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DESIGNING AN OPTIMAL PERSONAL INCOME TAX RATE STRUCTURE: GOALS AND CRITERIA

BY VLADIMIR SALZYN**

I. INTRODUCTION

In order to design a rational tax rate structure and to resolve conflicts, it is important not only to be aware of the choices available but also to understand the public policy goals being sought. This paper begins by explaining the prevailing views on social choice decision-making and ways of achieving consensus, with the objective of establishing the broad social goals that Canadians want. In Part III, these goals are applied to the specific objectives of economic efficiency and social justice in the design of an optimal tax rate structure. Part IV explains the types of rate structures available and examines their technical characteristics. The ways in which the goal of social justice in tax rate design might be achieved are set out in Part V. Part VI deals with trade-offs and compromises. Parts VII and VIII set out the rates recommended by the Royal Commission on Taxation and compare them with the current rate structures.

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Social Choice Decision Making

Social Ideals

Social Choice Theories

Unanimous Fiscal Exchange

Non-Unanimous Social Consensus

Motivation

Self Interest

Ethical Considerations

Objectives

Maximum Social Welfare

Ethical and Politically Operational

Social Goals

Social Justice Economic Efficiency Rights and Freedoms

Figure 1
II. THE GOALS

Although in tax design "it is of fundamental importance that the goals ... be made clear,"¹ this is not an easy task. The public goals of tax policy are of a social nature. They represent what society as a whole wants. In order to find out what society wants it is imperative to start with the most basic goals that are accepted by all. Only after these goals have been established can they be applied to the specific objectives of tax policy. This assures that the objectives of tax policy are always consistent with the underlying goals of society.

A. Approaches to Social Choice Decision-making

There are a variety of theories of the best way of determining what society wants. Philosophically these theories range from holding that governments should seek only those objectives that are unanimously approved by every single person in society, to "social consensus" approaches, which accept that all social goals need not be supported by every single member of society, so long as they represent the preferences of most members.

One example of the "unanimous" approach to social choice is the fiscal exchange theory advocated by Nobel Prize winner James Buchanan.² This approach, shown as Route A on Figure 1, maximizes personal rights and freedoms but is much too restrictive on a wide range of desirable government activities.

Most economists favour social consensus theories, such as the one developed by Burk and explicated by Samuelson, which takes fully into account the utility-maximizing self-interest of every single individual in society.³ However, there are many problems with this

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type of "social welfare" approach (Route B, Figure 1), including the fact that it can be used to support quite perverse social goals that maximize total utility. For example, it has been demonstrated that this approach can lead to starving\(^4\) and torturing people to increase social welfare\(^5\).

Other social consensus approaches (Route c, Figure 1) do not depend on individual self-interest but are based upon what Mishan calls "ethical considerations", guided by what is right or just.\(^6\) In support of this approach, Thurow argues that "individual preferences are still totalled but the relevant individual preferences are of a different type"\(^7\) — not the self-centred, utility-maximizing type.

B. Reaching Consensus

There never was, and there never can be, unanimous agreement on what is the best social choice theory or what our social goals should be. No amount of philosophizing will ever justify ultimate values in society. As Fisher notes, we should expect some philosophical doubt to remain with any practical social decision.\(^8\) According to Dorfman, it is not necessary to have proof that any given social goal is the right one, but only that there is some well-founded consensus on its desirability.\(^9\)


It has been argued by Rawls that this consensus would emerge if decisions were made from "behind a veil of ignorance."\(^{10}\) Individuals would choose goals as though they had no knowledge of their own personal preferences. In this way, O'Kelley argues, agreement would be "arrived at impartially."\(^{11}\) Also, as Head shows, if a particular goal cannot be established as being "ethically desirable", then being "acceptable" may have to suffice, and in some cases being "politically operational" may be the best that can be expected.\(^ {12}\)

C. The Social Goals of Canadians

It has been argued that the search for social goals begins "by considering a hypothetical original position where representative [persons] gather to agree."\(^ {13}\) What "representative" Canadians want can be ascertained by examining statements made by the government,\(^ {14}\) the courts,\(^ {15}\) Royal Commissions,\(^ {16}\) and others who have studied these issues.\(^ {17}\) Although there is no unanimous


\(^ {13}\) O'Kelley, *supra*, note 11 at 18.

\(^ {14}\) Hon. E.J. Benson, Minister of Finance, *Proposals for Tax Reform* (Ottawa: Queen's Printer, 1969) at 6-7 [hereinafter *Proposals*]; Canada, Department of Finance, *Budget Speech* (Ottawa: 18 June 1971) at 3; Canada, Department of Finance, *Guidelines for Tax Reform in Canada* (Ottawa: Queen's Printer, 1986) at 3-4 [hereinafter *Guidelines*].

