Agricultural Taxation in Pakistan Revisited

FAIZ MOHAMMAD*

This paper is an attempt to throw further light on the empirical dimensions of the issue of agricultural taxation. ¹ It has two objectives: First, using an alternative methodology it attempts to measure the effective tax burden (as opposed to the nominal one) in the agricultural sector (AS) relative to other sectors (NAS); and second, it tries to examine (empirically) the implications of some of the tax proposals made in the literature for various farm groups and, in particular, for tenants. Some of the earlier estimates are either too aggregate or too outdated to be of immediate relevance.²

Accordingly Sections I and II take the above two points in turn, whereas Section III presents the tentative conclusions of the paper.

I. INTERSECTORAL TAX BURDEN

Strictly speaking, the rationale of whether or not there should be a tax on agricultural income does not depend on the relative taxable capacities in different sectors and this is what has been argued by all those who favour agricultural taxation[Azhar (1973); Hamid (1970); NTRC (1986)]. However, this is not as simple as it might appear. The income of a particular farm group is not independent of the socio-economic environment in which it operates. There are direct and indirect effects of government policies relating to input and output prices, subsidies, and social and economic development which not only affect the agricultural sector as a whole but also the individual farmer's income and the effective tax rate paid by him relative to others. Keeping this in mind we, therefore, try to present some estimates of the intersectoral tax burden in Pakistan using an alternative methodology.

^{*}The author is Associate Professor at the International Institute of Islamic Economics, International Islamic University, Islamabad.

¹A good account of the controversy on this subject is presented in The Final Report of the National Taxation Reform. Ahmad and Amjad (1984), Hamid (1970) and Khan (1981) also cover some issues of Value in this debate.

² See [Azhar (1973); Hamid (1970); Khan (1981)] for some of the earlier estimates.

The crudest measure of the tax burden on a sector can be indicated by the proportion of per capita income (\overline{Y}) paid as tax (T) by a particular sector. We may term it the nominal tax burden. In the literature, however, a number of refinements have been proposed to capture the effect of "other factors" on the intersectoral tax burden. A measure reported by Qureshi (1986) and a simple version of which is also used by Kazi (1984), takes account of intersectoral inequalities in per capita income and wealth (\overline{W}) and in the subsistence level of consumption (S). Accordingly the tax burden (t) on a given sector (i) can be defined as follows:

$$ti = \frac{T_i}{f[(\overline{Y} - S), \overline{W} \cdot I] e0} \cdots$$
 (1)

where T is total per capita tax paid by a sector, I stands for wealth and income inequalities and 'e0' is the degree of progression needed for tax payment by a given sector (while comparing the intersectoral tax burden it is taken to be more than one for NAS, and equal to one for AS, for a progressive tax system). In our view this measure comes quite close to what is proposed below. However, there are some shortcomings of this system.

We believe that the numerator in (1) should also include implicit taxes (IT) and implicit (I) and explicit (L) subsidies (Z) (as negative items). On the other hand the denominator should include not only inequalities in development expenditure (LE) but also all other factors which might affect the welfare of a given sector relative to others. Similarly, instead of measuring the tax burden relative to aggregate income we could also do so in relation to the income of the top income groups as they are supposed to pay the major share of taxes. In this way a complete function of the effective tax burden for a sector may be described as in (2)

$$ti = f(\overline{Y}, \overline{W}, S, T, Z, I, IN) \dots \dots \dots \dots (2)$$

Where, \overline{Y} , \overline{W} and S are already defined; T stands for all types of implicit and explicit taxes; Z for all types of subsidies; I for inequalities in wealth and income distribution within an economy; and IN for all other intersectoral inequalities such as in the allocation of subsidies, development expenditure and credit, in terms of trade, and even in protection of life, property and honour. IN is an extremely important variable in Equation 2 as it determines the effective tax paid by a sector. Its effect can hardly be picked up by the rate of progression used in (1) because it is possible that in this way we find tAS = TNAS but still due to the unequal treatment of agriculture in the allocation of development expenditures, or subsidies AS bears a higher effective tax burden than NAS.

It is, however, not very easy to pick the effect of IN on tax burden by one summary measure as not all the factors in (2) are quantifiable. Therefore, in the

treatment of the qualitative variables an ad hoc method was used which is explained in an example given below.

Let there be two individuals A and B, where the latter's taxable capacity is twice that of the former. But at present both pay an equal proportion of their incomes as tax (i.e. tA = tB). Now if we try to incorporate the effect of unequal taxable capacities we may say that the effective tax burden of person A is double the rate paid by individual B. In other words, we could inflate the existing rate of tax burden on an individual by the degree to which he is unequal to others in a particular field.

In this way the effective tax burden on AS(t'a) can be defined as:

$$t'a = \begin{cases} \frac{ta}{\text{Degree of intersectoral in equality in a given field}} \end{cases} \dots \dots (3)$$

where 'ta' is the nominal tax burden on per capita income in AS (i.e. $\frac{TAS}{\overline{Y}AS}$),

and the denominator which stands for various values of intersectoral inequalities is a share (ratio) of AS in a particular activity relative to that of NAS. In some cases such ratios had to be normalised by the ratios of gross value added (GV) figures for the two sectors. In this way, different measures of effective tax burden for AS were obtained whose details are as follows:

a.
$$ta\overline{Y} = ta \div \frac{\overline{Y}AS}{\overline{Y}NAS}$$
 (Nominal tax ratio (ta) normalized by the difference in per capita incomes).

