Agricultural Land Taxes in Developing Countries: Can Market Forces, High Technology and Political Wisdom Revive an Ancient Tool?*

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Abstract

Land taxes in developing countries have thus far failed to generate significant revenues or produce the positive economic effects indicated by economic theory. The failure stems from inadequate valuations and a lack of mechanisms for updating and indexing values, from rates too low to be onerous, and from a failure by advocates to build a constituency in favor of reforms.

Instead of proposing land tax reform as a source of more revenue, it should be presented as a more efficient way to obtain present revenues from the sector. Taxes on exports and price controls on domestic sales should be ended, in exchange for the new taxes on land. Support can also be found by allowing local governments to collect land taxes and decide how to use them. And infrastructure investment should be financed largely with betterment levies, separate from the land tax, on owners whose land becomes more valuable.

In this way, an effective land tax could indeed generate revenues, yet lighten the tax burden of the productive and pressure the unproductive to sell or rent their land to others. Clearly, as Bird writes, this whole subject is more an exercise in political economy than in pure economic analysis.

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Introduction

The agricultural sector in many developing countries performs below what many economists regard as its potential (World Bank, 1986). Two of the major constraints on performance may be summarized as a) land tenure arrangements and b) price controls or heavy taxes on marketed products, especially on exports. These issues have been analyzed in depth in the literature and at previous conferences of the International Agricultural Economics Association.(1) Most of us agree that export taxes and price repression (favoring domestic consumers at the expense of producers) ought to be reduced. Access to land, water, and other inputs is also deficient in many countries, and most economists urge structural reforms and/or improved markets for land and other inputs.

From Ricardo to the present, economists have often recommended an annual tax on agricultural land as one instrument for achieving improved performance of the sector, better income distribution, and increased revenue for national and local government. For example, see the Harvard Conference on Agricultural Taxation and Economic Development (1954) or Wald (1959).

Many economists also credited agricultural land taxation with Japan's emergence as an economic power on the world scene in the last century. Oshima (1965), for example, wrote that the Meiji Restoration government used heavy land taxes to develop and modernize the economy, "without interfering with the healthy growth of the sector." Similar comments were made by Ranis (1959) and Johnston (1951), among many others.

Subsequent work by Ishikawa (1967) and others, ably summed up by Bird (1974), showed that this interpretation was in error. Irrigation and drainage investments, new technology, and a labor force disciplined during six centuries

were at least as critical as tax pressure and tenure reform, in the growth of Japanese agriculture. And industrialization was financed by small savers, many of them landlords, while the Meiji governments wasted much of the land tax revenue on military expenditures (Bird, 1974, 113-122).

In the 1950's and 1960's, however, most economists listened to by international aid programs urged developing countries to use heavy land taxes to extract surplus resources from the rural sector in order to finance industrialization. Development agencies agreed, and in the 1960's U. N. and bilateral agencies sponsored conferences and underwrote several dozen projects aimed at helping developing countries create or modernize land taxes. See USAID (1987, Appendix B) for a partially annotated listing.

Despite this widespread interest, by 1970 land taxes in most developing countries were still insignificant. Bird (1974) analyzed this failure exhaustively, and little more appeared in the literature, although aid programs continued to sponsor cadastral surveys and other land inventory and titling programs. In 1986, however, the subject came up again; this time USAID asked a team to survey developing country experience with a focus on improving performance of the sector, and not only on extracting resources from it. The present paper grew in part out of that work (USAID, 1987).

Like Bird thirteen years before, the new survey found land taxes in most developing countries to be badly administered, yielding little revenue and failing to achieve intensified land use or increased output. Nor did it find empirical evidence of any success on other objectives, such as inducing idle landowners to sell land to small farmers without the trauma of a land reform.

Revenues

Land taxes do not yield much revenue. The successful Chilean tax reform of 1962-65 was motivated in part by disgust at the fact that the agricultural

sector, which generated 15% of GNP, contributed less than 1% of fiscal revenues (Nowak, 1970, 145). Yet twenty years later, the ratio may well be worse yet (USAID, 1987, 17-22). Even countries that have made a major effort to reform their land taxes tend to obtain at best between 0.5 and 2.0% of total government revenues from them. Reasons are not hard to find: tax values are far below the actual market value, and effective rates are seldom high enough to produce either significant revenues or the other effects predicted by economists (USAID, 1987).

