# Simplification, Progression and a Level Playing Field 

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# TIMPLIFICATION, FROCREASION, AND A LEVEL FLAYING PIELD. <br> Wlllam Vickrey <br> Columbia University <br> February 9, 1996 

With sufficiently well-reasoned and principled reform of tax systems, it $1 s$ possible to achleve practical simplicity and a reduction $1 n$ perverse incentives to a far greater degree than under any of the "flat-rate" proposals being advanced, without significant sacrifice of progressivity. But it is necessary to ellminate many of the bells and whistles that confer benefits on selected constituencies, and to refrain from attempts to use the Income tax as a device to encourage particular activities. There are usually more effective and transparent methods avallable to accomplish these objectlves far more efficiently if done directly and explicitly rather than by tax tinkering motivated in part by a desire to reduce the apparent magnitude of the government "budget" by "off-budget" "tax expenditures".

## Lncome Tax

Simplicity and progressivity can be realized by dividing the income tax into a llat-rate normal tax, specified exclusively on a source basis, and collected largely at source, complemented by a progressive surtax with a high personal exemption collected on the basis of Individual returns flled by a sall minority of higher income taxpayers, exclusively on destination principle. This would be a return to the pre-1934 U.S. practice of having a distinct normal and surtax, and similar in many respects to the British system. A clear division between a sourcebased and a destination-based portion would avoid most of the complications, anomalies, arbitrary distinctions and perverse Incentives Involved $\ln$ the present foreign tax credit system.

## Normal tax:

The flat-rate normal tax would be collected at source on nearly all wages and salaries, interest, dividends, and other
payments ldentiflable as beling presumably income to the reciplent. In the case of wages and salarles, the withholding would be adjusted to glve effect to personal exemptlons and dependent credits as reported by employees to employers. This report to employers would be the only tax return required of the vast bulk of middle and lower income wage-earners. The withholding by employers can be done on a weekly, fortnightly, or monthly basis, cumulative over each year, as is done in the "Pay As You Earn" system In Britaln. Employers would have to report the exemptions allowed for each employee, ldentifled by soclal security number, to permit checking by the IRS agalnst excessive allowances for those with more than one employer for the year.

Those not having enough earned income to cover their personal exemptions and having significant amounts of other income on which tax has been witheld may be allowed to file an annual return to get a refund of the excess withholding. It may be appropriate to have a smaller personal allowance for those with primarily unearned income, as an equivalent to an earned income credit, reflecting the lower cost of living for those with leisure to economize in various ways, and reducing the number of returns to be processed. Small amounts of unearned income withholding might be made non-refundable, so as further to reduce the number of returns. Ideally the normal tax rate should be kept constant from year to year, to avold pesky problems as to which yearly rate should be applied to a glven payment. Changes in fiscal needs can be met by changes in the personal allowances and in the surtax.

Cumulative assessment of wholding tax payments by businesses;

Corporations and other business would pay withholding tax not only on actual income payments in excess of personal exemptions of employees and recelpts of dividends, interest, and rents, etc., on which normal tax has already been withheld (or in the case of payments from abroad, is deemed to have been pald), but on accruals of undistributed earnings and profits. From an
accounting standpoint the result would be very simllar to an income-type value-added tax, the princlpal difference belng the examption of amounts corresponding to the personal exemptions of employees and possibly of proprietors.

Buslness taxpayers can be freed from most constralnts on thelr bookkeeplng practices, and the neutrality, simplicity, and equity of the tax greatly lmproved by assessing the withholding tax payments on a cumulative basis. Tax payments are treated as deposits in an interest-bearing account; each year this interest plus the taxable amount for the current year are added to the cumulated amount for the previous year, a global tax on this cumulated tax base is then calculated by applying a rate appropriate to the period covered by the accumulation, and the balance in the tax account then credited to get the current tax payment due.

Provided only that all income accruals (including capital gains and losses) are eventually brought to account at a time of liquidation or other major change of ownership, by ariting to market of all asset values; accounts may be kept in any consistent manner that sults the purposes of the management. All that is needed is to insure that all recelpts are either recorded as income or applied to the reduction of asset basis, that charges as cost that do not correspond to actual outlays be recorded as reductions to basis, and no negative basis is generated. Elaborate regulation as to rates of deprectation, expensing, amortization and the like become unnecessary: deferral of the realization or reporting of income becomes merely a borrowing of the corresponding tax at an appropriate rate of interest. Adjusting this rate may even become an instrument of fiscal pollcy. There need be no significant effect on liquidity: books that show low declared current income or potential future tax liability will correspondingly inhibit private extensions of credit.

There may still remain some room for tax considerations to
affect declstons as to the thens or other detalls of mersers, spln-ofis, and the like, especially if there are substantial changes from year to year in the normal tax rate. But the distorting effect of the tax on business decisions would be far less than for any of the current "flat tax" proposals.

Surtax:

Surtax would be pald on incomes in excess of a personal exemption schedule that would limit the need for flling surtax returns to 10 percent or less of taxpayers. The total number of returns to be processed by IRS would be reduced by 60 to 80 percent.

