

Use of Land Rent to Finance MXC
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Article citation:
Gaffney, Mason. “Use of Land Rent to Finance MXC.” 11 July 1969. Report.

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USE OF LAND RENT TO FINANCE MXC

By

MASON GAFFNEY

A Report Submitted to Walter Vivrett,
Director, MXC ..... July 11, 1969

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Mason Gaffney

I. Introduction

MXC is dedicated to try new techniques, both technological and institutional, to make modern urban life viable. The cultural lag of institutional advance behind technology, although a commonplace thought, persists unabated. It is fitting, therefore, that MXC should consider its mission to include institutional experimentation. The success of its purely technological innovations may well hinge on the necessary institutional framework.

We speak of the need for cheap housing, and fault the technological backwardness of the building industry. Yet the industry can already supply a new $5000 factory built house -- we call it a trailer. Apartments are fairly cheap, too. The blockages are institutional: municipal finance of redistributive schooling prompts each municipality to require every newcomer to wrap his family in a house of enough cost not to dilute the tax base. Again, we have had mass transit technology for 70 years, but abandoned it because of falling densities and inept taxation. We have fully automated, individually controlled mass vertical transit (by elevator) and moving sidewalks (vertical) in all department stores; but we tax these while subsidizing motor cars. So it is in institutional innovation we must look for the keys to unchain urban technological advance. Institutional problems prevent our exploiting even the technology we already have.

Among a city's institutional problems, that of raising revenue ranks high. The test and signal of success or failure in a new city is whether

it can pay its bills. The skill and sagacity of the city's dreamers, founders, sponsors, and leaders, and the demands and enterprises of its immigrants, must first create a taxable surplus. Then the civic enterprise must contrive to tap this surplus for public use without dissipating it, either by depressing private enterprise or inflating public costs. This paper purports to show how this may be done.

II. Sources and Disposition of the Taxable Surplus

A. Sources

A city can pay its bills only if its services and other attractions generate a surplus above the private costs of land users. No surplus, no tax base; for without a surplus everyone's situation is marginal before taxes and therefore submarginal after taxes. Immigrants are not drawn to submarginal opportunities.

There are basically three sources of taxable surplus.

1. Macro advantages of a site. First are natural advantages, such as location at a natural gateway or focus of routes, a rich hinterland, natural amenities, drainage, bearing strength, and so on.

Natural advantages are reinforced and developed by man. Much road-building is financed from outside the city, clearly adding to its surplus. Some is financed by the city, but this, too, normally adds to surplus because the benefit outweighs the cost. Much is inspired by a thriving city -- that is, a flourishing populous city has economic and voting powers that attract shipping, canals, rails, highways, airlines, scheduled bus carriers, pipelines, utility load centers, and so on. Once established,

these add to urban surplus just as though they were natural, albeit with less permanence.

A city also enjoys a feedback benefit from encouraging development of its hinterland. Adam Smith had a whole chapter on "How the Commerce of the Towns Contributed to the Improvement of the Country." (Wealth of Nations, Book III, Ch. IV) Western reclamationists have long observed the converse, and although certain Federal agencies have brought some discredit to the notion by "hard selling" of secondary benefits from reclamation, it remains true that Merced, Tracy, Modesto, Turlock, Lindsay, and a number of California towns have voluntarily and aggressively bonded and taxed themselves to finance irrigation of their hinterlands, in recognition of the secondary benefits to them.

These feedback benefits are vital to the success of an urban enterprise. They are the joint product of a natural challenge and human response. A site of good potential may stagnate; a bad one certainly will. Judicious site selection is therefore vital. The site must be one of natural potential which lies fallow due to human and institutional failures. Alternatively, but less likely, it could be a site whose potential has waited on new technology developed by MXC.

Such a site is likely to be occupied, like Cairo, Illinois, by a stagnant community with some unsolved basic problems. A good policy of municipal finance should be adaptable to this kind of situation, as well as the "clean slate."

A question for national policy is always whether the surplus created in a site is a net national gain, or simply a transfer from other sites. There is great concern over "raiding" and "pirating" among cities, suggesting a belief that there is a transfer of surplus.

In general, to develop a fallow rent-bearing site should create a net new surplus for the nation. That is simply because mobile labor and capital are drawn from marginal uses elsewhere, destroying no surplus, and applied supramarginally here. This is the basic rule. The modifications are important, however.

There is a tradition of overtaxing industry in many older jurisdictions. A departing industry may therefore remove a large fiscal surplus. Some industries loom large in their towns, so more than marginal resources are removed. Even a large contract has import. Some have monopolies, with surplus profits, which their towns have been taxing. And in the short run, the unexpected departure of certain resources may leave idle complementary excess capacity in sunk durable capital.

