

Towards a Tax Constitution for Leviathan

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In this essay we analyze *constitutional* choice among tax institutions under a specified set of political assumptions. That is to say, we examine an individual's choice among tax rules and tax instruments when it is known that such institutions, once selected, will remain in being over an indeterminately long sequence of budgetary periods, and in a setting in which the individual is presumed to be unable to predict with precision what his own position will be at any particular moment in this postconstitutional sequence.¹ Our analytical framework differs from that which informs much of the conventional wisdom in a normative tax theory as well as from that which has informed much of the Wicksell-inspired, public choice alternative.

Neoclassical normative tax theory is, in all essential respects, institutionally vacuous.² Abstract normative criteria for a 'good' tax system are derived in response to the problem posed by the requirement to raise some exogenously determined amount of revenue for governmental use within a single time period. Emphasis is placed on the familiar efficiency and equity characteristics of alternative tax instruments. Within this traditional perspective, the influence of the tax instrument chosen on the amount of revenue demanded or required is neglected or obscured by the "equi-revenue" comparison within which the whole analysis is conducted. In a constitutional setting, by contrast, such possible feedback effects over a sequence by budgetary periods must be explicitly considered: the interdependencies between the form of tax institutions and the revenue demands placed on these institutions cannot be ignored. And, of course, predictions of such relationships will necessarily be embodied in the individual's choice. In this essay, we shall introduce an institutional model within which these interdependencies assume critical importance.

Modern public choice theorists have already gone some way toward incorporating these effects of tax instruments on public goods supply into the analysis of constitutional choice.³ Almost exclusively, however, the public choice model of constitutional fiscal choice has embodied the assumption, explicit or implicit, that postconstitutional or in-period budgetary decisions conform to the public goods demands of the median voter or his representative in a legislative assembly. Our analysis differs critically from this in that we substitute the model of a revenue-seeking Leviathan for the demand-driven and essentially passive government characteristic of early public choice analysis.

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The norms for taxation suggested by the analysis seem to accord more closely with some of the empirically observed attitudes of the taxpaying public than those which emerge from either of the alternative paradigms. Furthermore, the institutional model is in apparent consistency with a large, rapidly growing and uncontrollable public sector. This is in dramatic contrast with the implied setting from which the traditional reform suggestions emerge, a setting that retains residues of the classical economists' assumption of nonproductive public expenditures along with the implicit notion that the governmental share in national product is severely limited. Our model is also sharply at variance with the naively optimistic public choice perspective which incorporates the productiveness of a possibly large public sector but which does not allow for a supply-side influence on fiscal outcomes.

This essay is intended to be a contribution to the ongoing discussion of real-world tax reform, rather than an exercise in deriving the logical properties of yet another set of arbitrarily selected assumptions. Indeed, in some sense, the point of departure for our discussion is the observation that tax reform is a quasi-constitutional exercise. Tax institutions are usually intended to be moderately permanent features of the political framework: they set the context within which in-period decisions about public goods supply are made. Furthermore, the major tax reform process (say of the Carter type in Canada, or the British Royal Commissions) is perhaps more like an attempt at a genuinely "constitutional convention" than any other common aspect of political life (at least in the public finance specialists' experience).

Once this is acknowledged it becomes natural to think of devising tax institutions by appeal to the constitutional calculus of the typical taxpayer-voter rather than by reference to abstract ethical norms. On the other hand, it should be borne in mind that tax reform is *not* the full constitutional arrangement envisaged for example in *The Calculus of Consent*⁴; the mandate is necessarily much more restricted. For this reason, although we acknowledge the possibility of nontax institutions which might perform a similar role to the tax rules we discuss and perhaps do so more efficiently, we do not consider such alternatives here.⁵ To do so would be to move outside our basic tax reform orientation.

The central structure of the institutional model is set out in section 1. In section 2, we examine the choice of an individual as he compares a comprehensive and a noncomprehensive tax base as well as alternative rate structures within these. The analysis is extended to many tax bases in section 3, and to a many-person setting in section 4. Finally, in section 5, the discussion of the paper is related to commonly held views on tax reform.

1. Government as a Revenue-Maximizer Subject to Constitutional Tax Constraints

As Knut Wicksell noted, no persons would approve the imposition of taxes, either at a constitutional or a postconstitutional stage of decision, unless they expect to secure some benefits from the goods and services that they predict

will be financed from the revenues collected. Taxes are coercive instruments that allow governments to levy charges upon persons without any corresponding individualized expression of current willingness to pay. Furthermore, in postconstitutional stages of decision, political consent through the action of legislative representatives will not, typically, be extended to more than a simple majority of the citizenry.

What is a reasonable model of postconstitutional fiscal decision making by governments, a model that might be appropriate in informing the constitutional-stage choice among fiscal instruments? Perhaps at one period in history, it may have seemed reasonable to rely on the operation of majority rule in legislatures to hold governmental fiscal activities in bounds. And majority rule models remain in both the analysis of median-voter behavior and in popular discussion of democracy. Confronted with public sectors of modern scope, and with bureaucracies that demonstrably possess power quite apart from specifically legislated authority, the democratic-limits model of governmental fiscal constraint seems to become increasingly naive. A more acceptable model would seem to be one in which the political-bureaucratic process, as it is predicted to operate postconstitutionally, involves the maximization of revenues within the tax constraints imposed in the fiscal constitution.

