

## Distribution of Agricultural Tax Burden within the Sector\*

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Considerable work has been done on the estimation of tax burden on agriculture, but not enough on its distribution within the sector. The main estimators of tax burden are: Qureshi (1986), Qureshi (1987), Dorosch and Valdes (1990), Hamid, Nabi and Nasim (1990), Chaudhry and Kayani (1991) and Chaudhry and Maan (1991a). The estimates of the tax burden made by various authors are mutually not comparable due to differences in coverage, assumptions and methodologies used.

The latest and the most comprehensive estimate of the total tax burden on agriculture is that of Chaudhry and Maan (1991a). The authors have included in their estimates the burden of all the direct, indirect and implicit taxes of the federal, provincial and local governments on agriculture. The total burden on these taxes adds up to an incredible level of 44 percent of the value added in agriculture during the 1980s. The breakdown of the tax burden shows that direct taxes account for less than one percentage point and the local taxes for less than two percentage points. Half of the tax burden (22 percent) is contributed by indirect taxes (and non-tax revenues). The remaining 20 percent of the tax load is due to implicit taxation.<sup>1</sup>

### DISTRIBUTION OF AGGREGATE TAX BURDEN

We shall use the data and the estimates of total tax burden reported by Chaudhry and Maan (1991a) as the base. Small farmers are defined as those who have less than 12.5 acres of land. Those having 12.5 acres or more but less than 25 acres are classified as medium farmers. Large farmers are those who have 25 acres or more of land. The choice of this classification has been dictated by the availability of data.

\*Owing to unavoidable circumstances, the discussant's comments on this paper have not been received.

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<sup>1</sup>The author has strong reservations about the methodology used by various authors, particularly Chaudhry and Maan (1991a), for estimating the total tax burden on agriculture. These, however, cannot be included in the present paper.

There has been no study of the distribution of the tax burden on agriculture using the above-mentioned classification. Some estimates of the tax burden on the rural (not agricultural) sector, however, have been made on different income classes. Jeetun (1978) concludes that higher income groups in the rural sector are greatly undertaxed *vis-a-vis* the low-income households. Malik and Saqib (1985, 1989), analysing the distribution of only federal taxes also conclude that higher income groups in the rural households are relatively undertaxed compared to the lower income groups. These studies suffer from two major constraints: (i) they do not make a distinction between the rural sector and the agricultural sector, and (ii) they do not take into account the total tax burden of direct, indirect and implicit taxes on the agricultural sector.

### Methodology

The total tax burden on agriculture is taken as given [Chaudhry and Maan (1991a)]. It has been distributed among small, medium and large farmers in accordance with the following assumptions:

- (i) The direct taxes (land revenue and cesses, local rate etc.) have been allocated according to the pattern of land ownership among various categories of farmers (Appendix Table 1). At present, no land revenue is charged in Punjab, NWFP and Balochistan on irrigated holdings of upto 2.5 acres (or 5 acres of unirrigated land). In Sindh, the exemption limit is 25 acres of irrigated or 50 acres of unirrigated land [Khan, (1991)]. The same basis has been used to allocate district council taxes among different farmer categories;
- (ii) The indirect taxes are allocated according to the size of population of the various farmer categories (Appendix Table 1).<sup>2</sup> Non-tax revenues are also allocated in the same manner;
- (iii) The implicit taxes consist of two types of levies: (a) tax element in agricultural pricing policies, and (b) tax element in the overvalued exchange rate. The allocation of the first type of implicit tax proved to be quite difficult. It was decided to allocate the tax on each of the five major crops (wheat, Basmati, Irri, cotton and sugarcane) in accordance with the contribution to total marketed surplus of each crop

<sup>2</sup>The distribution of indirect taxes (and non-tax revenues) among various categories of farmers in proportion to the size of agricultural population of those categories is line with the assumption made by Chaudhry and Maan (1991a). It should, however, not imply that the author endorses their assumption.

by each of the farmer category. To determine that contribution, the distribution of cropped area under each crop by each farmer category was derived from the Census of Agricultural, 1980 (Appendix Table 2). The proportion of marketed surplus of each crop by each farmer category was taken from "A Study on Utilization Pattern of Agricultural Commodities" (1980) (Appendix Table 3). It was assumed that there are few economies of scale and that the total production of crops is, by and large, in proportion to the total cropped area of each farmer category. The information was used to estimate the share of each farmer category in the total marketed surplus of each crop (Appendix Table 4). The implicit tax on each crop was allocated to each farmer category in proportion to its contribution to total marketed surplus of that crop. The total implicit tax on five major crops was arrived at by consolidating the implicit tax on each crop for each farmer category (Appendix Table 5);

- (iv) The implicit tax due to an over-valued exchange rate was allocated among various farmer categories in proportion to the share of each farmer category in the implicit tax arising out of pricing policy (Appendix Table 6);
- (v) The relative tax burden of each farmer category was worked out by dividing the consolidated burden of direct, indirect and implicit taxes, on each of farmers by the value-added by the respective farmer category;
- (vi) The value-added by each farmer category was assumed to be roughly proportional to the cropped area of each farmer category; and
- (vii) The exercise covers the ten-year period beginning from 1980-81.