More generally, many towns are in a stage of long run increasing returns to scale of town. That they are conscious and even overconscious of this is implicit in the wide currency of economic "base" studies with their allegations of positive local multipliers from new industries. Multipliers to be sure are gross, not net, but their enthusiastic reception by at least some city boosters betrays a wide belief in increasing returns to urban growth. This means the marginal mobile labor and capital are rent-bearing, or thought to be, and their loss is keenly felt. Indeed, could it be shown that many existing towns enjoy increasing returns, there should be no new cities, unless they expect faster increasing returns at a higher level. Founders of new cities are generally explicit in their belief that existing cities are "too large," i.e. in a stage of falling returns to scale. This wants proving. That is beyond the scope of this paper, but it underscores the need for selecting a site of great latent

natural advantages, both to assure a taxable surplus to MXC, as well as to assure the nation that this surplus be a net national gain and not just a transfer.

2. Local public spending. Public spending also supplies works and services that add to land rent. Indeed, the entire net benefit from many public works is to be found in the added rents they create.

Focusing streets on the center makes downtown rents; extending streets and utilities makes axial and outer rents.

Some public works, like water supply or power lines (where these are public) yield added revenue from user charges. In setting the level of user charges, the debate often, indeed customarily, proceeds without recognition that Newton's third law must apply, i.e., for every added user charge there is an equal and opposite reaction in the form of lower rents on the limited land served. Fortunately the marginal cost pricers are bringing to increasing audiences this basic law of conservation of economic energy, which Hotelling made so clear in 1938. ("The General Welfare in Relation to the Problems of Taxation and of Railway and Utility Rates," Econometrica 6(3):242-69, July 1938)

Note well the fiscal corollary of Newton's third law. Taxing utilities does not increase the tax base, because the higher rates passed on to consumers must lower rents by at least an equal amount, and by more if there is friction. There is: it is known to economists as the "excess burden of indirect taxation;" it is nowhere greater than in the taxation of decreasing-cost operations like utilities.

A portion of what the world calls "land value" is produced by the landowner himself, as when he subdivides and pays much of the initial capital cost of streets. This still occasions some confusion in defining rent. But Marshall solved the dilemma long ago with his concept "the public value of land. [(Principles of Economics, 8th ed. (London: Macmillan & Co., 1947), pp. 794-804) See also Pigou's A Study in Public Finance, 3rd (rev.) ed. (London: Macmillan & Co., Ltd., 1949), pp. 147-53.] What is rent depends on what the public does free for the landowner. If the public does nothing there is no added rent from this source. A good working definition of rent is that amount which could be taxed away without impairing any useful incentive.

Under current practice around American cities, some subdividers have to contribute something like $2000 to the value of the finished lot, which may be from 10% to 100% of its market value, depending on location. Clearly, true land value is only the excess above this cost, and rent is the annual equivalent of land value. The landowner whose land income is all rent is he who just uses frontage along an existing public road. (Taxation of rent would hit the latter harder than the subdivider, and help avoid the noxious pattern of sucker driveways strung out for miles along trunk roads. The analogy is to a twig growing directly from a tree-trunk without proper dendritic development of limbs and branches.)

The private share of street improvements is overestimated by some analysts who look simply at the landowner's initial capital cost. After that, the public assumes maintenance, repair, snow removal, policing, and finally replacement. In most neighborhoods the original landowner's early contribution is long gone and may as well be forgotten. The landowner

does continue to contribute in his capacity as a taxpayer; but not unless his tax payments get ahead of the service flows received back can he claim to have a net credit in creating rent.

Public authority today also gives -- or denies -- rent through zoning control of land use. Where zoning is limiting, a monopoly rent attaches to it; and where this is appurtenant to land it may as well be regarded as part of land rent. The power that influential people have to get preferred zoning in a variety of places is temporarily another form of monopoly rent; but once exercised, it too becomes appurtenant to land.

3. Spillovers and synergism. A third source of urban land's productivity is complementary private activity on other land significantly linked to a given parcel. Benefits from one healthy land use spillover onto adjacent land, creating a rent. The spillovers are very localized. Richard Hurd in his classic Principles of City Land Values (New York: Record & Guide, 1903) stressed the basic principle of land value to be spatial continuity (which might be central or axial). That is, buyers pay a premium to be near complementary land uses. A new developer pays to anchor onto an established healthy community.

But that is too simple. Spillovers are reciprocal, and they feedback mutually, cumulating and reinforcing. This is what cities are all about. Urban gravitation, magnetism, agglomeration economies, scale, critical mass, increasing returns, external economies, and now symbiosis and synergism are common terms for the phenomenon. I will use the last, "synergism," indicating an interacting process where the whole comes to exceed the sum of its parts. The excess is rent.

