

Theory of Optimal Taxation and Current Tax Policy in Pakistan's Agriculture

M. GHAFFAR CHAUDHRY

1. INTRODUCTION

The theory of optimal taxation has tended to recast the existing literature of public finance into the mould of classical welfare economics by emphasising minimisation of dead weight losses resulting from the imposition of a tax or faulty tax structure. As such, these modern theories have much in common with the traditional approach in terms of efficiency and equity. In spite of this, however, the differences remain. For example, the former theories adhere strictly to the norms of classical welfare economics which treats individual consumers as utility maximisers where improvements in welfare involve change that makes one individual better-off without making someone else worse-off [Stern (1987)]. In contrast to the emphasis of traditional theories on lump-sum taxes, the optimum tax literature is concerned with the implication of using non-lump-sum taxes which have a wider range and therefore more useful to the policy-maker. The recent work on normative tax theory looks at the impact of taxation on individual decisions and the trade off between raising revenues or redistributing tax burdens and the efficiency losses [Atkinson (1987)]. Finally, the optimal tax literature may be more pragmatic in its approach than traditional works as it realistically deals with government objectives and constraints and combines them into models that are sufficiently rich to allow for differences between people regarding income and expenditure patterns.

In spite of some important developments, the optimal tax theory is still in its infancy and its application to real situations has not been widespread. The application on the theory and development of appropriate models in agriculture has been even more limited in view of complexity of production system and limited

M. Ghaffar Chaudhry is Joint Director at the Pakistan Institute of Development Economics, Islamabad.

Author's Note: The paper is based on earlier research studies by the author but with greater emphasis on optimal tax theory and the latest changes in agricultural taxation in Pakistan. Needless to add that the author alone is responsible for the ideas expressed in the paper.

availability of tax instruments in agriculture. This follows from Newbery's statement that the positive theory of agricultural tax analysis is therefore more complicated than the simple model of optimal taxation [Newbery (1987)].

Given this situation, the present paper is aimed at devising a tax system for Pakistan's agriculture that comes closest to the limited and scattered principles of optimal tax theory. To attain this purpose, Section 2 following this introductory section reviews the principles of optimal taxations as laid down in some of the key studies. Section 3 looks at the current system of agricultural taxation along with its limitations. Section 4 comprises of policy prescription that comes closest to principles of optimal taxation. Section 5 presents main findings in the form of summary.

2. SOME PRINCIPLES OF OPTIMAL TAX DESIGN

It follows from above that efficiency and equity remain the main considerations of optimal taxation subject of course to government objectives, constraints and availability of tax instruments as dictated by the socio-economic and political situation in the country concerned. As, however, the emphasis is on minimisation of efficiency losses arising from raising a given amount of revenue or redistributing income, efficiency goal remains in the forefront. The optimal tax theory within these limits lays down rules for achieving the set targets of revenue as follows:

Firstly, tax revenue is raised most efficiently by taxing goods or factors with inelastic demand or supply and tax rates should vary inversely with price elasticities of demand and supply [Sah, Kumar and Stiglitz (1987) as follows:

$$t = (1-B/e) 1/n$$

Where "t" = tax rates, "B" is a constant, "e" = price elasticity of demand and "n" refers to price elasticity of supply. It should be noted that the equation followed from peasants' consumption and output maximising behaviour under the assumption of absence of cross price elasticities of demand and supply.

Secondly, taxation concerned with distribution, externalities or market failures should as much as possible go to the root cause of the problem [Stern (1987)] and impose taxes accordingly.

Thirdly, we must realise that it will be impossible to deal perfectly with question of distribution and market failure directly and a target-instrument approach may be treacherous in a second-best world. In this context, a range of policy tools may be required [Stern (1987)].

Fourthly, tax choices between various indirect taxes especially those on gross and marketed output in agriculture, have been elaborated upon in Newbery (1987). According to him, a uniform tax on marketed surplus does not change relative producer prices but does change relative consumer prices. But a gross output tax

leaves both relative producer and consumer prices unchanged. A tax on gross output is therefore superior to a tax on marketed surplus. However, a tax on gross output is administratively costly and unnecessary when the optimal tax on food is zero, which adds to the superiority of marketed surplus tax.