## **Results and Discussion**

The distribution of the total tax burden among different farmer categories is shown in the Table 1.

The table clearly shows that the distribution of the total tax burden on agriculture is highly regressive with the small farmers carrying the highest load. The medium farmers bear relatively lower burden while the large farmers are much less burdened with taxes compared to the small farmers.

## **Breakdown of Total Tax Burden**

The total tax burden can be broken down into direct, indirect and implicit taxes, for each farmer category. This is shown in Table 2.

Table 1

*Distribution of Aggregate Tax Burden on  
Agriculture Among Small, Medium and Large Farmers<sup>a</sup>  
Tax Burden as Percentage of Value-added*

Years	Small Farmers	Medium Farmers	Large Farmers	Average
1980-81	56.9	46.4	39.1	48.5
1981-82	49.0	41.5	36.4	43.0
1982-83	48.7	37.8	33.3	41.0
1983-84	55.5	45.0	40.5	48.0
1984-85	49.1	35.9	32.0	40.2
1985-86	37.5	28.2	25.8	31.3
1986-87	58.4	46.7	40.1	49.0
1987-88	56.9	40.8	35.6	45.9
1988-89	55.4	38.3	31.9	43.4
1989-90	60.6	44.6	35.9	48.5
Average	53.5	40.2	34.8	44.1

<sup>a</sup>The Tax burden is 'gross' in the sense that subsidies on inputs have not been subtracted.

Table 2

*Distribution of Total Tax Burden on Each  
Farmer Category by Class of Taxes  
Percentage of Total Tax Burden (1980-81-1989-90) on each Farmer Category*

	Small Farmers	Medium Farmers	Large Farmers	Total
Direct Taxes (Including Local Taxation)	2.1	3.2	8.4	3.9
Indirect Taxes (Includ- ing Non-Tax Revenues)	67.0	42.3	23.9	50.3
Implicit Taxes (Pricing Policy and Exchange Rate)	30.8	54.5	67.8	45.8
Total	100.0	100.0	100.0	100.0

The bulk of direct tax revenue comes from the large farmers but the magnitude of that revenue is so small that its relative burden is minimal. The bulk of indirect taxes revenue comes from the small farmers. The implicit taxes constitute the most important component of the total tax burden on the large farmers.

Large farmers own as much as 53 percent of the total agricultural land but pay only 35 percent of the total taxes on agriculture. This is so because while they own more than half of the agricultural land, their cropped area is less than one-third of the total. This is due to their rather low land-use and cropping intensities compared to those of small and medium farmers. Had their land-use and cropping intensities been as high as those of smaller farmers, their tax burden in relation to their value-added would be even lower.

### Economic Subsidies on Agricultural Inputs

It is well-known that most of the input subsidies are appropriated by the large farmers. According to the Pakistan Rural Credit Survey (1985), 57 percent of the institutional credit went to large farmers, 21 percent to medium farmers and only 22 percent to small farmers. If we use these ratios to allocate the total subsidies among different farmer categories, we get the following picture of net tax burden on various categories of farmers.<sup>3</sup>

Table 3  
*Distribution of Subsidies and Net Tax Burden*  
(1980-81-1989-90)

	Gross Tax	Subsidy	Net Tax	Net Tax as percent of Value-added
Small Farmer	293,236	8,613	284,623	51.9
Medium Farmer	136,414	8,222	128,192	37.8
Large Farmer	145,015	22,317	122,698	29.4
Total	574,665	39,152	535,513	41.1

The ten-year (1980-81-1989-90) average shows that net taxes are even more regressive in their distribution than the gross taxes. The small farmers, who con-

<sup>3</sup>Institutional credit has been used as a basis for allocation of subsidies for two reasons: (a) subsidy on credit constitutes the bulk of total subsidy and (b) latest information about the distribution of various inputs among different categories of farmers was available only for institutional credit.

stitute the silent majority, are much more heavily burdened with taxes than the large farmers, who are the vociferous minority. Instead of talking about the tax burden on the agricultural sector as a whole, we should always talk about the tax burden on the small, the medium and the large farmers separately. The obvious policy implications are that the share of direct taxes should be increased, that of indirect taxes reduced and the implicit taxes removed. This will impart some measure of equity to the tax system and reduce its crushing burden on the small farmers.<sup>4</sup>

### SUMMARY AND CONCLUSIONS

The paper discusses the distribution of total agricultural burden among small, medium and large farmers.

The conclusions are:

- (i) the distribution of the total tax burden in agriculture is highly regressive with small farmers carrying a relatively much higher tax load than the large farmers;
- (ii) the bulk of revenue from indirect taxes borne by the agricultural population comes from the small farmers; and
- (iii) the implicit taxes constitute the most important component of the total tax burden on the large farmers.

<sup>4</sup>A distinction has been made between net tax burden (i.e. total tax burden less the subsidies or negative taxes) and net resource transfer which includes not only the net tax burden but also the investment expenditure in agriculture. Net resource transfer for agriculture has not been discussed as it was beyond the scope of this paper.

