Sales Tax Bias Against Turnover and Jobs
By Dr. Mason Gaffney

This article was first published in GroundSwell, a publication from Common Ground, USA. The Robert Schalkenbach Foundation has received approval from Common Ground, USA to republish this article at no cost for educational purposes.

Article citation:
Gaffney, Mason. “Sales Tax Bias Against Turnover and Jobs.” *GroundSwell*, Sept. 2011, pp. 6–11.

The Robert Schalkenbach Foundation’s Digital Collections and Archives is an extension of the Robert Schalkenbach Foundation’s Engel Georgist Library. It collects, organizes, preserves, and provides free online access to researchers and the general public of Georgist literature including books, newspapers, pamphlets, scholarly articles and archival materials.

RSF is particularly proud to offer free online access to the works of the late Georgist scholar Mason Gaffney, made possible through the generosity of the Danica Foundation.

Robert Schalkenbach Foundation: https://schalkenbach.org/
Engel Georgist Library: https://www.librarycat.org/lib/EngelGeorgistLibrary
RSF Digital Collections and Archives: https://schalkenbach.starter1ua.preservica.com/

SALES TAX BIAS AGAINST TURNOVER AND JOBS

By Dr. Mason Gaffney, Riverside, CA

Foreword

My thesis is that retail sales taxes, however "general" or universal in their apparent coverage, tax capital for turning over; turnover means replacement; and replacement sustains demand for labor. Replacement does not just depend on sales, it anticipates them, and thereby generates the consumer incomes that finance them: thus it can take the lead in the otherwise circular and now vicious circle of macro-economics in which employers wait for consumers, while consumers wait for jobs. Turnover is measured by the sales/capital ratio, which is highly variable among different firms, products, locations, stages of the cycle - and tax regimes, which economists influence. Sales taxes depress it heavily.

Public officials at all levels feel major pressure to make jobs, as they should. But how? We begin with the physicians motto, *primum non nocere* (first, do no harm). This is not a mindless grouch at all taxes, for we need public revenues, and some taxes have positive effects. This is a rifle-shot at retail sales taxes. These are a major source of state revenues today, they have grown fast since about 1932, and many politicians and lobbyists and academic and think-tank economists are agitating to raise them, and to add a Federal sales tax or VAT.

The Prevailing Canon

Standard textbooks and learned papers tell us that a truly general retail sales tax, unlike an excise tax, is neutral as between one commodity and another. A statewide tax is also neutral between locations, since it is the same in one town or region as another. Those conditions are never approached in practice, but in the sales-tax canon that merely means reformers should extend the reach of the tax, as California is trying to do against Amazon today – setting a precedent that would apply to every State. Authoritative economists, whether liberal or conservative, are rooting for California to win over Amazon, and for years have been conditioning students' minds to favor taxing interstate commerce. Thus, Buchanan and Flowers wrote "If the tax is uniformly imposed on the sale of all commodities and services, there can be no real shifting of resources from taxed employments to nontaxed employments. The shift in relative prices occasioned by the partial tax cannot occur under a truly general sales tax" (1975, p. 399). Even Harry G. Brown, no fan of sales taxes, wrote "if there is a tax on the production of all commodities and services ... there is no advantage in leaving one taxed line for another line which is taxed to the same extent." (1939, p.254). Earl Rolph and George Break, who bend toward agonizing agnosticism on most issues, commit to this view (p.117). So does Harold Somers, a little less guardedly (pp. 17, 26). Bernard Herber (p.254) chimes in cautiously, citing other work by Friedman, Musgrave, and I.M. D. Little. David Hyman finesses the question of forward vs. backward shifting as he segues seamlessly from a "consumption tax" based on income less saving to a retail sales tax (2005 pp.617-26). Charles McLure, mincing no words, wants Congress to outlaw " ... the ridiculously unfair and distortionary de facto exemption of interstate sales by mail-order houses" (2005).

The extreme outcome of such reasoning is Somers' implausible advice to the California State Legislature that a tax on gross sales is the same as a tax on net income (p.27). We return to this later under "The Mill Effect". Here we just note that there is another part of the canon, The Ramsey Rule, saying that sales tax rates, to be allocationally neutral, should not be uniform at all, but inversely proportional to elasticities of supply and demand. The writer has addressed this issue elsewhere (2009, pp. 52-53), quoting A.C. Pigou (p.105):

"If there is any commodity for which either the demand or the supply is absolutely inelastic, the formula implies that the rate of tax imposed on every other commodity must be nil, i.e. that the whole of the revenue wanted must be raised on that commodity."

