

Wheat Price Policies in Pakistan: Should there be a Subsidy?*

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1. INTRODUCTION

In the 1980s, Pakistan's wheat policies taxed its producers and subsidised its consumers. Moreover, the post-rationing, open-ended system of releases has increased the burden on the government budget. The Government now faces severe shortages of resources at a time when human capital and physical infrastructure must be developed and maintained. This paper reviews wheat price policies in Pakistan and patterns of wheat consumption over time, and makes recommendations for policy changes.

Wheat is the dominant *rabi*, or winter, crop. However, about half the wheat is grown after cotton. Most of this wheat is planted late and yields substantially less than it could if planted earlier because the producer price and profitability of wheat are depressed by government policies. While cotton prices are also depressed by the Government, cotton, and in particular a fourth picking, remains highly profitable, even with new, earlier varieties. CIMMYT studies have shown that wheat-cotton farmers are rational in planting wheat late, given the prices they receive.¹ The average wheat yield has risen since the Green Revolution, due to the adoption of HYVs. However, the yields of HYVs have not risen.

After they harvest their wheat, farmers can sell it to the Government (namely to the Pakistan Agricultural Storage and Services Corporation (PASSCO) or the provincial food departments) at the procurement price, or to a private trader at the market price. Thus two prices prevail in the market at any given time. Wheat moves through both channels primarily because of differences in quality. (In prac-

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¹[Akhtar *et al.* (1986), p. 24.]

tice farmers sell almost all marketed wheat to traders, and traders then sell about half the marketed wheat to the Government.) Both the Federal and Provincial Governments have at times resorted to movement restrictions that tend to bottle up surpluses in certain districts. Clearly this contributes to farmers' receiving lower prices in many areas.

Wheat production in Pakistan has trended upward. Despite increases in yield and production, however, Pakistan has not achieved self-sufficiency in wheat. Generally, wheat imported in years in which there was less than 1 million tons imported was for the Afghan refugees, not for Pakistan. Nevertheless, in five of the last ten and five of the last seven years, Pakistan has imported significant amounts of wheat for its own account.

Wheat is Pakistan's staple food, but urban consumers generally do not purchase it as wheat. They buy flour or in many cases freshly baked *roti*.² Wheat moves from traders to millers, and the ground wheat eventually moves to consumers. Wheat also moves through the government channel to reach consumers in the form of flour. Until 1987, the Government maintained a ration system that distributed wheat to millers for grinding at a fixed charge and distributed flour to privately-owned, licensed ration shops. Ration card holders could purchase flour at subsidised prices at ration shops. The Government abolished this system because it was not fulfilling its objective of helping low-income consumers.

While there are no longer ration shops, the Government maintains a substantial presence in wheat marketing. Theoretically, it stands prepared to sell any amount of wheat to anyone at the fixed release price.³ In practice, there have been some informal restrictions on the amounts released, keyed to numbers of hours of milling operation per day. The current system does not attempt to target any recipient group. Rather, its role is holding down and stabilising the price of wheat.

Because of the relationships between procurement and release prices, a major role of the Government in wheat marketing has been storage. Table 1 shows that the release price was sometimes below the procurement price, and never higher by the Rs 400-600 that would fully cover marketing costs. Thus the private sector has not had the incentive to store wheat for most of the marketing year, since it could not earn a sufficient return on its investment in storage facilities. Rather, millers have come to depend on the Government to supply a substantial part of their requirement of wheat during the latter part of the year. This can be seen from seasonal release data in Table 2.

²*Roti* is a generic term for several kinds of unleavened breads, including *naan* and *chappati*, which are baked while stuck to the sides of a brick oven.

³There is a minimum purchase of ten tons.

Table 1
Pakistan: Official Wheat Prices

Crop Year	Procurement Price (1)	Release Price (2)	Difference (2-1)	Ratio (2/1)
Rupees per Metric Ton				
1984-85	1,750.00	1,702.90	(47.10)	0.97
1985-86	2,000.00	1,702.90	(297.10)	0.85
1986-87	2,000.00	2,000.00	0.00	1.00
1987-88	2,062.50	2,100.00	37.50	1.02
1988-89	2,125.00	2,300.00	175.00	1.08
1989-90*	2,400.00	2,600.00	200.00	1.08

Source: Government of Pakistan.