\(^ {15}\) Statement by Mr. Justice Estey in *Stubart Investments Limited v. Her Majesty the Queen* (1984) 84 D.T.C. 6305 at 6321-22.

\(^ {16}\) Canada, Royal Commission on Taxation, *Report*, vol. 2 (Ottawa: Queen's Printer, 1966) (Chair: K. LeM. Carter) at 7 [hereinafter *Report*].

agreement, there seems to be a relatively high level of consensus in Canada on desirable social goals, at least in broad categories. Allowing for variations in terminology and problems of precise classification, three sets of underlying social goals appear to predominate.

One set of goals is concerned with the nation as a whole, involving the maximization of total economic well-being or welfare in society through the efficient production of goods and services desired by Canadians. Another set of social goals seeks a just relationship both between people and between the government and people. The third set of goals deals with the relationship of each person to the state, and comprises, for instance, the preservation of individual rights and freedom.

Thus, the social goals supported by most Canadians seem to fall into the following categories: economic efficiency, social justice, and the preservation of individual rights and freedom (see Figure 1). These are the goals, then, to which tax — and other government — policy must adhere.

III. APPLYING TAX POLICY TO SOCIAL GOALS

In applying tax policy to the goals of society, it is important to recognize the two prime functions of any tax system. The first function is to raise revenue to finance government expenditure programs, and the second function is to serve as a substitute for other government policy tools. These revenue-raising and non-revenue raising functions are depicted in Figure 2.

Tax policies can be classified in line with the two functions of taxes. Revenue-raising tax policies are concerned with designing taxes with optimal attributes; whereas non-revenue tax policies are concerned with achieving the objectives pursued by any government policy instrument.\(^1\) Revenue-raising tax policies deal with the *means* used, while non-revenue tax policies deal with *ends* sought.

\(^1\) Shoup, for example, separated the criteria of public finance measures into those that dealt with the attributes of the instrument and those that reflected the goals or objectives of the policy tool. C.S. Shoup, *Public Finance* (Chicago: Aldine, 1969) c. 5.
Although a tax system can be designed to serve revenue-raising and non-revenue tax policies simultaneously, each of types of policies has its own criteria. Consequently, in tax policy there are two sets of concepts of economic efficiency and social justice, relating to the revenue-raising and the non-revenue functions of taxes, respectively.

A. Applying the Goal of Economic Efficiency to Tax Policy

The efficiency goal of revenue-raising tax policy is to raise revenue without distorting the choices made by the economic agents in society — in other words, the pursuit of economic neutrality (see Figure 2).

![The Functions of a Tax System](image)
When taxes interfere with economic decisions, they alter resource allocation. If the choices were efficient to start with, households and businesses incur an additional burden besides the payment of the tax. As a result, society gives up more in economic terms than the government receives. The consequent reduction in economic welfare is called the excess burden of taxation. The aim is to minimize these tax-induced excess burdens.

The non-revenue tax policy objective of economic efficiency is directed towards correcting any pre-tax misallocations in resources and encouraging socially desirable activities. Thus, economists do not consider it "odd that a neutral tax base should be advocated by some of the same individuals who advocate an investment tax credit as a means of encouraging greater economic growth." The distinction between the two concepts of efficiency is very important because it eliminates spurious reasoning and averts misunderstanding in tax policy analysis.

B. Applying Tax Policy to the Goal of Social Justice

The goal of social justice requires a fair tax. Fairness in taxation is not only elusive, but its acceptable form must rest on the uncertain consensus of changing contemporary opinion. As we have seen with the goal of economic efficiency, much ambiguity and confusion can be avoided by separating concepts of fairness into those that bear on the revenue-raising function of taxes and those that do not.

According to Rawls, fair taxation requires that "the burden of taxation is ... justly shared," and that taxes are used "to correct the distribution of wealth."

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19 J. Bossons, "The Nature of a Comprehensive Tax Base as a Tax Reform Goal" (1970) 8 J. Law & Econ. 327 at 334.

20 Ibid. at 332.

21 Ibid. at 332.

22 Ibid. at 277.
The first of these two concepts is often referred to as *tax equity* and applies specifically to the act of raising revenue (see Figure 2). The raising of revenue in itself, according to O'Kelley, "serves no just purpose, but rather is constrained by requirements of justice."\(^{23}\) Tax equity, then, is conceptually similar to economic neutrality — both seek to raise revenue with the least distortion of existing conditions.

According to the Hon. Michael Wilson, Minister of Finance, "the tax system must ensure fair sharing of the tax burden among taxpayers. This means that the tax system should treat people in similar circumstances in the same way."\(^{24}\) And according to the Royal Commission on Taxation, tax equity also requires "that those in different circumstances bear appropriately different taxes."\(^{25}\) The first of these fairness essentials is *horizontal* tax equity, and the second is *vertical* tax equity (see Figure 2).