That reasoning leads straight as a guided missile to levying taxes EXCLUSIVELY on the value of land, because its supply is absolutely inelastic. Whether Pigou knew what he was saying we may never know, for he was guarded and cautious and indirect and often obscure and coded, like so many academics fearful of witch-hunters. His Chapter XIV, "Taxes on the Public Value of Land", does clearly favor such taxes, but is more hedged and two-handed. Meantime, modern academics manage to square the circle by citing and then ignoring Ramsey's Rule. Richard Musgrave, whose admiring students are visible leaders in the field everywhere, leaves Ramsey completely out of his classic *Theory of Public Finance.* More commonly, writers misquote the Rule, having it apply only to demand elasticities, omitting supply elasticities, even though these are the more important part of the original rule. Professor Allyn Young of Harvard started this ball rolling in reviewing Pigou in 1929: "I shall assume that costs are constant. It will be unnecessary, therefore, to take account of elasticity of supply as something apart from elasticity of demand" (Young, p.15). Boom, just like that, *ex cathedra!* So much for the fixity of land supply.

David Hyman's treatment, changing from one edition to the next, is too Protean to pin down. Jonathan Gruber contrives to cite the rule correctly but then turn it upside down (p.588) first by omitting supply (which he has just included), and then by "balancing" it with the broad-base rule, offering no rationale. John Kay purges supply from the rule, turns it into a case for a poll tax, rejects that, and by a path obscure and lonely concludes by favoring levying a tax uniformly over a broad base. The notable exception is Joseph Stiglitz. Consistently, Stiglitz often writes in favor of taxing land values (2010).

Modern writers deplore the exemption of "services" from the sales tax base. These writers and teachers refer in their contexts only to labor services, ignoring the service flows of land or capital. This is not from ignorance: they know that the "service-flow" of an owner's home has long been included in NIPA as a form of income, income consumed by the owner-occupant as the real estate yields it. They just blank that out when it comes to taxing services to the "final" consumer (Anderson, p.252). This attitude suggests a bias among economic authorities - a bias self-perpetuated over time by the selective processes familiar to anyone whose brain remains intact after traversing the echo-chambers (continued on pg. 7)

SALES TAX BIAS (from page 6)
of graduate training in Economics. This bias even affected Harry G. Brown, leading academic Georgist of about 1920-50. Brown published that "wages are a much larger part of the total product of industry than is either interest on capital or rent of land" (1939, p.256) – a standard line used to support "broad-based taxes" in lieu of taxes that zero in on land rents, the kind that Brown championed. (For a detailed refutation of this view, see Gaffney, 2009.)

Sales taxes in the U.S.A. are not "general"; lawgivers do not intend them to be. Sales taxes apply by law only to sales of personal property, i.e. the lawgivers knowingly exempt that other kind of legal property, real property, meaning LAND and anything affixed to it. They exempt real estate sales, debt service, rent, sales commissions, crop shares, royalties, bonus payments for leases, imputed consumption of owner-occupied grounds, gains in value, gifts, bequests ... almost everything to do with land, which the law treats quite separately from personal (movable) property. (An exception is the tax on hotel and motel rents, presumably in the belief that transients bear the tax and do not vote here.) On top of that many tenures to natural resources are not even real property, or any kind of property in the law, but licenses, e.g. to appropriate water, and not subject to any tax.

An exception is when a producer of "tangible personal property" uses the time-consuming services of land to add value to the goods, i.e. to convert the untaxed service of real property into taxed personal property. However, when one uses land-service directly, as for parking, riding to the hounds, shooting, golfing, housing, waste-disposing, yachting, or exhausting aquifers to water lawns, there is no sales or other "consumer" tax. Standard texts and authorities ignore and thereby accept this loophole, silently telling readers to conform with the custom, to take it as dogma, time-honored and regular. Thus Rolph and Break, who refer to sales taxes only as "commodity taxes", say that "optimal pricing refers to price relations among products only ..." (n. 15, p.120).