* Release price was initially announced as Rs 2,500.

Table 2
Pakistan: Monthly Releases of Wheat

	1987-88	1988-89	1989-90
Thousand Metric Tons			
May	26223	0198	
June	308	318	168
July	296	328	259
August	278	424	362
September	325	440	367
October	384	547	483
November	453	562	486
December	578	609	530
January	667	665	596
February	566	590	513
March	640	585	522
April	449	439	461

Source: Government of Pakistan, Ministry of Food, Agriculture, and Cooperatives.

The inadequate gap between release and procurement prices has resulted in a subsidy. The burden to the Government of this subsidy on domestic wheat has been reduced, however, by the depressed producer price. That is, if the Government had to procure domestic wheat at a price comparable to world wheat prices, the subsidy would have been more. While producers have borne part of the subsidy burden on domestic wheat, the burden of importing wheat, when necessary, and releasing it at the subsidised price falls entirely on the government budget. When world prices rise quickly and domestic prices have been raised slowly, the subsidy on imports can be quite large.

The amounts of recent wheat subsidies are shown in Table 3. Data relating to the federal subsidy are from federal budget documents. The provincial subsidies have been taken from annual Economic Surveys. Initially the subsidy arising out of imports was borne by the federal government, while the subsidies paid on domestic operations were carried by provincial budgets. Eventually, however, because of block grants from the Federal Government to the Provinces, the entire cost of wheat operations was shouldered by the federal government.

Table 3

Pakistan: Wheat Subsidies

Fiscal Year	Federal	Provincial	Total
Rs Million			
1986-87	150	2,625	2,775
1987-88	368	3,549	3,917
1988-89	4,947	2,956	7,903
1989-90	4,492	2,667	7,159

Source: Government of Pakistan.

These amounts are quite substantial in comparison to Pakistan's economy and government expenditures. The largest subsidy, in 1988-89, is about 1 percent of GDP and about 6 percent of total government revenue (or about 13 percent of the difference between total revenue and total expenditures). Pakistan is currently under a combination World Bank structural adjustment loan and IMF standby arrangement, under which various fiscal targets, including reduction of the fiscal deficit, have been set.

In the latter half of the 1980s, the Government has been removing subsidies on fertilizer. In the last two years (1989-90 and 1990-91), the Government has

recognised the "squeeze" this put on farmers, and it has also significantly raised the procurement price of wheat. However, it remains below the adjusted world price. The increases in procurement price have made it harder for the Government to increase the gap between the release and procurement prices, for to do so, the release price would have to rise even faster than the procurement price. Thus the ratio rose to its historical high of 1.08, but no further. The Government has also improved cost recovery in its marketing operations by charging more for the bags in which it distributes wheat. Nevertheless, the basic price structure has not changed with the abolition of rationing.

Two aspects of the post-rationing system (i.e., since 1987) are disturbing. One is the higher levels of releases, shown in Table 4, which result in high subsidy volumes. To achieve these releases, the Government seeks to procure large amounts and supplements these with imports. Although the new price regime would logically lead to lower procurement, the Government has apparently not reduced its targets. Second, while the domestic per unit subsidy has been gradually reduced, the previous Government was willing to undertake very expensive, subsidised imports. Under the new government, also, imports seem likely to be substantial.

Table 4

*Pakistan: Annual Releases of Wheat***Thousand Metric Tons**

1984-85	3,695
1985-86	3,543
1986-87	3,793
1987-88	5,202
1988-89	5,717
1989-90*	5,386

Source: Economic Survey, 1989-90.

*Estimate

2. RESULTS OF HOUSEHOLD INCOME AND EXPENDITURE SURVEYS

Given these government policies, what has been the pattern of change of per capita income, the real price of wheat flour, and wheat consumption since the early

1970s? According to official Household Income and Expenditure Surveys (HIES), per capita consumption of wheat has declined in all groups, despite increases in per capita income and decreases in the real price of wheat. Thus, according to time-series evidence, wheat may have become an inferior good. Consumption of other valued foods like meat, milk, and ghee has increased; calorie consumption has not changed significantly. This is true for the average Pakistani and for the lowest income quartile as well.

