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FORMULA FINANCING, FISCAL CAPACITY AND FISCAL EFFORT IN THE
NORTHWEST TERRITORIES

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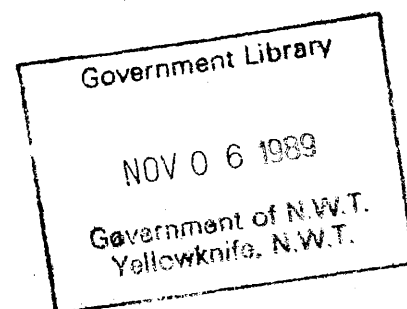
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October 1989

A paper prepared for the Department of Finance,
Government of the Northwest Territories.





Executive Summary

The federal government has recently proposed a major modification to formula financing in the territories. Under this proposal, a variant of the "representative tax system (RTS) approach" used in federal-provincial equalization would be applied to the territories. Unlike federal-provincial equalization, however, the proposed formula would also include a measure of tax effort. This paper examines the use of the RTS approach in measuring fiscal capacity and fiscal effort and evaluates the application of the RTS to the northern territories.

The paper is organized into two main parts. The first part provides essential background information on the existing territorial financing formula, federal-provincial equalization and the federal proposal for the territories. A comparison of all three systems suggests that the proposed federal formula moves the territorial formula closer to federal-provincial equalization (in its use of the RTS approach) and away from it (in its introduction of an explicit tax effort element). The second part of the paper discusses the use of the RTS approach to measuring territorial fiscal capacity and the appropriateness of introducing fiscal effort into the territorial financing formula.

1. The Territorial Financing Formula

Under existing formula financing, the federal grant makes up the difference between GNWT expenditures in 1982/3 (escalated by the growth in provincial-local expenditures) and the current tax bases multiplied by the tax rates in 1985. At least two important aspects of this formula can be noted. On the revenue side, "tax effort" is implicitly in the formula: a reduction in tax rates (below 1985 levels) does not increase the grant and an increase in tax rates does not reduce the grant. Thus, tax rate increases are encouraged and decreases discouraged. On the expenditure side, the inclusion of actual NWT expenditures for a given year (rather than the national average, for example) provides at least partial recognition of the different expenditure needs of the north.

2. Federal-provincial Equalization

The federal-provincial equalization formula compares the per capita tax yield at national average tax rates for each province with the average per capita tax yield at national average tax rates for five representative provinces, for each of 37 provincial and local revenue sources. A comparison of formula financing and federal-provincial equalization highlights the following differences: (i) expenditures are explicitly included in formula financing but are proxied by revenues per capita in federal-provincial equalization; (ii) no allowance is made for differential needs or costs in the equalization formula; (iii) the territorial formula is escalated by the growth of provincial-local expenditures and equalization is escalated by the growth of provincial-local revenues; and (iv) the tax rate in the territorial formula is fixed at a base year level whereas the national average tax rate which is used in equalization changes each year. This means that an increase in a recipient province's tax rate under equalization increases both its own revenues and its equalization payment but an increase in the territorial tax rate under formula financing only increases its own-source revenues.

3. Special Features of the North

The differences between the NWT and Canada as a whole suggest that placing the GNWT in a "comparable" fiscal position to other regional governments would require a very different revision to the territorial financing formula than that envisaged by the federal government. The NWT differs substantially from the Canadian average in respect to its economic structure, its demography and labour market, its income distribution, and its price level and cost structures. As a result of these differences, its pattern of revenues and expenditures does not resemble that of the provinces.

4. The Federal Proposal

Under the federal proposal, the RTS approach is to be used to compare provincial and territorial tax rates. This RTS assessment is to be done from time to time and the fixed relative tax rate factor thus computed is to be used throughout the period until the next periodic reassessment. The grant would be equal to expenditures minus own-source revenues, where own-source revenues are territorial revenues multiplied by a measure of relative tax effort. For each subsequent year, a "keep-up factor" would be applied to adjust for changes in provincial-local tax effort since the base year.

The proposed formula penalizes the NWT to the extent that its tax effort (as defined on the RTS) is lower than the national average. In addition, several comments can be made with respect to the underlying federal assumptions. First, the federal government fails to recognize differences in service levels and service costs between the NWT and the provinces. Second, it fails to recognize the growth in territorial own-source revenues over the decade. Third, the alleged decrease in territorial tax effort cannot simply be assumed to result from territorial formula financing. Fourth, the application of the keep-up factor means that where territorial tax rates are below national rates, the NWT has to increase tax effort more quickly than the national average simply to prevent its grant from declining. Fifth, the proposed formula departs drastically from the Canadian norm by requiring an explicit measure of tax effort.

5. Measuring Fiscal Capacity

In principle, "fiscal capacity" measures the resources a taxing jurisdiction can tax to raise revenues. Two issues that need to be addressed in measuring capacity are: (i) the scope of the revenues to be taken into account in calculating the potential revenue base and (ii) the impact of excluding some items from the base on the comparison of relative capacity in different jurisdictions. Since measured tax bases are not independent of tax rates, capacity (and effort) measures based on a subset of revenues are not independent of what is excluded.

Another issue concerns how to calculate a "representative" system, that is, how to weight the bases included. The approach used in Canada is to calculate arithmetically the average effective tax rate for each base for those provinces actually imposing the tax. Two alternative approaches are: (i) to apply an ideal or hypothetical tax structure or (ii) to determine the appropriate tax rate through econometric techniques, by regressing revenues on some measures of potential tax bases. Both of these methods have advantages and disadvantages when compared to the RTS approach.

The RTS approach is deficient in several ways: (i) it fails to recognize the interrelated nature of various tax bases; (ii) the use of the average as a representative yardstick by which to judge the NWT creates problems because budgets in the NWT differ from the rest of the country as a result of inherent economic differences; (iii) the extension of the RTS approach to the NWT is suspect because both expenditure needs and revenue capacities have to be defined differently in the unique circumstances of the NWT; (iv) the RTS approach fails to account for the ability of recipient jurisdictions to influence the grant by manipulating the size of the tax base and measure of capacity; (v) in the proposed application of the RTS, a volume change will affect the size of the grant in an undesirable way; (vi) the size of the tax base is not independent of the choice of tax rate and (vii) the RTS approach fails to take account of the effects of differences in prices on the revenue side.

6. Measuring Fiscal Effort

Under the RTS approach, "fiscal effort" is defined as the extent to which a province makes use of its fiscal capacity. The rationale for including a measure of fiscal effort in the formula is that the grant to any jurisdiction should only increase if it is prepared to increase its own tax rates. Also, a jurisdiction would receive no payment for taxes it does not levy. The main disadvantage of including tax effort in the formula is that its inclusion serves to reward high-capacity areas. This result is inconsistent with the objective of equalization which is to provide unconditional grants to relatively low-capacity areas.

The inclusion of fiscal effort into the equalization formula has many problems which would require adjustments to the measure used. Specifically, adjustments would have to be made to take account of progressivity in the tax system, cost of living differences, and differences in income distribution. There would still be problems, however, in cases where government units do not have the same revenue sources, where jurisdictions are at different stages of economic development and where, because of tax exporting, the measure of fiscal effort does not represent tax burden.

7. Conclusion

The introduction of an RTS based measure of "fiscal effort" into the general equalization formula makes little sense and completely contradicts the basic "unconditionality" of that formula. The inclusion of fiscal effort into the territorial financing formula makes even less sense and seems equally contradictory to its basic rationale.

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FORMULA FINANCING, FISCAL CAPACITY, AND FISCAL EFFORT IN THE NORTHWEST TERRITORIES

1. Introduction

The federal government has recently proposed a major modification to the territorial formula financing system in the form of a "representative tax system adjustment" to territorial revenues. This proposal deserves close examination not only because of its immediate implications for territorial finance but, more importantly, because it appears to mark the first occasion on which a "tax effort" component has been formally introduced into a federal general purpose grant formula. The introduction of an explicit tax effort element in this proposal is particularly striking since at the same time the introduction of this variant of the "representative tax system" (hereafter RTS) approach into territorial formula financing moves the territorial formula closer to the formula used for purposes of federal-provincial equalization grants - and the latter formula conspicuously, and deliberately, does not include an explicit tax effort component. The application of the RTS approach to measure tax (or fiscal) capacity and effort in the northern territories also gives rise to a number of interesting general conceptual questions about the suitability of this approach for the purpose of determining the appropriate degree of general federal support to the financing of territorial government services.

This paper examines the basic issues raised by the recent federal proposal. It is organized in two main parts, as follows. The first part (Sections 2-4 inclusive) provides some essential background to the specific questions of how best to measure fiscal capacity and effort considered in the second part (Sections 5-6). Specifically, Section 2 describes the background and nature of the starting point of the analysis: the present territorial financing formula. Section 3 of the paper briefly outlines the development of the equalization formula and compares it to the present territorial financing formula. Since the basic rationale of the territorial formula appears to be very similar to that of equalization, to some extent the present analysis is conducted on the assumption that the principal objective of both transfers is to enable subnational jurisdictions to provide "comparable" services to their inhabitants at "comparable" tax rates. The significance of the differences between the two formulas is then discussed in light of the postulated objective and the important differences in conditions between the north and Canada as a whole.¹

1. Note that the present paper focuses solely on the question of how best to design federal transfers to ensure "comparability" (or, in the particular sense of removing differences in potential fiscal residua, "neutrality") between jurisdictions. It does not discuss the quite different question of how the tax and transfer system might be used to foster regional development in the north. That is, the emphasis here is on removing obstacles to the equitable and efficient treatment of northern residents arising from the design of federal transfer policies rather than on using federal tax or transfer policies as regional development incentives.

Following this discussion, Section 4 of the paper outlines the recent federal proposal and compares it to both the present system of territorial formula financing and the equalization system. As already indicated, this examination reveals that the proposed formula is in a sense neither fish nor fowl since it simultaneously moves the territorial formula closer to equalization (in its use of the RTS approach) and away from it (by introducing an explicit tax effort element).