To level the playlng fleld between income on which normal tax has been withheld and that on which the taxpayer pays normal tax himself, the base for the surtax should allow the deduction of any normal tax paid directly. This is essentially equivalent to the "grossing up" practice under the U.K. income tax, but has the advantage of being administratively simpler, more attractive to nalve taxpayers, and for those who fear a tendency to make the degree of progression too steep, of making the actual progression less steep than it looks.

To keep the tax simple, the surtax should also be levied on a cumulative basis. In this case the global tax is first assessed on the cumulated amount of income reported since some starting date approprlate to the taxpayer, according to a tax schedule corresponding to the period covered by this cumulation. There need be no concern for the number of brackets in the schedule: the computations required of the taxpayer are the same whether there are two brackets or fifty; he merely determines, from the tax table corresponding to the year his cumulation began, into which bracket his cumulated income falls, derives from the table the amount of the tax on an income equal to the bottom of bracket and the rate to be applied to the income within the bracket. To imply that simplicity requires a small number of brackets is
fosentally a ruse designed to lahbit progresson at the top of the scale.

For the sake of minimizing the number of returns, it would be desirable to begin the surtax schedule with a farly high Inftal rate say $15 \%$ of $20 \%$, with a somewhat higher level of personal allowances, rather than lower exemptions with a lower Initial rate. Above this initial exemption level, however, there is no real difficulty involved in having numerous brackets and small rate increments. To simplify the processing of returns, it would be possible to attach to each return a coupon on which the taxpayer $[0$, the initial year op cumulation, the cumulated income and the cumulated tax would be entered. This coupon could then be certifled by the IRS and returned to the taxpayer for use in preparing his next year's return. This would reduce the need for cross-referencing previous returns by the IRS. The coupon could also contain space for entering next year's income and calculating next year's tax, to reduce the need for copying of data and possible errors.

Effective Income averaging becomes automatic, not only for the case of suddenly increased income, but also for the case of athletes, authors, and others enjoying a brief bonanza, who would be able to clalm a rebate or refund if their income subsequently fell back to a low level. Other averaging systems have generally failed to allow adequately for such cases. The calculations are also far simpler than those involved in any of the various averaging provisions enacted into law from time to time, and are Indeed simple enough to be required on all surtax returns.

The real simplification comes from the fact that the ultimate burden on the taxpayer is largely independent of the time at which he reports income. As with the withholding tax paid by businesses, the individual taxpayer can be left free to depreciate, amortize, expense, or otherwise keep his accounts and transact his business in any way that suits his purposes, provided only that there are no omissions or double counting, and
that all accrued galns are eventually brought to acoont in the event of a non-arms-length transfer such as by charltable donation, gift, or bequest, or change of restience status. It may be approprlate to hawe an accounting of accruals at times of change of marital status also, at which time market valuations are often required for other purposes as well, so that the compliance burden would not be serlous. Some twothirds of the Internal revenue code would become redundant.

Again, any deferral of the reporting of income and corresponding tax payment becomes in effect a borrowing from the fisc at a rate of interest that can be varied according to the circumstances of the moment, providing an additional tool of ifscal pollcy independent of the Federal Reserve. This need not constitute a wild expansion of credit, since lenders seelng books with lower income reported or the potentlal for higher future tax llabllities would probably correspondingly reduce the avallability of credit.

There would be a more nearly level playing field between risky projects and relatively secure investments. There would be little or no tax pressure for or against the accumulation of undistributed profits. There would be no substantial tax advantage from altering the time of realization of capital gainw.

Foreign tax credit

The splitting of the income tax into a normal tax assessed exclusively on a source basis and a surtax exclusively on a destination or residence basis makes the foreign tax credit, with all of its complications and perverse incentives, unnecessary and Inappropriate. For the normal tax it would be presumed that the equivalent of the normal tax has been collected by the source country, with no questions to be raised as to whether the form of the tax is such as to be creditable, or how much of the tax is to be allocated to the payment in question, or of pressure on the foreign government to modify their tax

Etructure ag to gualley. There would be no justlfleat on for a demand for "tax sparing," whereby $1 f$ a tax concession is made in an attempt to attract industry, the credit is nevertheless allowed as though the concesslon had not been made, the plea being that without tax sparlag the effect of the concession in the presence of the forelgn tax credit might be merely to transfer funds from the treasury of the host country to that of the U.S., with no net Incentive for the U.S.-based firm to respond to the concession. Under the current reglme, all of this Is further complicated by lapses in time between the payment of the forelgn tax and the transmission of the income with respect to which the credit is claimed.

In the case of the surtax, a progressive tax is inherently personal, related to the benefits the taxpayer enjoys in the country op restdence. and the degree of sacriflce or loss of welfare involved in paying the tax. There is no occasion for a source country to levy a progressive tax on an unknown fraction of the total lncome, nor for any attempt to allow for possible taxes in a foreign destination country.

Corporation income tax.

With cumulative assessment of the surtax, there ls no Justifcation for any corporation income tax beyond the normal tax as a collection at source of the normal tax on individual incomes. To the extent that it is more than this, it has a double whamy on the economy in that it not only abstracts income from the flow of purchasing power, but also acts as an additional hurdle that equity investment must overcone. Considered on a revenue-neutral basis as a substitute for taxes on appriate brackets of individual income, it slows growth and reduces employment, becoming essentially a burden on labor Income. If considered in the context of an unchanged GDP and level of employment, it results in a reduction in investment, a reduction In the productivity of labor that would have less capital to work with, and ultimately a reduction the wages of future labor. Under
elther scenario, the chief ultimate impact of the tax is on labor income.