Changes in Per Capita Real Income

Pakistan's real GNP expanded by 5 percent or more every year but four in the 1970s and 1980s. With population growing at about 3.1 percent, per capita real income has also increased significantly during this period. At these rates of growth, per capita real income over the 18-years period (1968-69 – 1986-87) showed a cumulative increase of over 60 percent.

Changes in the Real Price of Flour

In the 1970s and 1980s, the nominal price of wheat flour increased less rapidly than the Consumer Price Index (CPI) and the CPI for food. During 1969-70 – 1971-72, an index of the real price of flour (deflated by the CPI) had the value .97; it dropped to .91 during 1984-85 – 1986-87.

Changes in Consumption

The most comprehensive, ongoing measurement of expenditures in Pakistan is the Household Income and Expenditure Survey (HIES), which is conducted by the Federal Bureau of Statistics. The survey gathers many types of information, including quantities of food consumed and the expenditures made on food items, among other goods and services. The survey has not been conducted every year, but results are available for 1968-69, 1969-70, 1970-71, 1971-72, 1979, 1984-85, 1985-86, and 1986-87. An analysis of the quality of these surveys is given in the Appendix.

Survey Results (1970s and 1980)

The simplest way to compare the results of the various surveys is to match them up by income groups. A potential problem with this approach is that, because of inflation, the rupee bounds of the income groups changed from the 1970s to the 1980s. That is, individuals' incomes changed, and the HIES income groups were

adjusted in an attempt to give a comparable representation of expenditure patterns. In this situation, one can graph wheat consumption by income level and compare the results of the different surveys. If one observes no crossing of graphs or other anomalies, one may conclude that the results, as compared, are a reasonable reflection of the actual trend of consumption. This is the case for wheat flour consumption in Pakistan in the 1970s and 1980s.

A more sophisticated way to look at the pattern of wheat and flour consumption is by constructing income quartiles. This ensures that consumers in the same part of the income spectrum are being compared. HIES publications provide the data necessary to construct quartiles; limited interpolation was necessary, as the cumulative incomes of these groupings did not always come out equal to exactly 25 percent, 50 percent, 75 percent and 100 percent.

Such quartile analysis reveals a pattern of declining wheat consumption over time (see Table 5). When combined with increasing real per capita income and a decreasing real price, this pattern is most consistent with a zero or negative income elasticity. [Goldman (1989), p. 24] says that a negative income elasticity for wheat is "plausible". Even if there is some inaccuracy in the survey results, the consistent decline in consumption shown by the results should be interpreted to mean at least that there was not the increase in consumption that one would normally expect with an increase in income and a decrease in price.

Table 5

Pakistan: Per Capita Consumption of Wheat and Flour, 1970s and 1980s

	Income Quartiles				
	All	Lowest	Second	Third	Highest
	Kilograms/Person/Month				
1968-69-1971-72 (A)	11.60	11.72	11.52	11.64	11.63
1979 (B)	11.20	11.39	11.15	11.16	11.05
1984-85-1986-87 (C)	10.79	11.03	10.95	10.70	10.27
Percentage Change,					
(A) to (C)	-7.0%	-5.9%	-5.0%	-8.1%	-11.7%

Source: Calculated from Household Income and Expenditure Surveys.

With a substantial increase in income and a small decline in the price of flour, consumers in the 1980s were able to devote a much smaller part of their total expenditures to wheat (see Table 6). Consumers in the first three quartiles reduced significantly the share of their expenditures that went to wheat, while the highest quartile's consumers spent the same share to purchase less wheat, presumably of a higher quality. Finally, the increase in income also led to declines in the share of food in all expenditures.⁴ In the 1980s, food was a smaller share of expenditures for all quartiles, and less than 50 percent for the upper two quartiles.

Table 6

Pakistan: Share of Wheat in All Expenditures, 1970s and 1980

	Income Quartiles				
	All	Lowest	Second	Third	Highest
1968-69-1971-72	15%	20%	16%	14%	6%
1979	9%	14%	10%	10%	5%
1984-85-1986-87	9%	12%	9%	7%	5%

Source: Calculated from Household Income and Expenditure Surveys.