No State, to my knowledge, sales-taxes interest on consumer loans, e.g. on buying cars on time, and the dealer retains title to secure payment (Somers, p.11). The legal tax base is simply the invoiced price when the buyer takes possession, even though interest may add 50% to that price.

Sales of arms and supplies to the U.S. Government, to be used up in warfare, are also exempt.

John Due, a standard authority, wrote in 1963 that the Feds have preempted the income tax base, so the States "are virtually compelled to turn to sales taxation" (p.296) - no mention that they might turn to property taxes, as they did from colonial days to 1930 or so. Actually, the retail sales tax is a recent interloper in western fiscal systems. "The sales tax existed ... intermittently, in various European countries to about 1800, but in the 19th Century it played no part in the fiscal development of the important nations, ... " (Shoup and Haimoff, 1934, p.811; National Industrial Conference Board, 1929, pp. 163-66). Professor Due did not note how states may also, besides property taxes, impose severance taxes, carbon taxes, franchise taxes, fees for using state property like water (falling, ground, and surface), commercial fishing licenses, or other means of raising revenue from land and natural resources.

Neither did Professor Due note that millions of parcels of rental property, commercial and industrial property, and vacation and other extra homes of the most affluent belong to people who live and travel and consume out of the state or the nation. From a worldwide viewpoint they may (or may not) pay sales taxes elsewhere, but it belies Due's dictum that each State is "virtually compelled to turn to sales taxation". On the contrary, turning to property taxation would close the gaping hole of absentee ownership, which sales taxes do not. It would also attract droves of buyers from nearby states, as Delaware, Oregon and New Hampshire do so successfully (Sullivan, 2011).

Due also writes (p.295) that taxing residential rents is unfair to tenants because there is no tax on the imputed rent that owners pay to themselves – no mention that we could balance taxes fairly by taxing the latter instead of continuing to exempt the former. Anderson's and Due's views seem to reflect the profession's blind spot on matters pertaining to land, or tacit approval of raising sales taxes to avoid taxing land or its rent.

Some economists speculate that any tax on or shifted to workers, whether as such or as consumers, may make them work harder and longer. It is called a "backward-bending supply curve", caused by an "income effect" (Somers, p.27), a bloodless way of describing putting mothers and children and cripples and invalids and illegal immigrants and students and the aged in the labor force – thus combating unemployment by lowering pay rates. Most economists choose examples revealing that they would apply the idea only to labor supply; many, like George Stigler of Chicago and Robert Rector of The Heritage Foundation, tell us this is good policy, that the minimum wage and union scales are too high anyway and everyone deserves a "right to work" for less. Prof. Jack Stockfisch (1954) even applied it to owners of capital and the supply of investment, but this has not caught on. Prof. Nicolaus Tideman has correctly applied it to landowners with respect to a tax on land values, but not otherwise, which makes sense since sales taxes, and most (but not all) other taxes, lower returns on productive capital and drive investors into buying land as a long-term store of value, like gold – a point that Hendershott, Follain and Ling have recognized ((1986).

Sales taxes are said to fall on "consumption", and so to encourage "saving", but one searches in vain for any general principled definition of "consume" or "consumption" in the sales tax literature. Shoup and Haimoff (1934) are among the few who at least try to define key terms, but lose us in a thicket of minor technicalities, legalisms and ambiguities. Tax simplifier and lawyer Bernard Wolfman wrote in 1969, "If the statute were simpler, and spoke more in principles, the courts would feel a broad mandate to enforce the law and honor the intentions of lawgivers ." General principles are what economists should supply, what the present canon lacks, and what we seek here. (Cf. also Gaffney, 2009, "Four Vampires")

What does it mean to consume land, for example? Perhaps the unwritten assumption is that we cannot consume land because it does not wear out, but we certainly can consume time slots of it, and like the lawyer and doctor, time is its stock in trade. Man cannot destroy (continued on pg. 8)

SALES TAX BIAS (from page 7)

matter or energy or space, but wasted time is lost forever. If we convert 160 acres from growing walnuts to golfing, or from pasturing cows to sheltering foxes to chase or birds to shoot, or riparian land from landing food-fish to harboring yachts, we are reallocating the land from production to having its time consumed for the owner's pleasure, right? So to make sense of sales taxation we must change existing literature and its paradigms, which now lead us as by a ring in the nose to ends selected by an apostolic succession of authorities steeped in what may be false doctrines. We must think the matter through afresh, with our own minds.

