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PROVINCIAL-MUNICIPAL FISCAL EQUALIZATION AND REVENUE SHARING*

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I. Introduction

The theory of intergovernmental fiscal relations is a well defined branch of public finance which traditionally has emphasized problems in a federal system between the central and lower level governments. In Canada the theory has been used to explain, justify and develop a complicated system of conditional and unconditional grants from the federal to the provincial governments. (On the theory of grants see Scott, 1964; Graham, 1964; Clark, 1969; Boadway, 1980 and Economic Council of Canada 1982.)

More recently public finance theorists have addressed problems in provincial-municipal fiscal relations. (See Nova Scotia Royal Commission, 1974; Johnson, 1969; Young, 1977; MacMillan, 1981; and Auld, 1981.) Municipal governments historically have financed local expenditures with property taxes. Slow growth in tax revenues coupled with rising expenditures and public belief in the regressiveness of property taxes have led to complaints that local governments have inadequate revenue sources to meet rising expenditure commitments. At the same time differences in rural-urban growth rates and household migration from the cities to the suburbs have caused wide discrepancies among municipalities in tax bases and in tax rates necessary to finance a given standard of service. Lastly, provincial governments have begun to take interest in the provincial implications of local expenditures, particularly on education. As a result of these events municipal reliance on property tax revenues as a percent of gross revenues in Canada has fallen from 36.3 percent in 1971 to 30.2 percent in 1980, while provincial government transfers and grants paid in lieu of taxes have risen from 46.2 percent of municipal revenues in 1971 to 48.2 percent in 1982. (Provincial Finances, 1981, p. 68). Provincial governments now employ a broad range of fiscal instruments to transfer funds to their municipalities, e.g., revenue sharing, conditional grants, foundation grants for education, tax incentive grants, revenue guarantees, and equalization grants.

The aim of this paper is to examine provincial-local equalization grants and revenue sharing, and to relate these policies to the theory of intergovernmental finance. Section II describes the key characteristics of provincial-local finance in Canada. Section III develops the theory and policy implications of intergovernmental fiscal relations in terms of provincial-local finance. Section V discusses the equalization payments and revenue sharing schemes currently in operation

at the provincial-municipal level in Canada. Section VI concludes the paper.

II. Characteristics of Provincial-Municipal Fiscal Relations in Canada

We believe the following are key characteristics of provincial-municipal fiscal relations (PMFR) in Canada, selected on the basis of their difference from federal-provincial fiscal relations. Due to these differences, the problems in inter-governmental finance may not be the same so that policies that work well at one level may fail at another. This list will be employed in Section III to develop a theory of PMFR in a Canadian Context.

1. Local governments in Canada are creatures of their respective provincial governments; that is, each provincial government must determine the expenditure responsibilities and revenue sources given to its municipalities. This differs from provincial governments in Canada whose means and needs are outlined in the Constitution. As a result provincial governments in some sense are more responsible for financing problems that arise at the local level than the federal government is for the provinces. Also, financial problems at the local level may be more easily solved since municipal powers are not laid down in the Constitution.

2. The term "local government" encompasses a wide variety of government types in terms of area size, population, population density, financial powers and expenditure responsibilities. For example, the Canada Year Book 1980-1 (1981, p. 107) organizes local government into three types; 142 regional municipalities (in Quebec, Ontario, and B.C.); the 4090 unitary municipalities (mostly in Quebec, Ontario and Saskatchewan and varying from 37 in P.E.I. to 1502 in Quebec); and 508 quasi-municipalities (mostly in Newfoundland and British Columbia with none in the Maritime Provinces). The largest group, the unitary municipalities, consists of 185 cities, 824 towns, 1087 villages and 1994 rural municipalities. The large number and variety of local units may complicate PMFR in comparison to federal-provincial finance.

3. Factor mobility between municipalities within a province is probably much higher than between provinces due to lower travel costs, better information, etc. This means that differences in tax and expenditure packages between local governments may induce more migration than equivalent differences between provincial governments. Problems of tax harmonization, tax competition, overlapping taxes and tax exporting also may be stronger at the municipal level. On the other hand, less costly mobility may ensure a distribution of local govoernment tax-expenditure policies more aligned with community tastes and incomes than at the provincial level.

4. The range of expenditure powers delegated by provincial governments to their municipalities varies greatly. In general, local governments in Canada are responsible for "protection, transportation, environmental health and education...(and) may also operate such facilities as public transit and the supply of electricity and gas". (Canada Year Book 1980-1, 1981, p. 91). Education is usually administered and financed separately by school boards although some provinces (Quebec and New Brunswick) have assumed full responsibility for financing. The types of goods provided by municipal governments are generally referred to as local public goods which may or may not be congestable or pollutable (Hochman, 1982). Problems of benefit and tax spillovers and of fiscal externalities between municipalities may therefore complicate efficient provision of these public goods.