The second of Rawls's concepts of tax fairness mentioned above, the proper distribution of income, is often referred to as *vertical equity*. Note that a distinction is being made, here, between vertical equity and vertical *tax* equity, the former referring to the non-revenue tax policy objective of fairness in the redistribution of income, and the latter to fairness in the raising of tax revenue (see Figure 2).

In principle, the goal of vertical, or distributional, equity parallels the non-revenue tax policy objective of economic efficiency, in that both are designed to correct pre-tax conditions, one in the distribution of income and the other in the allocation of resources.

Personal views on vertical equity range from accepting whatever the free market yields, to the position that income should be distributed equally. Most views fall between these extremes and include such goals as the maximization of total utility (or income) in society and the maximization of the welfare of worst-off individuals.

\(^{23}\) O'Kelley, *supra*, note 11 at 31.

\(^{24}\) *Guidelines, supra*, note 14 at 3.

\(^{25}\) *Report, vol. 1, supra*, note 16 at 5.
as advocated by Rawls.\textsuperscript{26} In Canada, it may be safe to say, an overwhelming majority are likely to agree with Finance Minister Wilson that those with "inadequate income" deserve special consideration and that fairness requires that we "recognize the position of those most in need."\textsuperscript{27} That is, the prime concern is redistributing income to the poor, and not an overall reduction in inequality.

It is very important to note that it is not the exclusive function of the tax system to provide vertical equity in the distribution of income. This objective can be achieved by a variety of non-tax alternatives, principally government transfer payments. On the other hand, tax equity is a necessary attribute of every tax. Revenue raised for any purpose must be raised fairly and equitably for social justice to prevail. As the Royal Commission on Taxation noted, even "if the "ideal" system of transfer payments were instituted, Canada could not achieve an equitable fiscal system by reducing the progressiveness of the tax system and substituting a more progressive allocation of benefits. A fiscal system in which taxes were proportionate to income and redistribution was achieved solely through the provision of relatively greater benefits to those with low incomes would be unfair."\textsuperscript{28}

The Royal Commission on Taxation was not the first to make use of this distinction in analyzing taxes. Nearly a hundred years ago, Wagner made a very convincing argument for viewing fairness in taxation from these two perspectives. In his words,

\begin{quote}

there exists a "just" taxation both from the purely financial and from the social welfare point of view -- only it means something different in the two cases .... The
\end{quote}

\textsuperscript{26}Rawls, supra, note 10.

\textsuperscript{27}Guidelines, supra, note 14 at 5.

\textsuperscript{28}Report, vol. 2, supra, note 16 at 261.
two points of view imply different tax systems, but each of them is internally consistent, logically rigorous and rational, and corresponds to the respective concept of justice.\textsuperscript{29}

More recently, Musgrave, in his classic \textit{The Theory of Public Finance}, followed Wagner's lead by stating that "for the Allocation Branch, the need for securing a cost distribution independent of the particular resource transfer is the function and \textit{raison d'être} of taxation," while taxes for the Distribution Branch depend on "the desired type of distributional adjustment" and "the Distribution Branch will disregard taxes collected by the Allocation Branch."\textsuperscript{30}

In spite of the fact that there is nothing in the \textit{Report} of the Royal Commission on Taxation, either in criteria used or recommendations made, to suggest anything other than a concern for tax equity as defined here — that is, fairness in the raising of revenue — the Commission's concept of equity was harshly treated by critics as soon as the \textit{Report} came out, mostly because they failed to differentiate between the two concepts of vertical equity. Analysts, such as Low-Beer, for example, simply equated vertical tax equity with vertical equity and, not surprisingly, found the concept wanting.\textsuperscript{31} In fact, we were summarily advised by Robinson that "it may be best to ignore what the Carter Report says" about tax equity.\textsuperscript{32} More detrimental to the survival of the two-dimensional view of tax fairness was the advent of "optimal taxation" theory, which attempts to balance vertical equity with economic efficiency, ignoring the existence of tax equity, both horizontal and vertical.\textsuperscript{33}


\bibitem{Mirrlees} A seminal paper on optimal taxation was: J.A. Mirrlees, "An Exploration in the Theory of Optimum Income Taxation" (1971) 38 Rev. Econ. Stud. 175.
Because optimal taxation theory is concerned with ends and not the means of obtaining them, it is not equipped to deal with tax equity. It is not that economists do not recognize, as one important textbook in public finance notes, that "both the nature of the process and the results are relevant in making an equity judgement"; it is only that "among economists, the question of equity often takes on a very narrow meaning, referring to the distributional effects of policy."\textsuperscript{34} Even the authors of the above words limit their analysis to the one-dimensional view of equity.