This is what might loosely be termed a model of "Leviathan." The citizenry has no effective or operational control over government, once established, beyond the constraints that are imposed at the constitutional level; in-period or postconstitutional fiscal decisions are made entirely by the budget-maximizing or revenue-maximizing politician-bureaucrat.⁶ The model here is in several respects similar to the "monopoly" or "noncooperative" state theories developed by earlier continental writers, notably some of the Italian fiscal theorists.⁷ These monopoly-state conceptions, however, assume that the governmental powers have emerged from some coercive seizure of the state apparatus at some period in history. By contrast, in our model government is voluntarily established by general agreement in a constitutional contract among potential taxpayers-beneficiaries.⁸ The problem faced by persons in such a setting involves securing and insuring the benefits of governmentally provided goods and services (including the enforcement of contracts and claims to property titles, without which market trading would hardly be feasible), while avoiding vulnerability to exploitation by the Leviathan-like institutions that may be uncontrollable once they are established.

Many different types of constitutionally derived constraints are conceivable, and these need not be mutually exclusive. Here we focus on the subset embodied in the tax system. In doing so, however, we assume that there exist some effective constraints on the disposition of tax revenues. Specifically, we assume that the uses of tax revenues must include the financing of at least some goods and services that cannot be provided noncollectively. Without this assumption, as previously noted with reference to Wicksell's statement, a constitutional contract establishing a coercive tax-levying authority could not be assumed to have emerged.

Our stylized constitutional setting is characterized by the further, and

familiar, assumption that each person has well-defined predictions about the aggregate level and the distribution of incomes and consumption patterns in all postconstitutional periods, but that he possesses no knowledge about his own future position within the distribution or about the characteristics of his own taste pattern. This general, nonindividualized, knowledge is sufficient for him to make some estimate, within broad limits, both of the “efficient” levels of budgetary outlay on public goods, and of the aggregate revenues to be obtained under alternative tax systems. Since the individual remains ignorant concerning his own predicted income or tastes, he cannot identify a cost share for himself under any particular tax system. He cannot, therefore, predict whether, in-period, he might prefer a larger or a smaller public-goods quantity than that which he predicts to be “efficient” for the whole community. Thus, each individual rationally prefers institutions that will generate the “efficient” quantity, \bar{G} , given an independent estimate of the costs of provision. The actual level of outlay on desired public goods and services is given by

$$(G) = \alpha \cdot R, \quad (1)$$

where α is the predicted proportion of tax revenue spent on the desired budgetary component, and R is aggregate tax revenue. Throughout this discussion, the value of α is taken to be exogenous, by which we mean that it is fixed by the operation of constraints other than those incorporated in the tax system.⁹ As we have indicated, α is such that

$$1 > \alpha > 0. \quad (2)$$

Hence, the outlay on desired public goods and services is some direct function of total revenue raised, and the problem that the individual faces at the constitutional stage is to organize tax arrangements so that the revenue raised, when adjusted by α , will yield roughly the quantity of public goods and services estimated to be “efficient,” at the given estimated net costs—costs that will, of course, be dependent on the value of α .

Thus, R will be chosen so that

$$\alpha \cdot R = \bar{G}. \quad (3)$$

The characteristic assumption of our Leviathan-type model is that, in each postconstitutional budgetary period, the government will attempt to maximize total revenue collections (and hence total spending), within the constitutionally appointed tax regime—that is,

$$R = R^*(b, r), \quad (4)$$

where R^* is the maximum revenue that can be raised from the tax regime, and

is a function of b , the tax base, and r , the allowable rate structure. Formally, then, the problem facing the individual is to select b and r so that

$$R^*(b,r) = \frac{\bar{G}}{\alpha}. \quad (5)$$

What this implies in terms of the desired tax constitution is elaborated in ensuing sections.

2. Tax Base and Tax Rate Constraints in a Simple Model

Initially, we restrict the analysis to a single individual who is assumed to be exercising his constitutional choice between only two potential definitions of the tax base—the one fully “comprehensive,” the other falling short of this. We relax these assumptions later, but at this stage the simplification is convenient. It is immaterial for our argument precisely what the noncomprehensive base is, and whether the tax is levied on the “uses” or the “sources” side (that is, whether it is an “income” or an “expenditure” tax). Let us suppose, however, that the noncomprehensive base is money income from labor effort in the market, and that the comprehensive base includes this money income and also the money equivalent of the individual’s nonmarket production of valued end products; in other words, the comprehensive base is full income. The question we examine is whether the person would prefer a tax constitution that embodies the comprehensive base over the one that restricts the base to money income.¹⁰

The situation is depicted in figure 1. The indifference curves, labeled with i 's, indicate the individual’s preferences as between money-income earn-

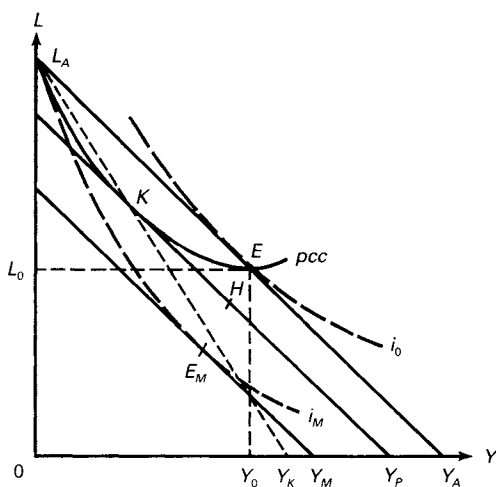


Fig. 1

ing activity Y , and, say, leisure activity L . These preferences exhibit the standard properties.¹¹ The pretax situation is characterized by a relative price between L and Y reflecting the productivity of income earning activity; the initial equilibrium is at $E(Y_0, L_0)$ on i_0 .