5. Municipal governments rely to a greater extent on intergovernmental grants as a revenue source than do provincial governments. In 1980 49.5 percent of local government revenues came from federal and provincial transfers and grants in lieu of taxes compared to 20.8 percent of provincial revenues received from the federal government. (Provincial Finances 1982, pp. 62, 28). This greater reliance on revenues from upper levels of government implies more interdependence and vulnerability and less autonomy at the local level. Also municipal governments rely on grants almost entirely from provincial governments. In 1980 only 1.3 percent of local revenues were received from the federal level while 48.2 percent came from the provincial level.

6. Local governments, to a large extent, exist at the pleasure of Provincial Legislature and consequently, specific purpose or conditional grants are a much larger percentage of total intergovernmental grants at the local compared to the provincial level (90.5 percent compared to 69.4 percent (Provincial Financess 1982, pp. 62, 68)). As a result local expenditures are likely to reflect strongly provincial priorities, leading to demands on the part of local government politicians for more autonomy.

7. Municipal government tax revenues are highly concentrated from one source based tax - the property tax. Provincial governments, on the other hand, have access to all direct taxes, and in addition, sales taxes. Heavy reliance on one tax base implies greater vulnerability and volatility since changes in the base translate into large changes in total tax revenues. This is particularly true where growth rates differ (e.g., cities versus rural areas). And if the base grows slowly, tax revenues also grow slowly. At the same time, since the tax is source based, the extent of nonresident land ownership and the fraction of local products sold to nonresidents affects the ability of the local government to export its taxes. The next major source of local tax revenue, user charges, has grown in importance as the property tax has declined. Since more provincial governments impose restrictions on local public debt, municipal borrowing is not a major source of funds.

In summary, local governments are creatures of provincial governments. This makes problems in PMFR more tractable; however, the wide variety and number of local governments offsets this. High factor mobility between local jurisdictions increases problems of tax competition, exporting and harmonization but it may allow more efficient groupings of households and public goods - tax packages. Problems of benefit and tax spillovers can occur when local governments provide local public goods financed by property taxes, while reliance for the remainder of their revenues on conditional grants reduces local autonomy.

In Section III we outline the theory of intergovernmental fiscal relations using the characteristics of PMFR to develop a theory of provincial-municipal finance in Canada.

III. The Theory of Provincial-Local Fiscal Relations

A. The Efficient Division of Expenditure Responsibilities & Taxation Rights

Economic efficiency in a federal system implies that, since most public goods have a spatial dimension, the optimal jurisdiction for a public good should be determined by the range of benefits it provides (Oates, 1972, Ch. 2). Within each benefit area the public good should be provided at minimum cost in such a manner that the summed marginal rates of substitution between the public good and a private good equal the marginal rate of transformation between them. Efficiency also implies that those households who receive benefits from public goods should pay for them. Musgrave (1971, p. 4) calls this the principle of reciprocity. As a result, the optimal assignment of taxes should also be determined by the spatial incidence of the public goods provided in each jurisdiction.

A more recent, and slightly different, interpretation of the efficient assignment of expenditure powers and tax sources is found in Breton and Scott (1978). Their model of a cost minimizing constitutional assembly would allocate expenditure and revenue functions so as to minimize resource costs spent on signalling, mobility, administration and co-ordination. However, they assert "that every government should be self-sufficient in taxes it collects itself is not a necessary condition for the choice of an assignment table". (1978, p. 143) Since the efficient allocation of expenditures and revenues can generate a mismatch of means and needs they contend intergovernmental grants are necessary for balancing purposes. Therefore, while Musgrave would argue that reciprocity is necessary for efficient fiscal federalism; Breton and Scott would argue that reciprocity is not necessarily cost minimizing.

In the real world, of course, expenditure and revenues are not efficiently allocated. The major sources of inefficiency that cause problems in the provincial-local finance are the following:

1. The first problem arises from the spatial nature of public good benefits. To the extent that benefit spillovers occur between jurisditions, underprovision of the public good may occur. Conditional open-ended matching grants (at a rate equal to the spillover rate) can be used to induce an efficient provision. Alternatively, the function in question can be shifted to a higher level of government. (See Oates, 1972, ch. 3). Of the ten billion dollars in specific purpose transfers from provincial to local governments in 1980, fully 66 percent were granted for education with another 11.8 percent for health and 7.6 percent for transportation and communications. (Provincial and Municipal Finances 1981, p. 181). This may imply that provincial governments believe there are significant positive spillovers in these functions. The high percent of total grants to the municipalities (90.5 percent) given in the form of specific purpose grants is, however, difficult to justify.

