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Tax Structure for Supply-Side Economics in Developing Countries

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### Abstract

The paper attempts to (a) identify the relationships which the tax policy prescriptions of recent supply-side economics (especially lowering of marginal tax rates) bear with those of the traditional and modern literature on taxation, and (b) establish what the tax system of developing countries would look like if supply-side effects of taxation and efficient allocation of resources were the sole concern of the policymakers.

A comparison of the recent supply-side literature with the traditional and modern literature on taxation reveals two things. First, unlike the traditional writers on taxation, the supply-side economists do not wish taxation to be an instrument of multiple objectives--certainly not of redistribution, demand management, and other macroeconomic objectives. Second, unlike the modern writers on optimal taxation, the supply-side economists have firmer views on the desirability of lower levels and progressivity of taxation. On the whole, the supply-side economists place the efficiency objective on a pedestal and believe that lower levels and progressivity of taxation alone are consistent with that objective.

The paper establishes that the tax systems of developing countries would look very different if efficient allocation of resources were the sole concern of the policymakers. They would consist of poll tax, tax on land area, tax on windfall profits, tax on potential income, taxes on items with inelastic demand or supply, and taxes for internalizing the externalities; they would not consist of any other taxes e.g., income tax, corporation tax, capital gains tax, payroll tax, wealth tax, gifts tax, and inheritance tax. Also, export duties and import duties would be justified as components of such tax systems only under exceptional circumstances. The rates of taxation would be strictly dictated by optimizing formulae and would contain little or no progression--in any case, they could not be raised simply for revenue reasons. Also, there will be no place for special tax incentives and preferences in such a tax system. The efficiency-oriented tax structure is, thus, shown in the paper to be no more than a theoretical ideal which cannot be realistically adopted by any developing country.

The paper concludes with certain factors which the policymakers of developing countries must take into account before they adopt the advice of the supply-side economists to lower tax rates, in general, and to lower the rates of income tax, in particular. More specifically, it argues that reduction of tax rates must go hand-in-hand with expenditure cuts and broadening the tax base and must be perceived by taxpayers to be permanent and not temporary. The use to which government revenues are put should be a serious consideration in deciding the extent to which taxes should be reduced. Finally, it cautions that the supply-side effects of the lower tax rates are more likely to be evident in the long run than in the short run.

## I. Introduction

"Supply-side" economics, a term coined in recent years, emphasizes the importance of the economic behavior of productive agents to aggregate supply and macroeconomic policies. A large number of books and articles have appeared on the subject, especially in the United States, which contain the views of leading supply-siders. A few books worth noting are Laffer and Seymour (1979), Meyer (1981), U.S. Congress (1981), Bartlett (1982), Fink (1982), Raboy (1982), Hailstones (1982 a and 1982 b), Gilder (1983), Canto, Joines, and Laffer (1983), and Roberts (1984).

### 1. Background on supply-side economics

Supply-side economics seems to have both a political and an economic content.

On the political side, supply-side writers base their view of the economic order on the beliefs that (a) free markets allocate resources most efficiently under almost all, if not all, circumstances; (b) governments tend to grow big and are inherently inefficient; and (c) politicians or bureaucrats in a policymaking position cannot be trusted to act effectively in the social interest. 1/

On the economic side, supply-side writers believe in at least three major propositions: (a) many government regulations aimed at protecting the consumer and worker are generally costly, and indefensible in terms of their cost-benefit ratios, eliminating them would therefore improve resource allocation in the economy; (b) welfare and entitlement programs discourage work effort, limiting access to such programs to the really needy would, therefore, restore work incentives; and (c) personal income tax is biased against work effort (work is taxed but leisure is not), as well as savings (income saved is taxed twice while income consumed only once), and investment (productive investment is taxed but unproductive investment is not--and investment in owner-occupied housing may even be subsidized), reducing marginal income tax rates would, therefore, substantially increase labor supply, savings, and investment. 2/

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1/ Supply-siders accept that the existence of "pure" public goods, such as defense and internal security, provides a rationale for social action, but believe that policymakers would not necessarily provide these goods in the optimum quantity or at the lowest possible cost.

2/ It should be pointed out that many of the points made by supply-siders are implicit in the behavioral and market structure assumptions made by most neoclassical economists.

In general, supply-side writers aim at minimizing the distortions that regulations, subsidies, and high and progressive taxes inject into the market choices and believe that their removal would encourage savings and production by allowing the economic incentives of a free market to work. They also believe that the private sector by itself is capable of bringing about sustained economic growth, so that there is a need to reduce the role of the public sector.

## 2. Objectives of the paper

As the problems of developing countries frequently are the result of insufficient supplies, it would appear, *prima facie*, that the tax policy prescriptions of supply-siders, viz., low and less-progressive taxes, could be highly relevant to them. This provides the motivation for the present paper.

The purpose of this paper is not to discuss the validity of factor and output elasticity (growth) optimism of the supply-side economists; this has been examined in other papers. <sup>1/</sup> Instead, this paper attempts to identify the relationships which the tax policy prescriptions of recent supply-side economics bear with those of the traditional (pre-1970) and modern (post-1970) literature on taxation. In addition, this paper seeks to establish what the tax system of developing countries would look like if supply-side effects of taxation and efficient allocation of resources were the sole concern of the policymakers. The discussion in the paper covers the issues both of tax design (establishing a new tax system) and tax reform (revising the existing tax system).

This paper, therefore, has six objectives. First, it attempts to restate, as explicitly as possible, the position of supply-side writers on taxation (Section II). Second, it attempts to define the supply-side objective of a tax system, reviews the importance attached to this objective amongst multiple objectives of taxation in the literature and describes the broad theoretical characteristics of a tax system based on supply-side considerations (Section III). Third, after a review of selected literature on taxation, the paper attempts to throw light on those elements of a tax structure, or the structure of tax bases, which would be consistent solely with the supply-side objective (Section IV). Fourth, it seeks to define a rate design, or the structure of tax rates (including its progressivity), that would be consistent with the supply-side objective (Section V). Fifth, the paper throws some light on the differences between a supply-side economist and a modern optimal tax economist (Section VI). Finally, the paper concludes with some practical advice on the implications of the supply-side approach to tax reform in developing countries.

