

## "Land Reform through Tax Reform"

Mason Gaffney

Delivered at a public conference, A Land Tax for the New South Africa?, presented by The Centre for Human Rights Studies, The University of Pretoria, 20 March 1992.

Final draft, 27 April 1992, for publication in Riel Franzsen (ed.), Conference Proceedings.

### INTRODUCTION

"May you live in interesting times" need not be, as the saying has it, a curse. Many South Africans are rising to these interesting times with hope and zest, tempered with prudence imbued by the several conspicuous failures of applied Marxism. Radicals and conservatives are coming together to negotiate a better social compact. In that spirit, I write from the conservative viewpoint, without representing myself as conservative: this is, admittedly, role-playing. The idea is to "walk a few miles in the other man's mocassins," the better to understand and accommodate his viewpoint. It is also to acknowledge the talent, training, solidarity, commitment, and leadership among conservatives that makes them a continuing force. They reckon ill who leave them out.

That follows the model of America's second Dutch President, Theodore Roosevelt. It was his genius to implement populist policies under elitist leadership. This was the essence of "The Progressive Movement," which achieved probably the healthiest social progress in U.S. history<sup>1</sup>. A substantial part of the progress consisted in rapid growth of property taxes, which were higher in the Progressive Era than before or since. Besides being higher, they were more focused on land values, and less on true capital, than at other periods: it was a demand of the times (Brownlee, 1985).

"Conservatives," viewed sympathetically, are those who recognize weaknesses and irrationalities in liberal ideology and leadership. They doubt liberal leaders can or will deliver on promised improvements in human welfare, pointing to Lenin, Stalin, Mao, Hoxha, Castro, Nyerere, Minh, et al. It is up to specific liberal leaders to prove them wrong -- if they are wrong. The thesis here is that tax reform is the kind of land reform most compatible with "good" -- i.e. public-minded, socially responsible -- conservative principles.

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<sup>1</sup>The other great Progressive President, Wilson, was not Dutch, but certainly was a Calvinist.

The "tax reform" in question means first raising the property tax rate on the land-value base, whether to replace other taxes or to increase public services. Second, it could mean adapting income-tax schedules to take more land income, and less earned income.<sup>2</sup> Third, it could mean a tax on gains from land sales, totally lacking from the present income tax.<sup>3</sup> Fourth, it could include a package of resource-based taxes, like severance or net proceeds taxes on minerals, and on water withdrawals.<sup>4</sup> Like King Arthur in Camelot, I submit the case in the form of succeeding "Propositions."

A. Tax reform uses existing institutions and professions

1. Tax reform, as just defined, leaves landowners in possession and in place, retaining title. No one is evicted; no land title need be expropriated, condemned, or nationalized.<sup>5</sup>

2. Tax reform uses existing institutions and trained personnel. It is a matter of raising property tax rates on one base (land value), and lowering (perhaps to zero) the rate on others (buildings and movable property). It could mean dismantling some taxing agencies now in place, if the revenue from land makes it possible. Several South African municipalities already practise the art of valuing land for tax assessment, and enjoy a considerable world reputation. The former Valuer of Johannesburg, John McCulloch, has lectured in the U.S.A. on his practise, and its impressive results.

Practise in the R.S.A. is limited to certain cities, it is true. Extending it to farmlands will require some innovation. In America rural "counties," and in Canada "regional districts," depend mainly on property taxation for rural services. Rural tax "assessors" (valuers) need and use soil maps. The R.S.A. has its

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<sup>2</sup>This happened at the inception of the personal income tax in the United States (Brownlee, ~~op. cit.~~)

<sup>3</sup>This is a major revenue raiser in Taiwan, and an integral part of its successful land reform programme (Riew, 1990; King, 1989).

<sup>4</sup>For those who like consumer taxes, it could also be presented as a tax on "land-consumption," a view not developed here.