Fifth, a direct tax such as a land tax per unit of land has an upper limit determined by profit rates per unit of land. Tax rates exceeding this limit drive the farm households into destitution and should be avoided. Also tax rates cannot rise so sharply with farm size that they make a farm household with more land actually worse-off than a smaller one. The implication of this analysis is that only simple forms of lump-sum taxes may be employed [Atkinson (1987)]. The conclusion is consistent with traditional theories [Bird (1974)] and with the theoretical arguments of optional tax theory [Newbery (1987)], which postulated that progressive land taxes or land taxes that depend on owner's income or wealth introduce considerable complexity, frequently provoke effective political opposition and can be evaded by subdivision. The evidence strongly suggests that complex land taxes are impractical. Still simple land taxes on administrative grounds, evidence suggests, are practical.

Finally, the design of tax structures is highly sensitive to economic environment in which it operates [Hoff and Stiglitz (1993)], especially in the developing countries because of missing or imperfect markets, limited government information, absence of credit rationing and limited risk markets. Although the simplicity of land tax may not be quite demanding with respect to the first two factors, the latter two are critically important as the land tax does not vary with output and the farmer has to bear the full risk of any shortfalls in output resulting from inclement weather or market failures. By contrast, taxes that are related to output are state-contingent and represent a sharing and pooling of risk.

3. PRESENT SYSTEM OF AGRICULTURAL TAXATION

Agriculture in Pakistan is subjected to direct, indirect and implicit taxes and the list has been expanding in the recent years. For example, although land revenue, and its cesses and Ushr were major direct taxes in agriculture, agricultural income tax has evolved as an independent levy since 1993 when presumptive farm incomes were taxed at Rs 2.00 per Produce Index Unit (PIU) with a basic exemption of 4000 PIUs per farm. Since 1996, most provinces in compliance with Agricultural Income Tax Ordinance introduced varying rates of taxes, exemptions and tax bases [World Bank (1999)]. Under 2001–2002 budget, the general income tax has been extended to agricultural sector as well [Hyder (2001)]. In spite of these changes and despite an almost 8-fold increase in receipts over the decade of the 1990s, the share of direct taxes as a percent of value-added by agriculture remains below one percent [Chaudhry (2001)].

Although not specific to agriculture, the indirect taxes like customs duties, general sales tax and excise duties are liable to be shifted to farmers as consumers for

ultimate payment [Newbery (1987)]. Although customs duties were nearly 55 percent of indirect taxes in 1990-91, their share was reduced to 23 percent by 2000-01. Likewise, the share of excise duty fell from nearly 28 percent to 18 percent over the decade. By contrast, the contribution of general sales tax witnessed a drastic increase from 18 percent in 1990-91 to almost 59 percent in 2000-01 [Pakistan (2001)]. As the latter tax is more widespread than the other two, the increasing incidence of the indirect taxes on agriculture can be expected. Based on the relative consumption of taxed commodities, it has been noted that agriculture's share in indirect taxes rose from Rs 61 billion in 1989-90 to Rs 177 billion in 1999-2000. The latter year's figure corresponds almost with 23.2 percent of value-added by agriculture [Chaudhry (2001)]. On top of all this government plans to impose the additional sales tax of 15 percent on fertilisers and pesticides. Being 15-20 percent of cost of production various commodities [Malik and Khan (2000)], a 15 percent tax on fertilisers and pesticides should add another 2-3 percent to tax burden in agriculture in the near future.

The quantitative estimates of implicit taxes based on parity and support prices at official and market exchange rates indicate a fall from nearly Rs 82 billion in 1989-90 to Rs 65 billion in 1999-2000. The decline was mainly caused by reduction in over-valuation of Rupee and to a lesser extent in improvement of support prices relative to falling world prices of major agricultural commodities. In spite of the lower magnitude of implicit taxes in 1999-2000, they still represent 7-8.5 percent of value added by agriculture.