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<sup>1/</sup> In particular, see King (1980), Boskin (1973, 1978), Hausman (1981 a, 1981 b), Rosen (1980), Boskin (1982), Evans (1982, 1983), Keleher (1982), and Keleher and Orzechowski (1982), Howrey and Hymans (1980). See also Ebrill (1984) in connection with developing countries.

## II. Views of Supply-Side Economists on Marginal Tax Rates

Of the many policy recommendations of supply-side economics, lowering of tax rates is the most important; it is certainly the best known. According to some leading supply-side economists, "The term supply-side economics has in recent years become closely associated with....a set of policy prescriptions, the most important of which has been a recommendation that tax rates be lowered both in the United States and in many other countries." 1/

Never before have economists attached such a great importance to the rates of taxation and given them such a central role in government policies. This elevation by recent supply-siders of tax rates to such a pedestal is a reaction to three major trends of recent years.

First, it is a reaction to the well-established Keynesian theory that (a) treats consumers, not producers, as the driving force in the economy and considers aggregate demand rather than aggregate supply as a major determinant of real and nominal economic activity; 2/ and (b) emphasizes the income rather than the substitution (or relative price) effect of government policies, including that of the personal income tax, which, by its very nature, can have significant "excise type" relative-price effects. 3/

Second, it is a reaction to the overwhelming equity bias of traditional (pre-1970) literature on taxation, with its preoccupation with the ability-to-pay basis of taxation and the sacrifice principles, in the end generally justifying the progressivity of taxation.

Finally, it is a reaction to the highly progressive income tax systems in existence everywhere, which progressivity has been accentuated by the interaction between recent inflation rates and tax brackets based on nominal incomes, as a result of which taxpayers have been constantly pushed into higher income brackets during inflationary times and have been subjected to even higher tax rates under an (unindexed) income tax system. 4/ Such steep progressivity, in the opinion of supply-side economists, intensifies the excise type relative price effects and biases of taxation, mentioned earlier, and "creates crushing effects on all incentives to produce." 5/

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1/ Canto, Joines, and Laffer (1983), p. ix.

2/ Cf., Evans (1980), Roberts (1978), and Feldstein (1981).

3/ Ture (1982 a), p. 14 and Kemp (1981), p. 68.

4/ "Under current law, everyone will face the top rate sooner or later," Kemp (1981), p. 94.

5/ Wanniski (1981), p. 37.

The basic premises of the tax policy prescription of supply-siders are that people are concerned with after-tax, not pretax, incomes and respond to incentives; government tax policy has important effects on individual incentives; and the (negative) substitution effects of marginal tax rates are larger than is generally believed. Consequently, a reduction of tax rates, especially a substantial and visible reduction, would significantly increase incentives to work in the short run and thereby raise aggregate supply. A reduction in marginal income tax rates, in particular, would increase the supply of labor significantly, by inducing marked shifts from leisure to work and from nonmarket to market activity as after-tax wages increase, thereby raising marketed output and slowing down the rate of inflation. It would increase the supply of savings and capital significantly, by encouraging large shifts from consumption to savings, thereby lowering interest rates. It would also redirect resources from unproductive investment and non-market activity to more productive uses of capital and market activity, thereby lowering unit costs, raising productivity, and removing supply bottlenecks.

In short, a reduction of marginal rates of income and of other taxes will significantly change the relative prices confronting households and businesses, and influence their economic behavior toward work, savings, and productive investments and against leisure, consumption, and unproductive investments. Lower tax rates and less progressive taxation would also greatly discourage tax avoidance and reduce tax evasion. The supply-side tax policy thus assumes a large positive short-run elasticity in the behavior of various economic agents.

It is this optimism that also underlies the now well-known "Laffer Curve," according to which government revenues first rise with tax rates (as long as tax rates are in the "normal range"), reaching a peak (the "Laffer hill"), and then falling (as tax rates rise to a "prohibitive range"). 1/ A reduction of tax rates from the "prohibitive range" is believed by the leading supply-siders to result in an expansion of economic activity and tax compliance, and hence tax revenues. 2/

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1/ For an elaboration of the Laffer Curve, see Canto, Joines, and Laffer (1983), pp. 2-24 and Wanniski (1978 a) pp. 97-115. The Laffer Curve is not essential to the basic premise of the supply-side economics that leaner governments are welcome. Other comments on the Laffer Curve can be found in Blinder (1981), Moszer (1981), Henderson (1981) and Fullerton (1982).

2/ Keynes also believed in tax cuts, but only if they were unaccompanied by expenditure cuts, so as to make fiscal deficits stimulative during recessions. Supply-siders, on the other hand, do not consider budget deficits in themselves to be an appropriate instrument of policy. See also Bechter (1982).

To sum up, the supply-side economists aim at reducing the "exciseness" (relative price effects) of taxation or achieving "neutrality" in taxation, if at all possible. 1/ As income tax is the major source of government revenue in developed countries, the supply-siders would like to particularly see the rates of personal income tax reduced and, as a matter of fact, the rates of all taxes reduced to result in leaner governments. 2/ In their opinion, it is the marginal tax rates more than the average tax rates which are important determinants of the substitution effect, so that they would like the marginal (real) income tax rates to be reduced. 3/

Supply-side economists do not advocate a reduction in marginal (real) income tax rates to be achieved through additional tax incentives for savings and investments (through, for example, liberal depreciation allowances and income tax credits, or more savings exemptions), as these would be merely selective (and hence distortionary) and inframarginal. 4/ The supply-side economists prefer individuals to make their consumption and savings decisions on economic grounds, undistorted by relative rates of taxation as implied by different tax breaks and incentives.