An alternative method to handle benefit spillovers is to increase the size of the jurisdiction. A larger area may permit economies of scale in provision of services or in collective decision making and also internalize benefit or tax spillovers. Since local governments are creatures of their provincial governments this is more easily accomplished than between the provincial-federal levels. Regional groupings of local governments have, however, been criticized by Sharpe (1981) on the grounds that functional efficiency is at the cost of the local democracy. This view has been challenged by the Nova Scotia Royal Commission (1974) which argued that general services, those with province-wide benefits, should, on the other hand, be locally provided and financed from real property taxes.

2. A second problem associated with the allocation of functions arises when the provincial government wishes to ensure a uniform provision of certain public goods, e.g., education. It may either wish to encourage consumption of a particular good or to ensure a minimum standard of service. In either case the provincial government substitutes its preferences for local preferences on the grounds that the good has provincial merit. To ensure a minimum standard, the provincial government shosusld completely finance the service up to the standard level, leaving it to local governments to raise the level if desired. Or if the goal is to reduce the cost, a matching grant should be used. (See Musgrave, 1971; Nova Scotia Royal Commission, 1974, Ch. 24.)

3. A third problem may arise from a spillover of the tax burden. To the extent that residents can export their taxes to non-residents an incentive to overprovide the public good may arise. To avoid this, one could allocate only those tax powers which minimize the possibility of tax exporting (e.g., residence based taxes) to local jurisdictions, or use unconditional grants to equalize net tax burdens between

municipalities. How serious is this problem at the local level? The major source of taxation is the property tax and if non-residents own land or if firms export products (or hire factors outside their jurisdiction), the possibility of tax exporting arises. Thirsk (1982, p. 399) argues that the municipal tax on commercial and industrial perperty should be replaced or moved to a provincial level since "local taxes should rest on local residents". Boadway and Kitchen (1980, p. 177) argue for uniform tax rates on residential and commercial property. The Nova Scotia Royal Commission recommended that local governments tax only residential real property, all other property being taxed at the provincial level (1974, ch. 29).

4. A fourth difficulty arises if there is a lack of tax harmonization at the local level. If labour and capital are mobile, and differences in tax bases and rates exist between municipalities, tax overlapping and differences in tax rates may induce inefficient household migration between localities. Local governments may also compete to encourage immigration. Tax harmonization of bases and rates, removal of the tax power to the provincial government, tax credits against provincial tax burdens, or equalization payments are possible solutions to this problem. (See Herber, 1979, Ch. 18; Thirsk, 1980; and the Economic Council of Canada, 1982, Ch. 9).

B. The Fiscal Balance Between Provincial and Local Governments

Within a federal system, vertical fiscal balance requires that each level of government has "...the financial resources necessary for it to carry out its constitutional responsibilities". (Mathews, 1978, p. 171) Imbalance may be due to inelastic revenue sources, increases in expenditue responsibilities (without corresponding tax changes) or a combination of both.(1)

The problem of vertical fiscal imbalance at the provincial-local level in Canada has been documented by Auld (1977, 1981) and Johnson (1969) and in the United States by Moak (1977). The widening gap between revenues and expenditures can be explained by the inelasticity of the property tax, the reluctance of local officials to raise property tax rates which are highly visible, unpopular and considered regressive, and the constraints on local debt imposed by many provinces. As local government reliance on own source revenue fell from 86 to 61 percent between 1955 and 1980, a higher and higher percent of local expenditures were financed from provincial grants which were almost entirely specific-purpose grants.

If it were argued that the bulk of the increase in local spending was associated with public goods with significant spillover or provincial merit good characteristics, this increased reliance by local governments on specific-purpose grants could be justified. To our knowledge, this argument has not been made by provincial governments. Rather, conditional grants have been employed in most instances in place of either a general re-alignment of expenditure and revenue responsibilities or an unconditional grant scheme that would provide some certainty to local governments and exhibit eleasticity with respect to nominal changes in cost and income (Auld, 1981).