Apart from provincial and federal taxes listed above, the local governments under the devolution plan will also be empowered to impose various kinds of 38 taxes [Bokhari (2000)]. It is not yet clear as to what would be the nature and magnitude of these taxes and what part of them would ultimately be paid by agriculture? However, given the long list of taxes and autonomy of the local councils to levy taxes, a 2-3 percent of agriculture's value added may be anybody's guess as a contribution of the farm sector.

Looking at the current system of agricultural taxation in the context of optimal tax policy, there can be no doubt that tax burdens in agriculture are immensely heavy and the new taxes of income tax, a 15 percent sales tax on agricultural inputs and taxes by local councils have the potential to drive agriculture to bankruptcy. The heavy reliance on indirect taxes makes the system highly inequitable. Although agricultural income tax may restore some equity to the system, the tax on fertiliser is likely to fall heavily on small farmers due to inverse relationship between fertiliser application rates per acre and farm size [Ahmed and Chaudhry (2000)]. The agricultural tax system puts no pressure on the farm sector for efficient land use as most of the indirect taxes, agricultural income tax and land tax based on cultivated area are unlikely to force farmers to bring uncultivated land under cultivation and use land more intensively. To the extent that fertiliser application rates in Pakistan are

considerably lower than the recommended optimal levels, a tax on fertiliser may be counter productive. What is more important to note is the fact that the introduction of agricultural income tax would be highly problematic because of complex procedures of calculation of agricultural incomes, inaccessibility of rural areas, administrative inefficiencies of the revenue staff and the widespread corruption that it may entail.

Given this situation, it may not be worthwhile to continue with the indirect taxes for reasons of equity, efficiency, economic stability and revenue generation. As the recent moves of agricultural income tax, a sales tax on agricultural inputs and local council taxes are equally incapacitated to achieve these objectives, one must think of alternative policy options. This by the way is the subject of the following section.

4. DEVISING AN AGRICULTURAL TAX POLICY

It should be clear from above that the choice of a tax instrument that is consistent with the prescription of optimal tax principles becomes extremely limited because no single tax instrument can be perfectly neutral with respect to allocation [World Bank (1988)]. To the extent that the objective of the optimal taxation is to minimise welfare losses of consumers and producers to raise a given amount of revenue, it seems advisable to combine two or more tax instruments for achieving the targets. Given the non-conducive tax environment in Pakistan's agriculture and the pitfalls of tax administration, the most rational agricultural policy involves two-tier system comprising of a simple land tax and a tax on marketed surplus. However, to rid the agriculture of onerous tax burdens, tax rates in agriculture should not exceed 5-6 percent of agriculture's value added. This follows from horizontal equity considerations as the current national tax rates are only about 15 percent and agriculture's incomes are only one-third relative to the rest of the economy on a per worker basis.

There can be little doubt about the feasibility of a simple land tax on administrative grounds as argued above. The poor quality of revenue administration makes it all the more important in the case of Pakistan and undermines the scope of introducing any graduated land tax like the current land revenue system and agricultural income tax. From the optimal tax point of view, land has been regarded as a natural base for tax because it is in inelastic supply [Ahmed and Stern (1989) and Newbery (1987)] and is readily observable [Skinner (1993)]. To the extent that ownership of land (cultivated or uncultivated and cropped or uncropped) is even more inelastic and observable, it should be a more natural base of land tax compared to the current practice of taxing cultivated and cropped land in Pakistan. The shifting of the tax base from cultivated or cropland to ownership (farm area as defined in agricultural census) should ensure greater efficiency of land use and reduce administrative costs. The former follows from the rising cumulative burden of the

tax on uncultivated (idle) land and consequent reduction in land resources kept for speculative purposes [Musgrave (1987)]. The tax base change should eliminate the need for seasonal crop records along with the associated corrupt staff and induce savings in costs both to the government exchequer and to the farm community. It may be noted that ownership records are available at the district level and their updating is not a problem as landowners have strong incentive to establish legal titles to their land [Burgess and Stern (1993)].