b.
$$taC = ta \div \frac{CAS}{CNAS}$$
 (ta normalized by the ratio of average taxable capacities).

c.
$$taRC = ta \div \frac{RCAS}{RCNAS}$$
 (ta normalized by the ratio of taxable capacities of top income groups).

d.
$$tas = \frac{ta}{\frac{SAS}{GVAS}} \frac{ta}{\frac{SNAS}{GVNAS}}$$
 (ta normalized by inequalities in the distribution of explicit subsidies).

e.
$$taIS^* = \frac{Ta - IS}{GVAS}$$
 (ta excluding the effect of implicit subsidies).

f.
$$taIX^* = \frac{Ta + IX}{GVAS}$$
 (ta including the effect of implicit taxes).

g.
$$taIT = ta \div \frac{ITAS}{ITNAS}$$
 (ta normalized by the ratio of implicit transfers from a sector to other sectors).

h.
$$ta DE = \frac{ta}{\frac{DEAS}{GVAS} / \frac{DENAS}{GVNAS}}$$
 (ta normalized by the inequalities in distribution of development expenditures).

$$TA + \text{Potential } Ushr$$
i. $taPU = \frac{C\text{ollected}}{GVAS}$ (ta including the effect of potential $Ushr$).

$$TA + \text{Actual } Ushr$$
j. $taAU = \frac{TA + \text{Actual } Ushr}{GVA}$ (ta including the effect of actual $Ushr$ collected).

k.
$$taIP = ta/TOT$$
 (ta normalized by weighted average ratio of procurement prices of wheat, rice and cotton to open market prices).

The ratios marked with an asterisk are those where direct values on taxes or subsidies are used in the numerator. The character of these measures is obviously different from others.

Estimates of ratios 'a to k' have been obtained for data on 'all taxes' as well as for 'direct' and 'indirect' taxes separately depending on the availability of data for a given period. Since in a number of cases data were available from more than one source we have used them without any critical examination.³ It is, therefore, possible that some of our estimates are biased because of bias in the original data.

The estimates for selected years between 1972-73 and 1983-84 are presented in Table 1 and have the following main characteristics:

First, when the ratio of the nominal tax burden is normalized by a factor of inequality, the effective burden on AS goes up and comes very close to the tax burden on NAS. In the cases of starred ratios the tax burden was obviously expected to either go up or down depending on whether a plus value (e.g. Ushr) or a minus value (e.g. subsidy) was entered in the numerator. But it is interesting to note that in the case of inequalities relating to explicit subsidies, the tax burden on AS became less. This means, that, relative to its share in GNP, AS received more subsidy than NAS. However, it is possible that if all kinds of subsidies were taken together, this position was reversed. We could not, however, do that exercise as data on implicit subsidies for NAS were not available.

Second, taking other cases individually, there is a significant jump in the tax burden on AS when the effects of inequalities in per capita incomes, taxable capacities (under two different assumptions of subsistence level), and development expenditures are taken into account. All of these inequalities make the effective tax burden

³ Most of the earlier studies on the subject also used similar data.

Per capita Rate of Tax Burden on Agricultural Sector Adjusted for various Factors of Intersectoral Inequalities