Unfortunately, only sporadic use of the two concepts of equity appears in current literature. For example, Menchik and David use the two concepts of equity to resolve conflicting interpretations of tax equity by separating the "structure" of a tax from its role in solving "social problems."\textsuperscript{35} Similarly, Pasquariello uses the criteria of "progressivity" (for vertical tax equity) and "distribution" (for vertical equity) to assess the justice of the U.S. tax system.\textsuperscript{36} It would appear that most analysts have completely missed the most important contribution to tax policy analysis appearing in the Report of the Royal Commission on Taxation!

In order to implement the concept of tax equity, in both its horizontal and vertical forms, a precise definition of "similar" and "different" circumstances is required. Unfortunately, there can be no universal consensus on this. What is meant by similar is subject to many interpretations. Since individuals are never the same in all respects, any criteria used to identify similar circumstances will invariably make unequal comparisons. On the other hand, if all individuals were the same, comparison would become irrelevant. In spite of these problems, there are a number of criteria that can be used to establish characteristics of "similarity" relevant to tax equity.

First, both horizontal and vertical tax equity should be derived using the same criteria: whatever determines "similar"


\textsuperscript{35}P.L. Menchik & M. David, "Reply and Comment on Brown" (1983) 36 Nat. Tax J. 515 at 520.

circumstances should also determine "different" circumstances. As Musgrave and Musgrave say, both horizontal and vertical equity "follow the same principle ... and neither is more basic." 37 The existence of vertical tax equity should imply horizontal tax equity.

Another important attribute of similarity is that the criteria used must be universal, or broad enough, to prevent discrimination or exploitation based on irrelevant characteristics such as race, ethnic group, or social status. 38 The analogy here is with the generally accepted principle of "equal treatment before the law." 39

Third, the criteria of similarity must be clearly visible, readily identifiable, and easily measured directly. In the words of Adam Smith, "the certainty of what each individual ought to pay is, in taxation, a matter of so great importance, that a very considerable degree of inequality ... is not so great an evil as a very small degree of uncertainty." 40

Fourth, although the concept of tax equity refers to persons only, persons could be treated similarly either as individuals or as members of a group. The most relevant group classification, for tax purposes, is the family unit, since it is the family's circumstances that most often matter and not just those of the individual who happens to write the cheque to pay the tax.

Fifth, the time horizon taken in viewing similar circumstances is also very important. Ideally, taxpayers should be treated similarly across the tax-planning horizon of governments. If the government is providing more services to meet the wishes of current taxpayers,

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38 Shoup, supra, note 31 at 36.


40 Quoted from A.D. Lynn, Jr., "Adam Smith on Taxation" in G.F. Break & B. Wallin, eds., Taxation: Myths and Realities (Reading: Addison-Wesley, 1978) 44 at 45.
then, according to Musgrave and Musgrave and Bird, it is these same taxpayers who should contribute to financing the desired services.\textsuperscript{41}

Finally, tax equity encompasses justice not only in terms of obtaining fair results, but also in the application of fair rules of conduct. Thus, Hayek argues that both ends and means are important to tax equity, just as they are in other areas of justice.\textsuperscript{42}

C. Applying Tax Policy to the Preservation of Individual Rights and Freedom

The social goal of preserving individual rights and freedom has a limited role to play in the design of tax rate structures, the subject of this paper, but is closely tied to the administration of the tax and the collection process. It is important that taxpayers are dealt with fairly and impartially by Revenue Canada, the collection agency of the government. The Declaration of Taxpayer Rights was issued by Revenue Canada, Taxation in 1985 to confirm these rights.

IV. THE CHOICES AVAILABLE

No decision on an optimal tax rate structure can be made without a clear understanding of the types of rate structures actually available and their desirable characteristics.

Tax rates are usually classified as progressive, proportional, or regressive, depending on the ratio of tax to income. For example, a tax is said to be progressive if the ratio of tax to income increases as income increases. Similarly, when the ratio is constant at all levels of income, the tax is proportional; and the tax is regressive when this ratio decreases as income increases.

If the tax base is something other than income, however, a tax classified under the above criteria may have to be reclassified.


For example, an excise tax levied on a given commodity would have a proportional tax rate structure if the rate was set as a fixed percent of price. Yet, the same tax would be progressive if consumption of the commodity increased more rapidly than income. Similarly, progressive or regressive tax rate structures could in fact represent any of proportional, progressive, or regressive taxes.

Thus, we must differentiate progressive, proportional, and regressive taxes from progressive, proportional, and regressive tax rate structures. Although most analysts are aware of this distinction, many still fall into the trap of not making it.

A subtle variation on this theme is that a progressive income tax may be proportional on part of income, when that part increases as income increases; such as, for example, the part of income that represents the ability of the individual to pay taxes.