To make land tax even simpler, workable and more cost effective, the tax should be imposed on unimproved value of land irrespective of its productivity, irrigation status or nearness to market etc. While productivity ratings have been a source of corruption and tax evasion, to do away with them would eliminate such practices and at the same time rid the government of costly and frequently needed land assessments and productivity surveys.

As a matter of principle and to discourage subdivision of agricultural holdings, especially that arising out of tax evasion efforts, all farmland should be taxable at a single uniform rate without any exemptions. The proposal must ensure stable tax revenues for the government with the widest possible tax base. However, tax rates should be kept sufficiently low as not to drive the peasants households into destitution. [Atkinson (1987).]

To the extent that revenue demands of each farmer are fixed, any productivity gains will be harvested by him. This should act as an added incentive to farmland more productively. Japan's experience during Meiji's era seems to be highly relevant in this regard as it has been argued in many studies that it was basically fixed land tax system which led to rapid transformation of Japan at that time.

Finally, the land tax policy suggested above can be regarded as non-discriminatory and non-distortionary on all accounts as is generally held in the traditional as well as in optimal tax literature [Newbery (1987)]. Although basically treated as inequitable, the land taxes might prove to be somewhat equitable if farm productivity varies inversely with farm size. Empirical studies on size-productivity relationship in Pakistan point to the negative correlation [Ahmed and Chaudhry (2000); Chaudhry and Azhar (1997) and Herring and Chaudhry (1974)]. If so, the regressive character of a proportional land tax might be considerably dampened.

In spite of these good qualities, land taxes may be regarded as poor revenue raisers. Being fixed in perpetuity, they cannot meet the rising revenue needs of a growing economy. They are basically income and price inelastic and are likely to lose their significance in real terms under inflationary conditions and rapidly rising farm incomes. A land-based tax would also be unsuited to cover incomes from commercial livestock farms operated with purchased fodders and feeds. In addition, it may also be inferred that the suggested land tax may not be adequate to redress the large inequalities of land distribution. Furthermore, the land tax may expose the farm sector to unnecessary production risk as noted above, especially under

indiscriminate use of the policy to raise more revenue. Farmers in Pakistan may be especially vulnerable to such risks under uncertain production conditions and lack of adequate credit facilities [Kurosaki and Khan (2001)].

Many of the above deficiencies and drawbacks of the land tax can be alleviated or eliminated totally by an additional tax on the marketed surplus. It was pointed out long ago that “in certain respects, a tax on marketed produce has unique qualifications as an instrument of equitable taxation..... the tax is responsive to production and prices..... The incidence of such a tax as distinguished from that of land revenue will be appropriately heavy on the large land holders, while the small land holder, to the extent his crop is not sold by him will not have to bear the tax at all”. [Wald (1959)]. Following in the footsteps of the above argument, the appropriateness of the marketed surplus tax is greatly enhanced in Pakistan due to many factors. The tax has a dynamic base and can be regarded to be highly elastic with respect to output or farm incomes in view of the evidence that agricultural marketed surplus in general is likely to grow at a faster pace than agricultural output [Johnston and Kilby (1975)]. The tax can also be made price responsive by taxing value of the output instead of marketed output. Doing so would ensure rapid growth of revenue both in nominal and real terms, add to the macro-economic stability and make the system state-contingent. It has been demonstrated that a tax on marketed surplus in combination with a land tax is preferable and Pareto-efficient relative to either tax alone [Hoof and Stiglitz (1993)].

A tax on marketed surplus is uniquely placed to address the equity issue even under its proportional and uniform rate structure and without explicit exemptions for overcoming the problem of regressivity of land taxes for many reasons.

Firstly, the evidence in Pakistan indicates that marketed surplus as a percentage of output varies directly with farm size [Ahmed and Chaudhry (2000)]. In the absence of tax shifting [Newbery (1987)], a uniform rate structure of a tax on marketed output, should, therefore, fall heavily on large farmers and be progressive in its impact. To the extent that most tenants and small farmers, subsist on farm output and have little marketable surplus, would automatically be exempted from the payment. As this forecloses the need for explicit exemptions, there is no scope for tax evasion through subdivision of holdings.