Part Trace Low L														
Per capita broome in AS (a) 1972-73 1976-77 1979-80 1983-84 1972-73 1976-77 1979-80 1983-84 1972-73 1972-73 1976-77 1979-80 1983-84 1972-73 1972-73 1972-73 1976-77 1979-80 1972-73 1972-73 1972-73 1976-77 1979-80 1972-73 1972-73 1976-77 1979-80 1972-73 1972-73 1976-77 1979-80 1972-73 1972-73 1976-77 1979-80 1972-73 1972-73 1976-77 1979-80 1972-73 1976-77 1979-80 1972-73 1976-77 1979-80 1972-73 1976-77 1979-80 1972-73 1976-77 1979-80 1972-73 1976-77 1979-80 1978-77 1979-80 1972-73 1976-77 1979-80 1978-77 1979-80 1978-77 1979-80 1978-77 1979-80 1978-77 1979-80 1978-77 1979-80 1978-77 1979-80 1978-77 1979-80 1978-77 1979-80 1978-77 1979-80 1978-77 1979-80 197	5			Total Tax	es Case			Direct T	axes Case		;	Indirect 1	axes Case	
Per capital income in AS (at) 0.61 0.99 0.122 0.186 0.0078 0.0032 0.043 0.043 0.63 0.87 0.118 Per capital income in AS and Tax for NAS (a) Inequality in intersectoral Taxable Capacity (itat) (at) 1.24 1.41 1.16 1.19 0.028 0.035 0.043 0.014 0.219 0.235 0.68 0.011 0.017 0.114 0.331 0.89 0.011 0.017 0.114 0.311 0.328 0.043 0.028 0.011 0.017 0.114 0.313 0.48 0.011 0.011 0.017 0.114 0.313 0.68 0.011 0.013 0.021 0.023 0.043 0.043 0.041 0.011 0.011 0.011 0.012 0.029 0.041 0.011 0.011 0.012 0.029 0.014 0.023 0.043 0.041 0.041 0.041 0.042 0.041 0.041 0.041 0.041 0.041 0.041 0.041 0.041 0.041 0.041 0.041 0.041 <th>ź</th> <th></th> <th>1972-73</th> <th>1976-77</th> <th>1979-80</th> <th>1983-84</th> <th></th> <th></th> <th>1979-80</th> <th>1983-84</th> <th></th> <th></th> <th>1979-80</th> <th>1983-84</th>	ź		1972-73	1976-77	1979-80	1983-84			1979-80	1983-84			1979-80	1983-84
Part of the complete (Part of MAS is and Tax for MAS is and Total	، نـ ا	ı	.061	60.	0.122		0.0078	0.0032	.0043	0.0049	0.53	0.87	0.118	0.18
Per capita hoome (1a Y) Directivation Di	; ,		.124	.141	.165	.119	0.028	0.028	0.034	0.036	0.097	0.114	0.331	0.083
Price quality in Intersectoral Taxable (145) 0.169 0.321 0.435 0.840 0.021 0.011 0.015 0.022 0.587 0.31 0.421	w.	Inequality in Intersectoral per capita Income (ta \overline{Y})	0.146	0.219	0.305	89.0	0.016	0.008	0.01	0.017	0.112	0.212	0.295	0.642
Capacity (isc) (a) 0.169 0.321 0.435 0.840 0.021 0.011 0.011 0.012 0.032 0.387 0.431 0.421 0.421 0.432 0.447 0.061 0.588 1.45 1.966 Inequality in Intersectoral Taxable or more per Annum (IsRC) 0.132 0.225 0.338 0.616 0.016 0.008 0.011 0.016 0.018 0.021 0.032 0.005 0	4.	Inequality in Intersectoral Taxable	,		•		,					ć	į	
Intequality in Intersectoral Taxable			0.169	0.321	0.435	3.312	0.021	0.011	0.015	0.022	0.587	0.31	0.421 1.966	0.818
Or more per formation of Explicit Subsidies (taS) Inequality in Intersectoral Allocation of Explicit Subsidies (taS) Inequality in Intersectoral Implicit Tandries from one Sector to Others (taTT) Inequality in Intersectoral Allocation of Development Expenditures (taDB) Inequality in Intersectoral Implicit Tandries from one Sector to Others (taTT) Inequality in Intersectoral Allocation of Development Expenditures (taDB) Inequality in Intersectoral Implicit Tandries form one Sector to Others (taTT) Inequality in Intersectoral Allocation of Development Expenditures (taDB) Inequality in Intersectoral Implicit Tandries form one Sector to Others (taTT) Inequality in Intersectoral Allocation of Development Expenditures (taDB) Inequality in Intersectoral Implicit Tandries form one Sector to Others (taTT) Inequality in Intersectoral Allocation of Development Expenditures (taDB) Inequality in Intersectoral Implicit Tandries due to low Procurement Tandries due to low Procurement Tandries due to low Procurement (taTD) Inequality in Intersectoral Implicit Tandries due to low Procurement Tandries due to low Procurement Tandries due to low Procurement (taTD) Inequality in Intersectoral Implicit Tandries due to low Procurement Tandries due to low Tandries due to low Tandries due to low Tandries d	.5	Inequality in Intersectoral Taxable												
Intequality in Intersectoral Allocation of Explicit Subsidies (taS) NA 0.072 0.082 0.106 NA 0.003 0.0025 0.005 NA 0.052 0.078 0.108		or more per Annum (taRC)	0.132	0.225	0.338	0.616	0.016	0.008	0.011	0.016	0.115	0.217	0.327	09:0
of Explicit Subsidies (taS) NA 0.072 0.082 0.106 NA 0.003 0.0025 0.005 NA 0.069 0.079 0 mplicit Subsidies (taS) Implicit Subsidies (taS) Implicit Subsidies (taS) NA 0.061 0.081 0.113 0.167 NA	9	Inequality in Intersectoral Allocation												
Implicit Subsidies (talS) 0.06: 0.081 0.113 0.167 NA NA NA NA NA NA 0.052 0.078 0.108 Implicit Taxes (talX) NA 0.128 0.228 NA NA NA NA NA NA NA N		of Explicit Subsidies (taS)	¥	0.072	0.082	0.106	NA	0.003	0.0025	0.005	ΑĀ	0.069	0.079	0.0191
Implicit Taxes (talX)	7	Implicit Subsidies (talS)	0.06!	0.081	0.113	0.167	NA	¥	NA	ΑĀ	0.052	0.078	0.108	0.162
Transfers from one Sector to Others from Others fr	∞i	Implicit Taxes (taIX)	Y.	0.128	0.228	Ą	¥	Y X	NA	NA	Ϋ́	0.126	0.224	NA N
Transfers from one Sector to Others (taIT)	6.	Inequality in Intersectoral Implicit												
Development Expenditures 0.112 0.185 1.76 0.205 0.014 0.006 0.006 0.005 0.017 0.169		Transfers from one Sector to	42	Ν̈́	7	0.456	Ą	Ą	Ą	0.012	¥	Ą	¥	0.441
Of Development Expenditures 0.112 0.185 .176 0.205 0.014 0.006 0.006 0.005 0.005 0.0173 0.169 Potential Ushr (taPU) NA	0.	Inequality in Intersectoral Allocation	:	!) }	!		!					!
(taDB) 0.112 0.185 .176 0.205 0.014 0.006 0.006 0.005 0.005 0.017 0.183 0.169 Actual Ushr (taPU) NA		of Development Expenditures												
Potential Ushr (taPU) Actual Ushr (taAU) Inequality in Intersectoral Implicit Transfers due to low Procurement Prices of Wheat, Rice and Cotton (taP) Average for all Sectors (b) 0.183 0.291 0.352 0.575 0.005 0.013 0.017 0.155 0.281 0.385		(taDB)	0.112	0.185	.176	0.205	0.014	9000	9000	0.005	0.095	0.173	0.169	0.197
Actual Ushr (taAU) Inequality in Intersectoral Implicit Transfers due to low Procurement Prices of Wheat, Rice and Cotton (taBr) Average for all Sectors (b) 0.183 0.291 0.322 0.575 0.0025 0.013 0.017 0.155 0.281 0.385	Ξ:	Potential Ushr (taPU)	¥	¥	Ν	0.1%	¥	N A	¥	0.0154	Ϋ́	Ϋ́	¥	0.197
Transfers due to low Procurement Prices of Wheat, Rice and Cotton C182 C1115 C179 C182 C1115 C173 C182 C1115 C179 C182	12.	Actual Ushr (taAU)	NA NA	Y.	Ν	0.188	A	¥	¥	0.0077	AN	¥.	¥	0.183
Transfers due to low Procurement Prices of Wheat, Rice and Cotton 0.182 0.115 0.179 NA 0.0105 0.0042 0.0063 NA 0.072 0.111 0.173 Average for all Sectors do 119 0.160 0.220 0.412 0.014 0.006 0.008 0.011 0.092 0.154 0.213 for Agriculture (b) 0.183 0.291 0.322 0.575 0.025 0.012 0.013 0.017 0.155 0.281 0.385	13.	Inequality in Intersectoral Implicit												
(talf) 0.182 0.115 0.179 NA 0.0105 0.0042 0.0063 NA 0.072 0.111 0.173 Average for all Sectors for Agriculture (a) 0.119 0.160 0.220 0.412 0.014 0.006 0.008 0.011 0.092 0.154 0.213 (b) 0.183 0.291 0.322 0.575 0.025 0.012 0.013 0.017 0.155 0.281 0.385		Iransfers due to low Procurement Prices of Wheat. Rice and Cotton												
Average for all Sectors (a) 0.119 0.160 0.220 0.412 0.014 0.006 0.008 0.011 0.092 0.154 0.213 for Agriculture (b) 0.183 0.291 0.322 0.575 0.025 0.012 0.013 0.017 0.155 0.281 0.385		(taP)	0.182	0.115	0.179		0.0105	0.0042	0.0063	AN	0.072	0.111	0.173	V
(b) 0.183 0.291 0.322 0.575 0.025 0.012 0.013 0.017 0.155 0.281 0.385	4.		0.119	0.160	0.220	0.412	0.014	9000	0.008	0.011	0.092	0.154	0.213	0.361
			0.183	0.291	0.322	0.575	0.025	0.012	0.013	0.017	0.155	0.281	0.385	0.504