<sup>5</sup>This does not preclude restitution, where a strong case can be made on other grounds. Tax reform does, however, have a rationale of its own quite apart from specific cases of restitution, and may be considered independently. It would also lower the public cost of restitution, as will be shown.

cadre of soil scientists, and a high level of concern over soil conservation. It only needs to integrate existing skills of valuers and soilsmen.<sup>6</sup> To be sure, new times and attitudes often call for new people, but they will need and can use many technical skills and the experience of the old.

3. No special "land reform" agency is needed: no new powers, no new bureaucracy, no arbitrary rules for takings. No land claims procedure or special court are required; no delay-ridden, trench-by-trench legal contests (de Klerk, 1991, 17-23).

B. Tax reform is gradualistic, not cataclysmic

1. Sale of land by present owners will be voluntary with individuals, piece-by-piece, based purely on market criteria. Advocates regard land taxation not as amending the market, but letting it function more perfectly. "... it would not act as a disincentive to production such as existing income taxation does; ..." (de Klerk 15). It is standard economic doctrine that a land tax is "neutral," in its "marginal" effects. In addition, it has strong wealth and liquidity effects, and they are pro-incentive. Its cash drain on landowners attracts their attention, in a compelling way, to use land productively if they will, and sell any surplus.

Some land reformers, indeed, dismiss land taxation as too mild a measure, because it works with market forces. The ANC Land Manifesto, July, 1991, expresses distrust of market-oriented policies. Working with the market does not mean, however, that tax reform underwrites all the market forces that now dominate land markets. It changes credit relations profoundly. Lending institutions are traditionally unwilling to finance black land buyers (Daniels, 1987, 3). Even in Soweto, few of the tiny stands (lots) are owned by the occupants (South Africa 1981, 248, cit. Daniels, 1987, 5). Little wonder ANC people distrust "the market": that is the land market as they know it now.

However, tax reform completely changes that. Heavy land taxation has the same effect as extending long-term credit to all potential buyers on identical terms (Gaffney, 1973). The simple mathematics of the point is in Appendix A.<sup>7</sup> It has the same effect as revolutionizing land credit markets. No land credit program in the world has ever, or could ever, remotely approach

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<sup>6</sup>Riel Franzsen in this volume calls for the use of rural cadastral mapping.

<sup>7</sup>Instead of paying debt service on a personal loan, whose terms vary with persons, everyone pays an annual tax that is the same for all.

so egalitarian and efficient a result. Tax reform is powerful land reform. Like tenancy, it makes "farming skills, rather than capital, the primary criterion for occupying land" (de Klerk (ed.), 264).

Tax reform even puts new entrants on the same footing as the present owners. For all alike, the price of holding land becomes the annual tax. The purchase price, i.e. the advantage sellers hold over new entrants, falls. Whoever grasps the full import of that will not see land taxation as "mild": love it or hate it, it is potent.

2. Owners with surplus lands will select for sale those lands that are marginal to their own needs, and most vital to the needs of others as evidenced by what others bid. Most owners will probably retain lands near the farmstead, the nucleus of their operations. Specific choices, however, are theirs to make for their own good reasons. Those good reasons include sentimental attachments to specific places, real economic values which the market weighs in the same balance with cash.

3. There being few legal black tenants in place, it may take time for many black buyers to familiarize themselves with soils and local peculiarities.<sup>8</sup> Land reform must involve substantial migration and re-orientation. An interventionist, centrally controlled land reform program might foolishly transplant people in "parachute" leaps, inviting failure. Tax reform, working through the market, lets buyers move in individually,<sup>9</sup> in their own time, based on personal wants and abilities, and private negotiations between buyer and seller.