Personal income tax does not play an important role in the revenue structure of developing countries; however, the supply-siders consider a reduction of tax rates, in general, and in the progressivity of income taxes, in particular, useful advice for developing countries as well, for essentially all the reasons given above. 5/

### III. Supply-Side Objective of the Tax System, in Theory

As supply-side economists have taken pains to stress, neutrality in taxation is the most desirable of all objectives of taxation, but if for some practical reason this objective is unattainable, a second-best aim should be to minimize the distortionary substitution and excise

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1/ See Ture (1982 b). See also Ture (1982 a), p. 17, and Kemp (1981), p. 68. Comments on supply-side economics can be found in Tobin (1981).

2/ Wanniski (1981), p. 43. Both Wanniski and Kemp would like to see the marginal income tax rates ultimately range between 5 and 35 percent. See Wanniski (1981), pp. 45-46 and p. 49 and Kemp (1981), p. 52. The supply-siders, thus, do not want, as one might think, to do away with progressivity in the marginal rates of taxation altogether. The equity objective of income taxation seems to be acceptable to them but within limits.

3/ Ture (1982 a), p. 26. The marginal tax rates are important for incentives while the average tax rates are important for their implications about the size of government.

4/ Wanniski (1981), pp. 44-45 and Kemp (1981) in U.S. Congress (1981). See also Feldstein (1983).

5/ Wanniski (1978 b), Chapter 11, pp. 249-86.

effects of taxation. 1/ In fact, few tax economists would disagree with the importance attached to the neutrality objective or the reduction of the disincentive and distortionary effects of taxation. In theoretical literature, this objective is labeled as the "efficiency" objective of taxation. 2/ In this paper, therefore, the two terms, neutrality and efficiency, will be used interchangeably.

1. Conflicts among multiple objectives of taxation

Traditional (pre-1970) tax theory, taking a cue from political reality, considered taxation as an instrument with multiple objectives: to raise adequate revenue with administrative ease, to correct externalities and play a sumptuary role, to redistribute income and wealth and, since Keynes, to stabilize aggregate demand and support other macroeconomic objectives. As the history of economic thought reveals, it is not that the traditional tax literature ignored the supply-side effects (distortionary economic effects) of taxation that so concern supply-side economists, but that it frequently treated efficiency and equity as two separate criteria. The traditional tax literature discussed them sequentially offering little or no guidance on how they could or should be combined. 3/ When the two conflicted, the traditional theory tended to allow the objective of equity and fairness in taxation to steal a march over neutrality and efficiency.

For example, while Adam Smith's famous canons of taxation (equity, certainty, convenience, and collection cost) did not include a supply-side objective, and he ultimately argued in favor of the ability-to-pay principle ("subjects should contribute in proportion to their respective abilities"), he was, nevertheless, well aware of the effects of high taxes on output and government revenues via the behavior of taxpayers. As he wrote, "high taxes, sometimes by diminishing the consumption of the taxed commodities and sometimes by encouraging smuggling, afford a smaller revenue to government than what might be drawn from more moderate taxes." 4/

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1/ Ture (1982 a) p. 17, Kemp (1981), p. 68, and Raboy (1982), p. 58.

2/ That productive efficiency or ensuring the efficient allocation of resources is desirable frequently goes unquestioned. However, there may be exceptional situations where productive inefficiency rather than efficiency may be "optimal" on certain distributive and allocative grounds. Such situations are described in Dasgupta and Stiglitz (1972) and Mirrlees (1972). They also involve high administrative and informational costs. See Sandmo (1976), p. 48.

3/ See, for example, Musgrave (1959) and Samuelson (1969). The conflict between equity and efficiency in taxation has been well known in literature and has been frequently repeated by economists since Adam Smith's time. Much of the recent optimal taxation literature, in fact, is devoted to developing a framework for dealing with both simultaneously rather than separately.

4/ Smith (1976), Book 2, p. 414.

Alfred Marshall did not have much to say on the objectives of a good tax system, yet he argued that high excise taxes on necessities were better than many other taxes for, given their low elasticity of demand, they have the least effect on consumer welfare: "If therefore a given aggregate taxation has to be levied ruthlessly from any class it will cause less loss of consumers' surplus if levied on necessities than if levied on comforts..." 1/

Arthur Pigou considered a tax system based on the principle of least aggregate sacrifice (i.e., on distributional considerations) to be ideal, but he too was very conscious of the "announcement effects" of high tax rates on the supply of work effort, savings, and risk-under-taking. He was particularly concerned about the significance of these effects on savings. 2/

Henry Simons had all the ingredients of becoming the first supply-side tax economist--a strong advocate of reducing the role of government, he disliked selective consumption taxes, because they interfered with the free private allocation of resources; he also disliked general consumption taxes, because they were easy to collect and were likely to make for irresponsible government expenditure. Nonetheless, he too ended up favoring progressive taxation, essentially on the "moral" ground of reducing inequality. He was, of course, quite concerned about the economic effects of progression on the supply of capital, but accepted the trade-off between equity and growth, finally asserting that the dangers of infringement of taxes on incentives were much exaggerated. 3/

It must, therefore, be recognized that tax policy has been and will remain an instrument of achieving multiple objectives. All leading traditional theorists on public finance struggled with the multiplicity of objectives of taxation but, while recognizing the economic (relative price) effects of taxation, concluded that equity was the more important objective in designing a tax system. 4/ Once that was accepted, the traditional literature on taxation concentrated on the search for a proper tax base (i.e., the measures of ability to pay--income, expenditure, wealth) and a proper rate structure (i.e., the measures of equality of sacrifice--progressivity, proportionality, regressivity). 5/

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1/ Marshall (1948), p. 467 quoted in Houghton (1973), p. 365.

2/ Pigou (1962), p. x. The optimal taxation literature, in fact, traces its origin to Pigou's "announcement effects" in estimating the deadweight losses of various taxes. Indeed, Pigou is said to have posed the "Ramsey problem" to Ramsey and helped to develop the efficiency rules relating to taxation.