The second part of the paper then discusses two important aspects of the federal proposal: the use of the RTS approach to measure territorial fiscal capacity and the introduction of an explicit fiscal effort element into the territorial financing formula. Section 5 points out a number of well-known difficulties with RTS measures of fiscal capacity. The fact that the RTS approach is well-established and seldom questioned in the context of Canada's equalization program does not make these problems any less significant, particularly when the many differences (as set out briefly in Section 3) between the NWT and the Canadian "average" with which it is being compared in this approach are taken into account. Both in principle and in practice, there is good reason to think the estimates of "fiscal capacity" emerging from this approach are biased. It follows, of course, that the measures of "fiscal effort" derived from comparing actual to "potential" revenues under this system are also biased, as is pointed out in Section 6. More importantly, however, there are substantial reasons to question both this approach to measuring fiscal "effort" and the whole notion of introducing fiscal effort measures into formula financing, as is also discussed briefly in Section 6.²

2. Although this is not a scholarly paper in the sense of breaking new ground, a fairly extensive list of references (all of which have been consulted in the preparation of this paper but few of which are specifically cited herein) is attached for several reasons. One reason is to reinforce a point made in section 6: the fact that the RTS approach has become an accepted part of the Canadian federal-provincial landscape in no way implies that this approach is necessarily the best, or the only, way of measuring fiscal capacity. In this regard, it is particularly distressing to see in the sparse Canadian literature frequent, dismissive mentions of the so-called "macro" approach as though that were the only - and discredited - alternative. Canadian thinking on this subject seems to be frozen at the level of the early work of Lynn (1968) and Clark (1969). Although this task is not undertaken here, it is surely past time for someone to re-examine this basic question in light of such modern literature as Akin (1979) and Tabellini (1985). In contrast, the reasons why Lynn (1968) and Clark (1969) did not recommend the inclusion of tax effort measures in their initial formulations of the Canadian system seem still valid and have been reinforced by later work on this question, particularly in the context of international comparisons e.g. Bird (1976) and Bolnick (1978). Finally, for those who are interested in how these matters are handled in other countries, a number of basic references to other grant systems are included e.g. Bieri (1979) and Dafflon (1977) on Switzerland (where effort measures are popular) and Bennett (1980, 1982) on the United Kingdom (where they are not).

2. The Territorial Financing Formula

The federal government has always been the main financial prop of the public sector in the Northwest Territories (NWT). Since 1952 there have been financial agreements between the federal and territorial governments setting out the terms of the major federal fiscal transfers. Until recently, however, these agreements were very different in nature from the five-year financial agreements negotiated with the provincial governments (also beginning in 1952) since the size of the principal federal grant to the NWT was really determined by annual negotiations about the size of the "deficit" (difference between expected "approved" territorial expenditures and expected territorial revenues).³ That this system was fundamentally unsatisfactory was clearly recognized in the Drury Report (1980), and a new system of "territorial formula financing" was therefore introduced in 1985.

From the point of view of the Government of the Northwest Territories (GNWT), the "deficit grant" system was undesirable because it involved the federal government in a detailed examination (and, in effect, approval process) of territorial expenditures. Moreover, the fact that the grant had to be negotiated annually, essentially as part of the federal budget process, made it difficult for the GNWT to take charge of its own expenditures and act like the "responsible" government it has increasingly sought to be - and the federal government has long urged. In particular, the federal government was understandably unhappy with the way the deficit grant system actively encouraged the GNWT to act irresponsibly with respect to both expenditures and revenues, since the higher the former and the lower the latter the larger the grant would be.

The new formula financing system not only dealt with all these problems, at least temporarily, but also went a considerable distance towards in effect extending to the territories the principles underlying federal equalization grants to the provinces. The remainder of this section describes the existing system of territorial formula financing and emphasizes its implications for territorial "tax effort" and the attainment of "comparability" in the sense of the equalization program. Section 3 develops further the relation of the territorial formula to equalization.

Under formula financing, the basic federal transfer payment to the NWT in any year is equal to the difference between GNWT expenditures (approximated by revenues) in the 1982/83 fiscal year (adjusted for the cost of programs subsequently transferred from the federal to the territorial government), escalated by the (three year moving average) growth in provincial-local expenditures, and the current tax base times the tax rates prevailing in 1985. Ignoring the fact that other federal transfers to the NWT are subtracted out, this formula can be expressed as follows:

3. In addition, as in the case of the provinces, the NWT government receives other federal transfers for health, education, and welfare, as well as various special purpose grants.

$$GR^n = \sum_i E_i^0 w - \sum_j t_j^0 B_j^n \quad (1)$$

where GR^n = grant to NWT in year n

E_i^0 = NWT expenditures on service category i in base year 0
(the base year in this formula is 1982/83)

w = growth of total provincial-local expenditures in Canada
(based on a three-year moving average)

t_j^0 = NWT tax rates on revenue source j in base year
(1985 in this formula)

B_j^n = tax base in NWT for revenue source j in current year

Several aspects of this formula are worth noting. In the first place, both expenditures and revenues are in effect "fixed" in the sense of not being open to direct manipulation by the GNWT. Of course, to the extent GNWT policy (e.g. with respect to tax rates) affects the size of the current tax base, there may be some scope for indirect manipulation in principle, but this seems unlikely to be significant in practice for two reasons. First, the relationship between tax rates and tax bases, while real (see Section 5 below) is not likely in most cases to be as direct and immediate as "manipulation" would seem to require. And, secondly, and more importantly in the present context, the formula strongly discourages any reductions in tax rates below 1985 levels.

Indeed, a second important aspect of the formula is that, in sharp contrast to the previous "deficit grant", which rewarded lessened tax "effort" with a higher grant, any reductions in tax rates below 1985 levels will result in lower total resources being available for territorial expenditures since the grant will not increase to offset the (presumed) decline in territorial "own source" revenues. By the same token, increases in tax rates (or the introduction of new taxes) are now not offset by a decrease in the federal transfer, as had previously been the case. Since tax decreases are discouraged and increases encouraged (in the sense of being subject to an implicit federal "tax" - transfer reduction - rate of zero at the margin), there is thus an important "tax effort" component implicit in the territorial financing formula. While the choice of 1985 rates seems arbitrary (1985 rates were chosen because it was the most recent year for which tax rates were known), this fixed tax rate component of the formula was apparently considered essential to achieving the objective of promoting responsible and accountable self-government in the territories by making them really responsible for their own tax policy for the first time.

At the same time, the federal government undoubtedly hoped that the implicit incentive thus provided to increased territorial taxation would encourage the territories to become increasingly self-reliant and less dependent on federal finance. The extent to which this hope is realistic, however, clearly depends less on territorial increases in tax rates - which may in any case be partly offset by resulting reductions in tax bases (as noted in Section 5 below) - than on what happens to territorial taxes as a result of

exogenous factors affecting the tax base on one hand and the strength of the factors increasing territorial expenditures on the other hand.

The other interesting features of the territorial financing formula concern the expenditure side. In the first place, the choice of the 1982/83 NWT expenditure base seems every bit as arbitrary as the choice of the 1985 tax rates. The year 1982/83 was chosen because it was the last closed fiscal year and thus expenditures would not be subject to manipulation. In any event, it seems reasonable to infer that one reason for using actual NWT expenditures in a base period as the target level to be maintained rather than (say) some national average - as is implicitly done in the equalization formula (see Section 3) - was in at least partial recognition of the very different expenditure needs in the north compared to the country as a whole. This point is developed further in the next section. Secondly, the escalator used in the formula - the growth in provincial-local expenditures - also appears arbitrary and, as was recognized from the beginning, probably inappropriate given both the different expenditure needs and costs in the north and the likely different development over time of these factors relative to the national average. As with the other arbitrary elements noted above, this particular escalator was apparently chosen because it was available at the time without too much trouble. In addition, it appeared to provide broadly the "right" results at least in the short run, namely, an increased expenditure component more or less in line with developments elsewhere.

Given the importance of these arbitrary components of the formula, and the novel nature of territorial formula financing in any case, it is not surprising that the initial three-year agreement - which was in any case not signed until the 1985/86 fiscal year was well under way - was extended for an additional two years, until March 31, 1990, while a review of the formula was undertaken. The present paper is itself of course part of the review process, the first results of which, the federal proposal for a revised formula, are summarized in Section 4 below. First, however, the next section provides another essential piece of background in the form of a brief discussion of the relation of formula financing to equalization and of what equalization means in the context of the north.

3. Equalization and Territorial Financing

The Development of the Equalization System

Like much else in Canadian federalism, the basic idea of "equalization" can probably be traced back to Confederation, when it seems to have been assumed that the provision of equal per capita subsidies to the provinces would permit them to be in essentially equal fiscal positions. This notion quickly proved to be mistaken, however, and for the next 70 years various patchwork alterations were made from time to time to the federal financial framework in an attempt to address the more egregious regional inequalities that emerged. It was not until the crisis of the 1930s, however, that the Rowell-Sirois commission clearly enunciated, in its proposal for National Adjustment Grants, what was to become the underlying credo of Canadian federal-provincial financial arrangements. In the Commission's words, such grants should be

given when a province cannot supply average standards of certain specified services without greater than average taxation, but the province is free to determine on what services the grants will be spent, or whether they will be used not to improve services but to reduce provincial (and municipal) taxation (Rowell-Sirois (1940), Book II, p.127).

The essence of the subsequent equalization program is apparent in the emphasis in this quotation on (1) the unconditionality of the grants - specifically including no penalty for reductions in tax effort - and (2) the use of the "national average" standard. Unlike the later revenue equalization program, however, the Commission's proposal explicitly allowed for the evaluation of expenditure needs.