#### C. Tax reform retains and strengthens the means and institutions of production and exchange

1. Tax reform resolves the supposed conflicts or trade-offs between growth and redistribution, between efficiency and justice. Some say that a few years' economic growth will do more for the poor than total redistribution of wealth. That is half true, but growth is no substitute for redistribution of land, because land does not grow. The benefits of growth, absent tax

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<sup>8</sup>There may be many "labour tenants" in place. As to that, sources differ. (Claassens, 1991b, 57-58, cit. de Klerk, 1991, 18). We do not know if they are ready to become owners. With tax reform, we do not need to know: when they are ready, the market is ready.

<sup>9</sup>"Individuals" may include corporate groups, whether familial, business, tribal, or cooperative.

reform, are likely to be distributed in proportion to prior landholdings. Most hold none: twice zero is still zero.

The good news, however, is that land redistribution via tax reform actually promotes growth of jobs, capital, and output. It replaces suppressive, distortionary taxes with pro-incentive, non-distorting taxes. Growth and efficiency combined with distributive justice: it is a happy combination, too long denied us by sour counsel that calls them incompatible.

2. Tax reform recognizes the need to motivate saving and investing by securing property rights in man-made capital. It secures those rights by downtaxing both capital and the income and sales it generates. It is possible to do so, while raising property taxes and revenues, simply by regarding the difference between land and capital. Man forms capital by producing, saving and investing. God created land, which is appropriated by sovereign states and granted to individuals by politics. What the state grants the state can tax without invading private capital proper, or driving it to flight, or discouraging its import or formation, or encouraging its wasteful consumption.

Untaxing capital (as proposed here) prevents capital flight, and encourages capital import by raising the after-tax rate of return to investing. It will, to be sure, discourage foreign land purchases, but that is a net plus, considering the political influence that accompanies landownership. At the same time, taxing land induces more domestic capital formation by lowering land prices. Land value substitutes for the value of real capital in the portfolios of individuals, weakening their resolve to add other assets by saving. Lowering land prices reverses the effect.

Besides raising returns to private capital, the proposal creates a flow of funds for financing infrastructure. The capital to finance internal improvements lies sleeping in the lands to be served. Land taxation is a reveille to awaken and a muster to enlist it.

3. Tax reform retains and sharpens market incentives to allocate scarce means to their best uses. Conventional economics has no higher praise.

4. Tax reform will strengthen the market system by abating taxes on trade. VAT and income taxes, which we propose abating, are both based on exchange, and are avoided by substituting non-market activity, and unrecorded activity (Loots 1991, p.45).

5. The financial system will adapt by basing loans less on land collateral, and more on capital, personal reputation, and

appraisal of specific projects.<sup>10</sup> On balance this will help stabilize the financial system, whose worst fiascos, from the South Sea Bubble of 1720, through the world banking collapse of 1932, to the American Savings-and-Loan debacle of 1987-91, and the 1992 Japanese collapse, have resulted from loans on speculative land.

6. Tax reform is a source of public funds; conventional land reform is a sink. Conventional reforms spend taxpayer money to finance land transfers. This sharply limits their scope, and also calls for higher counterproductive taxes (like VAT, introduced in 1991, now at 10%, and PAYE or payroll taxes) levied on job-making, demand-generating industry and commerce in cities. The best medicine for farming is higher demand from thriving indigenous cities, which tax reform promotes.

7. Tax reform will slacken the demand for restitution of specific lands to specific people, purely as a redistributive matter, because landownership is now to be coupled with tax obligations. Returning to old homes for sentimental reasons is, in the true sense, economical. It shows up in market demands, and is facilitated by perfecting the market. Restitution merely to secure special privilege, on the other hand, will be discouraged.

Most black families are too dispersed and impoverished to trace their history and claim restitution (Claassens, 1991a, 10, cit. de Klerk, 1991, 22), so restitution is tokenism that would only create a small new black privileged class. Restitution has the additional cost of clouding tenure and aborting investment to improve vast lands, for years or decades, while history is reviewed and claims sorted. Tax reform bypasses that highly counterproductive stage.