The Mill Effect

In this paper I take the above as too obvious to labor further, and focus on a more subtle but deeper and more general matter: how sales taxes penalize and slow down the turnover of capital, and the frequency with which a given capital is reinvested to make jobs. John Stuart Mill, with his philosophical bent, looked deeper than modern writers on sales taxation, and pointed out a systemic bias inherent in the tax.

"... if there were a tax on all commodities, exactly proportioned to their value, there would, ... as Mr. M'Culloch has pointed out, be a 'disturbance' of values,... owing to ... the different durability of the capital employed in different occupations. ... in two different occupations ... if a greater proportion of one than of the other is fixed capital, or if that fixed capital is more durable, there will be a less consumption of capital in the year, and less will be required to replace it, so that the profit, if absolutely the same, will form a greater proportion of the annual returns. To derive from a capital of £1,000 a profit of £100, the one producer may have to sell produce to the value of £1,100, the other only to the value of £500. (I.e., where capital is less durable, you must sell more gross to get the same net profit.)

"If on these two branches of industry a tax be imposed ... the one commodity must rise in price, or the other must fall, or both: commodities made chiefly by immediate labor must rise in value, as compared with those which are chiefly made by machinery. ... " -- (1848, Book V, Chapter IV, pp. 504-05).

How memorable is Mill's word "Disturbance", 150 years before Darth Vader in Star Wars sensed a "Disturbance in The Force"! In Mill's and M'Culloch's usage, "The Force" is value as determined in a market before or without taxes based on gross sales.

Mill hid this light under a bushel, by offering just one example of a small difference, arithmetic only, and easy to overlook in passing, which is what later standard economists have done. We should, rather, set this light in a tower on a hilltop as a beacon sending its gleam across the wave to save the foundering ship of state.

Harold Groves, a clearer expositor than Mill, makes the point in a simple table (p.113). "Store A is engaged in a trade which has a very slow turnover, such as the furniture business; Store B is one with a rapid turnover, perhaps a meat shop".

Store	(I) Operating Capital	(II) Gross Sales	(III) Sales/ Capital	(IV) Profit Before Tax	(V) Tax @ .5%	(VI) Tax/ Capital (%)
A	$30,000	$30,000	1	$300	$150	0.5
B	2,000	100,000	50	200	500	25.0

The sales tax, which is based on Column (II), gathers much more from B, the meat shop, than from A, the furniture store, because of B's higher turnover and greater volume. B's little capital of $2,000 turns over 50 times and is taxed 50 times a year, while A's $30,000 turns over and is taxed just once. Groves uses this table for another purpose, but it serves to make Mill's point as well.

Again, compare a parking lot with a cafeteria. Suppose both to be taxed on gross sales, including services. The inventory of fresh food in the cafeteria is taxed daily, as it sells out and turns over. The payrolls are taxed daily too, for they add to the gross value of sales. The value they add to the purchased stock of food is capital, too: "working capital". Or, if one prefers to ignore capital of life so brief and so small a claim on the final product, the sales tax is simply a tax on labor. The gross sales of parking lots, at the other extreme, include no turnover of capital at all, unless perhaps a minuscule Capital Consumption Allowance (CCA) on the paving and striping.

More generally, as Dan Sullivan points out, sales taxes penalize high-volume low-markup marketing strategies as against their opposite. Lest one turn up his nose at, say, Walmart, its low prices do not reflect low markup so much as low labor-service per dollar of inventory. It also provides acres of free parking, a service of land, like other big-box stores. Sullivan also notes that sellers in better locations, say Rodeo Drive, can have higher markups, so sales taxation favors better locations over marginal ones. Clifford Cobb notes that ghettos have many barber shops and beauty parlors but few shops carrying commodities.

What Mill means by "capital" is clear from his memorable saying, "Capital is kept in existence from age to age not by preservation but by continual reproduction". For a mnemonic, call it the "Millwheel Principal", a superior ancestor of modern macro-economics that later writers have obscured and then lost completely behind the veil of money. Capital is not a specific concrete good, like a chair in the furniture shop. Rather, it is a quantum of value that we can, and normally do, keep existing by using the cash from sales to "meet the next payroll", as they say, to replace the chair. It needn't be an identical chair, or any chair at all, for capital in this transition is totally fungible in form and location.