Although the intervention of World War II meant that the Rowell-Sirois proposal was in fact never enacted, its influence was still very apparent in 1957 when an explicit federal-provincial equalization program was finally introduced in Canada. In that year, the federal government agreed to pay each province an amount that would bring its per capita yield from three specified taxes (personal and corporate income taxes and succession duties) up to the average yield of the two wealthiest provinces (then British Columbia and Ontario). Unlike the present system, where equalization "entitlements"- though paid out of federal revenues - are based on the revenues actually collected by all provinces from the taxes (and other revenues) included in the equalization base, this early version of equalization calculated entitlements by applying hypothetical "standard" rates to the chosen revenue sources. In the next five-year agreement, in 1962, 50 percent of the three-year average of provincial revenues and taxes from natural resources also became eligible for equalization. At the same time, the equalization "standard" was changed from the top two provinces to the national average, a change which obviously had the effect of reducing the overall amount of equalization. The following year, however, the standard was changed back to the the top two provinces (still B.C. and Ontario), and resource revenues were again removed from the equalization base. In substitution, 50 percent of the amount by which the three-year average of any province's per capita resource revenue exceeded the national average was to be deducted from any equalization payment it might otherwise receive.

The third five-year agreement, in 1967, saw the introduction of the "representative tax system" (RTS) approach. First set out in detail in U.S. Advisory Commission on Intergovernmental Relations (1962) in essentially the form adopted by Canada five years later, the RTS approach remains the heart of Canada's equalization system today. In contrast to the earlier "hypothetical" system of standard tax rates, this system is "representative" in the sense that it takes into account the actual taxing practices of provinces both in terms of the revenues equalized and the manner in which tax bases are defined. In particular, a key element in equalization under this system is the national average tax rate, defined as the total actual collections divided by the total tax base. In 1967, 16 tax sources were included in the formula. In 1972, three additional tax bases were introduced.

Shortly thereafter, however, two major changes in equalization took place. First, in 1973, for the first time the important differences between provinces in the assignment of financial responsibilities to provincial and local governments were recognized in part through the inclusion of property taxes for education (though not for general municipal purposes) in the equalization base. Secondly, the oil crisis of the early 1970s brought out clearly one of the main problems with the Canadian approach to equalization. As one province (Alberta) became richer as a result of the quantum leap in oil prices, equalization payments automatically increased for the recipient provinces - even though there was neither any obvious link between Alberta's good fortune and changes in the cost of provincial services nor any corresponding rise in the revenues which the federal government had available to finance equalization payments. Characteristically, the response to the emergence of this problem was not a reformulation of the basic RTS approach - by then well accepted by all - but rather the imposition of an arbitrary rule: in 1974, the formula was changed so that energy royalties and revenues would not be equalized in full.

In 1977, the number of revenue sources was increased to 29 through the splitting up of previous categories, some bases were redefined, and a new system for reducing the impact of increased resource revenues was adopted. Once again, however, the second rise in oil prices at the end of the decade put the equalization system (and the federal budget) under strain. Indeed, applying the 1977 formula would have had the result of turning rich Ontario into a recipient province. To avoid this result - equally unthinkable to other provinces, to the federal government, and to Ontario itself - a totally new "macro" element was introduced in 1981 into the equalization system, in the form of the so-called "personal income override", whereby no province could receive equalization if its personal income per capita exceeded the national average level in the current year and in the two preceding years. This provision had the desired result of ensuring that Ontario would not be eligible for equalization. It also, however, in a sense calls into question the entire rationale of the RTS approach; as seen in Section 5 below.

Most recently, the 1982 formula (which was basically renewed unchanged in 1987) resolved some of the earlier untidiness by introducing a new standard known as the "representative five province standard". As before, for each revenue category, the national average tax rate is applied to each province's own per capita base (as defined for RTS purposes) to determine its potential yield ("fiscal capacity"). Now, however, this figure is compared not to the actual national average tax yield in per capita terms but rather to the revenue that would be generated by the application of the national average tax rate to

the average per capita base in five "representative" provinces. The five provinces included in this standard are Quebec, Ontario, Manitoba, Saskatchewan, and B.C.: rich Alberta and the poor Atlantic region are thus excluded.

Including Ontario in the "standard" essentially serves the same purpose as the macro "override" described above (which is no longer in force): owing to Ontario's size, its inclusion in deriving the five-province standard virtually ensures that Ontario will not be a recipient province. Excluding Alberta serves much the same purpose as the earlier arbitrary "caps" and limitations on the equalization of resource revenues and enables all resource revenues to enter the equalization formula without the need for arbitrary restrictions. The current formula, which includes 37 revenue sources, thus includes virtually all provincial and local revenue sources. Moreover, this exclusion has the added benefit (at least from the perspective of the federal budget, if not from the point of view of the objective of equalization) of in effect largely excluding from equalization any increases in provincial-local expenditures (revenues) attributable to increases in Alberta's oil and gas revenues. Another interesting development in 1982 was a provision "capping" the future growth of equalization payments to the cumulative rate of GNP growth after 1982. This reintroduction of a "macro" element in the equalization formula is, of course, intended to serve as a limit on the federal budgetary costs to which the program gives rise.

Perhaps the most important development in 1982, however, was that equalization was at last formally enshrined in the Constitution in the following words:

Parliament and the Government of Canada are committed to the principle of making equalization payments to ensure that provincial governments have sufficient revenues to provide reasonably comparable levels of public services at reasonably comparable levels of taxation (the Constitution Act, 1982, subsection (2), Section 36 of Part III).

The continuing influence of the Rowell-Sirois proposal cited above is clear in this provision.

To summarize, federal-provincial equalization payments have formally been made in Canada since 1957. The payments have generally been designed to equalize fiscal capacity by applying a "standard" rate of tax to the difference between a "standard" tax base and the actual tax base of the province. Over the last 30 years, changes to the equalization formula have, for the most part, addressed: (i) the choice of revenue bases to be equalized, (ii) the choice of "standard" base to which the base of each province would be compared (e.g. national average, two wealthiest provinces, representative five-province standard), (iii) the choice of "standard" tax rate (e.g. national average, a hypothetical standard), and (iv) arbitrary methods of altering the outcome of applying the formula (partial inclusion of energy revenues, personal income override, GNP cap).

The current federal-provincial equalization formula may be depicted as follows:

$$GR_r = \sum_j t_j^* (B_j/P)^* P_r - \sum_j t_j^* B_{rj} \quad (2)$$

where GR_r = equalization payments to region r

t_j^* = national average tax rate for revenue source j

B_{rj} = tax base in region r (on RTS base) for revenue j

$(B_j/P)^*$ = average per capita base for revenue source j in the "representative five provinces"

P_r = population in region r

Equalization is applied to each of the 37 different revenue sources, in effect comparing the per capita tax yield at national average tax rates for each province with the average per capita tax yield at national average tax rates for the five representative provinces. For any given revenue source, a province's entitlement may be positive, if its per capita tax base is less than that of the representative five province standard, or negative, if its tax base is greater. The sum of all these entitlements determines whether the province receives an equalization payment or not, and, if the sum is positive, how much it receives.

Two features of this formula are especially relevant in the present context. First, although there is no explicit mention of expenditures in the formula, they are in effect proxied by revenues: that is, "comparable" per capita expenditures are measured by "comparable" per capita revenues. As Clark (1969, p. 27) puts it: "In a revenue equalization formula, it is assumed that expenditure needs per capita are identical in all provinces; the distribution of total implicit expenditure needs is, therefore, based upon the distribution of total population." Secondly, as this quotation suggests, no allowance is made for price (cost) differentials on either the expenditure or revenue sides, nor is there any allowance for factors affecting expenditure "needs" other than total provincial population.

Comparison to Territorial Financing

Comparison of formulas (1) and (2) for territorial formula financing and federal-provincial equalization respectively reveals the following significant differences:

The territorial formula is explicitly escalated by the growth of provincial-local expenditures; the equalization formula is implicitly escalated by the growth of provincial-local revenues (subject to the GNP ceiling). Over a period of time, these two escalators should presumably produce very similar results. Of course, to the extent provinces finance expenditure increases from sources not included in the equalization formula - notably borrowing - this equality will not hold, but any such imbalance must be transitory since provinces cannot continually increase the size of their budgetary deficits. Moreover, as noted later, this problem, if it is thought to be such, may be

considered to arise from the incorrect determination of the equalization base rather from the use of an improper escalator.

The national average tax rate, which changes each year, figures in the equalization formula; in contrast, the tax rate in the territorial formula is fixed at a base year level. As already noted, the changing tax rate in the equalization formula in effect proxies the expenditure escalation factor in the territorial formula. In addition, however, this feature of the equalization formula means that an increase in any province's tax rates increases both its own revenues and those of any province (including itself) which receives equalization payments. In contrast, an increase in the territorial tax rate will (presumably) increase own-source revenues but will not increase its federal transfer payments. In this sense, and this sense only, the territorial formula would appear to be somewhat less conducive to additional "tax effort" than the equalization formula - although at the same time this "deficiency" reduces the cost such "effort" imposes on federal budgetary revenues!

Is the North Different?

The brief history recounted above gives rise to an obvious question: why not simply apply the equalization system to the NWT? The answer is as short as the question: because the NWT would not qualify for equalization under the existing formula. Contrary to common sense, the Canadian equalization system produces the outcome that the NWT is not a "have-not" region. This strange result comes about for two reasons. The first, and most important, reason is of course because the equalization formula takes no account of the much higher per capita expenditures required to provide a reasonable standard of services in the North. As noted earlier, the implicit assumption underlying equalization is that the average per capita revenues included in the "standard" adequately measure the level of expenditures needed to meet this target. The obvious falsity of this assumption in northern conditions is presumably the reason why an expenditure component is explicitly included in the territorial financing formula, even though that component is, as argued elsewhere (e.g. Foot and Slack, 1988) far from adequate to its task.

The second reason why the system fails in the case of the NWT is because it improperly measures the capacity of the territorial (and local) governments to raise revenues. Since the proposed federal revision of the territorial financing formula (see Section 4) in effect accentuates this second problem without compensating for the deficiency on the expenditure side of the existing formula its net result would probably be the precise opposite of what is claimed. That is, instead of treating the NWT more like the provinces receiving equalization, the outcome of the proposed revision would appear to be to move the NWT even further away from being treated on an equal basis with the rest of the country. The remainder of this paper in effect elaborates this conclusion.