In Colombia, with one of the best cadastral programs in Latin America, the tax rate for decades was frozen at 4 per mill, nowhere near a level that would be onerous to an owner that underutilized his land. Even when initial values are accurate and the tax rate is high enough to matter -- say, 2% a year on actual market value -- the base tends to be eroded very quickly, either by successful appeals against parcel values, or by inflation not offset by automatic indexing (USAID, 1987).

Today as before, from Argentina to Zimbabwe, proposals for reform arouse great opposition and little support, even though developing country economists largely agree on the theoretical advantages of land taxation. Why should this be so? How could genuine reforms be achieved? And do recent breakthroughs in the technology of land survey and registration make it any easier?

The Theoretical Attraction of Land Taxes

In economic theory, taxes on agricultural land could lead to increased productivity. A land tax based on potential, rather than actual output, would encourage land use through an income effect, whereas taxes on actual output, exports or income discourage investment and effort through a price effect. A critical assumption here, going back to Ricardo, is that land taxes fall on an economic rent and cannot be shifted. In practice, landowners try to treat

taxes as a cost of production, and they seek allies to oppose the tax by telling urban labor leaders and politicians that land taxes drive up the cost of food. (USAID, 1987).

Land taxes are also seen as a source of government revenue that is easier to administer than income taxes, and especially suited to financing local government. And where wealth and large landholdings are highly correlated, land taxes are often seen as a method of improving vertical equity in taxation. In countries with pressures for land reform, conservatives occasionally urge increased land taxes as a less-disruptive and more gradual way of seeking the same goal of wider access to land, through market processes. For instance, in Chile, a heavier land tax was urged in 1964, in order to make a land reform "unnecessary" (Pistono, 1964). In the end, Chile got both (Strasma, 1969).

Problems and Constraints in Land Taxation

Developing country experience to date shows clearly that the problems and constraints are both technical and political. To the armchair theoretician, land taxes should be easy to create and apply, because "The object of the tax cannot be hidden." In practice, one of the critical problems is precisely to identify, list, and value each parcel of land to be taxed. In parts of Africa, or in most socialist nations, individuals do not own land, but governments may pursue revenues and other policy goals through compulsory grain delivery, or by taxing trees, improvements, dwellings, cattle, and even wives.(3)

Identifying and valuing rural properties accurately is neither quick nor cheap. It takes trained staff, vehicles, and on average several years for the compilation and analysis of voluminous data on boundaries, soils, productivity, markets and values. This technical stage may take longer than the life expectancy of a Cabinet, which may explain why so few governments do undertake serious land tax reform.

In any event there is seldom a clear political constituency for creating a modern land tax. Those who expect to pay the tax will do all they can to block it. And those who might benefit from higher land taxes either don't know it or don't believe it. The main reason appears to be that land tax reform is almost never considered for the good reasons put forward by economists.

To most economists, a tax on agricultural land is a better way to raise a given amount of revenue, than is a tax on exports, marketed products, or net farm income. This is well understood in Argentina, where this approach has been debated for at least the last twelve years (Carballo, 1983).

In other countries, however, land tax reforms are rarely proposed as tradeoffs. Instead, they are proposed by governments desperate to find more revenue from any source whatever. No other tax will be cut, and no new spending will be financed--government is desperate to finance the expenditures to which it is already committed. There is no visible benefit to anyone, so of course there is no constituency for the tax.

We shall return to the institutional problem of building support for a proposed land tax reform. First, however, it may be useful to review recent technical improvements that have made accurate land registry and valuation much more feasible than formerly. We will also review developing country experience with short-cut methods that try to get accurate declarations cheaply and quickly, from landowners themselves.

Innovations in Land Registration and Valuation

One of the first land surveys in Western history was the inventory of his newly-seized domains done on orders of William the Conqueror, and summarized in the English Domesday Book.(6) It listed, by counties, all the estates belonging to the King and to each of his tenants-in-chief (nobles), describing for each estate its area, number of workers, improvements, and value, as of

1086. Highly useful to the King's officers, the survey was resented by the British because it formalized their subjection and was used for taxation. That survey was based mainly on clerical records of verbal declarations by nobles, tenants, and local officials, before one of eight Commissions that covered the country.

Creating land-based revenue systems in India and Japan also involved vast numbers of local officials, who created cadastral surveys with painstaking records, written by hand (Bird, 1974). State-sanctioned religions kept similar records for the collecting of tithes (Lansdell, 1906). This labor was fairly inexpensive, with little opportunity cost to the government. The tax itself financed the officials, increasing the rulers' control over their subjects, at the expense of the latter.