But this is not all. Because tax rate structures appear in the statutes in a marginal form, it is common practice to use marginal rate profiles as a guide for classifying taxes. In consequence, some analysts classify a tax as regressive whenever marginal rates decrease with income. This can be very confusing, because when marginal rates are falling, average rates may be rising. This means that while marginal rates may indicate a regressive tax, average rates may in fact indicate a progressive tax. And yet, tax rate structures cannot simultaneously be regressive and progressive. Little can be done about this ambiguity except to recognize the existence of the different definitions of progressive, proportional and regressive, and guard against misusing them.

Unfortunately, the complications do not stop here. By introducing variations in the size and type of tax deductions, credits, and surtaxes and making them increasing, decreasing, or constant, a new set of meanings for progressive, proportional, and regressive is created. For example, the burden of a progressive income tax with progressive effective marginal and average rates (as they relate to income) can be duplicated by combining proportional or regressive statutory rates (as they relate to taxable income) with just the right adjustments in deductions, credits, or surtaxes, separately or in combination.

In fact, virtually any kind of statutory tax rate structure can be devised to represent any given effectively progressive, proportional, or regressive tax. This mechanical manipulation of
form without changing substance is common, as for example when flat-rate taxes are suggested as replacements for existing progressive rates without a substantial redistribution of relative tax burdens. In evaluating rate structures it is important, therefore, to beware of using illusory statutory rates.

In conclusion, then, it is not possible to classify taxes as progressive, proportional, or regressive without clearly specifying whether the reference is to: income or some other base, marginal or average rates, or effective or statutory rates.

V. ACHIEVING SOCIAL JUSTICE

A. Achieving Tax Equity: Equal Treatment of Equals

Tax equity requires that "the tax system should treat people in similar circumstances in the same way." Whatever consensuses exist in Canada on tax issues, the one most nearly universal is that "similar circumstances", in tax equity, means similar ability to pay.

Tax equity also requires "that those in different circumstances bear appropriately different taxes." Again, there is near-unanimous agreement that a tax will be "allocated in accordance with ... ability-to-pay principles" when the "average rate of tax ... is greater the

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44 Guidelines, supra, note 14 at 3.

45 Report, vol. 3, supra, note 16 at 5: "In our judgement taxes should be allocated among tax units in proportional to their ability to pay." Proposals, supra, note 14 at 6: "a fair distribution of the tax burden is based upon ability to pay." Guidelines, supra, note 14 at 5: "individuals with similar ability to pay should pay similar amounts of tax."

46 Report, vol. 1, supra, note 16 at 5.
greater the total income," or, in other words, through the use of an effectively progressive average tax rate structure.

In order fully to understand why the income tax, as the main revenue-raising tax, should be progressive, it is important to recognize that the income tax is not really a tax on income, but on ability to pay. Thus, according to Bird, "the aim in devising an appropriate income tax base is to hit on a formulation that serves as an acceptable, and attainable, measure — or at least index — of "discretionary economic power," "potential consumption," "ability to pay," or whatever we choose to call it." Ability to pay can be measured by the income available for discretionary use, defined by the Royal Commission on Taxation as discretionary economic power. Income meets the criteria given earlier for establishing similar circumstances, quite well: Income is universal (we all earn or have access to varying degrees of it), can be identified as easily for individuals as for the family, is directly measurable, fits any time horizon desired, and does not conflict with the ends and means of justice (at least no more than our socio-economic system does). Moreover, once the concept of income has been adjusted to exclude its non-discretionary component it fits perfectly with both vertical and horizontal tax equity, since each dollar of economic power, as measured by the amount of income available for discretionary use, can be taxed at the same proportional rate regardless of the level of income.

Whenever economic power increases more rapidly than income, an equitable tax (one proportional to economic power), when applied to income, yields a progressive average tax rate structure. Tax equity, therefore, requires both a progressive income tax and a definition of income that includes all net gain arising from: the provision of personal services, the disposal or ownership of property, the receipt of gifts or bequests, and the receipt of windfalls.

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47Ibid., vol. 3 at 10. See also Proposals, supra, note 14 at 6: "fairness also requires that people with higher incomes ... should be expected to pay in taxes a larger share of their income than persons with lower incomes. Guidelines, supra, note 14 at 5: "Canadians believe that a fair income tax system must be a progressive one."

and government assistance payments. These gains can be in the form of cash, acquisition of or changes in the value of rights to or interest in property, benefits in kind, and personal use of property that could have been rented to others. And, as the Royal Commission on Taxation noted, it does not matter, in principle, whether the income is realized or unrealized, earned or unearned, in money or in kind, recurrent or non-recurrent, intended or unintended, anticipated or unanticipated, domestic or foreign, so long as it contributes to economic power.

B. Achieving Equity in the Distribution of Income

As to income redistribution, the concern in Canada is for those who have "inadequate income", by which is meant, the poor and needy. Canadians disagree about the extent to which broad equality of income is a desirable goal. Nevertheless, there is undoubtedly strong social consensus on the need to help the poorest and most vulnerable Canadians.