Marshall (Principles ...) and Henry George (Progress and Poverty, New York: Modern Library, n.d., Book IV, Chap. II) perceived it long ago. Florence ("Economic Efficiency in the Metropolis," in R. M. Fisher (ed.), The Metropolis in Modern Life, Garden City: Doubleday & Co., 1955, pp. 85-124); Futterman (Future of Our Cities, Garden City: Doubleday & Co., 1961, Chap. 2); Thompson (Preface to Urban Economics, Baltimore: Johns Hopkins Press, 1965, Chap. 1); Gaffney ("Urban Expansion -- Will it Ever Stop?" in A. Stefferud (ed.), Land, The 1958 Yearbook of Agriculture, Washington: GPO, 1958, pp. 503-07); and Chinitz (City and Suburb, Englewood Cliffs: Prentice Hall, 1964, pp. 3-29) among others have eulogized it recently, and Sperry-Rand claims to have it. E. M. Hoover (Location of Economic Activity, New York: McGraw-Hill Book Co., 1948, Chap. 8) sought to summarize the causes in three basic principles: multiples, massing of reserves, and bulk transactions. "Multiples" refers to specialization and subcontracting; "massing-of-reserves" to pooling of supplies through mutual access; "bulk transactions" to large scale transfer and handling. Interpreted very broadly these spare words may be intended to subsume a host of gains from urban size and concentration, but it is probably not redundant to itemize cheaper distribution; greater markets and tax base to share the cost of, and warrant greater investments in developing the city's basic locational assets, and supplying unique facilities and services. Larger markets also serve to whet competition, to maximize choice and variety, to foster innovation, to pool risks and maximize load factors, to improve credit, and to facilitate all human contact for economic, social, and political ends. Nothing short of several thousand pages can really convey the full force of urban synergism. The first thousand might profitably be

the Yellow Pages. But Adam Smith captured the essence in one phrase, "The division of labor is limited by the extent of the market."

For a city to flourish and prosper, its leaders need not force or foster synergism. It will grow of its own, in a million unaccountable and unpredictable ways. They need only provide a network of common public routes via which land users have access to one another and a wide choice of economical contacts. But that they must do, and as part of that, the more social infrastructure they supply the more hospitable niches they create for a variety of small innovative enterprises calculated to maximize a city's synergistic potential.

Frank Knight ("The Fallacies in the 'Single Tax,'" The Freeman, August 10, 1953, pp. 809-11) and other critics of the rent concept have emphasized how much of land rent is a "human product." But mark well the confusion in identifying the individual landowner with all humanity. Rent is the product of people, it is true, but they are other people than the rent collector. The human contribution to rent is given through public spending and synergistic spillovers. These are not collected by their creators, and so constitute a taxable surplus.

B. Disposition of the Taxable Surplus

The equity interest in the municipal enterprise is land. That is because a municipality is defined as certain lands; labor and capital come and go. These mobile inputs may be and must be won away from the outside world at market prices set in the larger economy. But the price of land is set by a local market, and varies from $400 p.s.f. at a few key corners in Manhattan down nearly to nothing in many desperate dying cross-roads.

Of course cities expand onto new land, spreading the equity interest over more land. But the forces of centralization that differentiate cities from mere space put limits on the outreach long before urban land values have been dissipated. On the contrary, the share of land in urban real estate value has risen sharply in 20 years of urban decentalization, as established by Allen Manvel's research for the NCUP (Three Land Research Studies, Research Report No. 12, NCUP, 1968), and widely observed by assessors. And thick or thinly spread, the surplus in any event imputes to land.

The senior claimant on the surplus is generally the sovereign public. (The Municipal Bankruptcy Act of 1936 now clouds this seniority in an ambiguous manner best left to a lawyer to explain.) It asserts its claim by taxation. When it spends its income on public works to enhance the land it taxes, there is no basic collision between the public and private claims, although there is a host of minor ones. When the public spends its income on redistributive functions like schools and welfare, there emerges a conflict, with which MXC like all cities must cope. The conflict is modified in respect to schools because their value is partly capitalized into local land values. As to welfare, massive federal payments have helped quiet this clash of interests, and a new city without old slums will attract few welfare clients anyway. But the school finance problem is increasingly profound. It is widely believed that part of a community's surplus is carried off by lower-middle-class school children. A central decision for MXC is how to meet this issue. It is beyond the scope of this paper, but the conclusions and recommendations of the paper must presuppose that the issue is being met.

It will be pointed out that there are local surpluses other than land rent. Most of these, however, upon analysis are based on control of natural resources and are "land" in the broad economic sense used here. Examples are frequency assignments, water rights, street easements, and franchises. Anyone who can identify non-land surplus/sinks and devise workable means to tap them for public use, deserves every encouragement. As a practical matter, land rent is so much larger and easier identified than others that it should be the first concern.

III. Performance Standards for a Developmental Tax Structure

Now we have surveyed the sources and sinks of taxable surplus, let us consider how to tap it. Before getting to specifics, what goals should we set for our fiscal system? These will be criteria for judging among alternative systems.

A. Allocation of resources to highest use. Taxes should not interfere with the market, except by forethought to achieve considered goals, like charging for spillover costs and subsidizing spillover benefits.

There is a large public equity in city land. But the public equity is in the custody of the private fee holder, who has no motive to protect the public equity save such motive as the public, by its sage construction of the fiscal reward structure, gives him.

