



Appendix 1: An Inventory of Rent-Yielding Resources (excerpt from: *The Losses of Nations*)

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Appendix 1

An Inventory of Rent-yielding Resources

Mason Gaffney

MANY NATURAL resources of great value are not comprehended in the simple colloquial concept of land as platted or surveyed land surfaces. These natural resources yield rents that are part of the proposed land tax base.

Resource rents may be classified into three categories: the major, the minor, and the huge aggregate. (Overlap among classes is minimized but unavoidable in certain cases.) Bibliographical sources used in this appendix appear at the bottom of this inventory.

The Major Sources of Rent

1. Energy

a. Hydrocarbons

In 1959, Alfred E. Kahn (1959) put the fraction of rent in oil and gas firms at 32-38% of sales. Paul Davidson (1963, 1964) put it even higher. Of course this fraction varies from field to field, and firm to firm, and is hard to summarize in a single figure. Oil firms studiously conceal as much of it as they can, to avoid taxation. Still, this was before the OPEC price revolution and the oil price shocks, a time when you could fill your tank, have your glass cleaned, oil, water, battery and air pressure checked, use a clean restroom and get a free map, for \$3.25 or so, indicating rent must be a higher fraction today. This and other material is summarized in Gaffney (1967: 409-15. *See also Gaffney 1977, 1981, 1982*).

We know that oil and gas rents support all or most of government spending in various oil-rich nations, as in the Persian Gulf and Caspian Sea areas. Dmitri Lvov (1994) estimates that Russian oil and gas revenues

alone could support the entire national government budget. In Norway, in several years the mere *change* in the value of petroleum reserves has exceeded the entire GDP of Norway (Aaheim and Nyborg 1995: 65).

Appreciation is a form of rent, on top of unit-of-production rent charges. Oil deposits normally appreciate many times over between when claims are first established and actual extraction begins, and more yet before it ends. A large fraction of industry “profit” is taken this way, but not usually declared for tax purposes. In 1980 the American Financial Accounting Standards Board (FASB) required oil firms (for the first and only time) to report the change in the value of their reserves. In that year the Getty Oil Co. reserves, for example, rose by 3.8 times as much as the profit they showed otherwise (Gaffney 1982, from Getty Annual Report). These gains now receive at worst preferential “capital gains” treatment, and at best become the basis for depletion allowances such that they are never taxed, but become a tax shelter. For this and other reasons, rent from oil and gas deposits has long enjoyed a high degree of immunity to present tax systems. Some of those nations that have found ways to tap this rent for public revenues are notoriously prosperous (although others have corruptly squandered their riches).

By 1980, in developing countries, host country shares of oil profits sometimes exceeded 80%. Conrad and Gillis (1985: 27) cite Colombia, Malaysia, and Indonesia. Oil taxes were 50%-66% of total revenues in Ecuador, Mexico, Trinidad and Tobago; and two-thirds of taxes in Indonesia, Nigeria, Venezuela, Gabon, and Congo.

b. Uranium.

With China turning to nuclear energy, we may expect rising demand for this scarce mineral.

c. Hydro.

Most American jurisdictions prodigally give away this cleanest, cheapest source of power to private firms. Canada sets a better example of how provinces and the nation can tap these rents for the public.

2. Minerals

Hardrock, sulfur, sand, clay and gravel, misc. After 1965, hardrock minerals produced 10%-20% of total public revenues in Chile, Thailand and Malaysia; and over 25% in Bolivia, Gabon, Jamaica, Liberia, New Caledonia, Papua New Guinea, Zaire, and Zambia (Conrad and Gillis 1985). These are mostly

naive people dealing with highly sophisticated and even ruthless foreign firms, so it is reasonable to infer that the true rents are higher than the figures given.

3. Fresh water and adjunct resources

In arid lands, like the western half of the U.S.A., dry land surface *per se* has only low value. The scarce, limiting resource is water. Yet, claims to water resources are not on the tax rolls and are not counted when we add up all tax valuations. Water is not held by title deeds, but by a complex system of licenses, customs and legal precedents. Thus there is a great deal of rent and value here above and beyond that counted in other ways (Gaffney 1992, 1997). Some of the valuable items are listed below.