8. Tax reform imposes neither upper nor lower limits on scale, but lets the market decide. In the event there are strong scale economies, tax reform lets society reap the gains of scale without suffering inequality, by taxing the rent surplus thus created. If public funds are then spent fairly, tax reform achieves equal distribution of net benefits without necessarily achieving equal division of land tenure. This is the beauty and genius of tax reform. It uses the monetary mechanism to achieve equality of outcomes, under conditions where equal division of land in kind is inefficient.

Many land reformers are sceptics of mere pecuniary-fiscal offset: it is too "theoretical," intangible, arguable, and easily reversible. Equality-in-kind is more solid and understandable.

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<sup>10</sup>Shem Migot-Adholla, in this volume, cites loans in Kenya secured by crops rather than land titles.

Fortunately for our case, tax reform in history usually has had the effect of splitting up large landholdings into smaller operating tenures (Rhodes, 1945; Gaffney, 1969; Henley, 1969). The American State of Wisconsin, with the highest farm property tax rate in its nation, and the most equal distribution of farm landholding, is a case in point (Gaffney, 1992b).

Many oversized landholdings are held as stores of value, or speculations, or "inflation hedges," rather than for operating efficiency, and are sold off when land taxes rise. Nick Vink points out in this volume that the unit price of small farms is higher than large, i.e. there is a market pressure toward subdivision. That would seem to attest to the superior operating efficiency of smaller farm units. Van Rooyen et al. provide evidence that smallholder operators are more capital-efficient than large (1987, cit. van Zyl and van Rooyen, 1991, 189). Claassens (1991, 43) observes "vast tracts of apparently empty 'white' land ..." At the other extreme, the old South Africa, almost alone among nations, has its agricultural anti-subdivision laws, ostensibly for soil conservation purposes. Should these be kept in place, rightly or wrongly, taxation may still be used to equalize the net social gains from landownership.

9. Truly marginal lands are left available for subsistence farming. Marginal lands, by definition, have no value, so no tax will be assessed against them. Users need not, therefore, raise any cash to pay tax. Vast areas will thus be left open for subsistence farming, for those who choose it.

On erosive sloping thin soils, direct controls may be called for to preclude exploitive farming. If and where so, adjustments in tax valuation may and should be made.

D. Tax reform strengthens land tenure and relieves pressures to violate it.

1. Sales of surplus lands to new entrepreneurs, in farm and city, will create a new social climate, and large numbers of motivated people with land tenure, to give mutual aid resisting trespass.

2. Taxation gives an obvious moral basis for ownership. "This land is mine, I pay taxes on it!" is a claim often heard and heeded in jurisdictions that levy property taxes.

3. Tax reform presses landowners to hire more workers, to put their land to full use. Abatement of VAT and PAYE taxes will open up many jobs now aborted by the tax "wedge" between customer

and seller, between employer and worker (Dunkley 1991, 8-13).<sup>11</sup> Opening legitimate job, management, and housing opportunities to landless blacks will relieve pressures to trespass and squat. So long as there are landless people, trespass and squatting are inevitable, lowering respect for law and private tenure. When job demand runs high, the state can with a clean conscience protect private tenures against illegal invasions. The state, as land tax receiver, has the highest interest in protecting and cultivating its source of revenue.

4. Dr. M.P. Lamont of the S.A. Reserve Bank suggests the national government should share in the land tax base.<sup>12</sup> If this be done, let this share be used for a social dividend, or the equivalent (like school support based on attendance). In this manner the central government creates a pecuniary motive for local governments to adjust local institutions (like zoning) to attract and admit new people as local landowners. This, in turn, lowers the pressure to trespass. Coupling this with the proposed relief of labor from work-based income taxation, tax reform will make economic life possible on lands now rendered submarginal by taxation, as expressed by Dunkley (1991, 8-13).