Consider now the prospect that the individual would face here if the government should be granted access to the fully comprehensive tax base. In this event, the individual would be exploitable up to the full limits of his potential earning ability, over and above some minimal subsistence. Apart from this minimal limit, all of the “income equivalent,” OY_A , is potentially available for governmental use. The government could levy a lump-sum tax that appropriated the individual’s *maximum* potential earnings, beyond the subsistence level.¹²

Since it is inconceivable that anyone could ever anticipate an “efficient” public-private sector mix that would require all potential income above subsistence for governmental purposes, it seems clear that a potential taxpayer-beneficiary would *not* select the comprehensive tax base at the constitutional level if he predicts postconstitutional governmental behavior of the type that we have postulated. He will seek to impose constitutional constraints on the fisc, on the ability of the government to tax. He can do so, in our simple case, by allowing the government to levy an income tax only on the ordinary sources of earnings. This constraint, alone, will reduce the potential maximum revenue collections of government drastically—from OY_A to $Y_M Y_A$ in figure 1. Clearly, if the government imposes a tax on money income the revenue from which exceeds $Y_M Y_A$, then the individual will be better off if he ceases to earn income at all; if he switches to L_A . If limited to the money-income base, the government can secure revenues up to this maximum limit, $Y_M Y_A$, only by levying an “ideally” structured *regressive* tax, in which the rate for each level of Y is equal to the slope of i_m . This involves creeping down i_m to the maximum revenue equilibrium at E_m , allowing the taxpayer a minute slice of surplus to ensure only that the position E_m is actually preferred to L_A .

Recognizing this prospect, the taxpayer may wish to impose the further constitutional constraint that the income tax should not be regressive in its rate structure. This would clearly be the case if the money-income base, along with the predicted value for α and the revenue-maximizing regressive rate structures, should be predicted to generate outlays on desired public goods and services in excess of the efficient levels of provision. If, for example, the government should be required to stay within a rate structure that is at least *proportional*, it would be effectively confronted with a locus of potential equilibria along the individual’s price-consumption curve for varying “prices” of Y , depicted by $L_A KE$ in figure 1. The revenue-maximizing arrangement in this case occurs at the point where a line drawn parallel to $L_A Y_A$ is tangent to the price-consumption curve, as indicated by K , with the associated revenue-maximizing proportional rate of tax being, $Y_k Y_A / OY_A$. The precise characteristics of this case, and the analytic resemblance to familiar results in price theory, can be isolated by appeal to the corresponding partial equilibrium diagram in figure 2.¹³

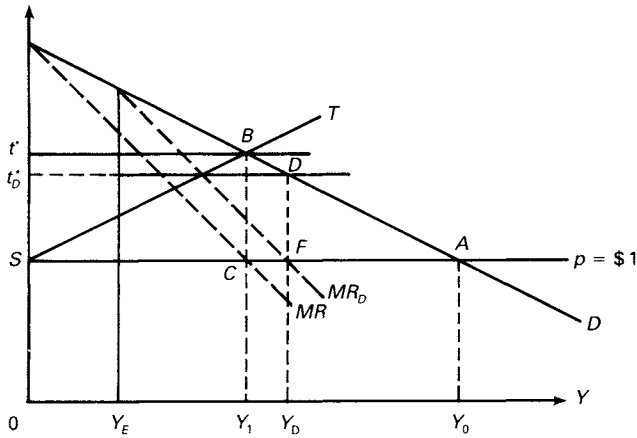


Fig. 2

The curve DD in figure 2. indicates the individual's demand for the income-yielding activity; this might be derived from a preference mapping exhibiting the properties depicted in figure 1. Confronted with the requirement that it must levy a proportional tax, what tax rate will the revenue-maximizing government impose? The question is obviously analogous to that asked of the monopolist who will seek to maximize profits, with the same answer. We derive a "marginal revenue" curve, MR in figure 2, and the maximum revenue is given where this cuts the horizontal dollar-price line (the marginal cost line), determining a post-tax equilibrium at Y_1 .

This construction reveals the precise analogy between our model of postconstitutional governmental process and monopoly theory—in an analytic as well as a conceptual sense, our model is appropriately called a "monopoly theory government." The revenue-maximizing tax rate, t^* , can be derived as follows:

$$R = tY_1, \quad (4)$$

$$Y_0 - Y_1 = Y_0 \cdot \eta t, \text{ since } \eta = \frac{-\Delta Y}{Y_0} / \frac{\Delta P}{P}, \quad (6)$$

where R is government revenue; t is the proportional tax rate and equals $\Delta P/P$

$$\therefore R = tY_0 (1 - \eta t), \quad (7)$$

$$\frac{\partial R}{\partial t} = Y_0 (1 - 2\eta t). \quad (8)$$

Setting (8) at zero, we have

$$t^* = \frac{1}{2\eta}, \quad (9)$$

and, substituting t^* in (7), we have

$$R^* = \frac{Y_0}{4\eta}. \quad (10)$$

Hence, as we might expect, maximum revenue is directly related to the initial size of the taxable base, and inversely related to the value of the elasticity.