Based on data from Appendix Table A-1. NA = Data not available. Source:

on AS higher than the nominal tax burden on NAS. However, this is not the case for implicit taxes on agriculture due to low procurement prices (i.e. *TaIP*). Only for 1979-80 was this tax large enough to make the tax burden on agriculture higher than that on NAS (.179 compared to .165 for NAS) (Table 1). However, in 1983-84 using data reported in the Taxation Commission Report (1986) on the overall transfers from different sectors to other sectors, the tax burden on AS jumps to .456 which is about four times the figure (.119) for NAS.

Third, the effective tax burden on AS is higher than on NAS. In 1976-77, for example, the average figure for AS was 0.16 under assumption (a) and 0.291 under assumption (b), whereas for NAS the corresponding figure was 0.141. The difference between the two sectors widened over time as in 1983-84 the average figure for AS under assumption (a) was 0.412 and for NAS it was 0.119, a difference of about 1 to 4.

Fourth, the result on direct taxes does not show the effective tax burden on AS increasing significantly in comparison to that on NAS. But this is not so with indirect taxes. In the latter case, there were no significant differences between the two sectors as far as the nominal tax burdens were concerned. However, when measures of effective burden were used, the differences were substantially increased in most of the cases. Except in the cases of implicit subsidies (taIS)* and 'taIP' for 1972-73 and 1975-76, the indirect tax burden on AS was higher than that on NAS.

II. SOME ESTIMATES OF AGRICULTURAL INCOME AND LAND TAXES AND THEIR IMPLICATIONS FOR TENANTS.

Different estimates for direct taxes on agriculture were obtained to determine their revenue potential and burden on AS. Similarly, keeping in view the asymmetrical relation between tenants and landlords where the latter enjoy disproportionate power on the use of land, it was assumed that part of the direct land taxes could be "shifted backward" on the tenants. In the case of a progressive land tax it is possible that tenants cultivating land from different categories of landlords face a greater reduction in their net income than the tax paid by the landlords. This may happen because landlords liable to pay relatively low tax could capitalise the differential quality of their lands and thus increase their rent to bring the tenants net income at par with the same from other lands.

To calculate total tax payable by a given farm category the method used was to first determine its average taxable income and then apply the prevailing tax rules to reach a taxable figure showing the amount of tax payable. For this purpose, data on farm income, land holding and tenancy were taken from the published sources

⁴ Strictly speaking the term 'backward shifting' is used when a firm tries to shift a tax on labour in the form of low wages. When a landlord shifts a tax on tenants this also means a decrease in the net return to the labour and other factors used by the latter. See Bird (1974) on this.

[Faiz Mohammad and Badar (1985); Government of Pakistan (1980); Government of Pakistan (Various Issues)]. Various estimates of agricultural taxes and their effects on tenants under alternative assumptions are presented in Table 2. Main features of these estimates are given below.