3/ Simons (1938), pp. 18-19 and Simons (1950).

4/ Some theoreticians, like Rawls (1971), believed only in the equity objective.

5/ See Goode (1976), especially Chapters 2 and 4.

## 2. A "neutral" tax system

The relevant question which this paper must address is the following. If the multiple objectives of taxation are to be foresaken and if neutrality is to be the only or the paramount objective of taxation (i.e., if the primary aim is to cause minimal distortions to individual choices), what is an ideal tax system? A clue to the answer to this question is provided by the theory of the first-best and the second-best taxation, succinctly developed primarily in the recent (post-1970) literature on optimal taxation.

### a. General theory of the first-best taxation

The theory of first-best claims that, in the absence of market failures, all taxes, except lump-sum taxes that an individual cannot alter by any of his actions, should be considered distortionary. 1/ All taxes, other than lump-sum taxes, increase rather than reduce distortions in one or more of the following: (a) the relative prices of commodities; (b) the relative rewards of factors of production; (c) the relative values of present versus future consumption; and (d) the relative rewards of work versus leisure. 2/

Government activities should, therefore, as a first-best solution, be primarily financed not through taxes (except via a poll tax which alone is consistent with Pareto optimum, as it cannot be related to individual economic circumstances), but through user prices. These prices, sometimes called benefit taxes, can be based on the "voluntary exchange principle," enunciated by Wicksell and Lindahl. This is particularly valid for "impure" public goods, which do not suffer from the "free rider" problem, i.e., where consumers can be identified and preferences can be determined. "Pure" public goods should, on the other hand, be financed through nondiscriminatory and nondistortionary poll taxes. 3/ For any redistribution beyond that implicit in Pareto optimal taxation, the theory of first-best recommends lump-sum transfers only.

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1/ Market failures, defined here as the inability of markets to achieve an efficient allocation of resources, generally arise in cases of goods where (a) private costs and benefits are different from social costs and benefits; (b) prices are higher than marginal costs due to the failure of competition or existence of monopolies; or (c) benefits of outputs are shared by all individuals, irrespective of whether or not they pay.

2/ Any system of taxation will have an income effect, but a tax is said to be distortionary (or to cause "excess" burden) if it creates distortions in compensated demands. For details of this argument see Atkinson and Stiglitz (1980) and Tresch (1981).

3/ All "pure" public, or nonmarket, goods, have a "revelation problem" requiring the use of demand-revealing mechanisms that are nondistortionary. For some of these mechanisms, see Vickrey (1961), pp. 8-37 and Mueller (1979), pp. 72-84.

This view of taxation depends on five main assumptions. (a) Choices made by individuals are better than other choice mechanisms, since all individuals are rational economic beings and have the relevant information needed for making rational decisions. (b) Product and factor markets are perfectly competitive, factors are perfectly mobile, and pre-tax market prices reflect true social opportunity costs. Implicit in this assumption is the belief that the cost of and benefits from consumption or production are wholly internalized--there are no externalities or spillovers. (c) Individual behavior is affected by prices (taxes being, of course, elements of prices); that is, there are no social and institutional constraints affecting individual economic behavior. (d) Government expenditures, have no desirable effect on relative prices; they certainly cannot compensate for the distortionary effects of taxation on relative prices and at the same time provide "merit goods," that may be socially desirable. (e) Redistribution is not a major objective of taxation; the initial distribution of income and wealth as well as the redistribution generated by market forces (and lump-sum transfers, if any) are correct and socially acceptable or else that redistribution should be achieved by policy instruments other than taxation.

The theory of first-best does tolerate some taxation (and subsidies) besides poll taxes, even though it affects market-determined relative prices, but only under two conditions. First, taxation is acceptable if it corrects some major market failure (such as positive and negative externalities), that is, raises the level of private costs to the level of social costs or absorbs the excess of private benefits over social benefits. <sup>1/</sup> This, of course, requires that there is an agreement among one and all as to the existence and magnitudes of externalities in the economic system and that the differences between private and social costs (and benefits) can be measured to design an optimal tax (or subsidy). Second, if a negative tax or a subsidy brings the prices charged by decreasing-cost (i.e., increasing-return) industries to the level of long-run marginal costs, and optimizes output, then also it is acceptable.

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<sup>1/</sup> An externality exists whenever the action of a given consumer or a producer affects, negatively or positively, the utility or production possibilities of some other consumer or producer, so that the marginal social cost of his action differs from the marginal private cost of his action. The appropriate first-best policy in such a case would be to make the former individuals directly compensate the latter financially for the latter's gains and losses. However, this may not be possible if more than a few individuals are involved.

b. General theory of the second-best taxation

The theory of second-best starts with the premise that (a) reality is unlikely to conform to the assumptions needed for first-best solutions; (b) lump-sum taxes are generally infeasible, forbidden, or simply insufficient to meet revenue needs; (c) all other taxes distort individual choices and create deadweight (welfare) losses to the consumer and/or to the producer, by placing a "wedge" between prices paid and prices received.

The basic premise of the theory of the second-best, then, is that when a government must raise a given amount of revenue by imposing a distortionary tax (i.e., a tax with "excess" burden) it is generally optimal to tax all goods and factors at differentiated rates to bring about equiproportional changes in compensated demand and supplies so as to minimize "excess" burden (Ramsey rule). <sup>1/</sup> That is, taxes should not be broad-based: goods and factors with relatively inelastic demand and supply should be subjected to relatively higher rates of taxation. This is the famous inverse elasticity rule, according to which an efficient tax is one whose rate is proportional to the inverse of the price elasticity of the tax base.

The recent optimal taxation literature, which deals with direct versus indirect taxes, as well as the mix between direct and indirect taxes, is essentially an application of this theory of the second-best and attempts to minimize the deadweight loss of any and all packages of distortionary but feasible taxes. <sup>2/</sup> The design of a tax system in the second-best situation requires that, for each individual, the own- and cross-price elasticities of demand (of commodities consumed) and supply (of factor inputs) are known and that, despite the wide range of elasticities that exist between individuals, it is possible to "personalize" the tax base and the tax rates for each individual separately.