Since World War II, however, technology has brought great improvements in mapping and survey techniques. Maps based on aerial photography make it possible to compare owner declarations with reality, discovering many fields that owners "forgot" to declare. The Chilean reassessment of 1962-64, perhaps the most successful modern reform of a land tax in a developing country, paid for itself almost entirely from additional revenue gotten by finding previously undeclared lands (Strasma, 1969). At last, it is actually true that the object of a land tax cannot be hidden, at least if the skies are clear.

Even where there is permanent cloud cover, or where farms are under a canopy of tall trees, radar imaging and other mapping methods developed for military or space purposes, may be helpful. With photos in hand, staff on field trips can rapidly resolve doubts or conflicts among owner declarations. Measurements on scale maps, when supported by "rectified" ortho-photography to compensate for angles and slopes, are about as accurate as rod and chain methods for large parcels, and far better than owners' statements.

Surveying and mapping techniques have also been improved through various land registry projects in developing countries, such as Bangladesh, Thailand, several states in Brazil, and Honduras. Also, costs can be cut by requiring farmers to be present at their parcels on an announced day, to mark corners of their holdings, and to carry gear for the surveyors.

Where boundaries are disputed, the allegations are noted for subsequent resolution. In some projects, such as the one in St. Lucia, an adjudicator is included in the team and disputes are resolved in the act. (In my observation, this conflict resolution itself does more to increase land security, investment and output than the pressure of any land tax.)

More recently, handheld electronic devices measure distances and angles more precisely than surveyors' rods, and handheld calculators can determine areas even when the land is sloped and irregular in slope.(4) Points on the ground can be tied to points on maps quite precisely by measurements using navigational satellites. The latter requires expensive equipment, but prices are falling and portability is improving, just as with other electronic products.

The entire field of land surveying and registry is evolving rapidly, and the World Bank, USAID, and other agencies have supported recent work to improve procedures and lower costs further. Interested readers may peruse several recent estimates of costs. Depending on the actual scope of the project, these range from the $5.4 million spent on the Chilean reassessment to $250 million projected for a World Bank project in Brazil. Costs per hectare varied, from $4 to $75, depending on the size and scope of the project, terrain, and other variables (USAID, 1987, pp. 130-133).

Short-cut Methods for Valuing Agricultural Land

In practice, many land taxes rely largely on owner declarations of the sales or rental value of their property. Naturally, these tend to be on the low side. Uruguay attempted to enforce honesty by providing that the government could buy any property at the price declared by its owner. However, the threat was empty; the Legislature never gave the government any budget with which to do so (Gimeno, 1970).

At a 1961 Conference on Taxation and Development, in Santiago, Chile, Kaldor and Harberger advocated a "short-cut," requiring owners to sell their properties at their declared values, to anyone (Joint Tax Program, 1961). Some of the more obvious problems were resolved in a subsequent article (Strasma, 1965). Nonetheless, the "market-enforced self-assessment" method has not been adopted anywhere except as an informal, low-cost method of appeal.

When other prices are distorted, self-assessment may yield huge discrepancies in values. In El Salvador's 1980 land reform, owners were compensated at values they had declared for property taxes. Many had indeed undervalued, and so received little. However, a 1982 study (Checchi & Co.) reported that some, perhaps 10%, of the owners had over-declared land values. Some may have expected a land reform. However, most were heavily mortgaged, and it appeared that owners had overvalued their farms in order to obtain larger loans from banks, at a negative real rate of interest.

Valuation for land tax purposes still requires some effort by government, to control abuse and to apply a uniform method fairly to all property.

Creating a Constituency for Land Taxes

So long as land tax reform is proposed only as a method of raising more revenue, without cutting other taxes or increasing any benefits, it will fail. No one wants it except a beleaguered Finance Minister desperately seeking to

meet a revenue need. So advocates must either find supporters, or return to the theoretical case for land taxes, and try to convince politicians that a land tax has merit of its own, but not as a source of more revenue.

A land tax can be "sold" if those who will pay it believe they will benefit. The clearest case in developing country experience is the relative success of the betterment levy in Colombia. Here, landowners benefitting from public works are required to pay the cost, prorrated by the expected increase in value of their land. If owners refuse, or fight too hard against the share assigned them, government can always simply cancel the project. The techniques are well-known (Rhoads and Bird, 1969).