- a. Licenses to withdraw (for farming, domestic, industrial, recreational, lacustrine uses);
- b. Aquifers and recharge beds;
- c. Dam and reservoir sites;
- d. Power drops (cross-ref. 1,c);
- e. Fish (fin and shell), fishing banks, waterfowl, other wildlife (high value of quotas);
- f. Scenic use (from bays to tarns to waterfalls);
- g. Right-of-way, navigation servitude and priority and exemption from liability;
- h. Riparian values (also apply to salt water): beaches, foreshores, water lots, frontage on water, access to water, views, fresh air;
- i. Eminent domain for access to divert and “wheel” water;
- j. Watersheds (water blotters, for storage and regulation of flow);
- k. (Formerly) source of ice;
- l. Recreation use (flatwater, whitewater);
- m. salinity repulsion;
- n. Waste disposal.

Waters almost all belong to the Crown, the states, or the federal government (depending on the jurisdiction), in trust for the people. Levying proper public charges on some or all of the above resources would fulfill that trust in the most efficient, equitable way.

4. Timberlands

The area is vast - one-third, in the case of the U.S.A. Unit values are low, but even low values add up to a lot over such an area. The annual value (rent) for growing wood is a fraction of the harvest value. The fraction varies with the time period and the discount rate, but if the time period is

20 years, and the real discount rate (inflation-adjusted) is 5%, the annual value (rent) is 3.0% of the net harvest value (applying a standard financial formula, "the sinking fund factor"). As a very rough cut, *if* the harvest value were \$20,000 per acre, every 20 years, the rent would come to \$600 per acre per year. One-third of the U.S.A. comprises 771 million acres. At \$600 per acre per year, that would come to \$462 billions annually. This is probably too high an estimate, since many lands classified as "forest" are less productive than the example; but it is a hundred or more times higher than taxes actually levied, for timberland enjoys virtual tax-exemption, even compared with other properties that are lightly taxed (like all California real estate after 1978). In Mendocino County, California, taxes on timberland are at about 1/36 of its annualized rent value from timber culture alone (Gaffney 1995).

Land uses declared by law to be "compatible" with timber go completely unrecognized in the legislated low valuations for property tax. These include grazing, resorts, vacation (but not retirement) homes, campsites, fishing, hunting, watershed protection, tourism, rifle ranges, rights-of-way, mining, log storage, landings, roads, logging camps, etc. There is also marijuana, possibly California's most valuable crop, but unrecorded: officially it does not exist.

Some timberland also has high ripening values for "incompatible uses" like urban subdivisions that require formal changes of zoning. These growing values go completely untaxed until conversion actually occurs - by which time the accrual of value, which is part of rent, will have gone completely untaxed.

Mature trees contain a lot of stored-up rent, most of which was never taxed. It is not too late to tap this store, with interest, by using yield taxes that the industry itself has lobbied through to displace the property tax on standing timber. In general, yield taxes are not an efficient way to tap timberland rents, but there is a place for them during a transition period towards a tax-free economy, and they are popular with preservationists because they tend to slow cutting cycles. Currently legislated levels of yield tax rates are much too low to compensate for the revenues previously lost, but raising the rate is a simple matter. Revenue-neutral rates may be calculated by formula, coupled with some judgment calls (Gaffney 1997).

5. Radio spectrum

Almost everyone now recognizes that radio spectrum is a natural resource, of enormous value, and part of the public domain. The uses of spectrum are many and growing: radio, TV, cellular phones, telephones, satellite linkages, fax, email, internet, and who knows what future forms of

transmission. Nationwide, there are 16m radio dispatch units (RDUs) in use; and 14m cellular phones. In Los Angeles alone, there are 550,000 RDUs.

Assignments of licenses to use spectrum are territorial, like most natural resources. Values differ widely with the territory covered, like all rents. The next big thing may be Personal Communications Services (PCS), low-power cellular, mobile phones for the masses. Construction costs are half those of cellular. Licenses are expected to go for \$100-\$150 per potential customer. With 250 million potential customers in the U.S.A., that comes to \$15.6 billions for PCS uses alone.