In addition, the tax complicates the law and favors investment that can be financed with debt, such as railway rolling stock, over investments that require equity, such as a classiflcation yard. The tax lubricates reorganizations, takeovers, and mergers of questionable soclal worth, thin equittes and excess bankruptctes.

In the absence of cumulatlve assessment, there ls a posible rartionale for a type of tax on undistributed profits approximating an interest charge on the deferral of the Individual surtax. Rather than the badiy designed undistributed profits taxes of the thirties, a suitable tax would be one of say 2\% per annum on the accumulated undistributed surplus of corporations, representing an interest charge of $5 \%$ on a maximum surtax rate of say $40 \%$. Only the surtax is involved, since the normal tax is collected on undist ributed profits on a current basis. But this is at best only a very rough offset to the Interest involved, since some shareholders may realize the income as capital gain through salea, while stockholders are likely to be subject to widely vaying marginal rates. Any overoffsetting can be accepted as providing some counterincentive to the tendency of managements to retain earnings uneconomically for the sake of expanding thelr range of authority. Cumulative assessment of the surtax neatly solves the problem.

Capital gains.

The level playing pleld made possible by cumulative assessment will only be realized if all capital gains, inclusive of lmputed reallzation at non-arms-length transfer, are treated effectively in the same way as other income.

Falling cumulative assessment, it is not generally understood that even full inclusion of realized capital gains in
taxable lncome, with treatment on a par with other income, stll results in a tilt in favor of income that can be made to quallfy as capital galns. The disappearance of galns from the tax base at the death of the holder is one important factor. But even with full assessment of accrued gains on transfer, there $1 s$ still a galn from the deferral of the payment of the tax on the accruals in value frow the time of accrual to the time of realization, equivalent to an interest-free loan of the deferred tax amounts over this interval. A very rough levelling of the playing fleld here would involve some form of surcharge, say by increasing the reported capital galn by a percentage depending on the length of time held. Even this often involves complicated regulations to determine the holding time after a series of swaps, mergers, reinvestment of dividends, and the like, making it probably not worth the effort, given the political difflculty of even getting full Inclusion. On the other hand, the elimination of special status for capital gains results in a masive reduction in the complexity of regulations.

It $1 s$ not even clear that special capital galns provisions, taken as a whole, have any net positive effect in encouraging soclally valuable risky investment. The regulations regarding what will be considered a capital galn have little or nothing to do with any social desirability of the investment. Giving a lower rate to gains from a real estate investment trust investing mainly in undeveloped tracts will do nothing to increase the supply of land. More generally, concessions to capital gains inevitably entall restrictions on the deductibility of losses, lest the taxpayers be given too much leeway to arbitrage fully deductible losses against undertaxed gains to the serious loss of revenue. The restrictions on losses are often more severe than the concessions to gains, sometimes even putting the revenue in the position of playing "heads $I$ win, tails you lose" with the taxpayer. Under these conditions the net result may be to make the taxpayer less, rather than more, eager to engage in risky ventures. In contrast, under cumulative assessment, the marglnal rates at which losses eventually reduce tax tend to be more
nearly the atote athe thoge at which galng are tated.

In any case, the propect that the galn several years hence from a venture embarked on today will be taxed at concesslonal rates is subject to a great deal of uncertalnty. Even if the enacted concesslons do increase the prospectlve return to the Individual, this is essentlally after the market, increasing the wealth of the taxpayer, there would be relatively little effect on the overall market terms on which capital will be avallable for new ventures. In contrast, the corporation income tax is a tax on top of or before the market, constituting an additlonal hurdle that ventures must overcome to get financing. Eliminating the corporation tax except as a withholding tax, combined with full taxation of capital galns on the same basis as other income would be far more likely to encourage capital investment, would be more nearly neutral as among different typses of investment, and would certainly result in a vast simplificatin of the tax code.

On a revenue-neutral basis, the effect on the economy of a reduction in capital gains taxes may be negative rather than positive. Substitution of other taxes for taxes on capital gains is likely to reduce consumer demand, since the net return from the sale of capital assets is likely to be regarded as for investing rather than spending. The resulting reduction in market demand may have a more discouraging effect on investment than whatever stimulus is provided by the prospect of lower rates on galns. Even should a drop in the tax rates produce a "flre sale" spate of realizations sufficient to generate a temporary spurt in revenues, any stimulative effect would at best be temporary.

Inflat lon.

It is often argued with specious plausibility that that part of nominal capital gains representing inflation should be exempted from taxation through indexation. Unless the rate of Inflation is very high, however, indexation of galns is likely to
make thlngs worge rather than better.

If indexing is to be applied at all, it must be applied across the board to all forms of return on capital, down to interest on savings accounts and the taxation to debtors of Income derlved from the decrease in the real value of their debt. Otherwise there wlll not only be gross inequity between those allowed to index and others, but the door would be wide open for arbitrage and manipulation agalnst the revenue, with unindexed Interest and other payments offset agalnst indexed galns.