Illustrations and Analogies

Within each business there are also differences among kinds of capital. In a retail bakery, for example, there are pies and pie-shelves. The pies come and go, perhaps several times a day; the shelves last for years; the ovens for decades; the buildings even longer; the sites forever. Many a needy widow with hardly any capital has earned her mite by baking, while renting the site, building and hardware. Her sales/capital ratio is high in contrast (continued on page 9)

SALES TAX BIAS (from page 8)

with that of the landlord, and orbital in contrast to, say, Georgia-Pacific or Weyerhaueser timber corporations.

The case is even clearer when we compare two uses competing for the same land. The one with more turnover pays more sales tax per dollar of capital invested. The tax drives away capital that turns over fast, and reallocates the land to capital that turns slower, or to uses requiring less capital, or no capital at all, like the parking lot. As to the lot itself, it never turns over in the relevant sense of wearing out and being replaced. Curiously, Harry G. Brown, a stern critic of holding land idle, as well as of taxes with excess burdens, does not connect his two goals in one consistent system (1939, p. 254). He does not recognize that sales taxes inhibit using land intensively, if at all. His mentor and role model Irving Fisher may have confused him, as he has others. In Fisher's tax theory, all taxes should fall on consumption, and capital gains are not income at all.

Chemists have a vocabulary for it. Land in production is like a chemical "catalyst": it facilitates a process without disappearing into the product. Its "quantum of value" remains in the land. Working capital is, at the other extreme, like a "reactant": its corpus and its quantum of value go into the product. That means they get sales-taxed with each turnover – the basis of the Mill Effect.

Physiologists have a name for it, too: what is metabolism but the turnover of protoplasm in cells? One could elaborate, and find analogies from other sciences, but the point is made, and will be made once more below with Dorfman's essay on hydraulic engineering.

Difficulties, Solutions, and Measures

"Fixed" (durable) capital is a mixed story. The corpus of fixed capital as a catalyst does not get sales-taxed, only its income plus a little extra for depreciation get sales-taxed. Separating the catalyst from the reactant in fixed or durable capital is a trifle less simple than with working capital, but only marginally so. The basic mathematics of finance tells us exactly how to divide the product between interest, the net income of capital, and depreciation, which corresponds to the recovery or turnover of capital (and is labeled a "Capital Consumption Allowance" (CCA) in NIPA). We do not repeat the mathematics here, but lenders, mortgagors, bankers, and I.R.S. agents use it every day. So do millions of innumerate consumers who buy on the installment plan, taking the mathematics on faith.

A unit or "quantum" of fixed capital embodied and frozen into, say, Hoover Dam, or grading building sites, or land-fill in shallow water, or a tunnel, or The Pyramids, or The Brooklyn Bridge, or the marble cladding of Nelson Rockefeller's Parthenon in Albany, turns over so slowly that its net product or service after O&M is mostly pure income. That product or service as a tax base, however we measure it, includes little recovery of capital. Too often, indeed, there is none at all, thanks to engineering megalomania coupled with the "irrational exuberance" of land speculators and "earmarking" politicians who subsidize them.

As to land, this never turns over. Its ownership may turn over many times, but that is an entirely different meaning of "turnover": it entails no depreciation and ultimate replacement of the lot, and no routine recovery of the original purchase price through a CCA (Capital Consumption Allowance). In a rational market, land is priced so high that its cash flow is just enough to cover interest on its price, with nothing left over for a CCA. In a rising but still rational market, indeed, interest on the price is greater than cash flow by an amount equal to annual appreciation. In a market with "irrational exuberance", which comes along every 18 years or so, interest often exceeds the sum of cash flow and appreciation, as we learned so well in 1990, promptly forgot, and went through again in 2008.