3. Conclusion

In sum, a tax system would seem to meet the supply-side or efficiency objective fully if it either did not affect relative prices at all (theory of first-best), or if it only affected them in a unique manner, as described above (theory of second-best). The tax-mix and the rate-design characterizing such a tax system, which emerge from the foregoing discussion, can be presented in a tabular form.

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<sup>1/</sup> The presence or absence of pure profits can complicate the optimal tax rules and raise issues concerning the number of degrees of freedom available to the government. Cf., Munk (1978).

<sup>2/</sup> In fact, optimal taxation theory is an advance over second-best theory since it allows for nonlinear taxes, where Ramsey ruled these out. For a brief review of optimal taxation literature, see Sandmo (1976) and Stern (1984).

Characteristics of a Supply-Side Economics Tax System

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Objective(s)	Tax Base(s)	Tax Rate(s)
1. No effect on relative prices.	User prices for most public services and a lump-sum or a poll tax to finance "pure" public goods.	User prices as determined by the equilibrium of demand and supply for public services and a uniform rate poll tax.
2. Affect relative market prices but only to correct market failures and externalities.	Taxes on production and consumption (negative) externalities.	A rate of tax which will capture the degree of externality.
3. Least distortion of individual choices.	Taxes on items of inelastic (or less elastic) demand and inelastic (or less elastic) supply; both commodities and factors of production.	No limit on the tax rate in the case of complete inelasticity, and the tax rate inversely related to elasticity, in the case of less than zero elasticity.

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Source: Author's Summary of the Arguments.

As is apparent from the Table, a neutral and efficiency-dictated tax system would require reforms in the tax bases as well as the tax rates. As a matter of fact, only a certain mix of taxes and a mix of (upward and downward) revisions in the rates of taxes would be consistent with efficiency-oriented tax reforms. The next two sections deal with the ingredients of a supply-side or efficiency-based tax system more fully.

#### IV. Tax-mix for Supply-Side Objective or Efficient Tax Bases

A review of selected traditional and modern literature on taxation reveals an agreement as to the tax-mix if neutrality or allocative efficiency were the only and paramount considerations of policymakers. Only those taxes which either have no effect on relative prices, or have no substitution effects, would be considered most desirable. The next in line would be those taxes which have least distortionary effects on relative prices.

##### 1. Appropriate taxes for efficiency objective

A tax system geared toward a supply-side or efficiency objective alone would consist of the following taxes:

- a. taxes for internalizing the externalities;
- b. poll tax;
- c. taxes on land area;
- d. taxes on windfall or monopoly profits;
- e. taxes on items with inelastic demand or supply (such as basic necessities or land); and
- f. taxes on the ability of individuals to earn income, or on potential income. (The second-best alternatives to this proposal would be either a tax on accrued (Haig-Simon) income of an individual coupled with taxes on the consumption of complements to leisure, or a tax on life-time personal expenditures.)

The rationale for (a) and (b) is clear from the arguments given in Section III. <sup>1/</sup> Taxes on land area, (c), are defensible on the assumption that land is in inelastic supply, so that the ground rent of land is a sort of windfall gain. Taxes on windfall or monopoly profits, (d), are justified on the ground that they will not affect price and production decisions made by producers before the imposition of such taxes. Taxes on basic necessities (e) are defended on the ground that these commodities tend to have inelastic demand.

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<sup>1/</sup> Poll tax is justified only when the assumption of no migration is made.

That a tax on ability to earn income or on potential income, (f), is also acceptable calls for a little more explanation. Whereas a tax on actual earnings allows a person to favor leisure over work, a tax on potential income as determined by ability (which is inelastic in supply) is said to be nondistortionary. <sup>1/</sup> However, ability, especially that incorporated in human capital, is difficult to measure, so that a tax on potential income will be difficult to administer. Hence a tax on accrued income (including own consumption, transfers by gifts and bequests, and unrealized capital gains), though second-best, is considered a vast improvement over existing income tax systems, which are based on realized money incomes and which contain many tax shelters and loopholes. But a tax on accrued income, besides entailing the well-known problem of how to measure the unrealized gains, would still suffer from intratemporal and intertemporal inefficiencies: the leisure component of welfare or economic capacity would still remain tax-free, resulting in intratemporal welfare loss from distortions in work--leisure choices, and savings will continue to be penalized by double taxation causing intertemporal inefficiency. (The latter would be exacerbated by inflation.)

To avoid the distorting effect of income taxes on intratemporal choices, and recognizing the difficulties of taxing leisure, taxes on consumption goods which are complements to leisure are generally recommended. To avoid the distorting effect of income taxes on intertemporal choices, the exemption of savings from the tax base is favored and the levy of a flat-rate tax on the lifetime consumption of an individual (with a personal exemption or an exemption which recognizes differences in family circumstances) is frequently recommended. <sup>2/</sup> Leisure will, nonetheless, remain untaxed even under a personal consumption or expenditure tax, producing a disincentive to work; consequently, even the proposal to replace an income tax by a personal consumption tax will not be completely satisfactory on efficiency grounds. However, the efficiency losses of an expenditure tax are stated to be much smaller than those of the present income tax, which is frequently based on realized incomes and a nonindexed tax base, and which arbitrarily discriminates among various forms of savings (e.g., in favor of owner-occupied housing and against equity investment).

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<sup>1/</sup> For the detailed discussion of this point, see Tanzi (1980), Millward (1983), especially Chapter 2, and Kay and King (1980), Chapter 6, especially pp. 75-76.

<sup>2/</sup> Savings will be taxed over the lifetime of a consumer and, if bequeathed, by taxes on inheritances. The case in favor of consumption tax is presented in Fisher and Fisher (1942), Kaldor (1955), Meade (1978), U.S. Treasury Department (1977), Lodin (1978), and Sumner (1983). For the case against consumption tax, see Musgrave (1983), pp. 23-24, and Pechman (1980).