Land taxes could also be politically acceptable, if central governments were willing to decentralize. If local communities are allowed to collect property taxes and to decide how to spend them, citizens are far more likely to acquiesce in their creation or in the updating of tax values. Latin American experience is less positive here; many governments are strongly centralized and leaders have no intention of allowing local governments to set their own priorities. Bolivia (1967) and Panama (1979) are but two cases in which a proposed land tax reform was acceptable to many of those who were to pay it -- until the central government refused to allow this decentralization of decision-making (Strang, 1970, and USAID, 1987).

On the other hand, the successful Chilean land tax reform of 1962-64 earmarked 75% of all property tax revenue to the municipality in which the property was located, with considerable freedom to decide how to spend it. Although the reassessment raised the average farm tax bill by three times, Pres. Eduardo Frei linked the tax to popular and visible local programs, such as building more schools.

The "Trade-Off"

The other case in which land tax reform might succeed would be as a "trade-off" for another tax. Economists in many nations are now urging a reduction of export and marketing taxes, to encourage agricultural investment and production. Yet developing nations, under fiscal stress as well as desperate to increase exports, hesitate to give up revenues. The solution is obvious: offer a "package," in which landowners accept a significant land tax -- which is neutral as between the productive and the unproductive -- in a revenue-neutral exchange for the end of heavy taxes on exports.

Valuation Methods and Appeals: A Further Need for Consensus

Mass valuation methods no longer attempt to determine "actual" market values, in part because the cost per unit valued is enormous and the cost of dealing with traditional appeals of such valuations is greater still. The only fair and feasible valuation method now available requires the setting of unit values for typical soil types, microclimates, water availability, slope, and access and distance to markets (United Nations Manual, 1968).

Improvements, if taxed, are also valued by the area and type of construction, and a rough estimate of their condition. These relative unit values are best determined with the participation of local experts, who thus have an opportunity to participate in the valuation process at one remove from the tax that will affect them personally. While the stated reason is to ensure "horizontal equity," among taxpayers, an added benefit will usually be a reduction in the hostility toward the tax reform itself.

Research Needs

Land taxes present a major opportunity for research by IAAE members. Political institutions, land tenure, and markets for land and farm inputs and products vary enormously among nations. Yet in each of them, the land tax

today falls far short of making the positive contributions predicted by economic theory. Landowners themselves, in opposing the tax, often assert that the tax is a cost of production, rather than a lump-sum levy they cannot make more bearable by making greater efforts to produce (USAID, 1987). Is this true, and is the generally-accepted theory thus erroneous? Does the Newberry and Stern approach (1987), particularly respecting possible differences between taxing land used for traded crops and land producing for domestic markets, offer a better theoretical underpinning?

The 1987 USAID study was based on a survey of the literature, experience of the consultants, and a review of reports. It does not deal adequately with tax problems in socialist nations, where USAID has no programs, but where the governments still need major revenue from agriculture. For the 1991 meetings, might we hope for a session with papers by IAAE members from many countries, following a common scheme worked out in Buenos Aires? This could shed definitive light on the constraints and on the methods that might either make this instrument a reality, or bury forever any further thought that it might ever be useful!

Notes

1) See, for example, the papers by Olson, Hayami, de Veer, and Binswanger and Pingali at the 1985 Conference. (XIX International Conference, 1986).
2) See, for example, the Proceedings of a Harvard Conference on Agricultural Taxation and Economic Development (1954). The consensus is reflected nicely in Wald (1959).
3) Many African nations collect personal taxes based on these indicators of ability to pay taxes; the price and income effects vary, but generally fall somewhere between those of taxes on land and those of taxes on products. (USAID, 1987.)
4) World Bank technicians have prepared a program to calculate areas, requiring only data obtainable with a compass, a measuring tape and a clinometer; this has been improved by Douglas Stienbarger, at the Land Tenure Center (University of Wisconsin) to allow for slope in hilly land, a significant problem when dealing with tiny plots in Haiti.
5) A summary appears in USAID (1987, 130-133).
6) The name comes from the fact that there was no possible appeal from the facts as recorded in this "Description of England," which has been called one of the most amazing administrative feats of the Middle Ages (Encyclopedia Britannica, 1974, Micropaedia, vol. III, 612).

Notes

1) See, for example, the World Bank's World Development Report, 1986.