Many economists disregard The Mill Effect by assuming, too blithely, that sales taxes are all shifted forward to "consumers". Even if that were 100% true it would certainly depress demand for the overtaxed items. Most economists today share some, at least, of the paradigm of Buchanan and Flowers wherein sales taxes are shifted backwards to factors of production. There is a hint of this in Mill (Bk V, Chap 5, p.517), but the stronger recent statement is in Harry G. Brown (1939). Earl Rolph, crediting Brown, agrees (1952). Richard Musgrave, crediting both Brown and Rolph, endorses this approach in the main, too (1953, p. 318; 1959, p.379). Many of us now hew to the Physiocratic doctrine that All Taxes Come Out of Rents (ATCOR). Either way, sales taxes create "A disturbance in The Force" – a massive and basic disturbance. To fuss over trivia, while missing the Mill Effect, would be to strain at gnats while swallowing a camel. For examples of such straining see Shoup and Haimoff, Somers, Rolph/Break, and almost any popular text on public finance.

Many texts on public finance compare a retail sales tax favorably with a "turnover tax", since the latter taxes every transaction up to and including the retail stage. Thus they dispose of "turnover" by giving it an entirely different meaning than that used by Mill, and used here. They criticize a "turnover tax" (as sometimes used in Germany, and in the former Soviet Union, and now in Ohio) for taxing the same capital several times, "in cascade", as it moves from owner to owner in successive transactions through the "stages" of production. They then criticize how firms may avoid it by integrating vertically. Fair enough, but then they dust off their hands as though done, leaving us the retail sales tax, imposed at only one "stage" of production, as though it were free of taxing turnover. Thus they purge The Mill Effect, the "Disturbance in The Force", from modern fiscal economics.

One of the few mainline fiscal economists to address Mill's kind of turnover was Carl Shoup (1948). Shoup, with Vickrey, did monumental public service in redrafting the Japanese tax code under MacArthur' reign, and warrants respect. Shoup's work is of limited value to us here, however, for five reasons. One, he writes of turnover only in connection with the corporation income tax, not the sales tax. Second, he alternates between using "turnover" as the sales/taxable-income ratio (p.326) and then the ratio of sales to "total property", closer to Mill's meaning (pp. 327 and 328), but confusing readers. Third, he digresses into details of corporate organization that distract us, and perhaps Shoup himself, from the main themes, the general economic principles at issue. These are what concerned Mill and should concern us. Fourth, he writes that differences in turnover ratios only cause tax bias if they are "in the same (continued on page 10)

SALES TAX BIAS (from page 9)
industry" – i.e. inter-industry bias is of no account (p.328). The last belief is so indefensible I will not labor the obvious.

Fifth, Shoup inexplicably backs away from drawing any practical conclusions, pleading lack of data (p.328), implying a grant request is coming. That is infra dig. One does not need any National Bureau data and tedious analysis to observe that capital in the baker's pies turns over about daily, or 365 times a year, while capital used to reforest cutover lands in boreal climes may take over 70 years, or 26,000 times as long as the pie.

Austrian economist Mark Skousen, presents an enigma. He presents a long valuable list of previous texts and learned writings supporting Austrian capital theory (Chap. 4, pp. 84-130 et passim), the product of extensive research in deep tomes and articles. He argues persuasively against policies that drive capital away from "lower order" capital goods that turn over quickly because they are near to the final consumer. You would therefore expect him to take the lead against retail sales taxes, with their bias against these lower order goods.

Instead, Skousen suddenly reverses himself and favors sales taxes on the grounds that final consumers bear them. "... a consumption tax ... would be highly favorable toward the earlier stages of production," he writes (p.345). But "earlier stages of production" means UNripe capital, at farthest remove from final consumers, capital that ripens and turns over slowly, the kind that Austrian theory tells us to treat LESS favorably, or at least NOT favorably. Let us hope that Skousen, who is still active and even crusading for his views, will take notice of this apparent flip-flop and explain it for us. I will not labor the obvious contradiction, but simply express wonder that no Austrian economist, to my knowledge, has ever used Austrian-derived paradigms to criticize sales taxes.

Skousen also gives priority to repealing the "capital gains tax", evidently believing that it is a tax on capital, as its name misleadingly suggests. Actually, most unearned increments of value come from land. Taxing or untaxing them has no direct effect on the structure of capital proper. Most real capital depreciates with time. There are some exceptions, like commercial timber and other biological capital that does add value with time. Here, a pure gains tax would indeed contain a small bias in favor of slow turnover, since the tax is deferred until sale (Gaffney, 1957, 1970-71, 2006; Vickrey, 1971). The capital gains tax as we know it in practice, however, is structured to impose higher rates on faster turnovers.