A clumsy tax is one which the fee holder can partly avoid by altering his behavior -- almost always for the worse. Any tax he can economically avoid, he will. His evasive action involves an excess burden, costing the fisc more than it profits him. But the fisc also loses what he gains, a double loss of taxable surplus.

An adroit tax taps the rent surplus without such losses. It is unavoidable by fee holders. It may affect their behavior and be "unneutral," but not in the negative. A tax may be better-than-neutral if it helps imperfect markets work better.

To understand more fully the functions of the urban land market we need look at the allocative functions of rent. These are outlined in Appendix I.

B. Coordinating and synchronizing interdependent land uses. "Spillovers" and "synergism" bespeak interdependence of land uses. A good tax system will help these cooperative links develop. To a large degree this follows from (A), respecting market allocation, because of feedback among complementary land users.

A builder is not trying to benefit his neighbors. He wants access to them for his own good. But there is a law of reciprocity. Access is mutual, so what can a poor Scrooge do? Despite his worst intentions, and even slight sense of shame, in our culture, at suspicion of do-gooding, he helps others as he helps himself.

Market rent also has temporal functions. It tells individuals when to develop or renew land. The interdependence of neighboring land uses, and Hurd's continuity of land values, makes neighborhood rents rise in unison. Thus rent transmits a synchronized signal to everyone, so complementary private and public investments in a neighborhood ripe for succession are made together. With the market and taxation in good working order, each investor can size and style his capital with certain knowledge that complementary and supplementary capital will be committed by others without delay.

A good tax will use market forces to serve public goals. If the market needs prompting because of inadequate private recognition of spill-overs, a good tax may go further and faster to force timely and complementary development.

If justification be needed, the public itself is a major investor, and often a prior one, among the interdependent investors. A tax must assure that complementary private building be encouraged to match public sewer and road extensions, for example; and that the sunburst of radial lines focused on the CBD be matched by equally brilliant private efforts in that unique and critical zone.

A good tax will also help maintain economical allocation between public and private investments. A major problem in most cities today is inadequate private matching of public roads and utilities, followed by further extension of roads and utilities: -- urban sprawl. This inflates public costs in most cities so much that MMC, by solving this one problem could go far towards assuring its competitive viability even on the Greenland ice cap!

This imbalance of developmental investments reflects in part a tax-induced preference for tax free public bonds over taxable private buildings, and has its remedy in tax reforms.

C. Accelerate development. In every durable investment project there is an early "hump," a cash-flow crisis, that must be surmounted. The more massive the project, normally, the slower the advent of payout years, and the greater is the need to provide against cash crisis.

In a new city it is not merely the viability of one building that is in question, but of an infrastructure to be complemented by hundreds of private buildings which are to be articulated with one another. Since MXC has some purport of being struck full grown from the brow of Zeus, at a size large enough to achieve critical mass and enjoy economies of scale, it urgently requires a forced-draft mechanism to attract $2-$3 billions of private capital in a few years, as well as 250,000 people.

Tax systems may be tuned to attract or repel. MXC clearly needs one that attracts.

It has been suggested in an earlier MXC paper that MXC guarantee some interest on early private capital stranded by delay of public. That could be expensive, and starts out wrong by giving private people great leverage over public capital. This is the route to urban sprawl and impotence of planning. But surely private landowners should pay interest on public investments when they leave them stranded by failing to build on the land given potential rentability by public works. This lets the MXC planner lead the pace of development. It gives full force to what Bruce Ricks calls "sewer power." It raises money instead of spending it, and simultaneously encourages private building: quite a clutch of benefits!

Economy of capital has always been important. At an 8 1/2% prime rate it is paramount. This calls for a revolution in some attitudes which were frozen in the early Keynesian era when a habit developed of regarding capital supply virtually as a free good. Cities economize on capital by development compact both in space and time. The tax system should motivate landowners to intensive and spatially continuous development, to shorten lines which consume most infrastructure costs: and it should motivate them fast.

D. Flexibility and renewal. Any city, but above all an experimental one, needs to be light on its feet, ready to retool itself continually to meet shifting demands.

It might seem that a new city need not concern itself with this for years, but that is not so. However fast the city grows, it is bound to go through some evolutionary stages on its way. The first generation buildings must meet the needs of the first few thousand pioneers and "Indian fighters." Most newcomers will be in the mobile age cohorts when there is a change in life, in their 20's or 60's. A balanced age mix comes with size and stability.

Experience will educate the city leaders. They should expect and prepare for progressive planning in response to market feedback. No city ever grew as planned; but many have foundered by irreversible commitments to initial plans.

First generation buildings in the city center sized for a few early settlers will be locationally obsolete when the city grows to 100,000, even if that happens in five years. They will need replacement. MXC needs a tax system that allows timely replacement.