First, from crop income the total tax payable (under the exemption limit of Rs 24000) could range between Rs 2438.2 million and Rs 2992.91 million depending on the assumption of investment allowance used. Similar figures for total income data range from Rs 3596.6 million to Rs 445.08 million. If the full potential of income tax were to be realised from agriculture the nominal tax burden on this sector in 1983-84 would have increased from 18.6 percent to 22.45 percent of per capita income. Major burden of the tax would fall on farms holding more than 50 acres of farm area. However, in the case of tax on total income some amount (about 15 percent) will also be payable by farms possessing 12.5 – 50.0 acres land. The tax burden is reduced to between Rs 1561.2 million to Rs 2952.05 million when the tax exemption limit is raised to Rs 48000.

Second, the amount of potential land tax under the exemption limit of 1600 Produce Index Units (PIUs), comes to Rs 1029.3 million, about 35 percent of potential income tax and about 80 percent of *Ushr* potential (Rs 1148.22 million) estimated by Mohammed and Chaudhry (1986). If the exemption limit is increased to 3200 PIUs as proposed in the Government of Pakistan (1986), the land tax potential is reduced to Rs 601.38 million which is about 50 percent of the *Ushr* potential

Third, using the lowest possible data on areas rented in and rented out by various farm categories, it is estimated that a major portion of agricultural taxes would be borne by tenants. Under a restricted assumption this amount could be Rs 720.22 million out of Rs 2438.2 (i.e. about 30 percent). It is, however, also possible that a decrease in the tenants net income, due to an increase in the rent by landlords is only Rs 2438.12 million. A major share (about 70 percent) of renants' tenants would bear an additional burden of Rs 2485.93 million when the tax payable by landlords is only Rs 2438.12 million. A major share (about 70 percent of tenants' tax burden is likely to be borne by those operating less than 25 acres of land on account of the fact that the majority of the tenants operate land in small parcels.

III. CONCLUSIONS

Since the secondary data used in this study from various sources is not completely unbiased and, since, in some cases due to lack of data not all the dimensions of the intersectoral tax burden could be examined, only some tentative conclusions can be offered at this stage. These are as follows:

⁵ This figure is obtained after adjusting potential tax figures for 1985-86 by a price deflator.

Table 2

Regression Relationships Between Effective Tax Burden (Dependent Variable) and Selected Inequalities Facing Agricultural Sector in Pakistan, 1972-73 to 1983-84 Selected Years

Ī	Source of Inequality	Total Tax	Tax	Direct Taxes	[axes	Indirect Taxes	Taxes
Ĭ.	(Independent Variable)	Regression Coefficient	T-Ratio	Regression Coefficient	T-Ratio	Regression Coefficient	T-Ratio
_;	All Inequalities.	,		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	4000		
	taken together	-1.591	3.61	-0.006	0.556*	-1.329	7.1.7
7	Per Capita Income	-0.838	239	-0.007	0.487*	-0.704	1.69
ж •	Per capita Taxable						
	Capacity Average (a)	-0.833	2.24	-0.034	2.23	-0.688	1.47*
4.	Per capita Income of					٠	
	those Earning 24000						
	or more per Year	-0.682	1.89	-0.005	0.385*	-0.541	1.18*
s.	Explicit Subsidies	-0.552	1.67	900'0-	0.427*	-0.463	1.20*
9	Development Expenditure	-0.824	2.20	-0.001	0.010*	-0.684	1.46*
7.	Implicit Tax due to Low Procurement Price of						
	Wheat, Rice and Cotton	-0.332	1.12*	900.0—	0.515	-0.349	1.09*
∞ਂ	Constant Term	1.67	3.91	1.75	1.65	1.44	2.51
		$R^2 = 0.364$.364	$R^2 = 0.386$	386	$R^2 = 358$	8

Source: Estimates based on data from Table 1.

^{*}The regression coefficient not significant at the conventional 5 percent level of significance. For one-tail test at 5 percent r-ratio = 1.65

First, the fact that the agricultural sector is exempt from direct (land/income) taxes in Pakistan does not imply that the effective tax burden on this sector is less than that on other sectors. In fact, while measuring the tax burden with factors such as the intersectoral differentials in per capita income, taxable capacity, development expenditures, terms of trade and implicit taxation are taken into account, the relative tax burden on agriculture, is substantially increased.

Second, keeping in view the revenue potential of different measures, if a tax is levied on agricultural incomes this does not sound a "soft option", as sometimes it is claimed, because it would amount to a huge transfer of resources from the agricultural sector to other sectors, with far reaching socio-economic implications. On the other hand if a land-tax is levied on the pattern proposed in the Final Report of the National Taxation Reforms Commission, its revenue potential will be far less than that of levies such as *Ushr*. The real possibility of the backward shifting of direct taxes on tenants make them further undesirable options. In this situation then, perhaps the best choice available to the government from among the direct levies is to make effective use of *Ushr*, a major portion of which can be spent on the welfare of the rural poor.