Actually, as long as inflation rates are moderate, unadjusted nominal income may be a superlor tax base, even though it departs from what purists would define as real income. Nominal income is equal to real income plus a percentage of net worth corresponding to the rate of inflation. This provides a larger tax base, permitting a given level of revenue to be secured at lomer marginal rates and smaller distortionary impacts. Since wealth is generally more concentrated than income, the tendency would be for progressivity to be higher.

To the extent that higher incomes have a higher propensity to save, the greater progressivirty of the tax would tend to raduce aggregate saving and reduce the need for deficit financing to recycle the attempted savings in excess of the ability of the private sector to convert them to investment, so as sonvert them into demand for output rather than being lost in reduced output and income, and thus balance the economy at all employment level. A modest degree of inflation may thus have definite advantages over a constant price level. In addition, the adoption of a modest rate of inflation as the norm would give the federal reserve system mere lemay to stimulate the economy in the event of an incipient recessilion by lowing real interst rates. With a constant price level as the morm, the ability of the FRB to take stimulative action is relatively limited.

The element of the tax that impinges on capital may be
conaldered a a replacement for glet and egtate taxes, which are so Inherently vulnerable to varlous types of avoldance, as by "estate management, or ultimately by migration, to a degree that has led to their being characterized as the "voluntary tax." However, since so many states have adapted thelr tax systems to the tax credit provisions of the 1926 act, it may be desirable to retaln just this tax, which had a maximum marginal rate of 20\%.

Tax-exempt bond interest.

The exemption from federal income tax of interest on state and local bonds in its present form is essentially a subvention of state borrowing that costs the federal government more than it benefits the states, while offering a partial loophole to high bracket taxpayers. For lower bracket taxpayers the value of the exemption is more or less offset by the lower coupon rate. An undesirable side effect ls to reduce the supply of venture capital to the extent that high-bracket taxpayers invest in lowrisk tax-exempts. The exemption has its origins in a by now obsolete legalistic notion of state immunity from federal taxation, which at one time exempted state salaries from federal income tax. The inverse uphill subsidy involved in the exemption from state income taxes of interest on federal debt, as the constitution was once held to require, makes no economic sense whatever, except as a kind of quid pro quo argument for the retention of the federal subsidy. .

For outstanding bonds, ellmination of the exemption outright would lmpose inequitable windall losses on owners and would be highly disruptive to capital markets. An appropriate solution with respect to the surtax would be to substitute for the exemption a taxable tax credit at a rate that would maintain the market value of the bonds. Taxpayers would apply a standard percentage to thelr tax exempt interest, add this tax credit to their income and then deduct $1 t$ from the resulting tax due. This would leave the lower bracket taxpayers substantially
unalfected, deprive upper bracket taxpayers of their loophole, Increase revenue to the treasury and lnduce upper bracket taxpayers to seek more appropriate investments.

For the normal tax, the effect of the exemption gould be achleved by simply exempting the lssulng governments from the requirement to withhold and pay the normal tax.

One could argue that exemption should be denied to new issues, on the ground that public projects should face the same rates of interest as other investments, and that grants by the federal government to lower governments should not be governed by how far the latter are in debt. Exception wight possibly be made for some types of reflnancing issues, to avold penalizing adaptations to changed market conditions. Exemption might be limited to the normal tax, though this by itselp might not maintain the market value of outstanding issues. Requiring issuing governments to withhold normal tax could raise hackles among those Jealous of states' rights.

Contribut Ions :

One of the more important and justifiable deductions in arifing at taxable income is that for charitable contributions. Many of the flat tax proposals make provision for such deductions. Unfortunately the implementation tends to be quite uneven and productive of added compliance and administrative cost. Past laws effectively insulated most low-income taxpayers from the incentive of the deduction by covering it within a minimum standard deduction in lleu of itemized deductions, and of course there was no inducement provided for those not subject to tax.

A positible treatment that avolds requiring the filing of additional individual returns is to adopt the British practice and allow organizations that would be eligible for the deduction to apply directly to the tsx administzation for a refund of the
normal tas deemed to have been withheld on the licome aut op which the contrlbution was made. For the sake of simplicity of administration it would not be too great a deviation prom principle to allow what would in effect be a matching grant equal to a normal tax even with respect to contributions from Individuals not subject to tax, obviating any need for such organizations to obtaln information as to the taxable status of thelr contributors.

In the case of religlous organizations, purists might complain that such a matching grant would be a violation of the principle of separation of church and state, but compared to the major subsidy involved in the exemption of church property from local property taxes, this would be stralning out the gnat and swallowing the camel.

There would be no great difflculty in allowing surtax payers to deduct contributions from the surtax base, though there could be differences of opinion as to how far this is appropriate, as it would amount to government matching of contributions of the wealthy at a higher rate than for those of midde and lower incomes. It may be noted that in the past the ratio of the net after tax cost of contributions to after tax disposable income has been lower for high incomes than for lower incomes, and that it is not clear that the effect of the deduction is to increase gross contributions by more than the tax concession. Also the walthy are more likely to contribute to colleges, symphy orchestras and the arts generally, while lower incomes contribute more heavily to such organizations as the Salvation Army.