However, apart from using negative rates, there is little that the income tax system can do about poverty. For those poor who pay little tax, simply removing their tax burden would accomplish little. Furthermore, the tax system is able to deal only with the symptoms of poverty, and not its causes.

The symptoms of poverty can often be tackled better using non-tax methods such as social insurance and welfare programs. Also, it may be preferable to remove some of the causes of poverty by such (non-tax) methods as subsidizing investment in human capital (education and training), reducing discrimination and unemployment, and subsidizing daycare facilities for children.

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50 Ibid. at 25.

51 Guidelines, supra, note 14 at 5.

To transfer income to the poor, the effective tax rate need not be made any more progressive than is required for vertical tax equity (other than reducing the tax on the poor by increasing the size of the basic exemption or some other such device). The average effective rate of tax would have to be increased, however, to finance transfers or refundable tax credits to the poor.

If the objective is to reduce overall income inequality, then the progressivity of the tax would have to be increased.

VI. TRADE-OFFS AND COMPROMISES

Since the raison d'être of the income tax is to raise revenue, the prime requirement of any tax rate structure is that effective average rates be positive; and if the amount of funds to be raised is high, the rates should also be high. For the tax rate structure to be fair, or equitable, in its distribution of tax burdens, these positive effective average rates must be progressive, ensuring that tax liabilities remain proportional to ability to pay.

If one of the non-revenue functions of the tax system is to redistribute income to the poor, then the tax system requires low or zero effective tax rates at the lower end of the income scale. This can be accomplished by reducing initial rates, increasing the size of exemption, or adding tax credits. (The use of refundable tax credits would effectively convert the income tax system into a transfer system).

Only if the redistributive objective is to reduce income inequality across the board does the effective progressivity of the average tax rates have to increase. There are some who, like Drache, argue that "the entire rationale for the progressive tax system lies in the notion of redistribution."\(^5\)

For the tax to be economically non-distortive, only a zero effective marginal tax rate will do. (A zero statutory rate might work for those deluded into thinking that the statutory rate represented the effective rate.) With a zero marginal tax rate there

is no excess burden.\textsuperscript{54} However, a zero marginal tax rate has to come with either a zero average rate or a regressive average rate (decreasing at the rate represented by a rectangular hyperbola).

<table>
<thead>
<tr>
<th>Taxpayer</th>
<th>Income</th>
<th>Total Tax</th>
<th>Average Tax</th>
<th>Marginal Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$10,000</td>
<td>$0</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>B</td>
<td>20,000</td>
<td>1,800</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>C</td>
<td>30,000</td>
<td>3,900</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>D</td>
<td>40,000</td>
<td>6,300</td>
<td>15.75</td>
<td>24</td>
</tr>
<tr>
<td>D'</td>
<td>45,000</td>
<td>6,900</td>
<td>15.3</td>
<td>20</td>
</tr>
</tbody>
</table>

Since revenue must be raised, a zero average rate is unacceptable; and for equity reasons so is a regressive effective average rate. Since a zero marginal tax rate cannot be adopted, a low marginal rate may be acceptable as a second-best choice; and if neither is possible, a regressive effective marginal rate combined with an effectively progressive average rate may be feasible by reducing the marginal rate at the upper end of the income scale. Table 1 uses hypothetical progressive average and marginal tax rate structures to demonstrate the fact that when average rates are rising marginal rates will be higher than average rates. The table also shows that while the reduction of the marginal tax rate for taxpayer D from 24 percent to 20 percent makes the marginal rate structure regressive above $30,000, the average tax rate continues to be progressive, throughout.

The lowered marginal rate not only reduces excess burdens, but can also induce taxpayers to produce more income, as shown by the difference in incomes between D and D' in the table. In the process, total tax collected by the government increases. This additional revenue could be used to finance transfers to the poor, or to lower tax rates across the board, further alleviating economic distortions.

\textsuperscript{54}See V. Salyzyn, \textit{The Economic Analysis of Taxes} (Calgary: Detselig, 1985) c. 5.
Yet another type of trade-off can be used to reduce the excess burdens created by the high marginal tax rates associated with progressive average rates. This can be accomplished by taking advantage of the principle that an increase in the marginal rate for any given tax bracket increases the amount of tax payable for all taxpayers above that bracket without affecting their marginal rates. The bracket chosen for the increase should be near the low end of the income scale in order to increase tax liabilities for as many taxpayers as possible. Ideally, this bracket should also include as few taxpayers as possible, to minimize the excess burden created by the higher marginal rate. Some of the additional revenue generated could be used to provide tax credits to those in the bracket with the higher marginal rate, to reduce their tax payable effectively to its original position. The remaining revenue can then be utilized to reduce marginal rates for all taxpayers.