As we have indicated, the revenue raised from the given base under a *proportional* tax is less than that which might be raised from the same base under an ideally *regressive* rate structure. We are led to ask what might be the influence of a *progressive* rate structure here. The revenue-maximizing government will have no incentive to shift from the equilibrium proportional rate to any rate structure that embodies progression, since this latter would imply increasing rather than declining marginal rates of tax. The revenue effect can be demonstrated most easily by thinking of the simplest of all progressive rate structures, one that involves only two marginal rates, with the first rate being zero. Consider such a structure, sometimes called a *degressive* one, where income over some initial range to Y_E is wholly exempted from tax. With this additional constraint, the revenue-maximizing proportional rate on remaining units of income falls and total revenue collections fall correspondingly.

To show this, note that under a degressive structure,¹⁶

$$\begin{aligned} R &= t(Y_1 - Y_E) \\ &= tY_0 \left[1 - \eta t - \frac{Y_E}{Y_0} \right], \\ \frac{\partial R}{\partial t} &= Y_0 \left[1 - 2\eta t - \frac{Y_E}{Y_0} \right], \end{aligned}$$

and

$$t_D^* = \left(1 - \frac{Y_E}{Y_0} \right) \frac{1}{2\eta} \text{ which is } < \frac{1}{2\eta}, \quad (11)$$

and

$$R_D^* = \frac{(Y_0 - Y_E)^2}{4\eta Y_0} \text{ which is } < \frac{Y_0}{4\eta}. \quad (12)$$

In terms of figure 2 it is clear not only that the revenue-maximizing degressive structure postulated generates less total revenue than the revenue-maximizing proportional tax, but also that the excess burden is smaller. Under proportionality, the excess burden is measured in figure 2 by the area *ABC*. Under the postulated degressive structure, excess burden falls to *ADF*.

Not all forms of progression yield this result for the change in excess

burden. For example, a linear progressive rate schedule (of the form shown by the line ST in figure 2) ¹⁵ will yield the revenue-maximizing *marginal* rate that is equal to the proportional revenue-maximizing rate, with the same posttax equilibrium at Y_1 . Note that, in this case, the total revenue obtained under progression is a constant share of that which would be obtained under proportionality where the marginal rate levied at income Y_1 would be applied over the entire income range. Thus, under the rate structure, ST , total revenue raised under progression is one-half that raised under proportionality. But the excess burden in the two cases is identical.

It may be useful to summarize the basic argument of this section. We have observed that the constitutional decision-making calculus of the potential taxpayer–beneficiary, operating under an expectation of a Leviathan-like postconstitutional fiscal process, involves his opting for institutional devices that will limit the revenue-raising potential of the tax system. We have explored two ways that might accomplish this. One is by limiting the size of the tax base—increasing the comprehensiveness of the tax base will be, beyond some point, clearly undesirable. The other is by imposing a constitutional requirement that some degree of progressiveness be incorporated in any rate structure. This “defense of progression” is completely different from any to be found in normative tax theory. It stems both from the constitutional perspective within which our whole analysis is developed, and from the unconventional, but highly plausible, assumptions we have made about the predicted workings of the political process. The argument does *not* spring from assumed risk aversion on the part of individuals behind the veil of ignorance, from Rawlsian maximin theorems, or from the more familiar “vertical equity” norms.¹⁶

3. Maximum Revenue and Excess Burden

To this point, we have restricted analysis to the simple setting in which the individual chooses between two potential tax bases and among rate structures on these bases. Generally, however, the potential taxpayer at the constitutional stage will have the option of considering many possible base and rate structures, all of which might be estimated to raise roughly the desired level of revenue, G/α , when exploited to the maximum-revenue potential. Retaining the single-person perspective, is there any reason to expect a constitutional preference for any particular method?

Presumably, the potential taxpayer will prefer that arrangement from among the set that will minimize net efficiency loss or excess burden. We may focus initially on the proportional rate case, and assume that the “demand curves” are linear over relevant ranges. In this setting it is interesting to observe that when maximum revenue is obtained from a source, the excess burden is a fixed proportion of revenue raised. For,

$$\begin{aligned} W &= \frac{1}{2}t(Y_0 - Y_1) \\ &= \frac{1}{2}t(Y_0\eta t), \end{aligned} \tag{13}$$

where W is the excess burden or efficiency loss generated by the tax. Substituting t^* in (13), we have

$$W = \frac{Y_0}{8\eta} = \frac{1}{2}R^*. \quad (14)$$

Consequently, given the assumption of linear “demand schedules,” any two bases which yield the same maximum revenue under proportional rate structures will involve identical excess burdens, independently of the size of the base or of the elasticity. Given proportionality, then, the maximum revenue potential becomes the dominant choice criterion—excess burden tends to become irrelevant.

Once we admit progression into the analysis, excess burden may once again assume a role. Suppose, for example, that the choice is to be made between a proportional tax on commodity (or income source) A , and a tax on commodity (or income source) B , that yields identical maximum revenue under a *linear progressive* tax schedule. In this case, the excess burden generated will be larger under the latter, and in the assumption of our geometrical model, will be exactly two times that in the former. This result stems from the fact that, under linear progression, maximum revenue and the corresponding excess burden are identical. Of course, not all forms of progression exhibit this property. Specifically, for the type of degressive structures analyzed in equations (11) and (12) the relation indicated in (14) holds. In this sense, a persuasive case can be made for degression over other types of progressivity. It is also clear that, with the relevant equal-yield comparison made (that based on maximum potential revenue), a proportional tax and a degressive tax are equivalent on strict efficiency or excess-burden grounds, while either tax is preferable to other forms of a progressive tax.