There are two approaches to flexibility. Besides rapid turnover of stock, the other approach is to reserve open space. The trouble with reserving vacant land (unless outside of town where it reserves itself anyway) is that the public infrastructure to serve it is committed. Vacant land inside the city's infrastructure network forces lengthening the network. This not only adds cost, it freezes the network and reduces its flexibility.

There is always flexibility in new growth, too. But city growth puts new pressures and demands on the center, where very rapid obsolescence and evolution is to be expected.

E. Compatibility with other public goals. A tax system should harmonize as much as possible with general goals, such as pollution control, encouragement of small competitive firms, opening employment opportunities, and so on. It should hit those able to pay, and compensate the public for benefits received by individuals except where the purpose is expressly redistributive, as with education and welfare.

IV. Alternative Means to Assert Public Equity

There are three major stages in the ownership of MXC: prior owner, sponsor owner, and user owner. I assume in general that the sponsor acquires most of the site from prior owners cheaply, and without crippling covenants. The sponsor plans the site, guides its early development, and gradually withers away as a sponsor while its institutions evolve into local government controlled by land-users, subject to state and federal law. Our attention centers on the relations of sponsor and land-users.

The sponsor creates urban surplus value by its conduct of planning and its capital outlays. How shall it assert its equity in the urban surplus?

The major alternatives are leasing; and sale of fee subject to future taxes. Of the two, leasing is generally inferior for several reasons:

- - Leases must expire, and at lease-ends there is a conflict of interest between landowner and lessee that may be destructive.

Jerusalem. It is better to assert the power to tax quite openly from the start. This discourages armchair absentee speculators and holds down land prices for desirable immigrants.

- - There are Federal income tax advantages to landholding. These are not socially creditable and from a national view are not gains at all. From a local view, however, they may argue against leasing.

Despite its inferiority, leasing is thinkable and feasible and worth reviewing. It has some advantages. It would make MXC more immune from tax base erosion via state-imposed tax exemption. Lease-ends could be synchronized by blocks or neighborhoods to allow replatting. Analysis of leasing methods also helps us understand tax choices better.

A. Leasing. The basic choices in payment patterns are: fixed cash rent; share of gross; and share of net. These may be variously combined. Each corresponds roughly to a different pattern of tax payment: respectively, ad valorem land tax; excise tax; and land-income tax.

Note there are hardly any leases in use that resemble the property tax on buildings. The individual landowner generally wants to encourage lessees to invest in buildings. Nor are there private leases resembling labor-income (or payroll) taxes. Private lessors see their interest in encouraging the lessee to use other inputs on their land. The hostage of a building is especially valued.

1. Fixed cash rent.

An advantage is leverage applied to lessors. There is a fixed periodic cash gain (a stick) and full marginal incentive (a whole carrot). Incentive is maximized -- there is no "excess burden"!

As to resource allocation, cash rent is good from a social view because it puts payment for land on the same basis as payment for other hired inputs like labor. The lessor's periodic rent simply becomes part of the regular payroll. In considering trade-offs between land and labor, the lessee is not biased by different terms of purchase.

A disadvantage is rigidity. Contract rent must be stipulated decades ahead. Escalation by later renegotiation occurs, but poses obvious difficulties. In general the lessor loses out on good windfalls when economic rent rises above contract rent, but may share bad luck when the lessee fails to pay. The latter also represents a calamity for the lessee who has overbid.

The analogous tax is the ad valorem property tax on land. This is also a flat periodic charge. There are important differences, however:

--- the tax is based on capital value, not current income. In growth neighborhoods the capital value is high in proportion to current income; in declining neighborhoods it is the reverse. The tax rests heavier where capital gains are accruing, and lighter in depressed areas.

- - the tax is more flexible, at least potentially, and becomes completely so under annual reassessment (as practised in Australia, for example).

- - the tax is unaffected by lease-ends, assuming proper assessment.

- - the tax normally leaves a private equity in land, while a lease is calculated to take it all.

2. Share rent

The advantages are in a sort of risk-sharing. The base is large, so the rate is low. The money is collectible.

The disadvantages:

- - Policing. The lessee must open his books to the lessor. The lessor must guard against skimming.

- - Limited applicability. Only commercial operations can pay on cash gross. Land leased for owner-occupied residences requires another basis. A dual system would almost certainly be biased. Note also the potential for avoidance by vertically integrated firms who have no cash sales, or sell at fictitiously rigged prices.

- - Illusory risk-sharing. A firm whose plight becomes marginal through bad luck may have a large gross and no net income. Share rents make such marginal firms submarginal: 2% of gross may be 200% of net.

- - Sterilization of marginal land. A share of gross is not abated on marginal land of no net income. Thus the land is made unusable. However, rates might be set higher on better land.

- - Bias against volume. Being based on volume, share rents rest lighter on low-volume, low-turnover, high mark-up operations and encourage them. Generally the external linkages of a firm vary with volume. Since linkages are the essence of urbanism and the source of urban taxable surplus, this bias against volume is basically anti-urban and a threat to the tax base.