To begin with, the balance of the present section sketches briefly a few of the salient differences between the NWT and Canada as a whole. These differences suggest that placing the GNWT in a "comparable" fiscal position to other regional governments would require a very different revision to the territorial financing formula than that envisaged by the federal government. Section 4 then sets out and critiques the federal proposal, while Sections 5

and 6 explore in more detail the meaning and measurement of fiscal capacity and fiscal effort.

The NWT differs substantially from the Canadian average in a number of important respects.⁴ Indeed, its economic structure, its demography and labour market, its income distribution, and its price level and cost structures are so different that it is not surprising its pattern of revenues and expenditures and the behaviour of its public finances over time are also different. A few examples will illustrate this point:

The NWT economy is based on one hand on public sector activities (which account for almost half of all employment) and on the other on natural resources, especially mining and oil (which account for over half of GDP). This dual dependence has two important consequences for public finance: first, the average per capita income of the employed population is relatively high (because the public and mining sectors are relatively high payers) and, second, the private sector tax base is highly vulnerable to changes in the world markets for natural resources.

This is not the only "dual" feature of the NWT economy. Spatially, too, the economy is decidedly dual. Most of the income (and about half of the population) is concentrated in a few relatively small administrative centres and communities based on resource extraction. The balance of the population is scattered throughout the immense northern territory in a number of very small and extremely isolated settlements. The implications of this settlement pattern for the costs of providing "comparable" or "reasonable" levels of public service are obvious: some services which most Canadians take for granted (e.g. roads) are almost nonexistent and others (e.g. education) are much more expensive on a per unit basis (Dean, 1989).

Finally, and in some ways, most importantly, the structural and spatial "duality" of the NWT economy is matched by a correspondingly dual labour market. Most of the "good" jobs are taken by non-natives, often by people who do not stay in the north very long - from 1976 to 1981, for instance, about half of the non-native population of the NWT moved into or out of the territory (Stabler, 1989) -, and in a surprising number of instances by people who do not live in the NWT at all. This "bunkhouse" population of transient workers living in what are in effect "enclave economies" with no significant linkages to the NWT economy may account for 20 percent or more of the total wages and salaries paid in the NWT. For the most part, non-natives employed in the north, whether full-time residents (like most government employees) or transitory workers (in mining and construction) are well-paid, both owing to the nature of their occupations (skill and educational levels, etc.) and as "compensation" for enduring the harsh living conditions.

In striking contrast, the relatively stable native population, which accounts for about half the territorial total, is for the most part either engaged in relatively low-wage occupations in the modern sector (matching their generally low skill and educational levels), unemployed, engaged in low-income

4. There are of course many other subprovincial regions (e.g. the northern parts of most provinces) which have similar characteristics, as does the Yukon, but no other regional government confronts the same combination and intensity of adverse circumstances that the GNWT does.

traditional occupations (hunting, trapping), or in some combination of these activities. Despite the strong economic underpinning provided by federal transfer payments to persons, the result is that the income distribution in the NWT is, so to speak, bimodal - with natives clustered at the lower mode and non-natives at the higher mode. This situation is clearly reflected, for example, in personal income tax statistics. It is well-known, for example, that the average assessed income is slightly higher in the NWT (\$20,809 in 1986) than in Canada as a whole (\$19,453). What is not so widely recognized, however, is that this results entirely from the greater concentration of income in the NWT. Even though the average income in the upper income bracket (over \$40,000 in the 1986 statistics) is considerably higher in Canada (\$60,305) than in the NWT (\$53,167), for example, the latter has 17 percent of its returns and 43 percent of its personal income tax base in this range compared to only 10 percent and 31 percent, respectively, for Canada. On the other hand, 18 percent of NWT taxpayers reported less than \$2500 in income, and 26 percent less than \$5000: the corresponding figures for Canada are 13 percent and 21 percent.⁵ The implications of such differences for measuring fiscal capacity are discussed in Section 5 below.

Spatial dispersion and occupational duality are not the only ways in which the NWT population differs significantly from the Canadian norm. From 1956 to 1986, for example, the rate of population growth in the NWT has been over twice the national average (3.4 percent compared to 1.5 percent). Reflecting this high growth rate, the population of the NWT is much younger than that in the rest of Canada, with over 42 percent being under the age of 20, compared to the Canadian average of 29 percent. This means both that there is a much higher "dependency ratio" in the north and that there is a much greater than average need for such public services as education.

Providing such services on a roughly comparable basis to the rest of the country, like everything else in the north, costs much more than in the south. Dean (1989), for example, has estimated that the per student cost of elementary and secondary education in the NWT was over 150 percent of the Canadian average. Since there are probably close to 50 percent more children of school age in the NWT population, the implication is that per capita expenditure on education might be expected to be well over 200 percent of the Canadian average.⁶ Similarly, the costs per patient day of providing hospital care were

5. A more detailed comparison of the taxpaying population in the NWT and Canada (for 1981) may be found in McMillan and Kitchen (1985). Incidentally, the great disparity between the regional distribution of GNWT revenues and expenditures emphasized in this study is of course another reflection of the "dual" nature of the NWT economy emphasized here.

6. Not all this difference is necessarily reflected in the expenditure budgets of the GNWT (and its local governments), however, both because of some continuing direct federal expenditures on education and because - as indicated by the repeated introduction of special programs intended to raise the standard of education closer to that prevailing elsewhere - in fact the educational system in the NWT is not providing a comparable standard of service. One indication of this is provided by the 1984 labour force survey, which found that (1) less than 15 percent of the native population over 15 years of age had completed high school compared to over 55 percent for the non-native (and mostly migrant) population, and (2) that even among those with less than a high

over 200 percent of the Canadian average and the cost per student in post-secondary education was close to 400 percent of the Canadian average. The harsh climate and the scattered and small population add considerably to transportation, heating, and other costs and make it difficult to reap economies of scale in the provision of services.

The result of such factors is plain to see in the public finance data. In 1987, for example, per capita expenditures by the GNWT were \$14,212, or more than three times the Canadian average of \$4,591. Expenditures by the territorial government were also much higher as a proportion of GDP: 46 percent, compared to 21 percent for all provinces and territories combined (Slack, 1989). Because local governments in the NWT are relatively unimportant, the difference is a bit less for consolidated territorial-local expenditures compared to provincial-local expenditures - 51 percent of GDP and \$15,866 compared to 29 percent and \$6,244- but it is still very large. Surprisingly, given the nature of the northern population and the still great gap between the level of public services available in many northern communities and those taken for granted in the south, the rate of expenditure growth in per capita terms has generally been similar in the NWT to the Canadian average. Over the decade ending in 1987, for example, GNWT expenditure grew at an average annual rate of 12.0 percent in total and 9.9 percent in per capita terms: the corresponding figures for provincial expenditure were 11.0 percent and 9.9 percent. For consolidated (territorial-local and provincial-local) expenditures, the picture was a bit different because of the slower growth of local governments in the settled south: the average annual rate of growth in the NWT in the 1977-87 period was 12.0 percent compared to 10.2 percent in Canada as a whole.

As in the case of expenditures, per capita revenues are much higher in the NWT than in the rest of the country. Almost three-quarters of NWT revenue, however, comes from federal transfers, implying a much higher level of "fiscal dependency" than in any other region of the country. Since own-source revenues in per capita terms were close to the national average (\$3,346 in 1986 compared to \$3,495), in a sense this high dependence on federal transfers might be considered simply to reflect the factors indicated above as requiring much higher expenditure levels to provide even roughly comparable services in the NWT. That is, one interpretation of the NWT situation is that northern taxpayers pay about as much for what they get as the rest of Canada, with federal transfers serving largely to compensate for the special cost and "needs" factors required in the north to provide comparable services. This interpretation is of course reinforced if one recognizes that since the cost of living is at least one-third higher than in the south even in Yellowknife (and much higher in more remote settlements), the real disposable income available to northern residents - their "taxable capacity" one might say - per dollar of gross income is correspondingly at least one-third less.⁷ As has been shown

school diploma and between 15 and 24 years of age, on average non-natives had two years more of schooling than natives.

7. Similar spatial differences in living costs of course exist between different communities in southern Canada (Dean, 1988). These differences, however, are so much less than those between the NWT and the south as a whole that ignoring them - while obviously highly questionable in terms of horizontal equity - does much less damage to the notion of "comparability"

elsewhere (Bird and Slack, 1983) - and as is in effect recognized to a limited extent in the federal income tax deductions permitted for "prescribed area travel and housing benefits (Sec. 110.7, Income Tax Act) - this means that the effective rate of the income tax in the NWT (apart from the effects of the deductions) is at least one-third higher than its nominal rate.

An alternative interpretation of the revenue situation in the NWT, however, is to proceed as follows: (1) Note the relatively high level of average per capita income on the one hand and the absence of a sales tax, the lower than average nominal rates of income tax, and other "gaps" in the revenue structure on the other. (2) Note also that expenditures in the NWT have grown more quickly than those in Canada over the last few years while own-source revenues have grown more slowly, with the result being growing dependence on federal financing. And (3) attribute these phenomena to inadequate "fiscal effort" by the GNWT arising in part from the design of the territorial financing formula. It is this interpretation which appears to have shaped the recent federal proposals for revising the formula, as set out in the next section.

underlying the equalization exercise.