This result, which indicates that many progressive rate structures generate more excess burden than the equi-yield proportional tax, is not at variance with our conclusion earlier to the effect that a constitutional requirement of progression may be one way of insuring a restriction on the total level of governmental outlay through the limits imposed by the rate structure. We are simply observing here that, compared with equi-income reductions in the tax base, if these possibilities should exist, then progression may be an inefficient means of accomplishing this restriction.

Finally, it may be useful to make a technical comment on the methodology of tax analysis. One feature of the discussion in this section is our usage of one variety of an “equi-revenue” technique of comparison. These equi-revenue comparisons, however, involve separate base-rate combinations that yield the same *maximum* revenue. It is only within this stringently restricted subset of possible tax arrangements that we have permitted the application of the equal-revenue methodology, and that we have applied excess-burden criteria, appropriately derived from the constitutional perspective. Strictly speaking, even this limited use of the equi-revenue comparison is question-

able, because *all* of the separate dimensions of tax selection (maximum revenue yield, excess burden, and such “equity” effects as intrude) are aspects of the same general constitutional choice. It seems clear, however, that given our model of postconstitutional political process maximum revenue potential will be the predominant issue in the selection of tax institutions.

4. One Among Many

So far our discussion has been cast in terms of a single individual’s choice calculus. This need not be nearly so restrictive as it might appear, particularly since we have examined choice in a constitutional setting, where the chooser is not expected to know just what his own position will be in postconstitutional periods. Nonetheless, we have neglected the problems that arise when the individual recognizes that, regardless of what his own position will be, he will be one among many taxpayers, with differences among persons in both tax base and in preferences.

We may first consider whether or not our earlier results concerning tax base limitations will hold in this setting. We may look at a simple two-person illustration. In figure 3, we assume that the two persons, *A* and *B*, will earn an equal amount of money income and in the pretax or no-tax equilibrium, Y_0 . (Recall that, under our constitutional-stage assumptions the individual will know only that the two persons *A* and *B* will have the characteristics depicted; he will not know which of the two positions he will, himself, occupy.) The persons are predicted to differ substantially, however, in their response to the imposition of a tax on the limited or money-income base, with leisure (or other valued end products) exempted from tax. The differential responsiveness is indicated by the slopes of the “demand curves” for money income, as shown by D_A and D_B .

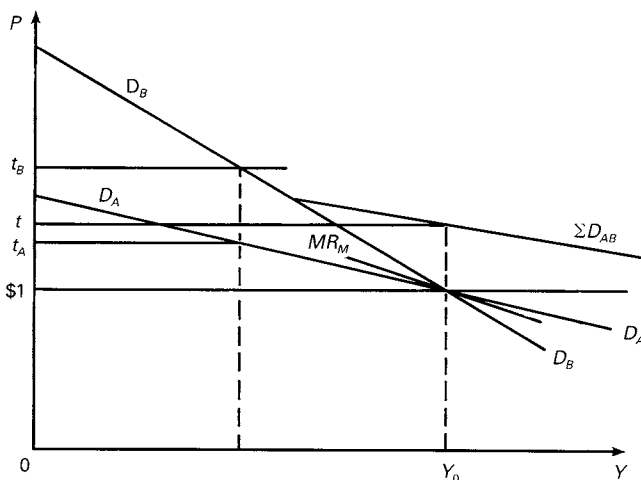


Fig. 3

The first point to be noted here is that so long as any responsiveness at all is predicted, the argument for the noncomprehensive base developed earlier holds without qualification. Each of the two persons whose preferences are depicted in figure 3 will be protected against the exploitation potential of government that would be present under full-income as opposed to money-income taxation.

Let us now examine the revenue-maximizing government's predicted tax behavior in this two-person situation. If the government could treat *A* and *B* separately and differentially, and if it could levy a proportional tax on each (but not a regressive tax), it would impose a tax rate of t_a on *A* and the higher rate, t_b , on *B*. Such differential treatment would clearly allow scope for the extraction of more revenue from the community than would be possible if the government were required to levy the *same* proportional rate on each person. The revenue-maximizing uniform rate, t , is determined in figure 3 where the "market" marginal revenue curve, MR_m , cuts the dollar price line, with "price" set at the intercept of the vertical drawn from this intersection and the aggregate "demand curve" ΣD . This rate is such that $t_a < t < t_b$. The fact that revenue collections under the revenue-maximizing discriminatory rate structure (t_a, t_b) exceed those under the uniform rate, t , suggests a further means of constitutionally restricting the revenue proclivities of Leviathan: by imposing the constraint that tax schedules be *uniform* over persons. Such an argument for *uniformity*, which is related to but different from the more familiar "horizontal equity" norm, has not, to our knowledge, been developed anywhere in normative tax theory.¹⁷

The construction in figure 3 can also be used to illustrate a proposition that seems at variance with that reached in models which assume institutional fixity. In the conventional framework, the behavior of individuals within the structure of given tax institutions is analyzed, and any attempt on the part of one person or group to avoid or to reduce tax payments, through recourse to nontaxable sources or uses of income, is interpreted as imposing an *external diseconomy* on less responsive taxpayers.¹⁸ Behavior in reducing tax liability generates costs for others in the community by making higher rates or tax and/or lower rates of public spending necessary than would otherwise be required.