Past assignments have been based on a giveaway policy. The Federal Communications Commission, charged with meting out these rights, in 1993 began pricing new assignments by auction, which helps raise the value of old ones. As economists would predict, the result has included much "rent-seeking" effort, with resulting premature acquisitions of spectrum. Licenses are now going for about double the maximum value at which a firm could break even in the first years. The rest is "rent-seeking": wasting capital today to secure rents for tomorrow.

Public service obligations, anti-merger restrictions, and regulatory control, never adequate, are now being relaxed and sloughed off, raising spectrum values. On February 18, 1993, President Clinton created a small stir when he estimated that the airwaves would sell for \$4.1 bn. In the event, the 1993 auction fetched \$9 billions, but it was like selling off the badlands after giving away the beachfront properties. The truth is much more stirring. AT&T paid \$12.6 billions for McCaw Cellular, a smallish regional firm, whose assets consisted of spectrum licenses (*Los Angeles Times*, Aug. 17, 1993, p. 1). In 1995, Disney Co. paid \$19 billions for Capital Cities/ABC Inc., comprising 30 TV stations and the ABC network. On this deal Warren Buffett, the second richest American, made over \$2 billions, an unearned increment, a form of resource rent that we include in the proposed tax base. These were, of course, only a tiny fraction of all the outstanding licenses. Like other untaxed natural resources, spectrum is being concentrated in a few strong hands. At the auction of March, 1995, a few deep-pocket firms dominated the bidding: these were AT&T, the Baby Bells, and The Wireless Co. (Sprint, Tele-comm Inc., Cox Cable, & Comsat). Westinghouse and CBS together own 15 TV and 39 radio stations that reach one-third of the U.S. population.

These values are based mostly on economic rents, almost as though the assets traded were bare carparks. At Westinghouse, profit margins are 45% of revenues; at ABC the rent fraction is higher; at CBS, somewhat

lower (*Los Angeles Times*, 2 August 1995, p.1). Rents show up as above-average rates of return on capital. In cellular phones, rates of return have ranged from 40-100% per year (Morgan Stanley Inc., 1994). During the long giveaway period before 1993, many applied for licenses "and then sat on them until they could resell them for a large profit." From 1985-94, 85% of cellular licenses turned over. In such sales, the license "accounts for approximately 60% of the sale price..." (Cohen 1995).

In addition to basic spectrum, high values attach to ancillary sites like hilltops for transmission relay stations. Even orbits like the geosynchronous orbital band and LEO (Low Elevation Orbits) are assuming a value. Many of these hilltops are on public lands, and are generally given away in what are essentially "sweetheart deals."

Teledesic (Bill Gates and Craig McCaw) next plans to link the whole globe with phone, video, and data services, using 840 satellites. Each one, of course, requires spectrum assignments from the public domain of various nations. These are Low Earth Orbit (LEO) satellites, at 435 mi. up, the cheapest kind, with the shortest life. Gravity pulls each one out of orbit every eight years or so - but the spectrum assignment remains, and spectrum lasts forever, rising in value (*Los Angeles Times*, 22 March, 1994, p.D1).

A few other major firms are aggressively expanding worldwide, seizing spectrum and orbital positions as they go, vying for the needed political influence. One of their vehicles is the ITU (International Telecommunications Union, a U.N. body with 182 members), dominated by U.S. money and national power, by which the firms exploit national power for private gain. Vice- President Al Gore, U.S. Government point man on this matter, is pushing hard, using U.S. power. "Gore said the U.S. will throw its weight behind the global network project" (speech in Buenos Aires to the ITU (*Los Angeles Times*, 22 March, 1994, p.D1).

Is it feasible for the public to collect spectrum rents? It is a simple matter of adapting classical economic theory to modern technology. Techniques and venues change; principles perdure. Professor Harvey Levin worked out feasible methods 25 years ago (Levin 1971). It only remains to apply them.

6. Rights of way, easements, etc.

Rights-of-way (ROW) occupy enormous areas. In cities, especially, streets occupy from one quarter to one half of the entire improved area. Right-of-ways have strategic monopoly bargaining power limited only by what the traffic will bear or what regulation permits. When privately owned they

owe their very existence to the state, which not only granted the original land surface, but in almost every case loaned its power of eminent domain to cobble the ROW together. The power to extract rents from taxing and rating ROWs is almost limitless (Gaffney 1988). It is limited prudentially by the case for economical (marginal cost) pricing to maximize use, but this can be provided via various forms of price discrimination (declining block rates) that are compatible with extracting rent from customers on high-rent lands.