## Housing, automoblles, and ather consumer durables,

The fact that the imputed income derived from the ownership of housing and other consumer durables is not included in the income tax base is understandable in terms of a popular notion that income connotes payments of money, but it results in a strong tilt of the playing field in favor of owning rather than
renting or leaging, For housing this la justifled la ame quarters by ascribing a special civic virtue to home ownership. In practice, however, this produces a serlous blas agalnst central oltles that tend to have a relatively small percentage of home-owners, and is a major impalrment of the progressivity of the tax.

Attempts to remedy this situation have proved extremely unpopular. Britaln for a time had a schedule E under which tax was assessed on residences based on an appraised net rental value, regardless of occupancy status, but the assessments laged so far behind the increase in property values that it became nugatory, at which point it was abandoned rather than updated.

In princlple one would want to determine a total value for all consumer durables, apply an interest rate and include the result in income. The administrative task would be exorbitantly costly and the results unrellable, witness the sad state of personal property taxes, where they stlll exist. Housing and automoblles stand out as belng not only relatively easy to assess, but also as items where renting or leasing are widely prevalent and the decision whether to buy or rent may be affected by tax discrimination. The renter who has been using Income from Investments to pay the base rent on his house, other than that part covering repairs and maintenance, can sell the securities and buy the house, to ifnd his taxable income reduced by the income no longer obtained from the securities, with his real situation much the same as before. The exemption unduly promotes coop and condominium arrangements that are often less appropriate to the circumstances, especially for high income occupants. The reduced supply of rental units is a factor in reducing the mobllity of labor and an extra burden on those required to move to keep their jobs.

There seems to be no way of leveling the playing field in the housing area that does not involve a large administrative and compliance cost. Property tax assessment ratios vary widely over
diferent jutisdictions and even in many cases for different types of property within Jurlsdictions. Some form op equalization on a natlonal level, such as $1 s$ practiced in some states on a state level, would be required. An acceptable compromise might be to tolerate the bias involved in exempting imputed rental from normal tax, but requiring surtax payers to include in the base an amount obtained by applying an equalization-adjusted percentage appropriate to the jurisdiction to the value assessed for property tan purposes. For automoblles, and possibly yachts, it may be feasible to take the original purchase price, depreciate It according to some standard formula, and apply an interest rate to get the imputed income for surtax purposes.

In any case there is no justiflcation for the deduction, in computing surtax net income, of property taxes on owner-occupied homes, which are essentially a part of personal consumption, in spite of the objection sometimes heard that this would be a $t$ ax on a tax." Even $1 P$ no attempt $1 s$ made to tax imputed income as a whole, elimination of this deduction is at least a step in the right direction.

Mortgage interest is another matter. Where imputed income is assessed for surtax with respect to the entire value of the home, rather than merely of the owner's equity, deduction of mortgage interest for surtax purposes is appropriate. Even if no imputed income is included in the surtax base, the fact that mortgage debt is often a ready substitute for debt secured by other collateral, or incurred for business purposes, on which interest should clearly be deductible, argues strongly for allowing the deduction $1 n$ this case also. Eliminating the deduction for mortgage interest has not only proved unpopular but involves arbitrary sdiscrimination between deductible business borrowing and mortgage borrowing. Somewhat anomalously, deductions for consumer credit interest have been eliminated, possibly on the somewhat moralistic ground that this impinged on saving, but this has led to the growth of a minor industry of selling second mortgages to pay off consumer credit debt, a ploy not avallable
to renters. Possible abuses through charging high interest rates offset by concessions in other matters can be met by putting a cap on the interest rate allowable as a deduction.

For the normal tax, rather than requiring mortgagees and those paying interest on consumer credit to withhold normal tax and remit to the revenue, such payments could be treated in the returns of lenders as non-tax-pald income subject to tax in their hands for purposes of the normal tax. Making no allowance for any property tax deduction for normal tax as well as for surtax, would be a step in the right direction both on grounds of equity and of simplicity.

## Local taxes

The property tax

Localities across the nation, and especially large central citles, are in serious flnancial diffculties, malny because of rellance on the property tax as the chief source of revenue, and fear that increased property tax rates will cause a loss of economic activity to competing jurisdictions. The situation is aggravated by competition in beggar-my-nelghbor attempts to attract business and Industry by special tax concessions that often violate principles of unfform application of tax laws and provide occasion for corruption.

The property tax is, economically speaking, a combination of one of the worst taxes, the part that is assessed on improvements and in some cases to a limited extent on personalty, and one of the best taxes, the tax on land or site value. A vast improvement in city finances would result from shifing from a property tax to a land value tax. A tax on land, properly assessed Independently of the use made of the lot, is virtually free of distortionary effects and "excess burden", while the tax on Improvements imposes serious burdens on construction, not only in terms of the immediate tax, but where a large debt has been
accumulated, by reason of the fact that anyone putting up a costly bullding is thereby assuming, for the time belng at least, a share $1 n$ the burden of servicing the debt over an extended peerlod in addition to an inceased share in the financing of current outlays.