Consider the same issue in our constitutional framework. An individual seeks to limit the revenue potential of Leviathan, while remaining uncertain as to his own position. In this case, he is benefited by the knowledge that at least some taxpayers will be able to reduce tax liability by shifting to nontaxable sources (uses) of income. This may be shown easily in figure 3. Compare the revenue-maximizing uniform rate, t , with that rate which would be revenue-maximizing if the two taxpayers were predicted to be equally responsive in the manner indicated by D_b . The uniform rate would, of course, rise to t_b , with a higher revenue potential. To the extent, therefore, that a person at the constitutional-choice level can predict that some members of the set of taxpayers will be able to shift to nontaxable sources (uses) in postconstitutional

periods, his concern about the exploitative possibilities of Leviathan is correspondingly reduced.

Finally, we want to consider whether or not our earlier results concerning the relationship between progression and maximum revenue hold in the many-person setting. It is perhaps intuitively appealing to suggest that the results might not hold, since if low-income persons should have particularly high elasticities of demand for leisure, it seems as if it might be revenue-maximizing to levy lower rates of tax on their incomes while, at the same time, levying higher rates on incomes above such limits. Progression offers one means of making this sort of discrimination, while preserving uniformity.

Once more we begin with the simple two-person case, and for simplicity suppose that for any positive tax rate individual *B* has higher income than individual *A*. Under the uniform-schedule restriction, will progression always yield less revenue than proportionality? We may answer this question by examining the revenue-maximizing uniform rate schedule in our two-person case. Only if this schedule is progressive will proportionality raise less revenue than progression. To check this, let us suppose that the tax rate, t_a , is imposed on all incomes over the range from zero to Y_a^1 , and rate t_b on all additional income. In this case, total revenue, R , is given by:

$$R = 2t_a Y_a^1 + t_b (Y_b^1 - Y_a^1), \quad (16)$$

where Y_i^1 is individual *i*'s equilibrium income in the presence of taxation. Now we use the result

$$Y_i^1 = Y_i^0 (1 - \eta_i t_i) \text{ for } i = a, b, \quad (17)$$

where Y_i^0 is individual *i*'s equilibrium income in the absence of taxation, and η_i is *i*'s elasticity of demand over the range Y_i^0 to Y_i^1 , and define γ so that

$$\gamma = \frac{Y_b^0}{Y_a^0}, \quad (18)$$

to obtain

$$R = Y_a^0 [2t_a (1 - \eta_a t_a) + \gamma t_b (1 - \eta_b t_b) - t_b (1 - \eta_a t_a)]. \quad (19)$$

By maximizing R with respect to t_a and t_b , we determine \hat{t}_a and \hat{t}_b and can examine the ratio

$$\frac{\hat{t}_a}{\hat{t}_b} = \frac{4\gamma\eta_b + \eta_a(\gamma - 1)}{4\eta_a(\gamma - 1) + 2\eta_a}. \quad (20)$$

Clearly, the revenue-maximizing rate structure is progressive only if (19) is less than unity in value; or if

$$\eta_b < \frac{\eta_a(3\gamma - 1)}{4\gamma} . \quad (21)$$

Since $\gamma \cong 1$, we know that

$$\frac{1}{2} < \frac{3\gamma - 1}{4\gamma} < \frac{3}{4} . \quad (22)$$

Thus, if there were no particular reason to assume that high-income receivers have lower demand elasticities than low-income receivers, we would expect (20) to be violated. In this case, the conclusion derived in our one-person model would carry over: progression would involve a revenue loss. But, it is also quite clear that (20) may hold; and in the case where η_a is significantly larger than η_b (by no means implausible), then the “right” degree of progression *could* generate more revenue than the revenue-maximizing proportional rate. The “right” degree of progression (from the revenue-maximizing government’s perspective) does not, however, seem likely to be large. For example, it can be shown that the maximum revenue derived from linear progression of the type examined above (i.e., a rate schedule of the form $m = \beta \cdot Y^1$) is always less than that generated by the maximum revenue proportional structure.¹⁹

5. Tax Limits and Tax Reform

As our analysis has suggested, the tax base and tax rate constraints imposed on governments at the constitutional level should, ideally, be such as to allow for the financing of some roughly efficient bundle of public goods and services. The danger of allowing governments access to revenue-raising instruments that will generate budgets in excess of these requirements is central to our whole model. We should, however, recognize that errors can be made in the opposing direction, that the constitutional tax constraints might, through time, prove to be overly restrictive. In this case, postconstitutional pressures will surely arise for escape through constitutional-style adjustments designed to widen the bases and to allow for more flexible rate structures, to move generally from specificity toward comprehensiveness. Empirically, it will always be difficult to distinguish between genuine constituency demands for a relaxation of such tax constraints, and the ever-present demands of the revenue-seeking politicians-bureaucrats. For the latter group, and their spokesmen, efforts will tend to be directed toward “loophole closing,” toward increasing the number of sources that may be taxed. “Tax reform” advocacy on the part of the “bureaucratic establishment” will tend to be centered on “tax base erosion.” Indeed one indirect test of the empirical validity of our model of political process lies in the observed lack of reformist concern about relative rates of tax within existing tax law limits. This offers some evidence to the effect that the revenue limits are indeed being approached.

In the discussion of proposed tax base changes the attitude of the traditional normative tax theorist and the members of the taxpaying public perhaps differ more sharply than anywhere else. Our analysis is helpful in “explaining” the attitudes of the taxpayers. For example, they are likely to react negatively and emphatically to proposals to move toward taxation on the basis of full income, as, for example, by including the imputed rental values of owned residences in the base for the personal income tax. The normative tax theorist, who advocates such inclusion always from reasoning based on equal-yield comparisons, responds to the taxpayers by arguing that overall rates of tax may be lowered simultaneously with the proposed widening of the base. But the taxpayers may be implicitly, but correctly, rejecting the equal-yield postulate, in their predictions that *any* widening of the tax base must open up further taxing possibilities for a revenue-seeking government.