These data are consistent with the notion that, over time, Pakistani consumers have chosen to eat less wheat and more of other foods. That is, there was no general decline in nutrition. Further evidence includes their maintenance of calorie intake and increases in the consumption of other foods. Moreover, it is normal in countries where a high percentage of calories come from one staple food for staple consumption to eventually decline.

One can examine the total calorie intakes of all income groups and the lowest income groups over time, as calculated from the HIESs.⁵ Because recent surveys have added some foods to those counted, the results are calculated both on an as-reported basis and with the new foods omitted. One observes little change in the average total calorie intake (see Table 7). Calorie intake in the low-income group also varies little, but fluctuates with wheat production: 1971-72 and 1984-85 were years of low output.

⁴Upper income consumers, who already had a much lower share, may have purchased higher quality foods and diversified sufficiently that their share did not decrease.

⁵Lack of time prevented analysis of all surveys and construction of low-income quartiles. The years chosen are representative.

Table 7

Pakistan: Total Calorie Intake, 1970s and 1980s

	All Income Groups		Lowest Income Group	
	As Reported	Adjusted	As Reported	Adjusted
	Calories/Person/Day			
1970-71	2061	2061	2060	2060
1971-72	2009	2009	1839	1839
1979	2172	2135	2044	2021
1984-85	2155	2104	1928	1899
1986-87	2182	2104	2122	2068

Source: Calculated from Household Income and Expenditure Surveys.

Note: The early surveys do not include yoghurt, fruits, tomatoes, and other vegetables. In the columns labeled "Adjusted", these calories are subtracted from the totals in the later surveys to make the totals comparable.

Milk, rice, ghee and oil, pulses, beef, and citrus are the most important calorie sources in the Pakistani diet besides wheat and sugar products. Calorie intake for all income groups and for the lowest income group increases or does not decrease over time for all of these foods.

The lack of response of wheat intake in Pakistan to increases in income is not unusual. Schiff and Valdes (1990) cite studies which have also found this phenomenon, even at very low income levels. They mention the desire for diversity in the diet as well as for freshness, taste, and convenience as factors that explain the lack of increase in the quantity consumed.

Recent Survey Results

The analysis above can be broadened and further verified with the addition of the results of the 1987-88 HIES. This is a particularly interesting exercise because of the changes in the wheat marketing system that took place in 1987.

The Government operated a ration system for wheat until April, 1987. When the Government abolished the ration system, it took care to have a very large stock of wheat on hand. This would ensure that the end of rationing did not turn into a political calamity. Indeed, the Government then released much more wheat than it ever had (see Table 4). The nominal price of flour actually fell in 1987-88, the only year this happened in all of the 1970s and 1980s.⁶

⁶Economic Survey, 1989-90.

The fall in the nominal price and the corresponding larger decline in the real price induced some lower-income consumers to increase their per capita consumption of wheat flour modestly in 1987-88. The average increase in the quantity of flour consumed by these groups was about 3 percent, from 11.4 to 11.8 kilograms per person per month. Consumption by income groups other than the lowest three was indistinguishable from that in 1986-87. Other data in the HIES reveal that the three lowest income groups in 1987-88 constituted about 4 percent of the total population.

One can also compare consumption in 1987-88 to the average for the other surveys of the 1980s. (When comparing 1987-88 to the average of the other three surveys in the 1980s, one should bear in mind that in 1984-85, wheat consumption among the poor declined substantially due to low wheat production). Here it is apparent that the tendency for wheat consumption to decline among the higher-income groups was continuing. The lower nominal price in 1987-88 was able to induce additional consumption only among the very poor, and then only very slightly.

3. NET EFFECT OF POLICIES

The Government of Pakistan has been providing a subsidy on the sale of wheat. Through this subsidy, the Government seems to have given all consumers who purchase wheat, which is the large majority, an income transfer in the form of cheaper wheat. Consumers benefit from the low release price through its dampening effect on the level of wholesale prices.