Secondly, although inaccessibility of rural areas tends to limit the scope of most taxes in agriculture, farmers become easily accessible at the market place for assessment and collection of a marketed surplus tax.

Thirdly, the tax may be implemented through the local bodies to avoid the additional costs, as they will increasingly become responsible for tax collection under the current government’s Fiscal Devolution Plan for local self-governments. The old system of Octroi (market entry tax) may be instructive in this regard and leasing out tax collection powers to private sector is a viable way of reducing tax collection costs and tax evasions as the large farmers will be less influential with urban tax assessors closely supervised by their seniors.

As a land tax does not cover taxation of commercial livestock sector, the tax on marketed surplus can profitably be extended to animal sales. Animals kept for domestic needs like self-consumption of agricultural commodities would be automatically exempted. This seems to be quite fair in view of large income tax exemption to meet the expenditure on basic necessities of life.

It should be realised that the whole idea of combining the two taxes was to evolve a workable system of agricultural taxation that would ensure greater and rising revenues in an efficient and equitable fashion. How far have we succeeded can be seen from the data presented in the following Table 1 that is based on current average land revenue rates and a 5.0 percent tax on marketed surplus of 5 major commodities including wheat, rice, cotton, sugarcane and maize.

Table 1
*Revenue Generation and Progressiveness of Combined Taxes
on Land and Marketed Surplus*

Description	Farm Size Groups in Acres under					
	2.5	2.5-5.0	5.0-12.5	12.5-25	25-50	50 and Above
1. Gross Value of Output (Rs Thousand)	13.80	28.83	58.76	115.58	187.82	429.87
2. Value of Marketed Output (Rs Thousands)	5.34	14.60	32.27	79.74	135.85	406.92
3. Tax at 5 Percent of Marketed Value (Rs Thousands)	0.27	0.73	16.2	3.98	6.78	21.35
4. Average Farm Size (Acres)	1.77	4.07	8.88	18.39	37.02	106.59
5. Tax at Rs 50.00 per Acre (Rs Thousand)	0.09	0.20	0.44	0.92	1.85	5.33
6. Tax Amount per Farm (Rs 000)	0.36	0.93	2.06	4.90	8.63	26.68
7. Tax as Percent of Farm Income	2.60	3.23	3.50	4.24	4.60	6.20
8. Number of Farms (Millions)	1.68	1.06	1.70	0.62	0.24	0.11
9. Total Tax Revenue (Rs Billions)	1.60	0.99	3.50	3.04	2.07	2.94

Source: [Ahmad and Chaudhry (2000) and Pakistan (1993)].

It is evident from Table 1 that even the current average land revenue rates combined with a meagre 5.0 percent tax on marketed surplus can result in more than double the revenue (sum of last row) currently derived from direct taxes in Pakistan. It may be noted as pointed out above, however, that these figures exclude revenues that would be generated by tax on marketed surplus of more valuable crops such as vegetables, fruits and sale of livestock and livestock products. The table also shows as to how the two basically proportional taxes can be combined to introduce indirect progression into Pakistan's agricultural tax system. Looking at row 7 of the table, it is clear that this two-tier tax system involves only 2.6.8 percent of the gross income of the smallest farm size group as against 6.2 percent of that of the largest group. It

should also be noted that the collectable tax amounts even in the case of smallest farm size group (row 6) do not exceed Rs 360 and cannot be regarded unnecessarily burdensome in relation to gross income and marketed surplus.

Realistically speaking, the tax burdens must be looked in the light of net farm incomes as tax burdens could become really onerous if the costs of production become excessively high leaving little income in the hands of the farmers. Although net farm income data by farm size are not available, cost of production studies (including land rent and own labour costs) in Pakistan indicate that rates of return in agriculture do not exceed 10.0–15.0 percent on various crops [APCom (n.d.)]. This may force many small farmers to engage in distress sales for payment of taxes. Furthermore, a tax of marketed surplus may be accompanied by deleterious effects on farm and marketed output and complicate the situation further.