The analogous tax is an excise. The resemblance is very close. The main difference is that an excise tax must be at a common rate over a wide range of land qualities. The excise necessarily sterilizes marginal land, therefore, whereas lease terms may be individualized from one plot to another, sparing marginal land.

3. Share of net realized land income.

Under this lease, the lessor shares the lessee's costs and in return takes a larger share of gross. Normally the lessor contributes

most to those costs the lessee is least well suited to bear, initial capital costs of building construction.

The advantages are:

- - Increased risk-sharing. Lessor and lessee become partners.

- - Widening the market for leases. Capital required by lessees is reduced, and nothing screens out so many competitors as a high capital requirement.

The disadvantages are:

- - Administration. The MXC lessor would become a partner in every business. It is hard enough to administer what is now the public sector of every city, according to the testimony of a host of resigning mayors. It is also hard to be anyone's partner. For the mayor to be everyone's partner is not auspicious.

- - Augmented policing. The lessor now must watch his partner's costs as well as his intake; and the higher share of intake recaptured adds to skimming problems at that level.

- - Higher shares. To recover his share of costs the lessor must take a higher share of gross. The short run disincentives are thus magnified.

- - Limited coverage. Like the share of gross, this lease is not applicable to land used for owner-occupied residences, institutions, captive suppliers without cash sales, etc.

- - There is minimum leverage and maximum marginal disincentive.

- - Advancing capital to builders multiplies a new city's capital needs enormously. This type of lease is more feasible for an established older city, than one with its own cash crisis looming up.

- - The federal income tax has preempted this type of device. As a result, income-based leases interact with federal taxes in unfavorable ways.

The analogous tax is a tax on property income with fast write-off of depreciable (i.e. non-land) capital. Fast write-off is a device whereby the treasury shares the cost of capital.

The differences are:

- - The lease is strictly on property and not wage income. Of course, the personal income tax includes -- indeed, focuses on -- wage income. The corporate income tax is a closer fit, but exempts unincorporated holdings.
- - Cost-sharing under lease is direct and requires actual outlay by the lessor. Income-tax cost sharing is by reduction of taxes on other income, and is available only to those who have outside income to shelter.
- - Lease rates are adjustable from site to site; tax rates must be uniform. Taxes therefore sterilize marginal land, while leasing need not.

Reviewing these choices, it seems that if flat cash payments are used, taxing is preferable to leasing; but if payments are to vary with output, leasing is preferable to taxing.

B. Taxation. In an open economy, especially a new one, all local taxes are ways of collecting rent, there being no other sink for taxable surplus. Taxes are like lease payments for the use of MXC land. There is no question, then, of what MXC will tax, basically. The question is how shall the tax be announced to the taxpayer?

Two alternatives have been viewed without enthusiasm: excise and income taxes. Four remain to be pursued here: property taxes on land value; property taxes on building value; user charges; and taxes on land increments. There is a passel of other choices too numerous to pursue. Several have been analyzed by James Heilbrun, Real Estate Taxes and Urban Housing (New York: Columbia Press, 1966).

1. Taxes on land value

These have great advantages, and are my recommendation for MXC.

Compared to leasing, we have seen that taxation is better because there is no lease-end problem or uncertain tenure; users prefer fee ownership; taxation covers prior owners too; taxation creates a democratic community of interest; taxation is controlled by the living generation; and sale of the fee lets MXC absorb in advance any excess of economic rent over anticipated taxes without binding the city to limit taxes.

The fatal objections to excise and income taxes -- that they exempt imputed and capital gains income, sterilize marginal land, and impair incentives -- do not apply to taxes on land value.

As to risk-sharing, the land value tax discriminates in a remarkably optimal way between responsibilities of society and the individual. Windfalls of exogenous cause, if there are any, are reflected in higher values and taxes: rewards of personal labor and sagacity, if any, go to the individual. The mechanism is imperfect, but it's an improvement over known alternatives.

The land value tax is like a lease with escalation. The problem in escalator clauses is finding a neutral referee using predictable criteria. The public tax assessor, for all his faults, is more generally acceptable than a private party. And his results are continually subject to the objective review of neighboring and other comparable assessments. In a technologically advanced jurisdiction with long experience, like Copenhagen, land value maps with frontage assessments and depth factors are distributed widely. Thanks to Hurd's principle of spatial continuity, almost all land values conform closely to their neighbors.

The land value tax measures up well against the Performance Standards (III above).

- - It does not interfere with the market, the tax being independent of landowner behavior. The allocative functions of rent (App. I) are not hampered. At worst the tax is neutral. In practise it is better than neutral. By applying a cash drain to inert landed wealth, it lubricates a sticky market. (For detail on this, see App. II.)

- - It helps rent serve its coordinating and synchronizing functions, by prompting each parcel to its best use and (by obviating other taxes) removing fiscal barriers to best use. The tax gives real force to city "sewer power" because sewer extension means an immediate tax increase. The cash-squeeze says "Move!"