Millers may also benefit from low and constant release prices. During a given year, the retail price of wheat flour has generally moved along with the wholesale wheat price, while the release price remains constant throughout the year. Millers' margins at the end of the year are higher than at the beginning; at that time they are buying mostly from the Government, at the release price, and they are capturing some of the subsidy. The millers' ability to jointly set flour prices helps them capture some of the subsidy at this time. On the other hand, there has been excess capacity and geographical maldistribution in the industry since the rationing period, so the overall return on investment may not be abnormally high.

Over the past twenty years, real prices to consumers have declined, whether due to the subsidy or not, and individuals have not increased their consumption. Even when the nominal price of wheat fell, in 1987-88, the poor who increased their consumption represented only about 4 percent of the population; their increase in consumption was only about 3 percent. Consumption by better-off groups continued to decline. Price stabilisation was also a government objective, but

presumably this could have been accomplished without depressing the price.

Nutrition may have improved marginally, but average calorie consumption did not change substantially. Nor has severe malnutrition been eliminated. The National Nutrition Survey (1985-87) found that:

Protein-energy malnutrition and anaemia continues as a serious, widespread problem throughout the country....According to WHO criteria of weight-for-age,...10 percent [of young children] are severely [malnourished].⁷

Even if severe malnutrition were half this much, it would still be disturbing.

During the 1970s and early 1980s, both the commercial poultry industry and the volume of wheat handled by the Government grew steadily. Cheap wheat became an economical source of calories for the poultry industry. Along with the Government's large-scale wheat marketing operations came the likelihood of increased losses to insects and shrinkage during storage, as well as spillage and spoilage. Finally, because wheat in Pakistan has been cheaper than in neighbouring countries, unrecorded exports were also stimulated.

Thus, besides the direct fiscal cost of the wheat subsidy, there was considerable waste, use of wheat for feed, and smuggling to other countries; per capita consumption of wheat as food did not increase. Expenditures on health, education, and other social programmes were lower than they might have been.⁸ More foreign exchange was also expended on wheat imports.

The interaction of the subsidy and wheat demand can be thought of as follows. Per capita consumption of wheat (as food) can be taken as constant, although the case can be made that it has declined. Over time, the per capita demand curve for food use has shifted back. At the same time there has been a decreasing real price, which is the result of the subsidy and other factor. The declining price stimulates demand for other "uses", namely feed, smuggling, and additional losses. Thus, total per capita use (disappearance) continues to increase.

The Government has recently made further progress in enlarging the gap between the release and procurement prices. In April, 1991, it announced a second increase (for 1991-92) in the procurement price. More importantly, it effected the largest single increase in the release price-over 19 percent. This raised the gap between the two prices to about 11 percent, and raised the Government's recovery of its marketing costs to about 90 percent. However, the Government is not yet

⁷Pakistan, National Institute of Health, Nutrition Division, 1988, *National Nutrition Survey, 1985-87*, pp. vi, vii.

⁸Sahibzada and Mahmood (1989) show that literacy in Pakistan and government expenditures on education are quite low by the standard of other comparable, Islamic countries.

fully committed to removing the wheat subsidy. Moreover, as long as the domestic price remains below the world price, imports, when they are necessary, will remain subsidised.

The wheat subsidy remains, despite progress in reducing poverty. According to the World Development Report [World Bank (1990), p. 40], "Even countries that are often thought to have followed inegalitarian paths of development, such as Brazil and Pakistan, have succeeded in reducing the headcount index", a simple measure of the number of persons in poverty. In addition, the average income shortfall – the amount needed to get out of poverty – declined substantially in Pakistan over the past 20 years.

A general thrust of the 1990 Development Report is that the poor need health and skills, and the opportunity to use the skills, which generally means labour-intensive growth. That is, governments should spend scarce resources on health, nutrition, education, roads, etc. The report states that Pakistan has among the lowest expenditures on health and education as a percent of GNP in the world.

These facts lead us to paint a new picture of the existing situation, which we hope will be considered by policy-makers. In this view, poverty is less, although it is concentrated in some areas; there is still malnutrition. Wheat consumption is not increasing. Appropriate government measures, we feel, would be a decrease in direct intervention in the economy and a return to its major role of providing infrastructure and building human capital. A general wheat subsidy does not belong in this scheme, but targeted programmes do.