In spite of the potential possibility of the above two factors, they are unlikely to be major problems in the future. For example, studies in Pakistan found no evidence of distress food sales by the farm household [Naqvi and Cornelisse (1986)] and their occurrence in future has been considerably reduced by the increased wheat productivity in the recent years relative to 1980s. The likelihood of distress sales by the farm sector may also be reduced by reciprocity-based informal credit among the farmers [Kurosaki and Khan (2001)]. In addition, the suggested tax on marketed surplus is only 3.0 percent in contrast to historically significant implicit tax rates of 40.0–50.0 percent until the early 1990s and exceeding 20.0 percent even in the recent years. To the extent that this two-tier system would replace the implicit taxation of agriculture by assuring world prices, agricultural output should be favourably affected on all farm size categories. The disincentive affect of a tax on marketed output may also be considerably dampened by the presence of land tax ensuring more productive land use.

In addition to discontinuation of implicit taxation of agriculture, Pakistan in general need to move increasingly toward direct taxes for a clearer specification of relative tax burdens of agricultural and non-agricultural sectors and desist from indirect taxes. Although the above-suggested policy is capable of generating more revenues from agriculture in terms of its income relative to direct taxes in the non-agricultural sector, it is the impact of indirect taxes that over burdens the agricultural sector. Obviously, the government has moved somewhat in that direction in the 1990s but a more definite reformed and planed action seems to be a dire necessity to reduce agriculture's tax burdens and to put this reformed policy in place at an early date for the betterment of agriculture.

5. SUMMARY AND CONCLUSIONS

This paper provides a review of optimal tax theory and its basic principles. The underlying purpose of this review is to devise an appropriate tax policy for Pakistan's agriculture that is, more or less, consistent with the norms of optimal

taxation. On the basis of incidence analysis of various taxes, the paper highlights the pitfalls of the current tax policy in terms of equity, efficiency, economic stability and their revenue generation capacity. Being highly onerous the current tax policy is likely to drive the farm sector towards bankruptcy especially under the added burdens of agricultural income tax, a 15 percent sales tax on agricultural inputs and a long list of taxes by the local governments.

This being so, the current system of agricultural taxation should be replaced by a combination of a proportional land tax and a tax on marketed output because of latter's greater appropriateness under Pakistan's conditions. Furthermore, this two-tier system of agricultural taxation has all the desirable characteristics of a rational tax policy and would largely be consistent with the theory of optimal taxation. For example, a proportional land tax based on owner's farm area (cultivated or uncultivated) is preferable over the current tax policy changes because, as was argued before, it will keep the tax base stable and relatively broader, will reduce the temptation for undue subdivision of landholdings, will avoid the possibility of declining absolute tax revenues over time, will ensure efficient use of resources, and above all will be easy to administer.

A proportional land tax, although in line with optimal tax rules, is inherently handicapped by its inequitableness, income and price inelasticities and is risk prone. A tax on the marketed produce is best suited to overcome these deficiencies of agricultural taxation. For example, the incidence of such a tax, as distinguished from that of land revenue, will be appropriately heavy on the large landholders. While the small landholder, to the extent that his crop is consumed and not sold by him will not have to bear the tax at all. Similarly, the tenants will not be subjected to heavier tax rates along with the large landholders, the largest producers of marketed surplus. The tax base will be widening and the revenue from the tax on marketed produce will be expected to grow at the rate of growth of the marketed surplus plus the rate of increase in prices of agricultural commodities. In the case of crop failures and market gluts, tax payments by farmers will automatically be reduced for relief against unforeseeable events. This tax-sharing arrangement thus reduces the farmer's vulnerability to risk and makes the tax more desirable in terms of optimal tax theory. The tax may be implemented through the local bodies administration to avoid any additional cost as the local bodies in the recent past were collecting a similar tax on agricultural commodities and have now been given additional powers under the current government's Devolution Plan. The tax in addition will avoid tax evasion, as the farmers will be easily approachable at the market place. Moreover, there will be less corruption because the tax collectors will be closely supervised.