Appendix Table 1—A
Agricultural versus Non-agricultural Sectors in Pakistan: Some Selected Features

1972-73 1976-77 1979-80 1983-84 1985-86 1972-73 1976-77 1979-80 1983-84 1985-86 1972-73 1976-77 1979-80 1983-84 1985-86 1972-73 1976-77 1979-80 1983-84 1985-86 1970-73 1979-80 1983-84 1985-86 1970-73 1979-80 1983-84 1985-86 1985	7	Characteristics		Ÿ	Agricultural Sector	ector			Non-s	Non-agricultural Sector	¥	
Gross Value Added 618 11907 43968 62164 92165 118670 39507 92014 148438 280583 Per capital Taxable Capacity (a) 5886 94.53 218.69 315.66 NA 662.09 1439.42 2522.52 4445.61 Capacity of Top Income (b) Indirect (c) Direct* (c) Indirect (c) I	Ž		1972-73		1979-80	1983-84	1985-86	1972-73	1976-77	1979-80	1983-84	1985-86
Per capita income 618 1109 1551 1857 2354 1304 2703 3893 6640 Per capita income (a) 312 496 772 1123 1295 864 1784 2789 5048 Two Estimates (b) 5886 94.33 218.69 356.66 NA 662.09 1439.42 272.52 4445.61 Per capita Taxable Capacity of Top Income 1299 2470 3376 4784 NA 2844 661.09 1439.42 252.52.52 4445.61 Groups Total taxable 171.9 141.1 260.04 4784 NA 2844 662.09 1439.42 252.52.52 4445.61 Groups Total taxable 171.9 141.1 260.04 4784 NA 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4 141.4	 _;	Gross Value Added	21907	43968	62164	92165	118670	39507	92014	148438	280583	366540
Per capita Taxable Capacity 1312 496 772 1123 1295 864 1784 2789 1784 1	4	Per capita income	618	1109	1551	1857	2354	1304	2703	3893	6640	7756
Two Estimates 129 496 772 1123 1295 864 1784 2789 4789 172 1123 1295 866 1439.42 2525.25 44 Per capita Taxable Capasticy of Top Income 1299 2420 3376 4784 NA 2844 6014 9435 1600	е;	Per capita Taxable Capacity										
(a) 5312 496 772 1123 1295 864 1784 2789 Per capita Taxable Capacity of Top Income Capacit		Two Estimates										
(b) 5886 9453 218.69 356.66 NA 662.09 1439.42 2522.52 44 Per capita Taxable Capacity of Top Income 1299 2420 3376 4784 NA 2844 6014 9435 Total taxes 1346.8 3997.35 7635.55 17083 NA 4916.32 13023.15 24579.86 510.04 171.9 141.1 269.04 452 NA 1093.0 254.0 511.446 110.04 171.9 141.1 269.04 452 NA 1093.0 254.0 511.446 110.04 171.9 141.1 269.04 452 NA 1093.0 254.0 511.446 110.04 171.9 141.1 269.04 452 NA 1093.0 254.0 511.446 110.04 171.9 141.1 269.04 452 NA 1093.0 254.0 511.446 110.04 171.9 141.1 269.04 452 NA		(B)	312	8	772	1123	1295	864	1784	2789	5048	5921
Per capita Taxable Capacity of Top Income Cap		<u> </u>	2886	94.53	218.69	356.66	V	662.09	1439.42	2522.52	4445.61	¥
Capacity of Top Income Capacity of Capacity of Top Income Capacity of Capacity of Capaci	4.	Per capita Taxable										
Groups 1299 2420 3376 4784 NA 2844 6014 9435 Total taxes (a) Direct* 1346.8 399735 7635.55 17083 NA 4916.32 13023.15 24579.86 (b) Indirect 171.9 141.1 269.04 452 NA 4916.32 13023.15 24579.86 Explicit Subsidies 171.9 141.1 269.04 465 2424 NA NA NA NA Implicit Subsidies 20 435 636 1722 NA NA NA NA Implicit Subsidies 20 435 636 1722 NA NA NA NA (\$\text{cotors}\$ of \$\text{Cotors}\$ 1722 NA NA <t< td=""><td></td><td>Capacity of Top Income</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		Capacity of Top Income										
Total taxes		Groups	1299	2420	3376	4784	Ϋ́	2844	6014	9435	15663	N
(a) Direct* 171.9 141.1 269.04 452 NA 1093.0 2564.0 511446 1 Explicit Subsidies 172.3 386.25 7366.51 16631 NA 3823.32 10359.15 19468.4 Implicit Subsidies 20 435 636 1722 NA NA NA NA Implicit Tansfers 20 435 636 1722 NA NA NA (% of VA) NA NA NA NA NA NA NA (% of VA) NA NA NA NA NA NA NA Development Expenditures 902 3199 4892 6660 9411 2968 13040 17078 Potential Expenditural NA NA NA NA NA NA NA NA Potential Land Revenue NA NA NA NA NA NA NA NA (a) NA NA N	s.	Total taxes	1346.8	3997.35	7635.55	17083	AN	4916.32	13023.15	24579.86	33408	N.
(b) Indirect 1174.28 3856.25 7366.51 16631 NA 3823.32 10359.15 19468.4 Explicit Subsidies 345 914 2694 1466 2424 NA NA NA Implicit Transiers 100 Other Soctors NA NA <td></td> <td>(a) Direct*</td> <td></td> <td>141.1</td> <td>269.04</td> <td>452</td> <td>Ϋ́</td> <td>1093.0</td> <td>2564.0</td> <td>5114.46</td> <td>1021.6</td> <td>N</td>		(a) Direct*		141.1	269.04	452	Ϋ́	1093.0	2564.0	5114.46	1021.6	N
Explicit Subsidies 345 914 2694 1466 2424 NA NA 4330 Implicit Subsidies 20 435 636 1722 NA NA <t< td=""><td></td><td>(b) Indirect</td><td></td><td>3856.25</td><td>7366.51</td><td>16631</td><td>Ϋ́</td><td>3823.32</td><td>10359.15</td><td>19468.4</td><td>23192</td><td>N A</td></t<>		(b) Indirect		3856.25	7366.51	16631	Ϋ́	3823.32	10359.15	19468.4	23192	N A
Implicit Subsidies 20 435 636 1722 NA NA NA NA Indicit Transfers NA NA NA Indicit Transfers NA NA I 682 6584 NA NA NA NA NA NA NA N	٠,	Explicit Subsidies	345	914	2694	1466	2424	Ϋ́	1514	4330	4668	28
Implicit Transfers	۲.	Implicit Subsidies	8	435	989	1722	Ϋ́	¥	NA	Ϋ́	¥N.	N
to Other Sectors (% of VA)	<u>~</u>	Implicit Transfers										
(% of VA) NA NA NA 29.1 NA		to Other Sectors										
Implicit Tax		(% of VA)	Ϋ́	Z	Ϋ́	29.1	Ą	Ϋ́	Ą	NA	11.88	¥
Development Expenditures 902 3199 4892 6660 9411 2968 13040 17078 2 Potential Agricultural Income Tax NA		Implicit Tax	Ϋ́	1682	6584	Ϋ́	Ν	Ϋ́	Ϋ́	NA	AN	¥
Potential Agricultural NA NA NA NA 2694 NA NA NA NA A008 NA NA 4008 NA NA 4008 NA NA HORENTIAL LANG Revenue S	ď.	Development Expenditures	905	3199	4892	0999	9411	2968	13040	17078	22488	28872
Potential Land Revenue	÷	Potential Agricultural										
Potential Land Revenue NA NA NA 1029.34 NA NA NA 1029.34 NA NA NA 1029.34 NA NA NA 1029.34 NA NA NA 1029.34 NA NA NA 1029.34 NA NA NA NA 104.32 NA		Income Tax	NA	¥.	NA	¥N	2694 4008	Y V	Ą	Ϋ́	NA	¥
(a) NA NA NA 1029.34 NA NA NA NA OPERATE (b) Potential Ushr Revenue NA NA NA 969.98 1148.22 NA	_:	Potential Land Revenue										
Potential Ushr Revenue NA NA NA 969.98 1148.22 NA NA NA Actual Ushr Collected NA NA NA 148.22 NA NA NA Ratio of Domestic Prices of Unformal Prices of Selected Agri. Commodities 6 6 6 6 6 6 6 6 6 6 6 7 7 0.682 NA		3	Ą	Y	NA	Ϋ́	1029.34 6013	N A	V	V	Y Y	Y Y
Actual Usive Collected NA NA 254.46 NA NA NA NA NA Ratio of Domestic Prices to International Prices of Selected Agri. Commodities (Weighted Average) 0.741 0.783 0.682 NA NA NA NA NA	~;	Potential Ushr Revenue	Ν	Ν	NA	86.696	1148.22	¥X	Ą	NA NA	Ϋ́	¥
Ratio of Domestic Prices to International Prices of Selected Agri. Commodities (Weighted Average) 0.741 0.783 0.682 NA NA NA NA NA	<u>.</u> .	Actual Ushr Collected	Ϋ́	W	Ϋ́	254.46	NA	NA	V	Ą	Ϋ́Z	Y
0.741 0.783 0.682 NA NA NA NA NA	-	Ratio of Domestic Prices to International Prices of Selected Agri. Commodities										
		(Weighted Average)	0.741	0.783	0.682	NA	NA	NA	Ϋ́	N	Ä	Y.