4. The Proposed Revision in Territorial Financing

As already suggested, much of the recent federal proposal is devoted to the rationale for including a tax effort element in the territorial financing formula. The principal reason given for doing so is because federal grants have increased over the last few years but the "tax effort" of the territories has not increased. Specifically, total grants increased over the period 1985-6 to 1988-9 at an annual average rate of 7 percent (not including additional programs devolved over the period), while over the same period territorial revenues have grown more slowly in the NWT than total provincial-local own-source revenues, with the result that the territorial government has increased its surplus over the period. "In summary, the general fiscal situation of the territorial-local governments relative to that of provincial-local governments is enviable, due largely to growing federal transfers" (Department of Finance (1989), p.10). In particular, the NWT is said to be favored by the existing formula relative to the provinces because it gains (as a result of the escalator) when provincial-local expenditures increase without having to raise its own revenues proportionately to the increases in provincial-local revenues that finance (at least in part) the additional expenditures.⁸

Specifically, under the federal proposal, the "representative tax system" (RTS) approach familiar from the federal-provincial equalization system is to be used to compare provincial and territorial tax rates. This RTS assessment is to be done from time to time (say, every 3 or 5 years), and the fixed relative tax rate factor thus computed is to be used throughout the period until the next periodic assessment.⁹ This relative tax rate factor is to be multiplied by territorial "matching" revenues (those revenues that are included in the RTS) at territorial tax rates in the year of the RTS comparison. Moreover, for each

8. A secondary argument alluded to several times in the federal document is that much of the increase in provincial-local expenditure reflects increased debt service charges which have no parallel in the territories. While this argument is not explored in detail here, two preliminary comments may be made. First, as already mentioned in the text, this phenomenon is clearly a transitory one in an important sense. Secondly, what is really being called into question here is the whole question of what should be equalized: if, for example, one views borrowing as primarily a "tax smoothing" exercise, a good case can be made for including the proceeds of borrowing as well as taxes (and other charges) in the base to be equalized. Without proceeding any further along these lines, we would simply note that the implications of this whole matter for territorial financing are by no means as cut-and-dried, or one-sided, as the federal document implies.

9. The discussion in the text assumes, for simplicity, that the "RTS base" means the same thing in the proposed territorial formula as it does in the equalization formula. To the extent the "capacity" thus estimated is adjusted for cost-of-living differentials, this assumption is of course incorrect. Unfortunately, while it appears that some such correction may be contemplated, exactly how it is to be calculated is far from clear.

year, a "keep-up factor" is to be applied to adjust for changes in provincial-local "tax effort" since the base year.

The mathematical formulation of the federal proposal is as follows:

$$GR = E - TOSR \quad (3)$$

where, as in equation (1),

GR = grant to NWT

E = a measure of expenditure needs (e.g. E_1^0)

TOSR = territorial own-source revenue

The main problems discussed in this paper concern the reformulation of TOSR in equation (3). With base year 0 being the year in which the RTS assessment is determined, in any subsequent year n,

$$TOSR = \left[\sum_j t_j^0 B_j^n \right] \left[\frac{\left(\sum_j t_j^{*0} B_{rj}^0 \right)}{\left(\sum_j t_{rj}^0 B_{rj}^0 \right)} \right] \left[\frac{\left(\sum_j t_j^{*n} B_j^{*0} \right)}{\left(\sum_j t_j^{*0} B_j^{*0} \right)} \right] \quad (4)$$

where t_j^0 = actual tax rate in NWT for revenue j in base year 0

B_j^n = actual base in NWT for revenue j in year n

t_j^{*0} = national average (RTS) tax rate for revenue j in year 0

B_{rj}^0 = NWT bases included in RTS for revenue j in year 0

t_{rj}^0 = NWT rates for bases included in RTS for revenue j in year 0

t_j^{*n} = national average tax rate for revenue j in year n

B_j^{*0} = national average base for revenue j in year 0

The first bracketed term in equation (4) represents the revenues the NWT would receive as a result of applying its actual tax rate in the base period 0 to the actual base (for "matching" revenues) for the current year n. The second bracketed term in equation (4) represents the taxes that would have been collected in the NWT in base year 0 at national average tax rates (as calculated under the RTS approach) relative to the taxes that would have been collected in the base year at actual territorial tax rates. The base in the second bracket is not the actual NWT tax base (as in the first bracket), however, but rather the tax base redefined to be consistent with the RTS. The third bracketed term in equation (4) shows the revenues that would have been collected on the national average RTS base at national average tax rates in the current year n relative to the base year 0. In other words, this term represents the growth in national average tax rates. (Note that this is not the same as the "representative five-province standard" base used in the equalization formula set out in equation (2).) Finally, another term could be

added to equation (4) which would cover revenue bases which are not part of the RTS (the non-matching revenues) and therefore are not subject to the tax adjustment factors. These include, for example, EPF, CAP and interest revenues.

In the base year $n = 0$, the formula reduces to:

$$TOSR = \left[\sum_j t_j^0 B_j^0 \right] \left[\left(\sum_j t_j^{*0} B_{rj}^0 \right) / \left(\sum_j t_{rj}^0 B_{rj}^0 \right) \right] \quad (5)$$

In other words, the growth in national average tax rate factor is equal to one.

Looking at the base year 0, it is interesting to compare this formula for TOSR with what it would be if the equalization system applied to the NWT. Under equalization (from equation (2)),

$$TOSR = \sum_j t_j^{*0} B_{rj}^0 \quad (6)$$

In other words, under the proposed federal formula, the estimate of TOSR in year 0 is equal to what it would be under equalization multiplied by the ratio of actual NWT revenues (i.e., actual rates times actual base for RTS bases in year 0) to the revenues of the NWT calculated for the RTS base and territorial rates. If actual revenues were equal to revenues under the RTS, then the proposed formula in the base year would reduce to the equalization formula. In year n , however, this amount would be increased by the growth in the potential territorial tax base (in RTS terms) and the growth in national average tax rates.

The proposed formula thus penalizes the NWT to the extent that its "tax effort" as defined on the RTS system is lower than the national average. As noted earlier, no such penalty is applied to the provinces under federal-provincial equalization. In effect, the proposed formula introduces the RTS into the territories and adds a tax effort measure. Both aspects of this proposal may be questioned on many different grounds and at different levels, as seen in the next two sections.

First, however, several preliminary comments may be made at this point with respect to some of the specifics of the federal argument for making these changes in the territorial financing formula. First, this argument completely ignores differences in service levels and (especially) service costs between the NWT and the provinces: for example, the statement (Department of Finance (1989), p. 16) that the expenditure bases in the formula are "more than adequate" appears to have no basis other than the existence of a surplus in the last few years. There is certainly no reason to accept that the 1982/83 territorial expenditure level arbitrarily fixed in the present formula represents in any way an adequate, let alone a "more than adequate", level of expenditures in the NWT. Indeed, as already suggested, and as developed at more length in such recent studies as Foot and Slack (1989) and Dean (1989), there is good reason to think that the real expenditure levels required to achieve even roughly comparable levels of service provision in the NWT are higher than this.

Secondly, the assertions (1) that the NWT had a lower "tax effort" to start with and (2) that it recorded no increase in effort, in contrast to the

provinces, ignore the evidence that over the last decade territorial own-source revenues have grown twice as fast relative to GDP as provincial-local revenues as a whole (Slack, 1989). The inclusion of the relatively unimportant - and more slowly growing - local government sector does not alter this conclusion significantly. From 1977 to 1987, consolidated own-source territorial-local revenues more than doubled from 6.1 percent to 12.5 percent of GDP, while over the same period provincial-local own-source revenues rose by less than 10 percent, from 18.8 percent to 20.4 percent. All such statements are, of course, highly sensitive to the choice of period.¹⁰ As an example, the federal document focuses solely on the 1984/85 to 1988/89 period and claims that territorial-local own-source revenues fell from 13.1 percent of GDP to 10.2 percent over this period, while provincial-local revenues remained virtually constant (at around 21%). This finding seems a little curious since the available calendar year data for the 1984 to 1987 period shows in contrast that this ratio rose from 12.0 percent to 12.5 percent in the NWT, while falling very slightly for Canada as a whole. Something drastic must have happened in 1988: since it is clear there were no territorial tax cuts (and no substantial increases elsewhere), there would appear to have been a jump in estimated territorial GDP unmatched by a corresponding increase in taxes.

Thirdly, and more important than such statistical quibbling, numbers such as these simply cannot bear the weight of either this interpretation or that placed on them in the federal document. The (alleged) decrease in territorial "tax effort" - measured, interestingly enough, in terms of such macro indicators as own rates of growth and shares of GDP - cannot simply be assumed to be entirely attributable to the temptations to laxity afforded by the territorial financing formula. The relatively high dependence of NWT own-source revenues on such cyclically vulnerable levies as the corporate income tax and many other factors mean that changes in own-source revenues reflect a great many factors that are (1) in no sense within the control of governments in the NWT and that (2) may behave very differently in the NWT, given its quite different economic structure, than in the country as a whole. Another aspect of this same problem of volatility in many of the tax bases of the territories, especially the corporate income tax, is that revenue capacity can fluctuate considerably from year to year.

Fourthly, the "keep-up" factor in effect updates the "tax target" set for the NWT annually by the rate of growth in national average tax rates. Since national average tax rates are unlikely to decrease, what this means is that, where territorial tax rates (measured on the RTS basis) are below national rates, the NWT has to increase its "tax effort" (as understood in this proposal) more quickly than the national average simply to prevent its grant from declining. In other words, to maintain a constant absolute difference in tax rates, the jurisdiction starting from a lower base requires a greater percentage increase. This is of course an arithmetical truism. Nonetheless, it is important for two reasons. First, as shown in Section 6, any meaningful notion of comparing the "effort" of different jurisdictions has to consider rates of change as well as levels. And second, as shown in Section 5, any meaningful measure of tax capacity has to start with exactly the comparable and

10. The rate of increase in the NWT relative to Canada, for example, would be much less impressive if we compared 1978 with 1987 because there was a very large jump in the size of "own-source" revenues in 1978.

meaningful definitions of tax bases which the RTS approach (even as confusingly modified in the federal proposal) fails to provide in the case of the NWT.

Finally, not only does the proposed formula require greater effort from the NWT just to stay in the same place than is at first apparent, it also departs drastically from the Canadian norm by requiring an explicit measure of "effort" in the first place. As noted earlier in this section, the existing territorial formula in fact rewards increased "effort" a bit less than does the equalization formula. Moreover, it explicitly discourages reducing tax rates (on actual tax bases) below base year levels. In contrast, although equalization too in effect discourages recipient provinces from lowering rates (on the RTS bases), since the days of Rowell-Sirois it has always been explicitly accepted that these payments may, if the recipients so choose, be used to lower taxes. It is far from clear why the territories should be singled out in this way and in effect encouraged to expand the relative size of their public sectors. This point too is further developed in Section 6 below.