REFERENCES

- Ahmad, Ehtisham, and Nicholas Stern (1989) Taxation for Development Countries. In Hollis Chenary and T. N. Srinivasan (eds) *Handbook of Development Economics*. Amsterdam: North-Holland.

- Ahmad, Nisar, and M. Ghaffar Chaudhry (2000) *Fertiliser Use at Farm Level in Pakistan*. Islamabad: National Fertiliser Development Centre and Pakistan Institute of Development Economics.
- APCom (n.d.) *Support Price Policies for Wheat, Sugarcane, Rice and Cotton*. Islamabad: Agricultural Prices Commission.
- Atkinson, Anthony (1987) The Theory of Tax Design for Developing Countries. In David Newbery and Nicholas Stern (eds.) *The Theory of Taxation for Developing Countries*. New York: Oxford University Press.
- Bird, Richard M. (1974) *Taxing Agricultural Land in Developing Countries*. Cambridge, Mass.: Harvard University Press.
- Bokhari, Jawaid (2000) Tax Schedule for Fiscal Devolution Finalised. *Dawn*. November 30.
- Burgess, Robin, and Nicholas Stern (1993) Taxation and Development. *Journal of Economic Literature* 31:2, (June).
- Chaudhry, M. Ghaffar (2001) *Taxation of Agriculture: Current Practice, Recommended Policies and Optimal Tax System for Pakistan*. Chiba (Japan), Institute of Development Economics. (V. R. F. Series No. 355.)
- Chaudhry, M. Ghaffar, and Azhar Mahmood (1997) Elusive Land Reforms: Pakistan's Missed Opportunities. *Pakistan Banker* July-December.
- Herring, Ronald, and M. Ghaffar Chaudhry (1974) The 1972 Land Reforms in Pakistan and their Economic Implications. *The Pakistan Development Review* 13:3, 245–279.
- Hoff, Karla, and Joseph E. Stiglitz (1993) Consequence of Limited Risk Markets and Imperfect Information for the Design of Taxes and Transfers: An Overview. In Karla Hoff, Avishay Braverman and Joseph E. Stiglitz (eds.) *The Economics of Rural Organisation: Theory, Practice and Policy*. New York: Oxford University Press.
- Hyder, Sidat (2001) "Budget (2001)" *Budget Briefing*. Representing Arthur Andersen in Pakistan.
- Johnston, B. F., and Peter Kilby (1975) *Agriculture and Structural Transformation: Economic Strategies in Late Development Countries*. New York: Oxford University Press.
- Kurosaki, Takashi, and Humayun Khan (2001) *Human Capital and Elimination of Rural Poverty: A Case Study of the North-West Frontier Province, Pakistan*. Tokyo: Institute of Economic Research, Hitotbashi University.
- Malik, M., and Sardar Ali Khan (2000) Cost of Production of Major Crops. *Pakistan Journal of Agricultural Economics* 4, July.
- Musgrave, Richard (1987) Tax Reform in Developing Countries. In David Newbery and Nicholas Stern (eds.) *The Theory of Taxation for Developing Countries*. New York: Oxford University Press.