Some basic ROWs are streets, rails, highways, canals, navigation servitude with priority and subsidy and freedom from liability, air corridors with overflight privileges, ROW for power lines, phone lines, cable lines, gas lines, water lines, storm sewers, sanitary sewers, flood-control channels, drainage lines, etc.

When ROWs are congested, direct use has high marginal social cost, and could and should be used to raise revenues. Peak load tolls on ferries, bridges, and controlled highways are obvious cases. Parking fees for downtown streets are another: think what revenues New York could raise from the street parking it now gives away on land worth up to \$2,000 per square foot, or about \$600,000 per parking space. Moving vehicles also take up scarce space: electronic means of measuring vehicle space usage are now technologically and economically feasible and in actual use in several stretches of congested space, like California #91 in Orange County. Taxi medallions in Manhattan now trade for over \$200,000 apiece, values that could easily be socialized. Oversized, space-hogging vehicles can and should pay more.

Utility ROWs are the essence of the franchise's monopoly power. Through the common devices of price discrimination they can be and are used to extract rents from consumers, limited only by regulation. A public agency might easily use such discrimination to tap rents from customers with high land values (Gaffney 1988).

ROW monopolists are often required to provide "common carrier" service to all applicants. In practice, some of them comply with the letter, but not the spirit of the law by giving outsiders and interlopers low priorities of usage, reserving the prime times for themselves. This results in monopoly profits, a form of rent, that should be taxed away, if it cannot be prevented altogether.

The common tax practice is to value utility lands on the same basis as ordinary private lands adjacent thereto - lands lacking the eminent domain premium. This results in ignoring the eminent domain premium in ROWs - in effect, valuing it at zero. A proper tax on rents would assess its monopoly value and tax it accordingly.

Many ROWs were granted, and accepted, subject to heavy public obligations, like the rails duty to carry the mails free, and carry troops in wartime, and maintain passenger service. Private beneficiaries have become expert at sloughing off these public obligations, and brainwashing the public into accepting it as being in their interest. Deregulation; privatization

Backup lands with special access and/or integration: parking, railyards, power-plant sites, tank farms, fuel stations, moorings, truckyards, rest stops, sales yards for autos, trucks, driveways, laterals, container lots, aircraft parking, billboard sites, etc.

7. Aircraft time-slots, landing rights, gates, airlines, etc.

- a. Busy airports: congestion-relieving landing fees are rent charges.
- b. Redundant airports: high unit cost from underuse. Here, user cost equals zero, so users as such should not be charged, leaving benefited landowners to pay it all. Desired economic result: abort such airports, release vast lands for higher uses.

8. Pollution easements, *de facto* and *de jure*.

These include contingent easement (Price-Anderson Act), and subsidized waste-disposal. The alternative is "polluter pays," a "green tax," which is a rent charge (principle of "Tax bads, not goods.")

9. Farm soils

10. Recreation lands

11. Privileged use of congested commons (user charges on commons are rent taxes.)

- a. City streets: taxi permits; curb parking; access to congested times and areas; preferential traffic controls; vending licenses, *de jure* and *de facto*, mobile and stationary; licenses for oversized vehicles; surface mass transit; emergency vehicles; cortege right-of-ways; right-of-ways for utilities, with rights to stop traffic for digging, etc.
- b. Highways: peakload use; exclusive rights to serve, e.g. trucking, busing; accident investigation and clearance;
- c. Parks, beaches
- d. Air
- e. Common waters
- f. Open range (grazing, hunting)
- g. Pre-leasing exploration

12. Territorial franchises

- a. Publicly granted: bank charters; concessions at parks; utility franchises; liquor licenses; gambling licenses; etc.
- b. Privately granted: dealerships; leases that bar competition; etc.