Richard Musgrave, a literate German native and Heidelberg graduate, does cite the "Swedish Austrian", Wicksell, who published in German and on tax policy, and with great insight. Penetrating Musgrave's arduous and obscure prose, and adding some leaps of faith, we do find that a tax on a base variably defined first as "production", then as "production or gross receipts", and finally again as "production" (pp.396-97), "leads to a lengthening of the average period of investment" (p.397). With effort one could take this as endorsing The Mill Effect, but Musgrave obscures it inside so many reservations and qualifications and disclaimers and digressions that one only can count him as hinting faintly, in the approved professorial two-handed hedging style, with little conviction, that there may be something to it (pp. 392-99).

As to definitions and measurement, some economists see nothing but insoluble problems in measuring or even conceiving of the lifetime of a simple capital item, and even worse problems with the average lifetime of a collection of heterogeneous items. The matter may be made to seem hopelessly complex, and a battery of economists, following J.B. Clark and Frank Knight, ever stand too ready to oblige.

Fred Foldvary, an "Austrian" thinker, solves the problem by describing specific concrete embodiments of capital as "capital goods", while the word "capital" standing alone means the quantum of value. This quantum of value is relayed from one concrete capital good to another with each turnover (cycle of liquidation and replacement). In this relaying the capital becomes completely fungible in form and composition and location. Fungibility is a concept that most economists grasp and teach, although some resist, or quibble over the idea of capital as a quantum of value – something more obvious to accountants, however, and, as we shall see, to hydraulic engineers.

Hydraulic physics and engineering provide a simple solution, ably expounded by Robert Dorfman in an article I cannot praise too highly (1959). Dorfman whimsically calls it "The Bathtub Theorem", and properly acknowledges Knut Wicksell's priority with his "grape-juice model", although Dorfman's model is more general. The average transit time of a molecule of liquid through a reservoir is basically the flow/fund ratio: in economic terms, the sales/capital ratio (p.353 et passim). For the lady baking pies and selling out daily the annual ratio is 365. For the boreal forester the annual ratio is 1/70. Both figures may be modified slightly for elegant variations on the main point, but the difference of 26,000 times illustrates the Mill Effect so starkly, why bother with more? For doubters and masochists Dorfman provides many equations, but ends them delightfully saying "It is nice that this elaborate calculation is really unnecessary" (p.372).

Dorfman does not treat land separately, which is a fault. Neither does he analyze sales taxes and their effects. This writer has tried to supply the lack (1976, mathematical appendix). For now it is enough that we can measure turnover simply, and it varies hugely among sales-taxable items and firms.

Professor William Vickrey (1971) favored me by contributing a general mathematical model published as an Appendix to my "Tax-induced Slow Turnover of Capital", showing how "Yield Taxes" (sales taxes on timber harvests) slow down average rotation periods. He equates average tree life with the sales/capital ratio simply by inverting the order of integration – a new trick for most of us, a simple trick for him, a math major (1971). It was consistent with his lifelong efforts to tax capital gains as they accrue, following the Haig-Simons definition of income.

Summary

We are left with this. Jobs depend on turnover. Turnover is measured by the sales/capital ratio, which varies hugely among different firms, products, locations, stages of the cycle - and tax regimes. Elected officials control the last, and we as economists influence elected (continued on pg. 11)

SALES TAX BIAS (from page 10)
officials. Sales taxes, rampant and rising in our times, depress turnover heavily, and so depress demand for labor – both the number of jobs and their pay rates. Property taxes have the opposite effect, and so may some aspects of income taxation. We do not here address how both property and income taxes may be modified for the better, although they may and should be. Our main point here is that sales taxes (and their twin, VAT) are among the worst possible choices when the objective is to make jobs and raise pay rates.

Appendix I: How Gigantism in Banking Reinforces the Bias Against Turnover

The following is an excerpt from Stacy Mitchell, "How State Banks Bring the Money Home", *Nation of Change.org*, Sept 15, 2011.

One of the most significant, but least noticed, consequences of the rapid and dramatic consolidation of the banking industry over the last decade is how much it has hindered the U. S. economy's ability to create jobs.