5. Measuring Fiscal Capacity

In principle, "fiscal capacity" measures the resources a taxing jurisdiction can tax to raise revenues. In contrast, "fiscal effort" measures the extent to which a government actually uses that capacity to raise revenues through taxation. The idea of measuring the relative fiscal capacity of jurisdictions has a long history (Prest, 1978; Stamp, 1922). In its modern use in Canada, it has come to play a central role in the determination of federal-provincial equalization payments. In contrast, using capacity measures as a basis for determining fiscal effort has long been consciously rejected in Canada. As argued in this and the next section, the recent appearance of this concept in the proposed revision to the territorial financing proposals not only raises questions in its own right, but calls into question the way in which fiscal capacity is measured for equalization purposes.

Two basic approaches to measuring fiscal capacity may be found in the literature. The first employs such economic indicators as income which reflect the ability of individuals to pay taxes as the basis of such a measure. The second instead focuses on measures of tax bases which reflect the resources available to governments to raise revenues. These measures are, of course, related because revenues raised by governments are ultimately paid by individuals but they may differ for many reasons, notably because of the possibility of tax exporting, as discussed below. In the end, however, fiscal capacity clearly rests on the capacity of people to contribute to government, which in turn depends on the level and distribution of income and wealth, the level and nature of business activity, the quantity and quality of public services, and many other things.

The Scope of the RTS Base

Even if "capacity" is taken to mean the potential ability of governments to raise revenue through taxation, as has been the case in Canada since the beginning of the equalization system, a number of important questions remain to be decided - and how one decides them may substantially affect the measured "capacity" of particular jurisdictions. A first question concerns the scope of the revenues to be taken into account in calculating the "potential" revenue base: taxes? natural resource revenues? fees and charges? borrowing? Different studies (e.g. ACIR 1962, 1971, 1982) have resolved this issue in different ways at different times, as has the Canadian equalization system (see section 3 above).

In principle, the base used for measuring capacity should presumably be as broad as possible, given the substitutability and interdependence of different ways of raising revenue. Presumably in part for this reason, there has over time been a steady expansion in the number of bases taken into account in the Canadian equalization system. Nonetheless, some major questions concerning the scope of the base would appear to remain open: for example, should borrowing be taken into account? This point seems particularly relevant in the present context because of the allusions in the federal document to the fact that the territories, so to speak, reap the benefits of provincial expenditure expansion which is in part financed by borrowing and in part attributable to debt service

charges incurred as a result of previous borrowing - and do so without having to pay the cost in the form of increased taxes.

This argument seems unduly one-sided, however. One can argue, for instance, that borrowing capacity is as real a component of total fiscal capacity as tax capacity. Moreover, as the efforts of bond rating services suggest, it seems about as easy to measure as some of the items already included in the equalization base (e.g. property tax base). And most importantly, unless some allowance is made for this factor, the "true" capacity of some units will be misstated. For example, a unit with less stable, more volatile revenue bases (like the NWT), which depends largely on the generosity of others for its continued fiscal survival, may have less borrowing capacity than other units with more stable and larger revenue sources and hence less capacity to finance its own expenditures than indicated by point estimates of (partial) fiscal capacity. Preliminary work in the United States on estimating "borrowing capacity" found that the inclusion of this factor in fiscal capacity measures made a significant difference in a number of instances (ACIR, 1971). Since provincial governments in Canada, unlike the U.S. states, can readily substitute borrowed funds for other revenues, this adjustment may well be even more important here. Of course, this whole matter needs much more careful examination, and it is by no means clear whether even the best, most comprehensive measure of "fiscal capacity" would much alter the apparent position of the NWT relative to the Canadian average. Nonetheless, what can be said is that the references in the federal document to the possible exclusion of debt service charges from the expenditure escalator give a deceptively oversimple and one-sided view of the matter. Moreover, since the validity of any "effort" measure turns in part on the validity of the "capacity" measure from which it is derived, it would seem incumbent to rethink carefully this and other aspects of the presently-accepted RTS capacity measures before putting still more weight on this fragile basis in the form of adjusting grants in accordance with fiscal effort.

Another question that may be raised about the scope of the base to be used in measuring fiscal capacity is simply that, as in the case of borrowing, excluding some items from the base may render the comparison of relative capacity in different jurisdictions suspect. The proposed revision of the formula financing basically suggests measuring fiscal capacity in the territories by using the RTS basis developed for equalization, but omitting the natural resource revenues to which the territorial governments do not have access. In the general equalization system, however, the RTS rates are applied even if the province does not use the tax base since otherwise capacity would be understated in jurisdictions that did not employ all bases. In fact, for only 20 of the 37 items included in equalization are bases to be found in all provinces, and for 12 of these items there is no basis in at least half the provinces. It is not clear why this procedure has not been followed in this case also. Instead, only a selected range of the 37 items included in the equalization base are to be taken into account in calculating the proposed tax effort adjustment. But what this does is in effect to treat each of the 37 items included in the RTS base as independent.

For example, it is assumed that the capacity to raise lottery revenues (to be included in the proposed formula) is independent of the capacity to raise revenues from race track taxes (excluded). The latter omission - like that of the more important natural resource revenues - may seem to make sense. There are no race tracks in the NWT, and the basis for calculating the equalization

entitlement is the amount wagered at tracks. However, there is good reason to expect the amount "potentially" available to governments from one form of state-sponsored gambling to be related to that from other forms. People who bet at race tracks may spend more (or less?) on lottery tickets than those who don't, but the two phenomena are most unlikely to be totally unrelated, and "capacity" (and effort) measures that look at only part of the picture are likely to be biased.

As already mentioned, the RTS approach is deficient in failing to recognize the interrelated nature of various tax bases. In effect, it assumes that different tax bases affect capacity in proportion to their revenue productivity. The real possibility that the capacity to tax a given base will be affected by the size of another base, as in the gambling case, is ignored. In reality, there are clearly trade-offs between different ways of raising revenues. In particular, since (as emphasized below) measured tax bases are not independent of tax rates, capacity (and effort) measures based on a subset of revenues are not independent of what is excluded. If the base of the equalization system is to be used for any purpose with respect to the NWT, it would seem sensible to use all of it, rather than only part of it.

Of course, there would be little point in doing so in a sense since we already know in advance that simply applying the equalization formula to the NWT will not produce the (apparently) desired result of yielding anything like "comparable" treatment of NWT residents. That is, the equalization formula does not "work" in the case of the NWT in the sense that it does not yield a large enough transfer. In a sense, the essence of the federal argument for introducing some part of the RTS approach in a revised territorial financing formula seems to be to use this well-known fact to reduce the size of the transfer. There would seem to be much simpler ways to achieve this goal, however, than by introducing the complexities of the RTS approach into a situation where it is neither appropriate, needed, nor desirable.¹¹

Weighting RTS Bases

Another important question that arises with respect to defining an RTS base is how to calculate a "representative" system, that is, how to weight the bases included. As noted earlier, the approach used in Canada essentially calculates arithmetically the average effective tax rate for each base of those provinces actually imposing the tax. Two alternative approaches that might be followed are to apply an ideal or hypothetical tax structure (as was essentially done in Canada's first stab at equalization in 1957) or to determine the appropriate tax rate by regressing revenues on some measures of potential tax bases. That there are problems with each of these alternatives is well known. Each of them also has advantages over the method employed in Canada, however, and it is worth setting these out briefly to emphasize some of

11. Perhaps, however, the rationale is similar to that cited by Break (1980, p. 152) with respect to U.S. revenue sharing: "...the most important feature of the distribution formula for revenue sharing may be its complexity. That widens its political appeal, frustrates attempts by individual recipient jurisdictions to improve their own entitlement qualification, and impedes the development of systematic reactions designed to take advantage of its loopholes."

the defects and limitations of the RTS method of measuring capacity (and effort).

In the first place, it is important to understand that in principle the underlying measure of "capacity" is the same in both the arithmetical (hereafter called the RTS) approach and in the statistical (regression) approach (Bahl, 1972). In both cases, for example, the choice of tax mix in a particular jurisdiction may affect measured capacity if there is any tax substitutability and in both cases the "capacity" measures in fact mix up "capacity" and "effort". The latter point deserves special stress: as Bolnick (1978) demonstrates conclusively, it is simply not possible to separate capacity and effort meaningfully in these exercises. The measures derived are always hybrids of differences in performance relative to desires and differences in desires and are only strictly meaningful as "capacity" measures if the latter differences are assumed to be non-existent. This assumption may not be too bad in the case of the southern provinces, where expenditure and revenue patterns are surprisingly similar: it is, as suggested in Section 3, much more suspect when extended to the very different circumstances of the NWT.

Despite sharing this common defect, the regression approach has at least two significant advantages over the RTS approach. The first is that this is the only way the interdependence effect alluded to earlier can be taken into account: the very "partial" RTS approach completely neglects both the interdependence of bases and that of bases and rates. The second, which goes more to the cutting edge of the concern with tax effort, is that what the RTS approach in effect does is to derive average measures and then use them to derive marginal conclusions about the added revenues that would result from changes (Akin, 1973). Of course, the results of this exercise are strictly meaningful only when the base in the jurisdiction under consideration is itself average. Again, the regression approach is clearly conceptually superior in this respect.

These relative virtues are generally admitted in the literature but seem to be dismissed in Canada in part because of a mistaken belief that the regression approach involves recourse to the dread "macro" indicators, thus sliding over the line into measuring tax "burden" rather than tax "effort" (see Section 6). This is a mistaken view, although it is almost certainly true that such indicators as, say, the level of business activity would play a larger role and some of the more detailed "bases" incorporated in the present RTS approach a smaller role. In this connection, it deserves underlining that the "bases" measured in the present approach are for the most part not in fact the real tax bases used in any jurisdiction, let alone an average of such tax bases. As the original paper by Lynn (1968) correctly said, what they are is rather an increasingly elaborate set of proxy indicators measuring some hypothetical conception of what an "average" tax base would look like if such a thing could be worked out. Comparing the results of this approach and a regression approach is thus not a question of comparing some "real" measure of tax capacity with some statistical abstraction but rather a comparison between two sets of proxy bases - which in principle could even be the same - and different methods of weighting the taxes applied to each. Since in both instances the bases will be partly "hypothetical", and the "capacity-effort" knot impossible to disentangle, legitimate questions as to the meaningfulness of the results can be raised. The regression method, however, has the two not inconsiderable advantages set out above. Its major apparent disadvantage is that few politicians understand statistics, and most think they understand tax

rates: but since no one can understand the present RTS system, this disadvantage should perhaps not carry as much weight as it seems to do.

