and border price can be

used to indicate policy effects. The Producer Subsidy Equivalent (PSE) and the Subsidy Ratio to Producers (SRP) are the two measures that use the divergences between market price and border price as policy effects of government intervention in agriculture.

Producer subsidy equivalents (PSEs): Under the strong demands for broader policy measures to bring agriculture into General Agreement Tariffs and Trade (GATT) negotiations, agricultural trade specialists were seeking an alternative measure with broader information content on domestic and border distortions. Josling (1973) proposed the notion of Producer Subsidy Equivalent (PSE), the level of producer subsidy that would be necessary for the removal of array of government farm policies employed in a particular country in order to leave farm income unchanged. The broader formulation includes distortions in traded inputs $q_i(p_i^* - \lambda p_i)$ as well as in domestic factor-markets $q_n(p_n^* - p_n)$ and outputs $q_o(p_o^* - \lambda p_o)$. The "total" PSE is defined as:

$$PSE_{Total} = q_o (p_o^* - \lambda p_o) - q_i (p_i^* - \lambda p_i) - q_n (p_n^* - p_n) \quad (1)$$

PSE "total" is denominated in specific units such as dollars per tons and is useful to quantify the policy effects of particular scale of activity. However, agricultural activities are expressed usually in different units of measure, which makes PSE "total" difficult to compare across different activities and countries. The problem is resolved by converting PSE_{Total} into a unit-free percentage by using PSE_{Total} as a proportion of market revenue ($p_o^* q_o$):

$$PSE = \frac{PSE_{Total}}{(P_o^* q_o)} \quad (2)$$

Since the 1980s, the percentage PSE quickly became a standard measure in GATT policy debate to harmonize agricultural policies of member countries in order to reduce state participation in agriculture and liberalize commodity trade. Besides GATT, PSEs are also used as a test of compliance in other trade treaties (e.g., NAFTA and EC).

The subsidy ratio to producers (SRP): Percentage PSE is expressed as a proportion of distorted producer revenue ($p_o^* q_o$) and not opportunity costs ($\lambda p_o q_o$), it may give different levels of total PSE, depending on the "mix" of policies between input subsidies and output price supports. More specifically, a percentage PSE understates agricultural protection in countries supporting output prices relative to countries subsidizing factor markets. Monke and Pearson (1989) resolved the discrepancy of results between total and percentage PSE by writing total PSE as a proportion of social revenue in lieu of market revenue. This is a net policy transfer to

producers as a proportion of total social revenue and may be defined as Subsidy Ratio to Producers (SRP):

$$SRP = \frac{PSE_{Total}}{(\lambda p_o q_o)} \quad (3)$$

The SRP uses the same information as percentage PSE, but has an advantage of being a tariff-equivalent measure like NPC and EPC. Thus the SRP aggregates most of the criteria of good indicator of policy effects and therefore deserves to be a more accurate incentive indicator in the known world of policy analysis.

Results and Discussion

The government of Pakistan has long history of government intervention in agriculture. The main policies covered by this study are state control of trading and marketing, price supports, costs of production, and macroeconomic distortions. Regulating the export of cotton and textile has been enabled the government to plan for a balanced flow of foreign exchange over the years for uninterrupted payment of foreign debt and debt service. The economic importance of textile industry led to subsidize cotton as cheap input to promote textile industry. Wheat is the staple, and the government has felt the need to guarantee the poor a low and stable flour price. It did so directly through the ration system and occasional open-market releases and indirectly, through restricted trade, which insulated consumers from world price fluctuations. At the same time, the government has striven to assure producers of cotton and wheat a reasonable return through market price support systems.