To begin to understand this, take a look at each end of the banking spectrum. On one end are the nation's 6,900 small, locally owned, community banks. These institutions control $1.4 trillion in assets. That's 11 percent of all bank assets. They currently have $257 billion in loans to small businesses and farms on their books.

On the other end, four giant banks-JP Morgan Chase, Bank of America, Citibank, and Wells Fargo-now command $5.4 trillion in assets, or 40 percent of the total. Given that they are nearly four times as large as all local banks combined, one might expect that they would have made four times the small-business loans, or about $1 trillion. In fact, these banks have a mere $85 billion in small-business and farm loans on their balance sheets.

Why do giant banks make so few small-business loans? Automation is the short answer. The only way these sprawling institutions can function efficiently is by taking a mass production approach to lending: Plug credit score, income, and appraisal into the computer - out comes the loan. That's why the mortgage business was supposed to be so safe. The economic meltdown of 2007 shows that it's actually very risky.

Small-business loans are not so easily mechanized. Each is a custom job, requiring human judgment to evaluate the risk associated with a particular entrepreneur, a particular business plan, and a particular market. Community banks excel at this. Their lending decisions are made locally, informed by face-to-face relationships with borrowers and an intimate understanding of their hometown economies. Big banks, whose decision-making is long-distance and dictated more by computer models than judgment, are pretty bad at it. So they don't make many small-business loans.

It's no wonder, then, that unemployment has been so persistent. Our financial system is top-heavy with big banks that are scaled to meet the needs of large multinational corporations. The Commerce Department estimates that U.S.-based multinationals have eliminated 3 million American jobs over the last decade. Meanwhile, small businesses, historically responsible for about two-thirds of new jobs, have found it harder and harder to obtain credit.

In short, we have a financial system that is mismatched to the economic needs of American communities. This mismatch will become more acute as we attempt to transition to a carbon-efficient economy, which, by its very nature, will be the domain of small-scale enterprises: local food producers, community-owned wind and solar electricity, neighborhood stores that provide goods within walking distance of homes, and so on. To take root, these businesses will need a robust array of community-based financial institutions capable of meeting their capital and credit needs.

(Dr. Gaffney's article included a lengthy Bibliography including works by Mason Gaffney that are cited in or relevant to "Sales-tax Bias against Turnover and Jobs", most of which works are available online at www.masongaffney.org. ; 2004-2009 articles previously published in GroundSwell; and articles published in The Georgist Journal, Winter-Spring 2001 to Autumn 2009. GroundSwell does not have room to publish the Bibliography.)

(Economics Professor Dr. Mason Gaffney may be emailed at m.gaffney@dslextreme.com)

=== ==

CGNYC CHAPTER MEMBERS (from page 3)
(once with a new HG student too), and once with a member of the Public Banking Group from California who flew in just to present the public banking case. We handed out hundreds of fliers and some Robert Schalkenbach Foundation donated books, had dozens of stimulating conversations, and tried to present our cases. In nearly every case the solutions of Public Banking, Land Value Taxation, Greenback/debt-free money were completely new to them. And these are typically people who care a great deal about our economy, our society! What has the MSM media been feeding them? Well, lies, pessimism, tales of shortages with moral solutions based on austerity (for what the OWS crowd calls the 99%, not the top 1%, no, never them. Well, I think the next 10% facilitates the top 1%, but why quibble...). I was interviewed by an independent media producer here: http://www.youtube.com/watch?v=eXkK04vrm_c&list=FLTz-y1bLaYeoE4wyr4Xue7Q&index=1. I don't come in until the 3:30 mark, and even then, only my comments about State Banking were included. What? It's wrong to have more than one solution? Don't we have more than one problem?

Some pictures I took at OWS are here: http://www.flickr.com/photos/47625182@N05/sets/72157627901486224/.

I submitted Land Value Taxation to a new working group trying to come up with a charter to be voted on by the General Assembly of the Occupy Wall Street Movement here: http://tapnec.wikispaces.com/page/diff/Catastrophic+Economic+Policy/267970888 as follows:

"Tax Land values, not production by people. 'Rent' on natural resource use/abuse and locational values are over 1/3 of GDP. This value is not produced by the owner, it is because of population and demand by people over resources and locations (think how less valuable (concluded on pg. 16)