As mentioned above, there are also substantial virtues in using "hypothetical" rather than actual average tax rates in deriving capacity measures. Again, these virtues are two in number (Tait and Eichengreen, 1978). First, such weights are obviously much less sensitive to changes in the mix of revenues: given the selection bias in the present RTS and especially the reduced form version applied to the territories, this point is perhaps of some interest. More importantly, however, in principle it is simpler to derive meaningful intertemporal comparisons on this basis - and, as noted in the next section, in a real sense what all this discussion is about is intertemporal comparisons. As Bird (1978) argues, perhaps the most meaningful way to measure the fiscal "effort" of any government is to separate the "automatic" and "discretionary" components of revenue increases - that is, to distinguish between those increases which come about from its good fortune (in having a particular tax mix, in lucking into a commodity boom, or whatever) and those attributable to its actually doing something.¹² The "hypothetical" weighting system in effect makes this sort of calculation easier.

Lest this point be considered unduly esoteric and academic, note what the RTS approach implicitly does with respect to the dynamic aspects of taxation. In effect, it assumes that the elasticity of revenues with respect to changes in either (measured) bases or rates is both constant across all jurisdictions and equal to unity (Morgan, 1974). This is clearly incorrect and may introduce substantial biases into capacity and revenue estimates over time. It would seem better to tackle these problems systematically, even if inevitably imperfectly, rather than letting the arithmetic do the thinking, which is what is really going on with the RTS approach.

Other Problems

The RTS approach employed in Canada defines the relative taxable capacities of provinces as the amount of revenue they could raise if they all used the same tax system, one which represents the average of currently employed tax structures. The method is broadly as follows: (i) identify the revenue sources in use by provinces, (ii) for each tax, estimate the tax base (uniformly defined) in all provinces, including those that do not use the tax, and (iii) fix the rate of each tax at a level which, when applied to the estimated tax "base" of a particular tax, produces an amount of revenue in aggregate which equals the total collections of this type of tax in all provinces. Apart from all the other caveats and problems already mentioned, this use of the average as a "representative" yardstick by which to judge the NWT is especially problematical where budgets differ as a result of inherent economic differences, as they do in the case of the NWT.

Grants based on the RTS approach are supposedly payments to governments based on their capacity to raise revenues from their own taxpayers, when such governments are in need of assistance to enable them to provide reasonable standards of public service without having to impose unduly high tax burdens

12. A similar distinction between "political choice" and "economic growth" is made in ACIR (1977).

when compared to other governments having the same expenditure responsibilities and revenue-raising capacities. The constitutional requirement for "equalization" among the provinces is probably adequately satisfied by this procedure, whatever its conceptual imperfections. But the extension of this approach to the territories seems much more suspect. Both expenditure needs and revenue capacities need to be differently defined in the very different circumstances of the NWT for reasons set out elsewhere. It is impossible to avoid the use of many approximations and much judgement in the use of such formulas and, as suggested earlier, there seems little reason to torture the already tortured RTS base still more simply to produce a slightly different grant entitlement for the NWT.

As also noted earlier, the RTS approach to the measurement of fiscal capacity also fails to account for the ability of recipient jurisdictions to influence the grant by manipulating the size of the tax base and the measure of capacity. As Courchene (1984) and others have noted, there is thus an incentive for provinces to levy taxes on revenue sources for which they have fiscal deficiencies rather than for sources in which they have fiscal excesses. Although this problem occurs under both the present formula and under the proposed federal revision, it is worse under the proposed formula.

In the new formula proposed for the territories, a volume change will affect the size of the grant in an undesirable way. In the case where the effort of the territories is less than the provincial average, a volume increase in territorial revenues would lead to a reduction both in the grant and in territorial revenues. A similar problem arises under equalization, of course, where if a province's own tax rate is considerably lower than the national average tax rate, it can actually suffer a decrease in total revenues as a result of an increase in one of its tax bases. In other words, the equalization loss more than offsets the own-revenue gain. The proposed inclusion of an "effort" element in the territorial formula in effect exacerbates this problem.

Moreover, the size of the tax base is not independent of the choice of tax rate. For example, differential property tax rates may be capitalized into property values. Under the RTS, the revenue that each jurisdiction would derive if it applied the national average rate is estimated. If a jurisdiction actually did apply those rates, however, the measured base would be different than it is. Thus, the RTS approach introduces a systematic bias into the measure of capacity: it understates the tax capacity for jurisdictions with above-average rates and overstates it for below-average rate jurisdictions. This point is potentially of particular importance in the NWT, given that the highly mobile non-native population accounts for the bulk of its potential tax base.

Using the RTS approach to measure fiscal capacity also fails to take into account the effects of differences in prices on the revenue side. Because prices are higher in the NWT, it is necessary to earn a higher income to attain a comparable standard of living, thus artificially increasing the tax base. Higher prices lead to larger bases (for those taxes expressed in dollar figures). To obtain a comparable level of taxation, it is necessary to deflate the base by the price differential, that is the ratio of the cost-of-living in the territories relative to the cost-of-living in the rest of Canada. The relevant "capacity" base (in real dollars) in the NWT of both income and sales

taxes, for example, is clearly smaller than the actual base (in nominal dollars).

6. Measuring Fiscal Effort

The concept of "fiscal effort" has many dimensions and many interpretations. It has, for example, a temporal dimension: how does a particular government's "effort" this year compare to its effort in past years? It also has a spatial dimension: how does its effort this year compare to that of other jurisdictions this year? Both dimensions may of course be combined: how does this jurisdiction's effort over time compare with that of other jurisdictions? As a rule, however, "effort" is measured by comparison with other governments, neglecting the temporal dimension - even though, as the federal critique of territorial tax effort indicates, it is often the temporal dimension that appears to lie at the root of the desire to measure effort. The proposed tax effort measure in a sense includes both temporal and spatial aspects, although in neither instance does it do so very logically or systematically. Requiring equal rates of increase in tax rates over time, for instance, is unlikely to be either efficient or equitable: it all depends on where one starts.

Interjurisdictional comparisons are defective as a basis for measuring effort in a number of ways. For example, if (as is usual) effort is measured as t_i/t_s , the assumption is that if B_i were taxed at t_s instead of t_i , B_i would not change - an assumption which is of course wrong if taxes affect decision margins in any significant way. Another underlying assumption is that the "effort" involved in increasing t_i is independent of the level of B_i , which is also wrong.

In the RTS approach, fiscal effort is defined as the extent to which a province makes use of its fiscal capacity. It is assumed that, if two provinces have the same capacity and taxes are higher in one than the other, then the province with the higher taxes has made a greater tax effort. In comparing tax effort across provinces and territories, a unit's actual tax collections are compared with what it might collect if it applied the national average tax rate to its tax base. In mathematical terms, the difference in fiscal effort for any particular tax equals:

$$(t^* - t^i)B^i$$

where: t^* = standard (or national average) tax rate

t^i = tax rate in province i

B^i = base in province i

These differences are then summed over revenue categories.

Under the general equalization system, the grant received by any province varies with the collective tax effort of all provinces selected as the criterion (e.g. all provinces in the case where the national average is the standard). Although fiscal effort is not explicitly included in this system, as mentioned earlier a recipient province can indirectly affect its grant by altering its fiscal effort. If any province increases its tax effort, the collective revenues from that particular source increase and equalization payments to all recipients increase. A recipient province thus gains when it raises its rates both by the additional revenue received and by an increase in

equalization payments. With the exception of this impact of fiscal effort on the grant, however, which would generally be expected to be trivial, changes in fiscal effort do not affect the grant under the RTS approach. Even for recipient provinces, there is very little incentive in the equalization system to tax more than the national average - and, more importantly, no penalty for taxing less than the standard.

Incorporating Effort in Grant Formulas

Fiscal effort could be incorporated into the equalization formula simply by multiplying the overall equalization payments (as calculated in the formula) by some measure of provincial tax effort. This measure or index could be, for example, the ratio of province i's percentage share of actual revenues of all provinces (from revenue sources to be equalized) relative to province i's percentage share of the actual tax base of all provinces. This provides an estimate of the tax effort of province i relative to the national average tax effort.

Alternatively, a province's actual tax rate t^i could be substituted for the standard tax rate t^* as follows:

$$GR_i = t^i(B^* - B^i) \quad (7)$$

In this case, only provinces with deficient bases would receive equalization grants and the magnitude of the grant would vary directly with its own fiscal effort.

The purpose of equalization is to allow provinces to provide a "comparable" level of services at "comparable" tax rates. As has long been recognized in Canada, introducing tax effort into the formula is fundamentally inconsistent with this objective precisely because it provides an incentive to recipient provinces - poor, by definition, in "capacity" terms - to levy higher rates of tax. Under the federal-provincial RTS formula, as noted above, the grant is not directly affected by the tax effort of the recipient province. In particular, a recipient province is not penalized for a low tax effort. In the federal proposal for the territories, however, the territories would be penalized for a low tax effort. A province is not penalized for a low tax effort under federal-provincial equalization but the NWT would be under the federal proposal for Formula Financing. The rationale for this distinctly unfavorable treatment is far from clear.

In short, the objectives of equalizing fiscal capacity on the one hand, and equalizing fiscal effort on the other are different and may be conflicting. Grants to equalize fiscal capacity are unconditional and provide a comparable starting point for provinces to finance public services. Grants to equalize fiscal effort are more concerned with rewarding those provinces that choose to spend more on public services. In effect, they are conditional (with respect to receipt though not with respect to use) in the sense that the grant increases with tax effort.