(Various Issues) on intersectoral implicit transfer from Government of Pakistan (1988); on procurement prices from [Qureshi et al. (1986); Cornelisse and Naqvi (1984); and Mohammad and Chaudhry (1986)]. Assumption 'b' on taxable capacity is based on data from Qureshi et al. (1986).
*Based on wheat and rice prices from Table 12 of Cornelisse and Naqvi (1984). Sources: Data on Taxes from [Kazi (1984) and Qureshi (1986)] on explicit subsidies, development expenditure and value-added from Covernment of Pakistan

REFERENCES

- Ahmed, Viqar, and Rashid Amjad (1984). The Management of Pakistan's Economy 1947-82. Chapter 11. Karachi: Oxford University Press.
- Azhar, B. A. (1973). "Agricultural Taxation in West Pakistan". *Pakistan Economic and Social Review*. Vol. XI, No. 3.
- Bird, Richard (1974). Taxing Agricultural Land in Developing Countries. Chapters 9 and 10. Cambridge, Mass.: Harvard University Press.
- Cornelisse, P.A., and Syed Nawab Haider Naqvi (1984). The Anatomy of Wheat Market in Pakistan Rotterdam: Centre for Development Planning, Erasmus University.
- Hamid, Javid (1970) "Suggested Approach to Agricultural Taxation Policy in West Pakistan". Pakistan Development Review. Vol. X, No. 4.
- Kazi, Shahnaz (1984). "Intersectoral Tax Burden in Pakistan: A Critical Review of Existing Evidence and Some New Estimates". Pakistan Development Review. Vol. XXIII, No. 4.
- Khan, Mahmood Hasan (1981). Underdevelopment and Agrarian Structure in Pakistan. Chapter 8. Lahore: Vanguard Publications Limited. pp. 270-311.
- Mohammad, Faiz, and M. G. Chaudhry (1986). "Some Estimates of Ushr Potentials in Pakistan" (Draft). Islamabad: Pakistan Institute of Development Economics.
- Mohammad, Faiz, and Ghulam Badar (1985). "Structure of Rural Income in Pakistan: Some Preliminary Estimates". *Pakistan Development Review*. Vol. XXIV, Nos. 3&4. pp. 385-406.
- Pakistan, Government of (1980). *Pakistan Census of Agriculture*. Islamabad: Ministry of Food and Agriculture, Agricultural Census Commission.
- Pakistan, Government of (Various Issues). *Pakistan Economic Survey*. Islamabad: Ministry of Finance, Economic Adviser's Wing.
- Pakistan, Government of (1986). The Final Report of the National Taxation Reforms Commission. Islamabad: Ministry of Finance.
- Qureshi, S. K., et al. (1986). "Some Aspects of Agricultural Prices and Taxation Policies in Pakistan". Islamabad: Pakistan Institute of Development Economics. (Research Reports Series, No. 146).