- - It accelerates development. Since the means of so doing is to raise revenue before development, it helps meet the cash crisis. It economises on public capital by prompting compact, speedy development.

- - It fosters timely renewal of sites. When a landowner renews, there is no increase of tax because the old obsolete building did not prevent the site's paying as high a tax as though already renewed.

- - It falls on an asset generally highly concentrated in strong hands, and thus has a progressive quality. It taxes the benefits received from public works, but not the benefits of deliberately redistributive spending as for schools (save in part) and welfare.

2. Taxes on building values

Taxes on building values lack most of these virtues. They sterilize marginal land and distort incentives in the most spectacular ways. They bias landowners toward the lighter taxed use, and so favor old buildings

over new, delaying renewal; waiting over acting, delaying initial construction; gas stations and parking lots and drive-ins and junkyards and open storage and agriculture over elevator apartments, offices, factories, houses, hotels, and every high urban use, disintegrating the compact city, inflating public costs, and subsidizing autos as they pollute the air.

Building taxes hurt the builder much more than they help the treasury by being at a maximum when buildings are new. Thus they aggravate every builder's cash crisis. Yet they do so without helping the city's cash crisis. Because when the city extends utility and road lines, most landowners just wait. Not until they build will they become fiscal angels for the city, and that's not something one rushes into. Each minimizes his risk by waiting on others, an Alphonse-Gaston impasse that destroys the harmony between self-interest and common good.

As to risk, it would be hard to devise a tax that throws more risk onto builders in proportion to the revenue raised. Based on capital input, the tax is a fixed cash drain at its highest level in the most critical period of building life.

Even the progressivity inherent in any tax on property (which is much more concentrated than income) is partly lost when we tax buildings, because of forward shifting. I believe this is greatly overdrawn in current doctrine, but regardless of degree, it is a fault not shared by land taxes, which are not shifted forward at all.

3. User charges

There is a place for user charges in public finance. Whenever a public facility is congested, user charges based on marginal social costs

are fitting. William Vickrey, James Nelson, and others have developed the theory and applications in recent years.

However, the necessary condition -- congestion -- is not generally met in a new city. A developing city will generally size its streets and utilities for future growth, and begin with excess capacity. This means low marginal user costs and so charges should be correspondingly low.

Even from the start, however, there is a need to apply user charges with a spatial factor -- charges should rise with length of line from land center to consumer. A rationale has been developed by hydraulic engineer Warren Hall, "A Method for Allocating Costs of a Water Supply Canal," J. of Farm Ecs. 45(4):713-20 (Nov. 1963).

4. Taxes on increments to land value.

Such taxes are redundant if there is a basic tax on land values. Where land is ripening to a higher use, market value of the fee -- the tax base -- is high relative to current ordinary income. The extra tax yield during ripening is essentially a tax on increments, only collected during the accrual period rather than upon "realization" by sale. This is in keeping with the "Haig-Simons" definition of income favored by most sophisticated tax economists.

Taxes on realized increments are contingent on sale, and suffer from a "locked-in" effect. That is, they are avoidable by non-sale.

A variation on increment taxation is the entrance fee for joining a city. Some Western water districts impose such a charge. The problem here is the voluntary contractual nature, which unfortunately is at odds with compact urban expansion. Compulsory entrance fees are a possibility.

V. Conclusion

Of the alternatives considered, I recommend first consideration to land value taxes as the financing method most favorable to the success of MXC. If this basic decision be made, of course further detail should be developed and sub-alternatives posed, for there are many options under the fundamental concept.

If MXC is so securely financed as to try it, another choice is to use MXC for comparison of the different tax or lease policies by applying different ones in different quarters. This could supply the most valuable experimental evidence. On the other hand, it would be expensive. Part of the cost would be interference with other experiments.

Much of the experimental cost has already been borne by many cities which use land value as a major local tax base. Some of these cities are Sydney, Brisbane, Johannesburg, Nairobi, Salisbury, and in lesser degree Copenhagen. Leasehold with cash rent applies in Canberra, Boulder City, and Fairhope, Alabama. It would be much cheaper for MXC to commission intensive study of this fund of experience than to repeat the experiments at full cost. Considering that Johannesburg and Sydney are the dominant economic centers of their respective continents, it is altogether remarkable after 20 years of developmental economic research that there is no full-dress study of their institutions in the literature. A survey of some East African experience by John Due is attached. (Appendix III). This is hasty but gives an idea of what might be done.

Another kind of fiscal experiment could be federal. Federal tax policy of course has profound effects on incentives to invest in real estate. There

seems to be a legal basis for such experiments, in view of current experimentation with negative income taxes.

Finally, there should be some historical perspective on previous American Utopias and New Jerusalems. The country is strewn with the wreckage of abortive cities, whose founders thought they co do things right by starting fresh, so that idea is neither novel nor especially awe-inspiring. Why did they fail? No one should dream of a new city without learning something of the dashed hopes of Atascadero and Patterson, Calif., for example. At least he could read Cornick on Premature Subdivision, or even Dickens on New Eden.