Supply-side or efficiency considerations would thus demand that many taxes existing in the tax systems of developing and developed countries should be eliminated. 1/ There is no place, for example, in such a system for:

- a separate corporation income tax; for without imputation, it is an additional tax on the form of business organization and all incomes and taxes must, in the final analysis, be imputed to individuals; 2/

- tax loopholes, special tax preferences, or tax incentives; for they affect relative taxes and prices (some of these may be defended on the grounds that they accommodate market failures, but an expenditure subsidy rather than tax expenditure is a proper vehicle for this);

- a wealth tax; for in the final analysis this is only an additional tax on capital incomes;

- gifts and transfer taxes; for a tax on accrued incomes, as indicated above, would theoretically cover all receipts from gifts and transfers;

- a general sales tax; for this tends to affect consumer choices especially as all goods and services with very different elasticities of demand and supply tend to be taxed uniformly;

- a payroll tax; for it is an arbitrary additional tax on wage incomes; and

- a separate capital gains tax; for capital gains are theoretically included in accrued income.

In the specific circumstances of developing countries, a supply-side tax system would demand the elimination of:

- export duties, unless they are seen as taxes on windfalls only, not affecting incentives; and

- import duties, unless they are seen as protecting domestic industry only and internalizing the externalities resulting therefrom.

There will also be no case for other narrowly-based taxes, such as an urban property tax or a rural land tax, which affect relative sectoral prices.

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1/ Cf., Musgrave (1978).

2/ In addition, a corporation income tax also tends to be nonneutral whenever (a) tax depreciation differs from economic depreciation; (b) inventory valuation in inflationary times is different from that on replacement basis (L.I.F.O. rather than F.I.F.O.); and (c) dividends are treated differently from interest payments. The tax can become neutral provided these differences are eliminated or the tax allows "free depreciation" and is based on cash flow rather than profits.

2. How realistic is such a tax system?

How realistic is it to institute in developing countries a tax system solely for the supply-side and efficiency objectives, as described above?

First, the normative theorizing implicit in the efficiency-oriented tax structure is based on many assumptions which may not be readily descriptive of the special circumstances of developing countries. As mentioned earlier, it assumes that government cannot, and should not, be a major producer in its own right, beyond being a supplier of "pure" public goods. Moreover, it assumes that all private individuals are rational and optimizing agents responding to price signals alone (where the market prices reflect true social costs), and that there are no social and institutional determinants of, and constraints on, either market prices or their behavior (which can be removed by government actions). Other assumptions involved are that there is perfect mobility of factors of production, that income distribution is appropriate without redistributive taxation, and that there is no need for the provision of merit goods.

Second, an efficiency-oriented tax system (especially one that consists of taxes on basic necessities while luxuries could be exempt) may have politically unacceptable and perverse distributional effects.

Third, the efficient tax bases consistent with supply-side economics, described above, have little resemblance with existing tax systems of developing countries which would suggest that the latter should be completely put aside. But, then, experience shows that the barriers to change existing tax systems even modestly tend to be fundamental--there is a widespread view that old taxes are good taxes and, moreover, major tax changes profoundly affect capital values and imply sizable income redistribution (capital-based taxes may already have been capitalized and reflected in asset prices). In a real sense, pragmatic tax reform to institute a completely new tax system, however desirable it may be from the efficiency point of view, may well be just about impossible. <sup>1/</sup>

Finally, the efficiency-dictated tax system may not provide enough revenue to run a modern government, especially if a tax on potential income, (f), is found administratively infeasible.

3. Conclusion

To sum up: the ingredients of a tax system for efficiency or supply-side objectives are well known, as are the limitations of adopting such a system in the real world. It would, therefore, be advisable for tax reformers of developing countries to be fully conscious of these ingredients in making their proposals but their attempts to move the tax systems in that direction are likely to be gradual, at best.

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<sup>1/</sup> Cf., Feldstein (1976).

## V. Rate Design for Supply-Side Objective or Optimal Tax Rates

If the efficiency in resource allocation is the only aim of taxation, then, as the Table above shows, there will be a variety of tax rates for the taxed commodities and individuals. The tax system will not be progressive with respect to individual economic capacities, however measured, and even the tax on accrued incomes would tend to be proportional (flat rate) or perhaps regressive. <sup>1/</sup> In addition, few judgments, if any, can be made on the optimal levels of tax rates that will prevail in an efficiency-oriented tax system, for they will require complete knowledge of empirical estimates of own- and cross-price elasticities of demand and supply for individual commodities and factors of production, measures of externalities associated with relevant commodities, etc. As there is little reason to believe that such crucial parameters can be estimated--even econometric estimates from past data are only going to be point estimates of own-price elasticities, and with standard errors attached to them--there is little hope that optimal tax rates can be derived, against which existing tax rates can then be judged.

A supply-sider will argue, and with some validity, that lowering the tax rates from their existing high levels in itself is optimal. According to this view, high and progressive tax rates simply discourage savings and investment, without achieving their intended effects on income distribution. Lowering tax rates and reducing their progressivity would, on the other hand, encourage savings and investment, and promote productive effort to such an extent as to generate employment and incomes for the less well-off and, thereby, actually improve equity in the longer run. It would also reduce tax evasion.

The desirability of lowering tax rates and reducing progressivity deserves, of course, closer examination by tax reformers in all developing countries where marginal tax rates are considered high. However, certain special circumstances of developing countries will have to be borne in mind.

First, a reduction of all tax rates might well encourage overall consumption in developing countries more than savings. It might well encourage savings by the rich (even in the short run as anticipated by the supply-siders), but if economic signals implicit in other economic policies are not correct, such savings can easily flow into unproductive investments, viz., speculation in and hoarding of commodities, foreign exchange, land, housing, and other existing capital assets. The efficiency gains from tax reforms would, thus, very much depend upon the assumptions made about other economic policy instruments.