Another policy solution is general revenue sharing where the upper level government collects its tax revenues and distributes some fraction to lower level governments without attaching specific conditions to the funds. Such funds can be returned to the jurisdiction in which they are raised (pure revenue sharing) or distributed on a per capita basis (an element of equalization is included here). Even pure revenue sharing, however, can lead to changes in local public expenditures. Fisher (1979) shows that one can determine how pure revenue sharing affects the individual voter by comparing the voter's share of local taxes (what he would have paid in local taxes to get the grant) with his share of central taxes paid (what he did pay to finance the grant). If the median voter in the locality gains implicitly from revenue sharing he may vote for an expansion of government programs. Fisher also notes that if central government taxes are more progressive than local taxes, substituting revenue sharing for local taxes raises the progressiveness of the overall tax system. A corollary to general revenue sharing is tax sharing. While there are, in some countries, sales and income taxes at the local level, they contribute only a minor share of total revenue. The various arguments for and against tax sharing at the local level can be found in several sources (Auld, 1981; Bennett, 1981; and Haurin, 1981).

Finally, the problems associated with vertical fiscal imbalance can be solved, at least in part, by more fully utlizing existing revenue sources. Boadway and Kitchen (1980) and Young (1977) argue that the property tax is underutilized and would be more elastic if assessment procedures and practices were improved. Although there has been no major reform in this or other areas noted above, revenue sharing, as we shall see later, has become more widespread in recent years.

C. Fiscal Balance Among Local Governments

The unequal distribution of wealth and income across a country or within a province is an economic fact of life. As a result, the ability to pay for similar public services differs among local jurisdictions. Horizontal fiscal imbalance is, according to Mathews, "...an inherent characteristic of a multi-level system of government" (1978, p. 173). The imbalance is a direct result of differences in per capita tax bases (basically property values) and/or differences in costs and needs associated with the geographical location of a city or its economic base.

The resolution of this problem is similar to horizontal inequalities among provinces; the development of an equalization grant scheme which takes into account fiscal capacity, costs and needs. The literature of equalization grants at the federal-provincial or federal-state level is well-developed, reflecting the high degree of complexity reflected in various schemes and the problems associated with their implementation (2, 3). The problems are not that different at the state-local or provincial-local level. As Fisher (1979) has argued, equalization grants may create a bias toward increased expenditure for recipient governments. The inclusion of tax effort can further bias recipients toward more expenditure at the local level.

Local governments have, for many years, received provincial grants based on population which incorporates one element of equalization.(4) Formulae for explicit local equalization grants have become more widely discussed in recent years along with the adoption of explicit schemes by several provinces (See Mathews, 1974; Le Grand, 1975; Nova Scotia Royal Commission, 1974; and McMillan, 1981). Tax base sharing has also been suggested as a solution to the problem (Bahl and Puryear, 1976 and Reschovsky, 1980) as has general revenue sharing.(5)

Since horizontal fiscal imbalance (HFI) implies that a household receives for the same taxes less public goods in municipality A than in B, or must pay more taxes in A to receive the same public services in both jurisdictions, HFI causes fiscal inequities between households. To achieve fiscal equity, households with equal incomes and tastes in each local jurisdiction (i), must receive equal net fiscal benefits (NFB_i) defined as the difference between total benefits from local public goods, B_i, minus local taxes paid, T_i. In an excellent statement of the fiscal equity principle, Graham (1980, 45) argues that the fiscal equity objective is to provide "...comparable levels of service with comparable tax burdens for citizens wherever they live". In addition to creating inequities, it has been argued that horizontal fiscal imbalance can lead to economic inefficiency as unequal net fiscal benefits cause nonoptimal migration between jurisdictions (Boadway and Flatters, 1982; Economic Council of Canada, 1982; Eden, 1981). To further complicate the issue, migrants can cause fiscal externalities for the existing population which are ignored by the migrant, further distorting resource allocation.

Equalization grants are a possible solution to the fiscal equity problem. Such grants, while designed to create horizontal fiscal balance between municipal governments, do give the municipalities the option of providing comparable services with comparable tax burdens so that fiscal equity in theory is possible. In addition equalization grants could reduce or eliminate migration induced by unequal NFBs between localities.(6) These grants have also been suggested as a possible solution to the fiscal externalities problem.(7)(8) Another solution is increased reliance on benefit taxation and user charges. Musgrave (1961) has argued that benefit taxation is sufficient to ensure fiscal equity.(9) A thorough analysis of user charges for urban services

can be found in Bird (1976, part III).

D. Summary

The problems associated with provincial-local government finance are similar to those at the federal-provincial level. Even the forces which give rise to the problems are similar, suggesting that models of federal-provincial fiscal relations may be applicable at the provincial-local level. While change has been slow, it is evident that new methods are being tried by several provinces to minimize fiscal imbalances at the local level. A review and analysis of some of these arrangements are the subject of the next section.