4. RECOMMENDATIONS

The Government should eliminate the wheat subsidy. The "domestic" subsidy can be eliminated immediately by raising the release price. The subsidy on imported wheat should be eliminated as soon as possible, especially when it is possible to take advantage of lower international prices of wheat. When the subsidy has been removed, the Government may wish to reconsider its massive involvement in wheat marketing. Specifically, the Government should bring procurement prices up to the world level, at least on a long-run average basis. Then it would be possible to eliminate most of the Government's role in storage.

We have shown that there is little need to keep subsidising wheat flour to the general economy. Timmer has argued that subsidising an inferior good is an efficient way to help the poor. However, this line of reasoning usually relies on the use of a *secondary* staple to achieve targeting. In this case the *primary* staple may have become inferior (so there is no targeting), and the *volume* to be subsidised is too large under the budgetary circumstances.

How do we help the malnourished? *The Government should target food-for-work or other programmes to specific groups.* This might be done through the *zakat* system. The *zakat* system achieves targeting by having a social stigma attached to it: only the truly poor receive *zakat*. Self-targeting programmes like food-for-work will have greater impacts on the target groups and less leakage than the existing general subsidy mechanism. Nutrition education would also help with preventable problems of food choices and intra-family distribution.

If the Government follows these recommendations, there will be significant impact on Pakistan's flour millers. No longer will the Government be storing wheat for them at less than full cost. A concomitant of this system has been a lack of credit in Pakistan for agricultural marketing operations. We suggest that, since the Government is also effecting a transition to commercialised banking, it should remove all obstacles to the provision of credit to flour millers and other agribusinesses.

Appendix

QUALITY OF HOUSEHOLD INCOME AND EXPENDITURE SURVEYS

Various scholars, including Ahmad *et al.*, Alderman, and Goldman have analysed and/or commented on the data in these surveys. [Ahmad and Ludlow (1988), p. 2] point out that the surveys in the late 1960s and early 1970s had small sample sizes. This is particularly true for two of the twelve income groups, the highest and lowest; other groups, including the second and third lowest, had more reasonable sample sizes. Small sample sizes in some "cells" make detailed cross-section analysis hazardous. However, these surveys are still recognised as valid at the national level and for averages of all income groups.

According to the Director-General of FBS, Mr S. M. Ishaque, all the HIES surveys have sample frames, and raising factors were used in all published results, except in 1979. The results of this survey should be used with caution. In general, the rural frame varies little. The urban frame was updated in the 1970s, but the raising factors were not applied to the raw data for 1979. A new frame completed in 1983 has been applied to the 1980s data.

[Goldman (1989), p. 20] claims the surveys of the early 1970s "form a weak statistical base", and may not be comparable to later ones; he calls the 1979 survey "particularly strong".

The surveys of 1980s include food consumed outside the home, but it is not known to the authors whether the early surveys did or not. Thus a comparison of

the early and recent surveys might be biased toward showing an *increase* in the consumption of some food items.

One check that can easily be performed on these survey data is to calculate the prices implied by the quantity and expenditure data. Results of such calculations show that the implied price of wheat purchased by lower-income consumers tended to be lower than that purchased by those with high incomes, and the implied prices increase more or less monotonically. This is consistent with expectations, since higher-income consumers can purchase higher-quality flour, and flour products in more convenient forms.

From these comments and analysis, we derive the following conclusions:

- With the exception of 1979, the HIES results are valid at the national level;
- Comparisons of the results of the early surveys for the lowest income group with those from the 1980s should be treated with caution; and
- The existing surveys are the best information we have on which to base policy.

This paper cites HIESs from the late 1960s/early 1970s, 1979, and the 1980s, depending to little on the 1979 data. Conclusions regarding the utility of a subsidy in increasing the consumption of flour by low-income consumers depend on the quality of the consumption data for this group. The quality of these data are diminished by the small sample size in the early surveys in the survey's very lowest income group. However, the sample size problem does not seem so serious that a rising trend in consumption would be reflected in the survey results as a falling trend. Moreover, flour and baked products consumed outside the home are included in the surveys of the 1980s and may not be in the earlier period, so the comparison of the two sets of surveys may overstate the (relative) level of consumption in the recent period.

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