Appendix Table 1

*Distribution of Farm Land and Farm Population*

Farmer Category	Area Owned		Area Farmed		Area Cropped		Farm Population	
	Thousand Acres	%	Thousand Acres	%	Thousand Acres	%	Thousand Acres	%
Small (a)	12,596	28	16,175	34	20,043	42	20,250	68
Small (b)	8,276	19	11,617	25	12,218	26	5,815	20
Large (c)	23,540	53	19,303	41	15,454	32	3,686	2
Total	44,412	100	47,095	100	47,715	100	29,751	100

Source: Pakistan Census of Agriculture 1980.

(a) Under 12.5 acres.

(b) 12.5 to under 25 acres.

(c) 25 acres and above.

## Appendix Table 2

*Total Area Under Five Major Crops Distributed Among Farmer Categories*

(Thousand Acres)

Crops	Farmer Categories						Total
	Small		Medium		Large		
	Area	%	Area	%	Area	%	
Wheat	7856	44	4604	26	5467	30	17,927
Basmati	936	44	554	26	624	30	2,114
IRRI	1756	52	856	25	796	23	3,408
Cotton	2325	41	1492	26	1914	33	5,731
Sugarcane	721	45	465	29	425	26	1,611
<b>Total</b>	<b>13504</b>		<b>7971</b>		<b>9226</b>		<b>30,791</b>

*Source: Census of Agriculture, 1980.*



Appendix Table 3

*Average Marketed Surplus of Five Major Crops by Farmer Categories*

Crops	(Percent)		
	Small	Medium	Large
Wheat	22	41	50
Basmati	39	53	51
IRRI	44	66	69
Cotton	82	78	74
Sugarcane	88	94	93
Total	275	332	337

Source: A Study on Utilization Pattern of Agricultural Commodities (1977-78) 1980a.

Appendix Table 4

## Percentage Contribution to Total Marketed Surplus of Five Major Crops by Farmer Categories

Crops	Small			Medium			Large			Total
	% Area	% Marketed	% of Total Marketed	% Area	% Marketed	% of Total Marketed	% Area	% Marketed	% of Total Marketed	
Wheat	.44	.22	.097 (28)	.26	.41	.107 (30)	.30	.50	.150 (42)	.354
Basmati	.44	.39	.172 (39)	.26	.53	.115 (26)	.30	.51	.153 (35)	.44
IRRI	.52	.44	.229 (41)	.25	.66	.165 (30)	.23	.69	.159 (29)	.553
Cotton	.41	.82	.336 (43)	.26	.78	.203 (26)	.33	.74	.244 (31)	.783
Sugarcane	.45	.88	.396 (43)	.29	.94	.273 (30)	.26	.93	.242 (27)	.911

Appendix Table 5  
*Consolidated Implicit Tax on all Five Crops*  
*(Pricing Policy)*

Years	(Million Rs)						Total
	Small		Medium		Large		
	Amount	%	Amount	%	Amount	%	
1980-81	3129	37.1	2430	28.8	2875	34.1	8434
1981-82	3448	34.8	2884	29.2	3562	36.0	9894
1982-83	2216	34.5	1829	28.4	2382	37.1	6427
1983-84	3052	31.6	2808	29.1	3805	39.3	9665
1984-85	2177	33.7	1782	27.6	2506	38.7	6465
1985-86	1660	33.8	1363	27.7	1894	38.5	4917
1986-87	3166	30.0	3036	28.7	4359	41.3	10561
1987-88	4462	34.6	3529	27.3	4919	38.1	12910
1988-89	4859	35.3	3764	27.4	5129	37.3	13752
1989-90	10307	36.8	7988	28.5	9741	34.7	28036
<b>Total</b>	<b>38476</b>	<b>34.6</b>	<b>31413</b>	<b>28.3</b>	<b>41172</b>	<b>37.1</b>	<b>111061</b>

Appendix Table 6  
*Implicit Tax Due to Exchange Rate Distortion*

Years	(Million Rs)						Total
	Small		Medium		Large		
	Amount	%	Amount	%	Amount	%	
1980-81	4548	37.1	3530	28.8	4180	34.1	12258
1981-82	4266	34.8	3579	29.2	4413	36.0	12258
1982-83	4504	34.5	3708	28.4	4843	37.1	13055
1983-84	4683	31.6	4312	29.1	5824	39.3	14819
1984-85	4904	33.7	4017	27.6	5632	38.7	14553
1985-86	4468	33.8	3662	27.7	5090	38.5	13220
1986-87	5389	30.0	5156	28.7	7419	41.3	17964
1987-88	6216	34.6	4904	27.3	6844	38.1	17964
1988-89	6341	35.3	4922	27.4	6701	37.3	17964
1989-90	6611	36.8	5120	28.5	6233	34.7	17964
<b>Total</b>	<b>51930</b>	<b>34.2</b>	<b>42910</b>	<b>28.2</b>	<b>57179</b>	<b>37.6</b>	<b>152019</b>

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