Illustrations might easily be drawn from recent American fiscal experience. For example, in the early 1960s, a proposal was widely discussed which sought to replace part of the corporation income tax with a broad-based value-added tax. The proposal was quickly rejected, no doubt in part for the reasons suggested: it may have been predicted that, ultimately, the rates of value-added tax would reach heights that would greatly exceed those required to recover revenue forgone under the corporate income tax. In fact, of course, almost any widely advocated tax change tends to be justified in terms of its greater “efficiency” or its greater fairness, springing from the extension of the tax base. And as our analysis indicates, if our perception of postconstitutional political processes bears any relation to reality at all, it is precisely on such grounds that the change should be rejected!

We have, in broad and general terms, examined the basic issue of tax-base comprehensiveness in a constitutional-choice perspective, as opposed to the standard economists’ perspective which is limited to single-period alternatives informed by familiar in-period efficiency criteria. We should emphasize, however, that our analysis does not involve a rejection of the efficiency norm, as properly understood. The rational person, who tried to predict his own position as a future taxpayer and as a beneficiary of public goods and services, will try to carry out some efficiency-like calculus in arriving at his choices among fiscal institutions at the constitutional stage, in the prediction that these institutions, once chosen, will remain as quasi-permanent features of the economic-political environment. As our analysis indicates, what is efficient at this level of choice may not be coincident with those institutions that seem to be efficient in the more restricted choice models usually discussed by fiscal theorists.

Our results depend critically on the assumed predictions about the properties of the political process. We have introduced a model of government as a revenue maximizer limited by the tax constraints imposed in the constitution. This model is not to be confused with any one of the following models: the all-powerful government, subject to no constitutional constraints whatever; the benevolent and omniscient government, which provides the ideally effi-

cient in-period quantities of public goods and “prices” these efficiently; the majority-rule democracy that makes fiscal decisions about public goods supply reflecting the preferences of the median voter—at least as traditionally conceived.

Each one of these alternative models of government (along with other variants not listed), as well as the one we have introduced in this paper, can be used to “explain” certain features of the institutional reality that we observe. Our claim is limited; the analysis based on the constitutionally constrained but revenue-maximizing government seems congruous with some fiscal institutions in existence that do command deference as “constitutional” elements, while at the same time the analysis seems consistent with many public, as opposed to academic, attitudes toward central issues in tax reform.

To the extent that our analysis does succeed in “explaining” both the institutions in existence and prevailing attitudes toward changes in these institutions, the contribution is positive. We should emphasize, however, that we are not primarily concerned with drawing a contrast between the “what is” of fiscal reality and the “what ought to be” that is contained in the traditional normative discussions of tax reform. Our analysis may well have a higher degree of positive explanatory content than the familiar alternatives. But our discussion is grounded squarely on a normative model of constitutional decision making. Tax-base comprehensiveness is a reform objective that is almost never questioned in the traditional treatments. This paper suggests, first, that tax-base comprehensiveness may be rejected in a normative constitutional-choice calculus under certain political assumptions, and secondly, that elements of the observed fiscal structure may well reflect this normative framework.

NOTES

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1. In the limit, we may assume that the individual is in some Rawlsian “original position” and behind the “veil of ignorance.” (John Rawls, *A Theory of Justice* [Cambridge: Harvard University Press, 1971].) We do not need to impose such rigid requirements, however, for the constitutional setting to be relevant. Somewhat more plausibly, we may assume only that the individual is highly uncertain about his own future position. Cf. James M. Buchanan and Gordon Tullock, *The Calculus of Consent* (Ann Arbor: University of Michigan Press, 1962).
2. We would include under this rubric the recent “optimal taxation” literature, virtually all of which is explicitly set in this framework. For a useful summary, see David F. Bradford and Harvey S. Rosen, “The Optimal Taxation of Commodities and Income,” *American Economic Review* 66 (May 1976): 94–101.
3. Notably by James M. Buchanan in his book, *Public Finance in Democratic Process* (Chapel Hill: University of North Carolina Press, 1967). The relationship is implicit in Knut Wicksell’s whole analytical framework. See Knut Wicksell, *Finanztheoretische Untersuchungen* (Jena: Gustav Fischer, 1896).

4. Buchanan and Tullock, *The Calculus of Consent*.
5. One such possibility is that of explicit constitutional limits on the proportion of national product available for public use (or on maximum rates of tax)—the national analogue of the recent tax limitations proposals in California and Michigan. It is worth noting in passing, that restrictions on maximum rates would tend to cause Leviathan to aim at comprehensiveness, which restrictions on revenue as a proportion of GNP would not do. In so far as comprehensiveness is viewed as desirable in such a context, this might be seen as suggesting a case for rate restrictions rather than revenue restrictions. Because such policy options lie outside the range of those typically available in the standard tax reform exercise, we do not focus on them here. The ensuing discussion is conducted on the (practically relevant) assumption that such explicit rate and/or revenue constraints are not operative. (Of course, restrictions on nontax means of securing bureaucratic surplus (use of laws, commandeering without compensation, etc.) would be required, both in the case of tax liability and in our discussion, to ensure that the fiscal constraints are operative.)
6. There are evident similarities between our model and that developed by William Niskanen. See his *Bureaucracy and Representative Government* (Chicago: Aldine, 1971).