The results of Producer Subsidy Equivalents (PSEs) and Subsidy Ratio to Producers (SRP) analysis are presented to gauge the level of government intervention in Pakistan's wheat and cotton sectors for the harvesting years 1997-98 to 2001-02. The negative values of PSEs and SRP in Table 1 indicate overall transfers from wheat producers to consumers and taxpayers when the wheat is produced as import substitution strategy. The production and import of wheat is implicitly taxed during the harvesting year 1998-1999. The PSEs analysis further shows the extent of taxation of wheat that is 14 percent for Pakistan, 31 percent in Punjab, 18 percent in Sindh, 12 percent in NWFP and 25 percent in Baluchistan, while the SRP analysis indicates over all lower taxation of production and import of wheat during the period. One of the major reasons for negative PSEs is that the price of wheat, the staple, was held down to benefit consumers while other policy factors are state control of production and trade and distorted exchange rate. The government provision of subsidies on inputs and other wheat activities are unable to offset the negative price policy effects of government intervention in wheat sector through sectoral and macroeconomics policies. However, production of wheat for export purpose will need government positive support to the extent of 20 percent (PSEs) and 23 percent (SRP) for Pakistan and 43 percent (PSEs) and 61 percent (SRP) for Baluchistan that is not possible given the current campaign of WTO to reduce government support to agriculture.

The results of PSEs and SRP analysis of cotton production and export are depicted in Table 2. Cotton is the major cash and exportable commodity of Pakistan's agricultural economy. Both the PSEs and SRP analysis depict that production and export of cotton are heavily taxed during the study period 1997-98 to 2001-02. The PSEs analysis for Pakistan indicates that the extent of implicit taxation is from 46 percent to 139 percent while SRP analysis has shown lower implicit taxation on production and export of cotton. The incidence of taxation is high in Punjab as compared to Sindh due to the former distance from Karachi, the only outlet to international markets and may be other institutional and economic reasons. The level of government intervention in cotton production is almost the same through out the study period except for the year 1999-00. The magnitude of implicit

Table 1: Producer subsidy equivalents of Pakistan's wheat sector (1998-99)

Farming regions	Import regime		Export regime	
	PSE	SRP	PSE	SRP
Pakistan	-13.57	-11.18	20.41	23.15
Punjab	-31.22	-22.37	9.52	9.63
Sindh	-17.8	-14.18	7.31	7.34
NWFP	-11.96	-11.30	25.18	37.12
Baluchistan	-25.24	-28.87	43.11	61.20

Source: (Anonymous, 1999) PSE: Producer Subsidy Equivalents SRP: Subsidy Ratio to Producer

Table 2: Producer subsidy equivalents of Pakistan's cotton sector (1997-98 to 2001-02)

Years	Pakistan		Punjab		Sindh	
	PSEs	SRP	PSEs	SRP	PSEs	SRP
1997-98	-61.0	-36.7	-62.4	-37.4	-59.8	-35.9
1998-99	-46.3	-30.2	-50.2	-32.8	-42.4	-27.6
1999-00	-139.0	-52.1	-121.6	-54.4	-110.37	-49.8
2000-01	-51.2	-33.13	-55.6	-35.9	-46.78	-30.36
2001-02	-57.0	-37.0	-57.2	-37.0	-57.00	-37.00

Source: (Anonymous, 2001)

taxation is greater during 1999-00 due to huge wedge between domestic price and export parity price.

Pakistan's position toward WTO Agricultural Trade Liberalization

The economics literature is full of evidences on the positive contribution of free and fair trade to increasing total production and net gains to society. Free trade is determined by the principle of comparative advantage that says that two nations can benefit from mutual trade if each nation specializes in the production of a commodity for which it has lower opportunity costs. Agricultural trade liberalization under WTO is a step toward free trade. However, the effects of trade liberalization would vary from country to country depending on their competitiveness, tariff and protection patterns, institutional arrangements and mix of sectoral and macroeconomic policies.

The PSE analysis depicts Pakistan's stronger position toward WTO agricultural trade liberalization in general and in wheat and cotton sectors in particular. Pakistan would not need to change any of its agricultural policies because its aggregate PSE is negative. If world prices for cotton and wheat rose as a result of the reduction of support in other countries, Pakistan would reap the benefits of the trade liberalization due to expansion of cotton and wheat production and will get it at little or no cost.