In some cases mundcipal debt has reached levels where the potential burden on new construction has brought new construction to an almost complete halt. One escape has been to grant special concessions or assessment freezes to those undertaking a suitably specifled project. Such concessions have sometimes been subsequently overturned on grounds of unconstitutional nonunfformity. A shift to land value taxation would offer a less discriminatory escape from this predicament. Ultimately a shift to land value taxation, by attracting additional activity to the city, ls likely to increase the net market value of the land.

With land value taxation, indeed, the local public debt becomes in effect a collective mortgage on the various lots in the jurisdiction. Reducing current taxes and borrowing a corresponding amount increases the cash balances of taxpayers and reduces the market value of their property by a like amount, leaving their net worth unchanged and their liquidity increased. "Ricardian equuivalence" is in full force and the effect of Keynesian plscal policy is limited to this relatively minor liquidity factor. Transactions in property at the lower market values are easier to inance. There may be a more substantial advantage to a larger public debt $1 f$ the interest payable on the public debt is lower than the effective interest rate or rate of potential profit faced by the taxpayer.

Land value taxation has been successful in New Zealand and parts of Australia, Johannesburg, among other places around the world, and is being used Increasingly in Pennsylvania, with notably good results.

Given high mobility of capital and labor, which tends in the
long run to equallze returns to these factorg over the region, landlords ultimately reap most if not all of the benefit from an Increase in the efflciency of the city, and should, if they fully reallzed their long term advantage, enthuslastlcally support the change to land value taxation. Even though at first there may be a shift in the tax burden that seems to penalize undeveloped properties, such as parking lots, and benefit highly improved propertles, in the long run the relative beneflts may actually be the reverse of this, as the relatively bare lots are eventually developed to the higher degree made profltable by the absence of a tax on improvements. Even at lower space rental rates, the
 from the bare lot by more than the increase in tax. On the other hand the already improved property may see its space rents fall In the face of competition from the new construction, offsetting the reduction $\ln h i s$ tax bill.

Congestlon charges

In most large cities, and some smaller ones, traffic densities in the central areas during much of the day are such that less travel is accomplished during a given perlod than could be accomplished by having fewer cars attempting to move within the area but moving at faster speeds. The cumulative effect of a single additional car moving accross midtown Manhattan at llam can be as much as 100 to 300 additional vehicle hours of delay over the remalnder of the day, as during subsequent perlods fewer cars reach their destinations, backing up more cars on the street and further slowing the traffic in a cumulative fashion.

A sovereign remedy is to adopt congestion pricing, whereby each car entering the area during the congested times is required to carry an automatic vehicle identifer, costing less than $\$ 20$. The congested area is divided into small zones, and scanner units installed at each crossing of a zone boundary, so that the entry Into and exit from each congestion zone by each car can be recorded on the fly, and a charge assessed and collected at
monthly or other intervals representing the congestion cost that the crossing of the zone ls estimated to have caused to other trafflc, as well as the cost to pedestrians.

Where cars remain within a zone for extended periods, an appropriate charge can be added representing a basic charge for on-street parking in unmetered spaces; appropriate rebates can be arranged for use of off-street parking facilities. Taxicabs can be equipped with a supplemental metering device that will be triggered by a signal from the scanning unit at each zone entry to begin recording a charge for mileage within the zone being entered. The charge would be at a rate appropriate to the conditions expected to prevail over the remainder of the congestion period affectd by the trip, to be paid by the rider and rewlted to the city. The drlver would be responsible for the charge while crulsing. The meter would have an externally observable display to perwit checking that the appropriate charge is being registered. Those anxious to preserve their anonymity could equip their cars with similar meters, with prepayment by means of cards or tokens purchased and inserted in the meter to add to the unused balance, then being cancelled and retained to permit checking against counterfeiting. To asure compliance, videocamer as can be mounted at a number of scanning points to proflde pictures of cars and license plates that pass without producing an identifying signal, and of a random sample of responding cars to permit checking that the identity signal corresponds to the restration.

When the charges are properly adjusted to reflect the cossts Inflicted on others, the result would be that traffic densities would be kept close to an efflcient level, generally below the maximum flow point. Some trips whose lmportance is insufficient for the driver to be wlling to pay an amount equivalent to the congestion cost he would be inflicting on others, would be abandoned or shifted to other modes or destinations. More important, many trips would be shifted in time in such a way as to reduce their contribution to congestion. Some trips will be
ahifted to an earlier tiwe when charges are low and thelr contribution to the build-up of congestion is less significant. Many trlps now made during and after the build-up of congestion will be started at a later time, agaln reducing their contributlon to congestion delays In many cases they will arrive at their destinations earller than they would have under present conditions. Some additional traffic that formerly could not afford the time for the trip will be attracted by the higher speeds. Where congestion has been severe, In all likellhood total traffic flow over the day would be Lncreased, rather than diminlshed, as is often the popular assumption.

In any case, speeds would be substantially increased over nearly all the day, air pollution would be diminished, and the locality would obtain a substantial amount of revenue. Businesses, especially the high level ones, would be attracted by the lmprovement in the ability to circulate rapidly, property values would increase and the yield of the land tax at given rates would increase.