The main rationale for including an effort measure in a grant formula is usually that the grant to any jurisdiction should only increase if it is prepared to increase its own tax rates. The greater the effort put forward, the greater the federal grant. Thus, putting fiscal effort into the formula

provides an incentive for poor governments to increase tax rates. Why the poor recipients of grants should be the only ones to receive such a stimulus is not clear.

Specifically, under a fiscal effort formula such as that set out above in equation (8) , a province would not receive equalization payments on taxes it does not levy. Since the actual rate of tax (t^1) is used in the formula rather than the standard rate (t^*) as in equation (7), if there is no tax effort for a particular tax, then the grant that would apply to that tax would be zero. In contrast, under the RTS approach (based as it is on the national average tax rate, even for bases with respect to which there is no fiscal effort, a unit will receive a grant if its base is less than the average (or, in the current formula, the average of the "representative" five provinces).

Another possible advantage of a fiscal effort formula is to take indirectly into account differences in expenditure needs across provinces. To the extent that differences in tax effort reflect differences in needs and costs (though not tastes), a formula based on effort will presumably provide larger grants for those with greater needs and costs. This consideration does not seem particularly relevant in the case of the NWT formula, however, since an attempt is made to include expenditure needs directly into the formula. In any case, as noted earlier, distinguishing "needs" from "tastes" is clearly impossible in the RTS approach to measuring capacity and effort.

Another general problem with effort measures is that high-capacity areas tend to be in a better position to show relatively higher effort. Grants based on fiscal capacity - like equalization - are designed to go to low-capacity areas. Grants based on fiscal effort - like the proposed territorial financing formula - are more likely to reward high-capacity areas that choose to spend more on public services. As Manvel (1971) has noted, it is impossible to get around this problem of the "contamination" of effort measures, except by either a separate system of transfers to low capacity states or more generous treatment of given effort levels by such states. It was suggested earlier that the straightforward way to deal with this problem in the NWT would be to recognize that it is a low capacity unit by any realistic measure and therefore to ignore the effort element in designing the territorial formula. Another approach is to recognize explicitly the impact of capacity on effort by altering the measure of effort.

Adjusted Measures of Effort

In general, if the system of taxation is progressive and if the measure of tax effort is assumed to be proportional, as in the proposed federal formula, the resulting measure favours high-income provinces. In a high-income province under a progressive tax system, taxes relative to income would generally be expected to be higher than in a low-income province. The tax effort of high-income areas will then exceed that of low-income areas and a grant based on fiscal effort would thus reward high-income areas, a result which seems to make little sense.

Moreover, in the case of the NWT, another problem results from cost-of-living differences. The combination of progressive rates with a higher cost of living means that the true effective tax rate is much higher in the NWT than the simple ratio of taxes to income would suggest. Thus, to determine an

appropriate measure of tax effort, it is obviously necessary to adjust the tax base for cost-of-living differentials and to adjust taxes to reflect progressivity.

Ideally, a measure of fiscal effort which introduces some element of progressivity into the formula and which takes account of cost-of-living differences therefore seems needed if such measures are to be employed at all. In most effort formulas, for example, it is assumed in effect that taxes relative to income (T/Y) increase by the same amount for equal increases in per capita income for all levels of income. Under the assumption of progressivity, one formulation (Aaron, 1965) might be $e = t/y^x$, where e = the index of effort, t = taxes per capita, y = income per capita and x = a "progressivity parameter". The latter is in effect assumed to be 1 in the proposed measure: that is, two jurisdictions will have the same effort, as measured by this index, only if t/y is the same in both. If it is (plausibly) believed that it is easier to raise an additional 1 percent in taxation in a rich than in a poor area, an alternative value could be chosen for x such as the value of 1.5 suggested in Bird (1978).¹³ Even with such an adjustment, however, if the above formulation were to be used to measure tax effort, it would still be necessary to adjust the tax base by the cost-of-living differential (the ratio of the cost of living in the territories relative to the cost of living in the rest of Canada).

To deal with this problem, tax bases denominated in dollars (e.g. sales and income taxes) could be deflated by a relative price index. Alternatively, it may be easier in some instances (e.g. property taxes) to recompute the base in terms of national average values - as is in effect now done in a sense for northern taxpayers under the income tax. To illustrate further in the case of the sales tax, the apparent value of the sales tax base in the NWT is exaggerated because pretax prices are much higher than in Canada as a whole. The result is that a lower than average (even zero?) tax rate might still represent an effort equal to the average, whereas the usual effort formula would require a considerably higher than average effort in real terms in order to equalize efforts in nominal terms.

Assuming that the progressivity in the federal personal and corporate income tax system is the standard and, for the moment, assuming that the base of these taxes is measured correctly (in particular, with respect to cost of living differences), then the tax effort with respect to the NWT for these federal taxes relative to the tax effort with respect to the rest of Canada would give an indication of the impact of progressivity on tax effort in the NWT as compared to the rest of Canada. This factor (actually 1/factor) when multiplied by the tax effort for the NWT on territorial taxes, would result in a measure of tax effort that is adjusted for the effect of the progressivity of the tax system. However, in order to do this correctly, it would be necessary to adjust the federal tax effort in the NWT for differences in the cost of living.

13. Note that we are discussing the proper formulation of "effort" measures, that is, indexes that attempt to evaluate the efforts one government makes to raise taxes relative to the efforts made by other governments, not the much trickier question of measuring the real "burden" of local taxes on local populations.

Effort, Economic Structure, and Tax Burden

Moreover, inclusion of tax effort in a grant formula only makes sense where the units compared have roughly the same revenue sources. As Clark (1969) recognized in the early days of the equalization system, it is simply not practical to estimate tax effort for a tax source in which some provinces have no base - or, indeed, where they have such a very small base that the formula is unduly susceptible to manipulation. For example, it would make little sense to apply tax effort measures to oil and gas revenues. What do effort measures related to a "representative" tax base mean when only one or two jurisdictions have access to a particular revenue source? As this point suggests, tax effort measures based on the RTS system do not take into account underlying differences in the economic structure of the provinces. Even when an alternative (behavioral) approach is taken to the measurement of tax capacity and tax effort, as in many international studies of tax effort, a high tax effort does not necessarily mean that taxes are too high; similarly, a low tax effort does not necessarily mean that there is a need for tax increases.

The allocation of resources between public and private goods varies across provinces with the stage of economic development and the rate of growth. To encourage development, for example, a province or territory may choose to allocate a smaller share of its resources to the public sector. Does this mean that, in complete contradiction to the principles laid down in Rowell-Sirois and since adhered to rigorously in the equalization program, it should be penalized by receiving a smaller grant? To put this point another way, does the federal government really intend to encourage the expansion of the public sector in the NWT (relative to the rest of the country), for this is what in effect the introduction of an "effort" component in the grant formula implies? Reducing the marginal cost of public sector expansion in this way would seem to subsidize inefficiency and thus have precisely the opposite result to that apparently intended by the introduction of the tax effort element in the grant formula.

Tax effort as measured in all these exercises is of course not equivalent to tax burden, in part because of the existence of tax exporting. Indeed, fiscal capacity, and hence tax "effort", is really a function in part of ability to export taxes. Some provinces are able to shift the burden of business taxes to residents of other provinces. Tax effort calculations do not distinguish between resident and non-resident taxes. A high tax effort index does not necessarily mean a high tax burden on local residents if the taxes are shifted outside the jurisdiction. Given that the proposed formula is clearly concerned with (supposedly) equalizing governmental effort, not taxpayer burden, this point might appear irrelevant. In fact, however, it is relevant, unless one is prepared to assume, most improbably, that the territories (to which the tax effort factor is to be applied) are in exactly the same position as the provinces (to which such a factor is not applied) with respect to their ability to tax nonresidents.

More fundamentally, most estimates of tax effort assume that tax effort is the same wherever tax yield is proportional to the tax base. However, this is not likely to hold over a broad range of incomes. Thus, there is a need to design a formula which compares the collective efforts of provinces with different average incomes (Clark, 1969): a suggestion was made above along these lines. Moreover, the distribution of income needs to be considered.

Consider two provinces in which the per capita income and average per capita tax collections are the same. These two provinces may be said to have the same fiscal effort. However, the tax burden imposed on particular groups of individuals in similar circumstances may be very different because income is differently distributed in the two provinces. One province may have an even distribution while the other (like the NWT) may have clusters at either end of the distribution. Tax burden is obviously different if the taxes are collected from the top 10 percent of the income distribution as compared to being collected proportionately from all income groups. What may not be so obvious, however, is that the governmental "effort" required to collect taxes may also be quite different in the two cases. Suppose, for example, that all the high income accrued to a group with no political influence (e.g. temporary residents): the "capacity" to bear taxes of such group would clearly be very different that if the same income were evenly distributed among voters.

To sum up much of the argument in this section, Bennett (1980) has argued that including "tax effort" components in grant formulas is problematical for a number of reasons:

- * Effort measures generally ignore differences in preferences, in costs, in the quality and pattern of service levels, and in the balance of current and borrowed revenues.
- * Such measures are biased against poor areas especially because they reward high effort that results from a high preference for public goods; they also of course in effect subsidize such preferences.
- * As a rule, such measures make no allowance for the fact that regions at different levels of development may have different efforts as a result of different expenditure needs (e.g. for new infrastructure) as well as a different mix of revenue sources with different productivity and elasticity.
- * Nor is any account taken of differences in the distribution of tax capacity and burdens between people, places, and firms or of the relation of tax burden (on people) to tax effort (by governments). It may make sense to measure capacity for certain purposes in RTS terms, but this argument cannot be extended to legitimate the use of the RTS approach to measure effort.

As argued in this paper, all these points and more besides appear to apply in the case of the proposed application of an effort test in the territorial financing formula. Introducing an RTS based measure of "fiscal effort" into the general equalization formula would both make little sense and completely contradict the basic "unconditionality" of that formula. Doing the same in the territorial financing formula makes even less sense and seems equally contradictory to its basic rationale.

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