Pakistan would benefit more than any other developing countries under uniform and full implementation of WTO trade reforms (Anonymous, 1997). The study further revealed that there will be five percent increase in the growth rate of wheat production attributable to increase in the wheat prices as a result of removal of negative price policies (implicit taxation). Several other studies, Khan and Mahmood (1996) and Blackhurst *et al.* (1995) have anticipated considerable expansion in Pakistan's export of cotton, textiles and clothing as a result of tariff reductions, relaxation of quota restrictions, removal of export subsidies and reduced Aggregate Measure of Support (AMS) in most of the developed countries.

In response to the current demand of WTO trade liberalization in agriculture, this study was designed to introduce concepts and techniques to gauge government intervention in agriculture and draw policy implications for possible adjustments in Pakistan's wheat and cotton sectors and predict future strategy of production and trade. The Producer Subsidy Equivalents (PSEs) and Subsidy Ratio to Producers (SRP) analysis are used for this purpose in cotton and wheat sectors for harvesting years 1997-98 to 2001-02.

The Producer Subsidy Equivalent (PSE) is the level of producer support that would be necessary for the removal of array of government farm policies employed in a particular country in order to leave farm income unchanged. Another more refined concept is Subsidy Ratio to Producers (SRP). The percentage PSE understates agricultural protection in countries supporting output prices relative to countries subsidizing factor markets. The SRP analysis resolves this problems by formulating the net policy transfer to producers as a proportion of total social revenue instead of total market revenue. The empirical estimation of PSEs and SRP analysis depicts overall transfers from wheat and cotton producers to consumers and taxpayers. The PSEs analysis further shows that the incidence of implicit taxation in cotton sector is heavier than wheat. The incidence of taxation for cotton production is high in Punjab as compared to Sindh due to the former distance. The level of government intervention in cotton production is almost the same through out the study period except for the year 1999-00 that show the government planned program of taxation of cotton sector for getting sustained flow of revenue for different expenditures.

The PSE analysis depicts Pakistan's stronger position toward WTO agricultural trade liberalization in wheat and cotton sectors. Pakistan would not need to change any of its agricultural policies because its aggregate PSE is negative. Pakistan would reap the benefits of the trade liberalization due to expansion of cotton and wheat production when world prices for rise as a result of the reduction of support in other countries. Other studies confirm these results and claim that Pakistan will gain more than any other developing countries under uniform and full implementation of WTO trade reforms.

References

- Anonymous, 2001. Agricultural Price Commission, 2001. Support Price Policies of Seed Cotton Production Data, Government of Pakistan, Islamabad.
- Anonymous, 1999. Agricultural Price Commission, 1999. Support Price Policies of Wheat Production Data, Government of Pakistan, Islamabad, Pakistan.
- Anonymous, 1997. Food Agricultural Organization, 1997. The Impact of Trade Liberalization on Production of Agricultural Commodities and Related Fertilizer Use to 2000. Rome.
- Anonymous, 2001a. Government of Pakistan, 2001a. Economic Survey (2000-2001), Finance Division, Economic Advisor's Wing, Islamabad, Pakistan.
- Blackhurst, R., A. Enders and F. Joseph, 1995. The Uruguay Round and Market Access: Opportunities and Challenges for Developing Countries. Paper presented at World Bank Conference, January 1995, pp: 26-27.
- Chaudhry, M.G., 2001. Impact of WTO Negotiations on Agriculture in Pakistan and Implications for Policy. Pak. J. of Agric. Econ. Vol. 4. No. 1, Islamabad, Pakistan.
- Josling, T.E., 1973. Agricultural Protection: Domestic Policy and International Trade. Report No. C 73LIM9, Rome: FAO.
- Khan, A. H. and Z. Mahmood, 1996. Emerging Global Trading Environment: Challenges for Pakistan. Asian Development Review, Vol. 14. No. 2.
- Khan, N.P., 2001. Comparative Advantage of Wheat Production in Pakistan and Its Policy Implications. Pak. J. Agric. Econ. Vol. 4. No. 2, Islamabad, Pakistan.
- Monke, E. and S.R. Pearson, 1989. The Policy Analysis Matrix for Agricultural Development. Ithaca, N.Y., U.S.A. Cornell University Press.