E. The proposed reform meets many tests of perceived fairness

Loots has written that efficiency demands perceived fairness (1991, pp. 50-51). So has Gaffney (1992), who, not surprisingly, supports Loots. No reform can meet all tests of perceived fairness, because some of these are subjective, or culturally determined. However, tax reform meets many tests.

1. The loss caused by higher land taxes will be offset, for most landowners, by the gain from lower taxes of other kinds. Land income is what remains after all expenses have been met. These expenses include taxes. Ergo, lowering other taxes tends to raise land income and price, just as raising land taxes themselves tends to lower them.

The net social gain in shifting to land taxes is that other taxes impose heavy "excess burdens," i.e. they cost the taxpayer more than they gain the treasury. This theme has been elaborated elsewhere (Gaffney, 1970).

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<sup>11</sup>Dunkley stresses how abatement of taxes on work, exchange and saving will allow use of lands now made submarginal by taxation. Equally or more important, abatement opens up the "intensive margin" of land use: i.e., intensification of use of better lands.

<sup>12</sup>Colin Clark (1965) has published a simple, comprehensive scheme of this sort which I commend.



In the short run this offsetting gain might seem to accrue only to those owners who are using and have improved their land intensively. Actually, it applies to all, because land price is derived from anticipated land income. Any owner of surplus land can take advantage of new opportunities created by untaxing or downtaxing inputs and sales and income. He does this either himself, or by sale.

The thesis that all taxes are shifted to landowners follows logically from two premises. One, after-tax interest rates are determined by world markets, so the local supply of capital is perfectly elastic at a fixed, after-tax rate. Two, labor has been reduced to so low a level that it cannot bear any more tax burden. Anyone may test the premises by observation.

2. Tax reform spreads the burden of redistribution over all rent-takers, where conventional land reforms focus on farm owners. Comprehensive rent-taxation would tap rents from urban land. Urban land values far outweigh farm land values, not just per ha. but in the aggregate; not just in the aggregate, but per capita; not just per capita, but relative to building values. In addition, retail and industrial lands are highly concentrated in a few hands, even more than farmland.

Besides urban values, there are rents from mines. These have been falling out of the R.A.S. tax system, as the P.I.T. has grown (Loots, 1991, 43).<sup>13</sup> There are several other sources of resource rent to tap, as well: rights of way, radio spectrum, air routes and landing slots, fishing rights, waterfronts and accesses, forests, waters, game preserves, discharging effluents in common airs and waters, etc.

3. Subjecting the natural earth to European-style land tenure may be necessary to promote the most efficient use. This has been seized as the occasion to extinguish traditional common rights as well, but it need not be so. We need merely replace the right of common access with a state duty to collect land revenues, and use the proceeds for common purposes.

Land taxation compensates the dispossessed and landless in at least three ways:

a. The tax supports public services and lets other taxes be abated.

b. To raise cash, the owner must produce more goods and services (including housing). By analogy, Cecil Rhodes imposed a flat poll tax on natives, to induce them to work for

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<sup>13</sup>Falling gold prices are also a factor in this change.

cash. A property tax based on land value has a bit of the same effect on landowners.

c. To produce the goods the owner hires more labor, or sells parcels to laborers wanting to go into business on their own. The newly employed labor earns incomes to buy the newly produced goods and services. Here is supply-side economics coupled with demand-side economics.

4. Tax reform does comprehensive justice among whites, among blacks, coloreds, Indians, and Malays, not just between groups. Conventional land reform is likely to select a few token blacks (those more organized and articulate) for restitution or subsidy, leaving the mass as wretched as before (Claassens 1991a, 10, cit. de Klerk 1991, 22). Tax reform truly levels the playing field, tapping unearned rents and distributing them equally among all citizens. These rents are now taken by a minority of South Africans, plus jet-setters of great wealth.

Today's economic playing field may be visualized as a hill consisting of resource rents. Those on top are higher because of what they stand on, not what they are. Measured differences of ability among persons are dwarfed by measured differences in their ownership of resources. Tapping those rents and dividing them equally will truly "level the playing field."