2) Ibid., plus many others, such as Theodore W. Schultz, Transforming Traditional Agriculture (New Haven: Yale University Press, 1964) or John Mellor, The Economics of Agricultural Development. (Ithaca, N.Y.: Cornell University Press, 1966.)

3) See, for example, the Proceedings of the Harvard University International Tax Program's 1954 Conference on Agricultural Taxation and Economic Development. The consensus of the profession was reflected nicely in Haskell P. Wald, Taxation of Agricultural Land in Underdeveloped Economies, A Survey and Guide to Policy. (Cambridge, Mass.: Harvard University Press, 1959.)

4) Harry T. Oshima, "Meiji Fiscal Policy and Agricultural Progress," in William W. Lockwood, ed., The State and Economic Enterprise in Japan (Princeton: Princeton University Press, 1965, p. 353, cited in Bird (see next note), together with references to journal articles by Gustav Ranis, Bruce Johnston, and others. However, Bird makes a strong case that irrigation and drainage investments, new technology, and a labor force disciplined during six centuries were at least as critical as tax pressure and tenure reform, in the growth of Japanese agriculture. And industrialization was financed by small savers, many of them landlords, while the Meiji governments wasted much of the land tax revenue on military expenditures.

5) Richard M. Bird, Taxing Agricultural Land in Developing Countries. (Cambridge, Mass.: Harvard University Press, 1974), pp. 113-122.)

6) (Author's names and title of the Report to USAID omitted to prevent identification of the present writer, during the review process.)

7) Norman D. Nowak, Tax Administration in Theory and Practice, With Special Reference to Chile (New York: Praeger Publishers, 1970), p. 145.

8) USAID, op.cit., pp. 17-18.

9) Ibid.

10) In Chile, for instance, a heavier land tax was urged in 1964, in order to make a land reform "unnecessary." Ing. Jose Luis Pistono Alvarez, "Proyecto de Ley: Impuesto Unico a los Bienes Raices Agricolas," Santiago: Ministerio de Agricultura, Consejo Superior de Fomento Agropecuario, 1964.

11) These concepts are widely understood in Argentina, and have informed a wide public debate over agricultural taxation for over a decade. See, for instance, E. Carballo, "The taxation of agriculture and livestock production," in the Revista de Direito Agrario, 1983, vol. 10, no. 9, pp. 43-50.

12) See, for instance, Turner and Mills, Land and Property: The English Land Tax, 1692-1832. (New York: St. Martin's Press, 1986.)

13) See, for instance, Henry Lansdell, The Sacred Tenth (London: The Society for the Promoting of Christian Knowledge, 1906.)

14) John Strasma, "Property Taxation in Chile," in Arthur Becker, editor, Land and Building Taxes: Their Effect on Economic Development. (Madison, Wisc.: University of Wisconsin Press, 1969.)

15) World Bank technicians have prepared a program to calculate areas, requiring only data obtainable with a compass, a measuring tape and a clinometer; this will be extremely useful in dealing with tiny plots in Haiti, in a Bank-assisted project.

16) Various cost studies, from the $5.4 million spent in the Chilean reassessment to $250 million projected for a World Bank project in Brazil, are summarized in the USAID report cited (note 6), pp. 130-133.

17) Jose Gimeno Sanz, La Tributacion Agropecuaria (Santiago, Chile: Oficina de Planificacion Agricola, Min. de Agricultura, 1970.)

18) John Strasma, "Market-enforced Self-Assessment for Real Estate Taxes," Bulletin for International Fiscal Documentation, 19, Sept./Oct. 1965.

19) Checchi & Co., Agrarian Reform in El Salvador, 1982. (Washington, D.C.: Report to USAID.)

20) See William Rhoads and Richard Bird, "The Valorization Tax in Colombia: An Example for Other Developing Countries," in Arthur Becker, Land and Building Taxes (Madison, Wisc. University of Wisconsin Press, 1969.)

21) For the Bolivian case, see Arthur Strang, "A Regional Relative Productivity Land Tax Proposed by the Government of Bolivia to Replace All Domestic Taxes on Agriculture." Thesis, Univ. of Wisconsin, 1970.

22) See note 14.

23) See note 11.

24) See USAID Report (note 6), and Newberry and Stern, The Theory of Taxation for Developing Countries, a World Bank Research Publication. (Oxford University Press, 1987.) Also, on valuation techniques as well as the theoretical concepts and approaches, see the United Nations Manual on Land Taxation, 1968.

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