Economic distortions can also be created by differences in tax liabilities between jurisdictions, such as those between Canada and the United States. In order to avoid this type of distortion, the objective should be to avoid differential tax treatment. For this purpose, any type of rate structure will do, provided it produces the same effective tax liability at each income level in both jurisdictions. The aim, of course, should be to get foreign governments to accept our tax system, and not the other way around.

For influencing economic behaviour domestically, any type of initial rate structure will do, again since, in this case, it is the deviations from the basic tax (in the form of deductions, exemptions, tax credits, or special rates) that induce taxpayers to alter their decisions.

A tax system should be easy to administer and to comply with, in order to enhance equity and efficiency. Administration and compliance is substantially easier using proportional statutory average rates with no exemptions or tax credits; the determination of net tax payable is thereby greatly simplified. Since such a tax also has proportional effective rates, it eliminates the practice of income-splitting, and removes the need for income-averaging schemes and inflation-indexing. A progressive effective average rate with a proportional statutory average rate (and with a large, constant exemption) would also simplify the calculation of net tax payable, but not as much. Although such a flat-rate tax would remove large
numbers of individuals from the tax roll, and would simplify the mechanical relationship between income and net tax payable for the remaining taxpayers, it would still encourage income-splitting and require some income-averaging and adjustments for inflation.

Political acceptability is an important determinant of tax rate design. Progressive effective average rates with constant exemptions and progressive statutory marginal rates appear very popular, although a progressive tax with proportional statutory marginal rates (a flat-rate tax) might not be entirely out of the question when combined with generous exemptions (for the benefit of the poor) and a more inclusive definition of income (to keep the effective average rate progressive). Progressive effective average tax rates with regressive statutory marginal rates would probably never generate any political support, while a progressive effective average rate structure with regressive effective marginal rates might be accepted by some if supported by the illusion of progressive statutory marginal rates. As shown in the final Part of this paper, even a regressive tax (average and marginal) might be accepted, if combined with progressive statutory marginal tax rates. (Political acceptability seems to thrive on illusions.)

And finally, if the income tax is not the only tax used, then the rate structure has to be adjusted by the extent to which the other taxes deviate from the criteria of an optimal income tax rate structure.

VII. TAX RATES RECOMMENDED BY THE ROYAL COMMISSION ON TAXATION

The Royal Commission on Taxation recommended that effective average rates be proportional to each taxpayer's net economic power, and progressive to income. Because the Commission recommended against the use of exemptions and other deductions, the statutory rates would have closely matched the recommended effective rates.

The Commission made three adjustments to its "ideal" rate structure, by: reducing rates at the lower end to compensate for sales and property taxes, reducing rates for middle-income taxpayers to make them more similar to the rates in the United States, and
keeping the top marginal rate at a maximum of 50 percent (federal plus provincial) in order to minimize disincentive effects. The rates recommended by the Commission are shown in Table A-1 in the Appendix.

VIII. TWENTY YEARS LATER

There are two major differences between the rates recommended by the Royal Commission on Taxation and those in effect now. One difference appears in the statutory rate structure as shown by Figure 3 (based on Table A-1 in the Appendix) Effective Mean Average and Marginal Tax Rates, 1984.

Figure 3
Current statutory rates are relatively higher for middle-income taxpayers than those recommended by the Commission, while the rates for high-income taxpayers are a great deal lower. The second major difference arises from the effect that current tax concessions have on reducing the effective rates of taxation. Effective rates have not only fallen dramatically in comparison with statutory rates, as shown in Figure 4 (based on Tables A-1 and A-2 in the Appendix), but they have also fallen primarily at the lower and upper ends of the income scale, adding substantially to the high rates of taxation of middle-income taxpayers.

**Figure 4**

![Effect of Tax Concessions on Effective Tax Rates, 1984](image)
The net results of these effects are shown in Figure 5 (based on Table A-2 in the Appendix). The figure shows that the effective rates, both average and marginal, are extremely progressive up to the middle incomes range and regressive for high-income taxpayers. This is in direct contrast to the rates recommended by the Commission.