In addition to charging for effects on congestion, a charge can readily be added to reflect the contribution to the costs of alr pollution. Each car can be assigned an alr-pollution rating on the basis of its condition new, subject to downgrading over time at a near-worst-case assumption, the rating being eligible for an optlonal upgrading by submitting to an appropriate emissions test at the cost and convenience of the owner. The pollution charge would be varied according to the time and location of use, to reflect atmospheric conditions at various times and places. and added to the congestion charge.

In the event of an impending inversion or other serious atwospheric condition, notification of an increase in pollution charges could be broadcast, giving those who can do so an appropriate incentive to shift the timing of optional shopping and other trips to less pollution susceptible times. Cars making only week-end trips to the country would not be unduly penalized,
whlle cars found unduly costly to upgrade could be sold to rural users not frequenting pollution-sensitive areas.

Parking

In many areas, parking spaces are pre-empted for long periods by those able to arrive when spaces are avallable, to the exclusion of many with more urgent needs whose arival times cannot readily be adapted. Where coin operated parking meters of the usual type are used, space for urgent parking is often unavailable because the rate is too low to keep vacant space avallable, or the time limit on the parking meter is too short for the errand to be accomplished, such as an hour with the dentist, while at other times the more convenient space remains underutillzed as parkers are driven to use less convenient but less expensive or less time-rationed free space.

A more flexfble and unlversal system of parking charges is needed whereby charges would be sufficiently high at times of greatest demand that a few reasonably convenient spaces would nearly always be available to those prepared to pay a marketclearing price, while charges would be reduced for times when demand is lower, being reduced to zero whenever there would be more empty spaces than is needed for convenience. Many technologies for doing this are avallabler; one of the simpler ones is the use of parking cards purchased in advance in various denominations, to be scratched or mutilated to indicate the time parking begins, with one or more cards displayed in the car to a total value equal to the charge for the intended parking period as indlcated by a posted schedule.

More sophisticated systems are feasible that would permit the parking charge to be determined at the end of the parking occupancy at rates that could be varied according to how many nearby spaces have been vacant during the time of parking. If properly callbrated, this would automatically keep the charges at close to the market-clearing level, enhance efficiency and raise
land values.

Transit fares.

With congestion charges on auto use and land taxation in effect, $1 t$ wll be posslble to adjust transit fares to reflect the marginal social cost of each type of trip, largely in terms of the impact on other passengers from longer travel times resulting from the time taken in stopping to board and discharge passengers, the increased probabllity that one wlll deprlve someone else of a seat, or crowding. This will require additlonal subsidy to be financed out of land value taxes in the areas served, but in the long run this will result In the enhancement of pre-tax land rents by more than the required subsidy.

This can be implemented by using magnetic cards and charging a maximum fare on entry depending on time of day and location, and allowing passengers making shorter trips or otherwise qualifying for a lower fare to obtaln the appropriate rebate by registering with their card upon exit.

Strict application of the marginal-cost pricing principle may result in what appear to be anomalies. On a lightly loaded bus going irome $A$ to $B$ to $C$ to $D$, merginal cost for a passenger from $B$ to $C$ ls lkely to be higher than for a trip from A to $D, 1 f, a s$ will often be the case, the number of passengers delayed by the boarding and alighting will be greater. This cost structure, Indeed, is what justifies the runing of express busses. The difilculty of explaining such anomalles to the public may be considered justiflcation for tolerating the sacrifice in efficiency resulting from a fallure to adjust the fare structure to ellminate them.

Actually, even greater anomalles that lack any efficiency Justiflcation occur in practice: in Washington D.C. a passenger may be able to save money by a free transfer to a bus for the latter portion of a trip that could have been made entirely by
wetro. A pasaenger boarding a train jugt before the rush hour way pay a lower fare than a passenger boarding the same train a little later after the beginning of the rush hour and going to the same destination.

Other network utllities.

In the case of local network utllitles such as water, gas, sewer, electric, telephone, cable services and the like, land rents in the area served are enhanced by the avallability of these services, and the lower their prices the greater the enhancement. Equity and efflctency are both served by baving landlords contribute to the network costs of these services so as to enable the prices of the services themselves to be brought closer to marginal cost. In the long run the increased efficiency of the local economy would tend to redound to the beneflt of the landlords by ralsing thelr market rents by more than the amount of the subsidy. Universal service would be achleved in accordance with the underlyuing principles by which a free-market is Jusstlifed.

Even those using land for tennis courts or parking lots and making no direct use of the services will be able to charge higher prices to customers because of the greater convenience of the location. They should no more be excused from contrlbuting to the cost of the service accessibility that is inescapably attached to their lots than one could expect to be able to get a rebate off the rental of a car because one intends to drive onfy by daylight in fair weather and will make no use of the beadlights and windshield wipers with which all cars come equipped.

## State taxes.

Land tax.

State governments are generally less involved in activities
that upport or generate land values than are local sovernments, but there may still be a case for dividing the land tax base into those values belon a certain fixed amount per acre or per square foot that are generally ascribable to fertility and other natural features, rather than to proximity to government services, and urban values in excess of this amount. The former part could appropriately be used as the base for a state tax, the latter for urban taxes.

This would have the advantage of mitigating discriminations accross jurisdictional boundarles, though this would be more of a political advantage than being of long-run economic signiflcance. Even so, it should be noted that land values in westport and Mount Kisco are what they are In part because of the existence of New York City subways, even though all commuters from these areas were elther to walk or take taxls irom Grand Central to their jabs and never set foot inside a subway.