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<sup>1/</sup> As Pigou has concluded, "[If announcement effects are important] the order of merit among tax formulae [will be:] first, poll taxes; second, regressive income taxes; third, proportionate income taxes; fourth, progressive income taxes." See Pigou (1962), p. x.

Second, lowering tax rates and reducing their progressivity alone may not be enough to reduce tax evasion that, in developing countries, is determined by many factors, the nominal progressivity of tax rates being only one, although an important one. <sup>1/</sup> It remains to be empirically established that just an across-the-board reduction in the progressivity and levels of tax rates would reduce tax evasion and improve tax compliance in developing countries to any great degree, at least in the short run.

Third, in developing countries, income inequality is frequently a result of highly skewed land and property ownership. Furthermore, in most of them, education--which accounts for most of the inequality of human capital and which is heavily subsidized by the government--yields extremely high private returns. Higher taxation on the earnings from skewed land and property ownership and on human capital can at once reduce the private windfalls and economic rents from the ownership of such assets, and this can be politically very appealing.

Finally, the degree of progressivity is frequently the result of a political and social consensus, but its interaction with high levels of inflation can raise the progressivity far beyond its intended level. If inflation rates are excessive, as they are in many developing countries, it may be desirable to adjust the tax system to inflation before tackling progressivity itself.

To sum up, theoretically there is no place for progressive tax rates in a tax system dictated solely by efficiency considerations, but then there is very little of practical value that can be said about the rate structure of a strictly efficient tax structure anyway. As modern taxation literature has shown, there is no optimal degree of progression--the optimal degree depends very much upon the form and shape of the social welfare function (comprising equity and efficiency objectives) as well as the form and shape of individual utility functions (as determined by factors such as abilities, tastes, relative income position, etc.). Consequently, little can be said even theoretically about the degree of progressivity which is of immediate policy relevance. Empirically, the degree of progressivity in taxation frequently reflects the political and social consensus on income redistribution in a given country, and the only circumstance in which it can be justified on efficiency grounds is if it captures scarcity rents or windfall gains.

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<sup>1/</sup> A multiplicity of factors, including many nontax factors and factors relating to income tax administration, are said to be responsible for the levels of income tax evasion found in developing countries. See Richupan (1984).

The inherent conflict between equity and efficiency objectives of taxation has always been well known. Policymakers in developing countries are also aware of this conflict. To resolve it, they frequently tend to have high nominal tax rates but give liberal tax exemptions and concessions to selected taxpayers and sectors. This is obviously inadvisable as such a policy simply compounds the distortionary effects of taxation. A strategy of taxation consistent with the spirit of supply-side economics would call for broadening the tax base (to reduce the scope of exemptions, tax concessions, and other deductions) while simultaneously lowering the tax rates. <sup>1/</sup> Most tax economists would agree with these tax policy prescriptions of supply-side economists. It would also simplify the tax system, ensure horizontal equity, and curtail the powers of the tax policymakers to erode the tax base in the name of supporting one or more social and noneconomic objective. Besides, it would also strengthen the tax policy as an instrument for stabilization purposes because, with fewer tax preferences and concessions, the effectiveness of tax rate cuts (and increases) as a component of macroeconomic policy would be enhanced.

#### VI. Supply-Side Economist Versus Optimal Tax Economist

"Thus, the policy suggestions of the supply-side school are fully compatible with the spirit of the huge body of optimal taxation literature," claims a recent supply-sider. <sup>2/</sup>

This paper may have implied that, simply because they attach a great deal of importance to the objective of efficiency, there is little difference between a supply-side economist and a modern optimal tax economist. This is not true. There are at least five major differences.

- A supply-side economist is inherently an elasticity optimist and favors large reductions in tax rates; in contrast, an optimal tax economist assumes little about elasticities in relation to marginal changes in tax rates and considers them entirely empirical matters.

- A supply-side economist concerns himself little with the equity objective, horizontal or vertical; in contrast, an optimal tax economist fully concerns himself with equity (vertical, if not horizontal) and, in fact, attempts to optimize between the efficiency and equity objectives of taxation--maximizing a social welfare function by minimizing excess burdens of taxation while achieving a socially desirable redistribution of income through taxation.

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<sup>1/</sup> A recent report of the Treasury Department has stressed this strategy for the reform of the U.S. tax system as well. See U.S. Treasury Department (1984).

<sup>2/</sup> Raboy (1982), p. 59.

- A supply-side economist accepts some progressivity on pragmatic grounds, though, in the extreme, would prefer a flat-rate (or proportional) income tax; in contrast, an optimal tax economist refuses to give a definitive conclusion on the optimal degree of progressivity, as, according to him, the optimal outcome is highly sensitive to the specification of the social welfare function (incorporating equity objective) and the individual utility functions (incorporating individual tastes). The most robust findings of optimal taxation on this subject have been that marginal tax rates should first increase and then decrease, with those on the highest income becoming zero--in other words, income tax rates should be regressive in the upper income ranges. 1/

- A supply-side economist takes the existing tax system as given and does not question the dominance of income taxation; in contrast, an optimal tax economist is fully concerned with the composition of tax structure and the balance between direct and indirect taxes as well as the structures of both income and commodity taxes. 2/

- A supply-side economist is perhaps pragmatic enough about tax reform not to want to design the tax structure de novo or to change the status quo; in contrast, an optimal tax economist is not pragmatic at all. The design of optimal tax structures requires a great deal more information than has been, or can ever be, collected. In addition, the implementation of such structures is not even on the horizon, as an optimal tax economist frequently does not concern himself with administrative feasibility (i.e., with the potential for tax avoidance and tax evasion) nor with taxpayers' preferences or the compliance costs of

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1/ Some progressivity of income tax might, however, be acceptable to them--provided that the rate structure can be made a function of distribution of skills and abilities and there is a negative income tax at the bottom of the income scale--but the degree of progressivity will be nowhere near what will be indicated solely by the application of minimum sacrifice principle.