We should note that the assumption of the revenue-maximizing politician is not inconsistent with the assumption that the politician is constrained by the political process. In the absence of effective constraints on the domain of public spending, or on the government's ability to redistribute private goods among voters, majoritarian democracy may simply involve "maximum" transfers from minority to majority, along with or independently of the provision of genuinely public goods. Our discussion is, however, *phrased* largely in terms of a "monopoly" government in which revenue maximization arises from the utility maximization of the partially unconstrained politician-bureaucrat rather than from the democratic political process itself.

7. For a summary of the Italian contributions, see James M. Buchanan, *Fiscal Theory and Political Economy* (Chapel Hill: University of North Carolina Press, 1960), especially pp. 24–74.
8. It is perhaps necessary to add the comment that the relevance of our analysis does *not* critically depend on whether or not governments have been, in fact, established in such a manner. The object of the contractarian exercise is to develop acceptable criteria for normative evaluation.

In this respect, the model resembles that which is familiar to economists in their analysis of the granting of franchises to monopoly enterprises.

9. Interesting questions arise if we allow the revenue yield to vary with α . In particular, there is the possibility of choosing tax institutions so as to constrain the disposition of revenues as well as the aggregate level. These are issues which we take up in a subsequent article.
10. The basic conclusions hold equally for the case in which full "neutrality" is precluded, and the choice must be made between the narrower base and the "second-best" alternative, in which different goods are taxed at different rates according to their complement-substitute relationships with leisure (the question of interest in most of the recent "optimal taxation" literature). Our argument is thus equally with "optimal tax" and "comprehensiveness" proponents.
11. By the assumptions of our model, the individual cannot predict his precise preference pattern as between money-income-earning and alternative activity in

postconstitutional periods. All that is required for our analysis here is that these preferences are predicted to be standard.

12. It should perhaps be emphasized that the “comprehensive” *tax* is levied on the income side only: the surplus which accrues to the bureaucrat-politician, the excess of revenue collections over public spending (as distinct from the bureaucrat’s *income*, more narrowly conceived), is assumed to lie outside the coverage of the tax system. This assumption can be rationalized in a variety of ways, depending on the particular conception of Leviathan that one adopts. In the simple conception of “Leviathan” as the ruling class or monarch, the assumption is tantamount to allowing the king not to pay taxes. In a dominant majority conception, the comprehensive tax may be presumed to fall on all income, but not to fall on the special benefits, transfers, etc., that accrue to the majority coalition as a result of disbursement of the total revenue.
13. The construction in figure 1 can be used to show how the constitutional-choice setting under our political assumptions transforms the familiar excess-burden argument in favor of the general or comprehensive-base tax. A solution at point *K*, in the neoclassical argument, is demonstrated to be inferior to that which might be attained with a comprehensive-base or general tax that will yield the *same* revenue, producing an ideal solution at some point like *H* in figure 1. This argument presumes, however, that the government once empowered to levy the general or comprehensive-base tax will, in fact, restrict its attempts to raise revenue to the collections dictated by the equi-yield comparison.

The partial equilibrium version, based on the Marshallian demand curve construction, can be used to illustrate the revenue-maximizing regressive structure, but by virtue of income effects will indicate a different rate structure than that derived from i_m . For similar reasons, the area under the demand curve does not accurately reflect consumer surplus; nor does the standard welfare triangle accurately reflect the welfare loss, or at least will do so only when the income-consumption curve E_mHE in figure 1 is a horizontal line. In what follows, we set such problems aside as being of no particular relevance to our discussion.

14. A diagrammatic derivation of this result can be indicated by drawing a new *MR* curve, MR_D , over the range where the nonzero proportional rate is to be applied—as in figure 2, with the maximum revenue rate being t^*_d .
15. That is, one in which the marginal tax rate, *m*, is given by $m = \beta Y^1(m)$, where Y^1 is equilibrium income in the presence of tax and β is some constant.
16. The existence of these is not inconsistent with our model. Constitutional preferences for progression as such may exist, and will merely complement the arguments posited here.
17. It is interesting to note that in this model no constitutional rationalization for “horizontal equity” as traditionally conceived emerges. A Rawlsian maximin rule, or generalized risk aversion, might generate a case for reducing the expected variance of the posttax, postexpenditure income distribution in postconstitutional periods, but neither involves a specific, independent desire to tax those with identical pretax incomes identically. By contrast, in the more familiar model of constitutional choice in which the median voter’s preference is decisive at the postconstitutional level, horizontal equity norms may be desired as a means of limiting distortions in public goods supply. A tax rule which levies burdens only on a small proportion of the population could be expected to generate levels of public goods supply which are significantly different from the optimum. In our

model, however, the median voter is essentially irrelevant and horizontal equity norms are simply subsumed by “vertical equity” ones.

18. For an explicit discussion in such an externality setting, see James M. Buchanan, “Externality in Tax Response,” *Southern Economic Journal* 33 (July 1966): 35–42.
19. This essay is restricted to an analysis of the opportunities of imposing limits on the revenue-collecting potential of Leviathan through constitutional constraints on tax bases and tax rates. This would not, of course, be the only objective of an ideal “fiscal constitution,” even if we remain within tax-side questions. To the extent that Rawlsian-like precepts of justice enter into the constitutional calculus, or even the more utilitarian motives of insurance and/or protection, a requirement that general public goods be financed at least partially by the imposition of progressive income taxes may emerge from conceptual agreement among all parties. In this context, our analysis may be viewed as complementary through its implication that progression may, independently, impose its own revenue limits.