I believe such a study would uncover a repetitive pattern of unbalanced investment, with public infrastructure getting ahead of matching private buildings and municipal bankruptcy the outcome. The land values created by public works was siphoned off and dissipated unproductively.

Conspicuously lacking was an adequate device to harness the rent increment to functional ends, and to stimulate private building. The policies recommended above are calculated to supply such a remedial device.

APPENDIX I

The function of rent is to ration land among competing demands. The tax authority must take care to announce (in Pigou's sense) taxes in such a way as not to impair this function. Rent communicates the economic signal letting no one believe that open space is a free good. It constrains owners to economize not just on nature's gift of raw space, important as that is; but also on the other factors that give land its value. These are public spending and spilled-over synergism. The first obviously costs money. The second may seem "free" like nature; but it is, again like nature, scarce and must be economized.

Indeed, the natural limit on land supply makes it the more important that rent be charged to ration land, to assure that mankind receive the maximum benefit from what land there is. Intensifying land use is a substitute for adding to land supply. When this function is obstructed, as by rent control or low-density zoning, the supply will not go around. The needed extra land may then be supplied, at enormous social cost, by extending urban infrastructures into the country. Charging market rents on central lands would supply it at no social cost.

Ely and Wehrwein described rent as the "sorter and arranger" of land uses, pursuing von Thünen's model where rent withholds central land from lower uses in order that they not interfere with higher and better ones. This only begins to tell the rationing function of rent, however. Rent not merely sorts commerce from industry, it is much more subtle. It determines the optimal intensity of each use.

Intensity is the quotient of non-land inputs divided by output. It has several dimensions. An obvious one is height. High rent ordains high buildings. Marshall expounded the rationale artfully. Beginning with a

high building, hold floor space constant while you cut the height and expand horizontally onto a larger site (all this in the planning stage, of course). Thus you lower building cost but increase land cost, with constant output. Optimal height is where the marginal saving of capital from adding land equals the price of land.[1]

Another dimension of intensity is, of course, quality. Rent constrains people to enjoy their luxury in the form of better and lovelier buildings and plantings instead of wide grounds.

Yet another aspect of intensity is density of occupancy or use. This is not fully harmonious with quality, for there is up to a point a conflict between quality and crowding. The conflict is resolved in the market place. The poor compete with the rich for valuable land by doubling up at higher density. They compete so well that the 100% location in most retail areas serves not the carriage trade but the mass market, sharp elbows and all. They compete so well that the rich, where they have the power, often dismiss the market referee and legislate for low-density zoning, a sort of compulsory land consumption. This strengthens their consumption dollars by giving preference to their style of consuming space. It helps them even more as owners: although it lowers some specific unit values, one would expect compulsory consumption to valorize the whole.

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[1] Marshall (pp. 447-49). An excellent modern empirical English work is P. A. Stone, "Economics of Housing and Urban Development," Journal of Royal Stat. Society, 122:417-60 (1959). Stone's work is written from the viewpoint of a town-builder who holds streets and buildings equally in his purview. A work of high quality, it betrays an interesting technocratic blind spot. Economy of land is conceived as economy of streets and farm land. There is no use of market value, hence no economy of synergistic values or travel time.

some orientation before they feel comfortable with that, so let us instead adapt Marshall's technique of common sense applied to rates of substitution between land and capital. Beginning with a short-lived building, hold the present value of future service flows constant while you cut the yearly service flow and expand temporally into a longer-lived building (all this in the planning stage, of course). Thus you lower building cost but increase the present value of the land-time required, with constant present value of output. Optimal planned life is where the marginal saving of capital from adding future land-time equals the present value of that increment of future land-time.

The higher the future rents, the greater the pressure not to substitute longevity for service flow.

Again, there are conflicts between the things that high rent stimulates. Tall buildings tend to be more durable. Rent promotes height but discourages longevity. Again, the market resolves the several forces and settles the conflict. Circumstances determine which force prevails in each case.

Mark that the subject was <u>planned</u> longevity. Another function of rent is to convey up-to-date information about changes in the scrap value of land. This new information is the basis for ultimately demolishing a building to salvage the land. The time to demolish is when the old building ceases to yield a return on the salvage value of the site. Almost always time will have brought some surprises and locational obsolescence, and the original plans should be modified.

While the latter point is in the literature (Gaffney, "Property Taxes and the Frequency of Urban Renewal," 1964 <u>Proceedings</u> of the National Tax Association, pp. 372-85), the former is not. The role of rent in determin-

ing the planned longevity of capital is virgin intellectual territory. Whoever works out the analysis and what it implies for policy will have made a signal contribution to economics and the public welfare. The macroeconomic implications are challenging. Rent affects replacement and turnover of capital, and hence demand for labor, factor proportions, and even gross investment and hence national income. There is a set of challenges worthy of anyone's steel!