- Naqvi, Syed Nawab Haider, and P. A. Cornelisse (1986) Public Policy and Wheat Market in Pakistan. *The Pakistan Development Review* 25:2, 99–126.
- Newbery, David (1987) Agricultural Taxation: The Main Issues. In David Newbery and Nicholas Stern (eds.) *The Theory of Taxation for Developing Countries*. Washington, D. C. : World Bank.
- Pakistan, Government of (1993) *1990 Census of Agriculture: All Pakistan Report*. Vol. 1. Lahore.
- Pakistan, Government of (2001) *Economic Survey 2000-2001*. Islamabad: Finance Division.
- Sah, Raj Kumar, and Josef Stiglitz (1987) The Taxation and Pricing of Agricultural and Industrial Goods in Developing Economies. In David Newbery and Nicholas Stern (eds) *The Theory of Taxation for Developing Countries*. New York: Oxford University Press.
- Skinner, Jonathan (1993) If Agricultural Land Taxation is so Important, Why is it so Rarely Used? In Karla Hoff, Avishay Braverman and Joseph E. Stiglitz (eds.) *The Economics of Rural Organisation: Theory, Practice and Policy*. New York: Oxford University Press.
- Stern, Nicholas (1987) The Theory of Optimal Commodity and Income Taxation: An Introduction. In David Newbery and Nicholas Stern (eds.) *The Theory of Taxation for Development Countries*. New York: Oxford University Press.
- Wald, H. P. (1959) *Taxation of Agricultural Land in Underdeveloped Economies*. Cambridge, Mass.: Harvard University Press.
- World Bank (1988) *World Development Report*. New York: Oxford University Press.
- World Bank (1999) *Agricultural Taxation in Pakistan*. Washington, D. C.: World Bank. (Report No. 18935-Pak.)

Comments

The paper provides a review of optimal tax theory and its basic principles. The underlying purpose of this review is to devise an appropriate tax policy for Pakistan's agriculture that is, more or less, consistent with the norms of optimal taxation. On the basis of incidence analysis of various taxes, the paper highlights the shortfalls of the current tax policy in terms of equity, efficiency, economic stability and their revenue generation capacity.

Although agriculture plays a key role in the country's economic growth and is a principal source of employment in the country, most of the government policies have been unfriendly toward this sector and there has been a declining trend of public investment in agriculture. Agriculture taxation in Pakistan has generated ample debate both on the magnitude and various types of the taxes. In this backdrop, the author of the paper has been successful in generating interest and provoking exiting discussion on the subject.

Predictating on the review of the principle of optimal tax theory and current agriculture policy in Pakistan, the author proposes a tax system for Pakistan's agriculture. While devising the proposed tax system, he has critically assessed the limitations faced to the current farm tax system. The author has come up with a 2-tier farm-tax system including a simple land tax and a tax on marketed surplus. In support of his stance, the author figures out the inefficiency of prevalent tax system and merits of the proposed two-pronged farm tax structure.

The experience dictates that the most appropriate system of taxation should base on income and progressively move in consonance with income growth. If income increases, the tax rates move upward and if, it declines, the tax rates go down.

While alluding to the tax on agriculture income, the author fathoms myriad problems in implementation, administrative inconveniences of tax collecting institutions, malpractices and so on. As a matter of fact, these considerations should not influence in proposing a plausible tax structure. By the recent tax reforms phased in by the government, the number of tax payers has proliferated to a great extent. Similarly, in case of agricultural taxation, if the various income groups in agriculture could be brought into the tax net and once a system is in place the overall tax net can expand.

According to the universal principle of taxation, agriculture should not be subjected to iniquitous imposition of several taxes. The author eloquently illustrated that in Pakistan agriculture is subjected to direct, indirect, and implicit taxes. Instead

of providing a relief to the farming community who is already hard pressed and overtaxed, the increase in number of taxes in recent years has posed additional threats to the agriculture sector.

The author also touches upon another dimension of production surpluses but there is no consideration to farmer's real cost of production and the real price of products he receives. In most of the cases, the grower is already at the margin or a net loser. As a matter of fact, in the recent decades, the farm sector has suffered a loss as compared to other sectors of the recent decades, the farm sector has suffered a loss as compared to other sectors of the economy and as a result the farm community has worsen off in real term. Some additional explanations with empirical evidence will enhance the understanding of the readers about the optimal limit of tax criteria. For instance the optimal tax limit—why 5-6 percent and why not 10 percent or less than 5 percent.

However, the study is unique in that it constitutes or pioneering effort in Pakistan's agricultural taxation structure which needs further filed work, exploring all its consequences and numerous other dimensions before it is fully recommended as a policy option. Also simultaneous efforts will be needed to mount a special campaign to create farm tax policy awareness among the farming community and to align the grassroots-level farm tax collecting machinery to the proposed policy.

Waqar Malik

Pakistan Agriculture Research Council,
Islamabad.