The illusion created by our existing progressive statutory rates has completely hidden from view the effectively regressive nature of our tax rate structure at high levels of income. This raises a number of basic questions. Do we know what social goals we want to achieve through public policy? How much consensus do we have on these goals? Are we applying these goals to tax policy? Are we applying them properly? Are we sufficiently aware of the various types of tax rate structures available for our use? Have we chosen the right ones? Do we recognize the trade-offs and compromises needed? Have we made the proper trade-offs? Do we know what we are doing? Do we care?
### Federal Statutory Average Tax Rates

<table>
<thead>
<tr>
<th>Income</th>
<th>Royal Commission</th>
<th>1984</th>
<th>1984 minus Royal Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,000</td>
<td>8.9</td>
<td>8.8</td>
<td>-0.1</td>
</tr>
<tr>
<td>20,000</td>
<td>14.0</td>
<td>14.0</td>
<td>0.0</td>
</tr>
<tr>
<td>30,000</td>
<td>16.7</td>
<td>16.9</td>
<td>+0.2</td>
</tr>
<tr>
<td>40,000</td>
<td>18.7</td>
<td>19.1</td>
<td>+0.4</td>
</tr>
<tr>
<td>50,000</td>
<td>20.3</td>
<td>20.9</td>
<td>+0.6</td>
</tr>
<tr>
<td>60,000</td>
<td>21.6</td>
<td>23.0</td>
<td>+1.4</td>
</tr>
<tr>
<td>70,000</td>
<td>22.8</td>
<td>23.9</td>
<td>+1.1</td>
</tr>
<tr>
<td>80,000</td>
<td>23.8</td>
<td>25.0</td>
<td>+1.2</td>
</tr>
<tr>
<td>90,000</td>
<td>24.8</td>
<td>26.1</td>
<td>+1.3</td>
</tr>
<tr>
<td>100,000</td>
<td>25.6</td>
<td>27.2</td>
<td>+1.6</td>
</tr>
<tr>
<td>150,000</td>
<td>31.4</td>
<td>30.6</td>
<td>-0.8</td>
</tr>
<tr>
<td>200,000</td>
<td>31.4</td>
<td>30.6</td>
<td>-0.8</td>
</tr>
<tr>
<td>400,000</td>
<td>37.1</td>
<td>32.3</td>
<td>-4.8</td>
</tr>
<tr>
<td>600,000</td>
<td>40.1</td>
<td>32.8</td>
<td>-7.3</td>
</tr>
</tbody>
</table>

1. Rates are based on single taxpayers, using basic exemptions.
2. The rates recommended by the Royal Commission for Taxation are adjusted to 1984 dollars and to the 1984 ratio of net federal tax payable to total income assessed.
3. Income assessed in 1984 is adjusted by adding in one-half of net taxable capital gains.


### Estimated Effective Federal Mean Average Tax Rates (EEFMATR) and Estimated Effective Federal Mean Marginal Tax Rates (EEFMMMTR), 1984

<table>
<thead>
<tr>
<th>Income Class</th>
<th>Average Income</th>
<th>Average Tax</th>
<th>EEFMATR</th>
<th>Change in Average Income</th>
<th>Change in Average Tax</th>
<th>EEFMMTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss to $10,000</td>
<td>$4,354</td>
<td>$43</td>
<td>1.0</td>
<td>$10,392</td>
<td>$914</td>
<td>8.8</td>
</tr>
<tr>
<td>$10,000 - 20,000</td>
<td>14,746</td>
<td>957</td>
<td>6.5</td>
<td>9,887</td>
<td>1,564</td>
<td>15.8</td>
</tr>
<tr>
<td>20,000 - 30,000</td>
<td>24,663</td>
<td>2,521</td>
<td>10.2</td>
<td>9,709</td>
<td>1,786</td>
<td>18.4</td>
</tr>
<tr>
<td>30,000 - 40,000</td>
<td>34,372</td>
<td>4,307</td>
<td>2.5</td>
<td>9,677</td>
<td>1,955</td>
<td>20.2</td>
</tr>
<tr>
<td>40,000 - 50,000</td>
<td>44,049</td>
<td>6,262</td>
<td>14.2</td>
<td>9,519</td>
<td>2,091</td>
<td>22.1</td>
</tr>
<tr>
<td>50,000 - 100,000</td>
<td>62,568</td>
<td>10,353</td>
<td>16.5</td>
<td>55,057</td>
<td>12,562</td>
<td>22.8</td>
</tr>
<tr>
<td>100,000 - 150,000</td>
<td>117,625</td>
<td>22,915</td>
<td>19.5</td>
<td>50,629</td>
<td>11,670</td>
<td>23.0</td>
</tr>
<tr>
<td>150,000 - 200,000</td>
<td>168,254</td>
<td>34,585</td>
<td>20.6</td>
<td>51,424</td>
<td>11,750</td>
<td>22.8</td>
</tr>
<tr>
<td>200,000 - 250,000</td>
<td>219,678</td>
<td>46,335</td>
<td>21.1</td>
<td>280,765</td>
<td>56,779</td>
<td>20.2</td>
</tr>
<tr>
<td>250,000 &amp; over</td>
<td>500,433</td>
<td>103,114</td>
<td>20.6</td>
<td>500,433</td>
<td>103,114</td>
<td>20.2</td>
</tr>
</tbody>
</table>

1. Income is adjusted by adding one-half of net taxable capital gains and subtracting the dividend gross-up.