13. Salt water

The Minor sources

1. Privileged access**2. Wildlife habitat zones**

3. Misc. energy sources: geothermal, wind, solar sites, firewood, adiabatic sites, tides, currents

4. Zoning

- a. Unaccounted-for zoning losses
- b. Exclusive use zones, e.g. foreign trade; tax-preferred zones, e.g. urban redevelopment zones (clear case of All Taxes Come Out of Rent); dumpsites; commercial zoning; locally undesirable land use (nuisance) zones;
- c. Variances with grandfather protection

5. The gene pool: seed patents; natural herbs, medications; breeding stock

6. Quotas, allotments to produce or import or sell.

Generally, such quotas should simply be stricken, transferring their rents to other lands; but, if not, they are taxable property.

7. Some patents which are indirect means of dominion over natural resources. Shale oil extraction techniques; coal liquefaction; sulfur extraction; etc.

8. Licenses to produce or dispense goods or services that are generally prohibited: nuclear materials; medicinal drugs; pharmacies; alcohol; undertaking & burial; barbering; gambling, liquor, prostitution.

9. Monopoly, with or without government support.

Monopoly or market power may be recognized wherever price discrimination is practiced, or might be.

10. Aspects of advertising

Intruding without leave on public's limited attention span, downgrading associated experiences. Billboards, commercials on media, phone solicitations, junk mail, roadside lights, newspaper ads, skywriting, sound trucks, etc.

11. Easements for views, air rights, etc.

Also the converse: permission to build or maintain eyesores, like the transmission tower on Twin Peaks, San Francisco; overhead wires;

12. Moorings

Riparian and foreshore land has high premium value from water access, but in addition, space on the water itself has another value.

Falsified land values

ECONOMISTS and government statisticians trivialize values and rents of ordinary or "standard" land. To recap the high points, here are some of the devices of false measurement that make land and rent vanish.

1. Narrow meaning of "land" to farmland.
2. Making land and rent the "residual" when allocating value between land and extant buildings. This has its *reductio ad absurdum* when buildings are demolished, indicating a net value of zero, and the tax valuer is still valuing the building higher than the site.
3. Understating building depreciation; ignoring building obsolescence.
4. Granting low assessments based on current use; or current restrictive zoning that market prices ignore; or historical cost; or capitalized cash income.
5. Valuing "acreage" as though it were farmland, regardless of location. *Reductio ad absurdum* comes to light when condemnation values are found to be many times assessed values.
6. Subsidizing some activities by exempting their land from taxation, even though salaries earned thereon are taxed; and neglecting to value the land at market.
7. Omitting the option value of favorable zoning until it is exercised. Likewise, omitting other option values like potential mineral leasing.
8. Omitting the value of grandfather privileges of old buildings.

9. Omitting the value of land and resources outside state and local tax jurisdictions (e.g. the Outer Continental Shelf).
10. "Cashflow bias": overlooking noncash and other less obvious and less easily measurable non-standard values of land. Overlooking or understating imputed income and unrealized gains.
11. Treating corporate values as "intangibles," ignoring the land assets of corporations, thus treating corporate income as though it contained no land income. Ditto for other profits.
12. Valuing ROWs only in lower uses; putting no value on result of using eminent domain.
13. Ignoring the ruse of shifting income to foreign-flag vessels, thus concealing the rents taken by businesses that are vertically integrated.
14. Overlooking the rents taken by extraterritorial assets that enjoy national flag protection, for which payment should be due.
15. Maladministration of public lands, concealing their latent rents.
16. Overlooking the value of *de facto* tenures without formal fee simple titles, e.g. licenses to divert water.
17. Overlooking unrealized gains in value, a form of rent.
18. Overlooking latent strata values ("air rights").
19. Overlooking the value of reservations held back by sellers and lessors.
20. Omitting latent plottage values of wrongly sized or shaped parcels.
21. Omitting the value of favorable leaseholds.
22. Omitting the value of privileged exemption from public liability, e.g. nuclear power sites, old plants with grandfather licenses to pollute, shipping licenses, etc.
23. Omitting the premium value of lands held by firms with superior market power. Adjusting the values of "ordinary" lands (land surfaces that are surveyed and platted) for the above factors results in rent values much higher than anything conventionally measured or reported today. Yet, when we propose taxing rents, those elements of value are all part of the tax base.

It seems reasonable to conclude that aggregate resource rents, in a tax-free economy, would be adequate to replace all present taxes. That conclusion is subject to a comprehensive definition of rent, as explained above.

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