Comments on "Agricultural Taxation in Pakistan Revisited"

In view of the large inequalities in wealth and income and the prevalence of massive poverty in most low-income countries, the evaluation of the tax system by the author on the sole criterion of intersectoral equity of the tax burden and of different taxes on considerations of intra-sectoral equity is understandable but somewhat misplaced. In developing countries where agriculture is the predominant sector, the questions relating to the mobilization of resources from this sector to finance development and the impact of different taxes on the efficiency of resource use within agriculture are of paramount significance. In what follows I would like to list some pertinent issues ignored by the author in his survey of agricultural taxation and also to indicate some analytical flaws in his argument.

First, the concept of intersectoral equity is superfluous. Persons and/or firms in a sector are taxed. Sectors as such do not pay taxes. Equity demands that equal taxes be paid by people with equal incomes, irrespective of the source of that income. If taxation treats all similar incomes equally and is progressive to the extent socially required to offset vertical inequalities in the distribution of income, equity norms in the tax system are thought to be achieved. In a recent study by Muhammad Hussain Malik and Najam us Saqib (1985) which estimates the incidence of the tax system in both rural and urban areas by income classes in Pakistan, it is found that the tax burden in each income class in the rural area is lower than its equivalent income class in the urban area showing that rural areas are 'under-taxed' relative to urban areas. This conclusion is in sharp contradiction with Dr Faiz Mohammad's major finding of intersectoral inequity being faced by the agricultural sector. If each income class in the rural areas is 'under-taxed', it is difficult to conceive of a situation when the agricultural sector would be 'over-taxed' relative to the non-agricultural sector.

Second, the computation of the tax burden of a sector by dividing taxes borne by a sector by its taxable capacity requires, among other things, accurate estimation of taxable capacity. While the notion of taxable capacity has been interpreted in a number of different ways, historically in the public finance literature, it is measured by the average income and wealth levels for individuals and by these factors and coefficients of income and wealth distribution for a group of individuals.

Comments 431

Dr Faiz Mohammad extends the list of determinants of taxable capacity of the agricultural and non-agricultural sectors to intersectoral inequalities such as subsidies, development expenditure, credit, terms of trade, protection of life, property and honour. Measurement difficulties aside, the inclusion of such factors in the analysis of the tax burden is highly dubious in the light of many studies in the area. The relevance of some of these factors in the determination of the direction and magnitude of net intersectoral resource transfers is, however, a separate issue.

Third, the emphasis on intersectoral equity in taxation neglects the important issue of finding resources for development. In the case of Pakistan, in view of the predominance of agriculture, a good part of the resources must come from agriculture. The case for intensive taxation of agriculture need not be rejected in the light of the findings on relative sectoral tax burdens. There is a need for an assessment of the heavier taxation of agriculture in the light of its effects on the national economy from the vantage point of developmental tax policy.

Fourth, the author seems to have a narrow perspective in his analysis of a suitable system of taxing agriculture. The analysis is limited to taxes on land, agricultural income and gross agricultural output. The early industrialization in Pakistan was financed largely by price distortions introduced deliberately by the government in so far as terms of trade were turned against agriculture. An analysis of government policies in this important area in the recent past is required. The case for an intensive taxation of agriculture can be built as there has been a dramatic shift in the government policies that had previously turned terms of trade against agriculture. The favourable movement of terms of trade in favour of agriculture since the early 1960s, floating exchange rates, reduction of tariff rates and easing of quantitative restrictions on imports, have increased agricultural incomes and thus, the taxable capacity in agriculture. A case for intensive taxation of agriculture is more valid today than when non-tax policies were transferring resources out of agriculture on a massive scale.

Fifth, the findings of the author with respect to the wide discrepancy between actual and potential tax collections from land tax, agricultural income and Ushr- an Islamic levy known in the public finance literature as tithe- indicates the existence of administrative and political constraints for using these devices for raising revenues. A discussion of these constraints in the effective use of these taxes would be an extremely useful contribution to the literature on agricultural taxation.

Last, but not least, *Ushr*, being a proportional tax, does not have favourable effects on the distribution of income. Being an indirect tax on gross output, the tax has adverse effects on effort and innovation especially when compared with land taxes. There is an additional problem that the revenue collected from this levy cannot be used to finance developmental activities as the purposes for which the *Ushr* proceeds can be used are prescribed rigidly.

In conclusion, I would urge Faiz Mohammad to broaden the scope of issues in his future research in the field of agricultural taxation and to give due consideration to objectives other than distributive justice in the design of a tax package applicable to the agricultural sector.

Pakistan Institute of Development Economics, Islamabad Sarfraz Khan Qureshi

REFERENCE

Malik, Muhammad Hussain and Najam us Saqib (1985). "Who Bears the Burden of Federal Taxes in Pakistan?". Pakistan Development Review. Vol. XXIV, Nos. 3 & 4.