5. The proposed reform helps everyone perceive the fairness of rewarding saving. Now, unearned wealth stigmatizes earned wealth, and free markets too, by free-riding on their good names. The rationale for land taxation, widely publicized, helps everyone distinguish assets formed by functional human effort and sacrifice from rent-yielding natural resources taken by force and politics.

F. Landowners are not left helpless, but retain a power base

1. Nothing stops landowners from organizing, and they will certainly continue to do so. If it is true that some 4500 owners control half the farmland, their voting power is small, and they depend on their discretionary wealth, which will be reduced. However, their political power base is automatically augmented as reforms succeed and their numbers rise. Thus, land redistribution, however achieved, may be self-limiting. To the liberal this is a problem, admittedly; to the conservative landowner (whose viewpoint we are simulating) it is a comfort.

2. Selling land to blacks introduces them to the capitalistic market economy, drawing them into the system by easy, natural, and generally advantageous experiences. It will demonstrate to ANC members that the market system can work to their advantage and fulfill their goals.

3. Tax reform, under professional leadership, will demonstrate that those presently in power have the will and the skill to make places for everyone in the ongoing system. Thus it may well preempt any tendency to turn government over to unqualified and opinionated doctrinaires. Conservatives may well see their enlightened self-interest in forestalling the kind of expropriative program, with no right of appeal, just initiated in Zimbabwe.

G. Tax reform will strengthen the economy of the R.S.A., giving it new stature in the world

Viewed from most centers of the world economy, the R.S.A. is a small, distant market, with fewer people than California and a costly, tiresome jet to London. Add to that, most of its people are not even in the market. How much stronger a market might it be if all its people were mobilized consumers; how much more attractive to buyers if all its people were producing and selling goods. The possibilities are limited only by the imagination.

Viewed by the world media, the R.S.A. has been a racist tyranny. Yet most leaders of this nation are benign, religious, educated, resourceful, industrious, and eager to set things right. This very meeting is proof of that. Think how you can inspire the world by forging "The New South Africa" as a society wherein all are productive, and united in mutual satisfaction with the terms of their association.

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BIBLIOGRAPHY

Brownlee, W. Elliot, 1985. "Wilson and Financing the Modern State: The Revenue Act of 1916." Proceedings of the American Philosophical Society 129 (2), pp. 173-210.

Claassens, Aninka, 1991a. "Who Owns South Africa?" Occasional Paper No. 11, Centre for Applied Legal Studies, University of the Witwatersrand.

Claassens, Aninka, 1991b. "For Whites Only -- Land Ownership in South Africa." In M.J. de Klerk (ed.), A Harvest of Discontent: the Land Question in South Africa. Cape Town: Institute for a Democratic Alternative for South Africa, pp. 43-62.

Clark, Colin, 1965. "Land Taxation." In Peter Hall (ed.), Land Values. London: Sweet and Maxwell.