2/ Cf., Atkinson (1977) and Atkinson and Stiglitz (1980). On the whole, an income tax structure that is approximately linear (a constant marginal tax rate with an exemption below which negative supplements are payable) is considered optimal. A linear income tax, with a constant rate on labor incomes and without an exemption, is simply equivalent to a linear commodity tax (a proportional rate on all goods) and is very much distortionary. On the other hand, nonlinear income taxes (proportional rate income tax with an exemption) are considered preferable, given equity and efficiency considerations, over differentiated taxes on goods and services, except where there is an interaction between the supply of labor and the marginal rates of substitution between goods. This conclusion, however, ignores problems of administration, evasion, horizontal equity, and taxpayer's preferences between taxes.

his proposals about tax designs. For these reasons, the large literature on optimal taxation, though enriching, has yielded few practical policy conclusions and results commensurate with the intellectual resources devoted to it. 1/

The recent supply-side economist has, thus, little resemblance to those who belong to the stream of recent theoretical literature on taxation. One common denominator between the two perhaps is that both see the expenditure side of the budget in a peculiar way. The optimal tax economist discusses the problem of optimal taxation on the assumption that the government has a fixed revenue requirement for an unspecified purpose which has no bearing on the utility of individuals. The supply-side economist also seems to discuss the problem of taxation on the implicit, if not explicit, assumption that government should provide few goods and services beyond "pure" public goods. That public expenditures can positively influence the utility of individuals is not an issue in either approach. This may, however, be an unrealistic assumption in the context of developing countries, where certain public expenditures on social and economic infrastructure may be positively productive and social welfare enhancing.

#### VII. Conclusions: Tax Reforms for Supply-Side Economics

Taxation is in practice an instrument with multiple objectives; it will continue to have these despite what economists profess. The conflict between equity and efficiency objectives is fundamental. A tax system based solely on efficiency grounds is unrealistic, while that designed solely for equity purposes cannot be justified by economic theory. The degree of progressivity will in practice, continue to be dictated by political and social consensus rather than optimizing formulae of the tax economists. One solid contribution of the recent supply-side economics is to point out that the way out of the conflict between the equity and efficiency objectives of taxation is not to have high marginal tax rates and generous tax incentives and preferences, as most developing countries do, but to have as wide a tax base as possible and lower tax rates. Tax reforms along these lines will be consistent with supply-side economics.

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1/ One of the major policy-oriented conclusions of optimal taxation literature is that taxes on elastic tax bases should best be avoided or, at best, kept low. It is in this spirit that the case is made for lower taxation of capital incomes vis-à-vis labor incomes and of married women vis-à-vis married men.

Whether or not tax rates should at once be significantly lowered in the present-day developing countries would depend very much upon the height of the present tax rates, government revenue from the existing high tax rates, the validity of the elasticity optimism of the supply-side approach in the context of developing countries (i.e., whether lowering tax rates will have much effect on production) and the relevance in the particular circumstances of a developing country of the assumptions on which supply-side theory is based. The paper has touched upon some of these issues. However, should a developing country be serious about adopting the supply-side tax policy, and lowering its tax rates significantly, it must bear five points in mind.

First, lowering and reforming tax rates must be accompanied by reforms in the tax base, viz., the removal of tax preferences, tax concessions, and narrowly-based foreign trade taxes (e.g., export duties) and other taxes important to their tax systems (e.g., payroll and other selective taxes). Both high tax rates and selective tax preferences can create distortions, encourage unproductive activities, erode the revenue base and lower the effective tax rates below the intended nominal tax rates. Tax cuts without tax base reforms can introduce more distortions of efficiency and equity than they correct, especially if they result in inflationary finance.

Second, tax rate reductions must be permanent or, at least, be perceived by taxpayers to be so if they are to have significant effect on work effort, savings, and investment behavior. The theory of rational expectations suggests that investors change their behavior according to their expectations of the costs of capital, including their expectations of future tax rates over the lifetime of an investment. The same holds good for the behavior of savers.

Third, short-run elasticities frequently tend to be lower than long-run elasticities for a given change in prices; consequently, it would be advisable to expect the full supply-side effects of a reduction of tax rates to become evident only in the longer run. Besides, tax cuts would have to be substantial if they are to have a marked "net" effect on behavior, especially as selective tax exemptions and concessions, which may have been enjoyed by taxpayers and which may have had some economic effect on their behavior, may now be withdrawn from the tax structure.

Fourth, reducing tax rates for supply-side effects (including improving tax compliance and to further other objectives) must go hand-in-hand with public expenditure cuts, at least in the short run, or until elasticity optimism materializes. Otherwise there will be a growing budget deficit and a likely rise in inflation (depending upon the sources of financing) with its own distortions and unintended economic consequences. For example, if people expect inflation to continue, and interest rates do not adjust with inflation, they will spend rather than save in the current period, thereby negating the

effect of tax cuts on savings and investment. As stressed in the beginning of the paper, supply-side economics is a package: lower taxes, smaller government, lower inflation through restrictive monetary policy, fewer regulations, etc.

Finally, the use to which tax revenues are put in developing countries is also relevant. If a large proportion of public expenditure is directed at financing certain human capital and social and economic infrastructure, it removes supply bottlenecks, aids the development process, and provides the justification for higher tax rates. On the other hand, if government revenues go to finance a large and unproductive civil service or nonpriority capital expenditure, they support wasteful consumption rather than capital formation.

In the final analysis, a tax structure for supply-side economics calls for fundamental reforms in the existing tax systems of developing countries. Following the objective of reducing the distortionary effects of their existing taxes, it would require removing most exclusions and exemptions and widening the tax base, while reducing rates of taxation. In the context of the tax structures prevalent in developing countries, this strategy would apply not only to personal income tax (frequently it is an unimportant revenue source) but to all direct and indirect taxes.

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