While it $1 s$ falrly clear that land taxes at rates that are acceptable, In the light of the ellmination of improvement taxes and the contribution to land values of government services, together with congestion charges and parking fees, can be adequate to meet the needs of local governments, it is doubtiul that this can be said today at the state level, in spite of the assertions of the single-tax wing of the Georgist movement, whatever may have been the case in Henry George's day. Continued recourse to other taxes is likely to be necessary.

## Income tax

There is in principle little objection, for most taxpayers, to a piggybacking of a state income tax on the federal tax, though there may be some quesion as to what extent imposition of a progressive state surtax is to be recommended in the light of possibilities for migration. For interstate commuters, and especially for those having jobs in more than one state, defining the normal tax strictly in terms of source raises awnard
questlons as to how the progresslve element embodied in the personal exemptions is to be handled. Administrative slmplicity would be for state exemptions to be allocated in the same way as they are for the withholding of the federal tax, apply the state rate and remit to the state of source. An alternativve would be to consider state taxes based on the federal normal tax as levied by the state of residence, at least with respect to income from within the United States; this would call for employers to assume the extra burden of paying the withheld tax to the state of residence, failing which the taxpayer would have to plle a return and pay tax separately. On the other hand a surtax on a strictly residence basis would be relatively free from questions as to source of income.

For a pource-based normal tax, the determination of the source of income of business enterprises for state purposes is much more prevalent a problem than in the case of the federal tax. The arbitrary versions of the "Massachussetts formula" currently in use are seriously deficient in that relatively sall changes in a company's operations can result in highly disproportionate shifts in the allocation of the income. For example if an accounting firm in Boston, renting its quarters and having very few assets of its own, acquires a vacation home in New Hampshire for the use of its partners, nearly one-third of its income would be shifted to New Hampshire, where there is no income tax.

Using the same data, a more appropriate formula would be

$$
Y_{i}=Y_{1}\left(a W_{1 j}+b P_{1 J}+c S_{1 j}\right) /\left(a W_{1}+b P_{1}+c S_{1}\right)
$$

where $Y$ is income, W Ls wages or payrolls, $P$ is tanglble property and $S$ ls sales, with the subscript i referring to totals for the l'th firm, and ij refering to the amounts of the quantity for the i'th firm allocated to the j'th jurisdiction, and a, $b$, and c are coefficients common to all taxpayers or posibly to a class of taxpayers. These coefficients can be determined by
rumalis a resression of the form

$$
Y_{1}=a W_{1}+b P_{i}+c S_{i}+e_{i}
$$

where $e_{i}$ is an error term and the coefficients $a, b$, and $c$ are determined to minimize the sum of the squares of the $e_{1}$.

These coefflelents could be determined by running the regression over all taxable flrms, or over classes of firms having similar lines of business, size, or other gross characteristics. But even though theoretical equity might be improved by such classiflcation, the administrative simplicity and certainty of dealing with only a single set of coefflcients may be considered to be of greater importance. Ideally it would be desirable for the coefflcients to be unlform over the various states, In order to avold over- or under-assessment of interstate operations, but this is not essential. In any case it would be appropriate to carry out the allocation before deducting the personal exemption allowances for local employees.

In pure economic theory, under perfect competition taxable income would be determined by the prime factors employed, rather than by sales, so that one mat drop the $S$ factor from the formula. On the other hand where types of intangible property such as copyrights, trade secrets and patents are an important profit-generating factor, sales may be an approprlate way of allocating the corresponding income, though the logic of determining the coefficient by regression may be somewhat loose, especially if the class of firms over which the regression is run is broad. At best the problem of determining the "sources" of the income of a broadcasting company with a transmitter in New Jersey, advertising products made in Pennsylvania to customers in New York does not seem to admit of a compelling rational solution, though in such a case neither Penssylvania nor New York might be deemed to have a practical means of assessing and collecting a tax.

A almilar formula could be used for transnational companies for federal as well as state normal tax purposes, especially in cases where the determination of "transfer prices" ls full of difilculty.

Motor vehicle taxes and lees

While congestion charges are most approprlately determined and collected at a local or perhaps metropolitan level, state authorization and setting of technological standards, where this is not done at a federal level, would be appropriate to assure interchangeability of protocols, as well as collaboration with nelghboring states in collecting charges from registered owners.

Heavy trucks and trallers should be assessed charges more nearly in line with their impact on highway surfaces. They should be required to carry vehicle-identifying transponders, by which thelr routing can be checked from records made by suitably located scanners. Axle-loads can be checked with welgh-in-motion equipment currently under development.

Utility taxes.

Taxes on electric, telephone bus, and other public utility services, while ralatively easy to administer and collect, are nevertheless to be avoided because of their high excess burden. Because of the strong economies of scale or intensity characterlstic of these services and in some cases positive externalities, cost-covering prices tend already to be substantially in excess of marginal cost. Because excess burden tends to vary as the square of the deviation of price from marginal cost, adding a tax to this margin adds a much greater increment to excess burden than $1 f$ one started with a pretax price closer to marginal cost.

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