- Daniels, Rudolph, 1987. "The Nature of the Agrarian Land Question in the Republic of South Africa." American Journal of Economics and Sociology 46(1):1-16.
- de Klerk, Michael (ed.), 1991. A Harvest of Discontent: the Land Question in South Africa. Cape Town: Institute for a Democratic Alternative for South Africa.
- de Klerk, Michael, 1991. "Addressing Land Hunger: Choices for Supplying the Land." Unpublished paper, School of Economics, University of Cape Town, pp. 1-28.
- Dunkley, Godfrey, 1990. That All May Live. Roosevelt Park: A. Whyte.
- Dunkley, Godfrey, 1991. Land Tenure: a Time Bomb Ticking in South Africa. Muizenberg: Printed and bound by Tait Printers (Pty) Ltd.
- Gaffney, Mason, 1969. "Economic Aspects of Water Resource Policy." AJES 28(2):131-44, April.
- Gaffney, Mason, 1970. "Adequacy of Land as a Tax Base." In Daniel Holland (ed.), The Assessment of Land Value. Madison: Univ. of Wisconsin Press, 1970, pp. 157-212.
- Gaffney, Mason, 1973. "Tax Reform to Release Land." In Marion Clawson (ed.), Modernizing Urban Land Policy. Baltimore: Johns Hopkins Press, 1973, pp. 115-52.
- Gaffney, Mason, 1992b. "Large Farms: Land without Buildings." Paper presented at LOTS, (Land Ownership and Taxation Seminar), Washington, D.C., Oct. 7-8, 1991, sponsored by The Economic Research Service (U.S.D.A.). Papers in press by Gene Wunderlich (ed.).
- Gaffney, Mason, 1992a. "Equity Premises and the Case for Taxing Rent." Invited paper, Annual Meetings, American Economic Association, New Orleans, January 1992. In press.
- Henley, Albert, 1969. "Land Value Taxation by California Irrigation Districts." In Arthur Becker (ed.), Land and Building Taxes. Madison: UW Press, pp. 137-45.
- King, Wei-Shin, 1988. "Land Value Taxation in Taiwan: Present Status." Paper presented at International Seminar on Real Property and Land as Tax Base for Development. Taoyuan: The Land Reform Training Institute. Proceedings in press, Isaac Ofori (ed.)
- Loots, Lieb, 1990. "A Tax Strategy for Redistribution." In Peter Moll, Nicoli Nattrass, and Lieb Loots (eds.), Redistribution: How can it work in South Africa? Pp. 39-57.

Nattrass, Jill H., 1981. The South African Economy: its Growth and Change. Cape Town: Oxford University Press.

Rhodes, Benjamin F., 1945. "The Thirsty Land." Ph.D. dissertation, The University of California, Berkeley.

Riew, John, 1990. "Taxation and Development: the Taiwan model." Department of Economics, The Pennsylvania State University.

Sachs, Albie, 1990. Protecting Human Rights in a New South Africa. Cape Town: Oxford University Press.

South Africa 1981: Official Yearbook of the R.S.A.

van Rooyen, Johan, Nick Vink and N.T. Christodoulou, 1987, "Improving Access to the Agricultural Market in Southern Africa," Development Southern Africa 4(2).

van Zyl, Johan, and Johan van Rooyen, 1991. "Agricultural Production in South Africa." In de Klerk, Michael (ed.), 1991. A Harvest of Discontent: the Land Question in South Africa. Cape Town: Institute for a Democratic Alternative for South Africa, pp. 179-38.

## APPENDICES

T = tax levy  
 t = property tax rate  
 V = market value of land, and base of property tax  
 i = interest rate, nominal  
 R = gross revenue from land  
 e = expenses (current)  
 a = R-e = "cash flow" from land  
 V/a = the price/earnings ratio of land

I. How property tax rate is capitalized into lower land price

$$V = \frac{a-tV}{i}$$

$$V(i+t) = a$$

$$V = \frac{a}{i+t} \quad (1)$$

At  $t=0$ , parties with access to cheap money (low  $i$ -values) have a differential advantage in bidding for land. The price/earnings ratio is  $V/a$ .  $V/a=1/i$ . As  $t$  rises, however,  $t$  swamps out  $i$ .  $V/a \rightarrow 1/t$ , the same for all parties.

Thus, a highly discriminatory market (the credit market) is by-passed, and replaced by a non-discriminatory market.

II. How tax cost of holding land displaces interest cost

$$V = \frac{a}{i+t} \quad (1)$$

$$T = tV = a \frac{t}{i+t} \quad (2)$$

$$iV = a \frac{i}{i+t} \quad (3)$$

In (2), as  $t$  rises,  $T \rightarrow a$ . At the same time, in (3),  $iV \rightarrow 0$ , and becomes a minor element in holding costs. Thus, a high  $t$  swamps out the effects of credit discrimination.