IV. Equalization and Revenue Sharing at the Local Government Level

It was noted earlier that while the concepts of equalization grants and revenue are not new, their application to the problems of provincial-local fiscal arrangements is a recent development. In this section of the paper we note briefly the development of these arrangements and examine the precise structure of the schemes now in operation.

1. New Brunswick

By the 1975-1976 financial year, local governments in New Brunswick were receiving equalization grants based on a formula incorporating the tax base, population and miles of road in the community. The grant to the ith community was equal to:

$$G_i^{t+1} = \left[\frac{E_i^t - E_i^{t-1}}{2}\right]\left[\frac{Z}{Z + .01A_i}\right] \quad \text{s.t.} \quad \frac{E_i^t + E_i^{t-1}}{2} \leq V$$

where E_i^t = expenditure in community i in year t

A_i^t = tax assessment in community i

V = provincial limit on the proportion of E_i allowable for adjustment.

$$Z = (.01A_i)\left(\frac{\Sigma A_i}{A_i}\right)\left[\frac{N_i}{\Sigma N_i} + \frac{1}{4}\left(\frac{M_i}{\Sigma M_i}\right)\right] K$$

where N_i^t = population of community i

M_i^t = miles of road in community i

$$K = \frac{(N_i - 5{,}000)}{200{,}000} \text{ s.t. } K \geq 0$$

This scheme has several unique features, particularly as they relate the control of various instruments which can affect the grant. The grant depends on what a local community has spent in the past two years, on average, suggesting an "open endness" to the scheme. The province, however, may thwart any attempt to build up a base expenditure by its complete discretionary control over V. The local government's control is confined to decisions on road building and the rate of growth of the population, and to the extent local government influences assessment values. There is no role for tax effort in this arrangement. The grant scheme was altered in 1980 changing the term $\left[(E_i^t + E_i^{t+1})/2\right]$

to E_A^{t+1}

where E_A^{t+1}

is approved expenditure for next year and is equal to $(E_A^t)(1 + \hat{g})$

where $\hat{g}$ is the expected rate of growth in the province's net revenues, including federal unconditional grants.

2. Nova Scotia

The Nova Scotia equalization arrangement takes both ability to pay and fiscal need into consideration. The objective is to provide a reasonably good standard of service to each dwelling unit without undue taxation. Municipalities are divided into 5 classes based on the degree of urbanization. For each class there is a standard expenditure per dwelling unit X_j. The "standard expenditures" for municipality i is therefore $(X_j) N_i$ or E_{ij} where N_i is the number of dwelling units. The revenue raising capacity of a municipality is determined by applying a standard tax rate, t_j, to the uniform assessment A_i where uniform

assessment includes the capitalized value of certain grants in lieu of taxes. There are 5 tax rates, one for each class of municipality. This determines the potential revenue R_{ij} for each municipality. The equalization grant G_{ij} is simply the difference between the standard expenditure and potential revenue. In equation form

$$G_{ij} = E_{ij} - R_{ij}$$

where $E_{ij} = (X_j) N_i$ and

$$R_{ij} = (t_j)(A_{ij})$$

Since the tax rate is fixed by the provincial government, unilateral action in terms of changing mill rates, on the part of one or more municipalities does not affect the grant. Similarly, since the X_j's are fixed, individual action has no impact on the grant.

3. Prince Edward Island

Prince Edward Island introduced a local equalization grant in 1980 which incorporates taxable assessment, population and miles of roadway. The grant to the ith locality is

$$G_i = \left[\frac{B^*}{B^* + A_i}\right] \hat{E}_i$$

where $\hat{E}_i$ = projected local expenditure

A_i = the tax base in community i

$$B^* = (\bar{A})(N_i) + \left[\frac{\Sigma A_i}{\Sigma M_i}\right] M_i + (N_i - 2000)(\bar{A})(.25)$$

where $\bar{A}$ = average tax base for the province

N_i = population of community i

M_i = miles of road in community i

The $\hat{E}_i$ is projected by the province for each community after receipt of all audited statements from local governments. The only 'control' directly exercised by the local government is the miles of roadway in the community although zoning and other procedures could limit population.

4. Ontario

The Province of Ontario's scheme, in place since 1972 was to equalize a portion of the deficiency between actual per capita assessment and $10,650. This scheme, referred to as the Resource Equalization Grant (REG) has been altered only slightly to change the benchmark per capita assessment and the limit on the grant (Auld, 1981). The formula in 1982 was

$$REG_i^t = .60 \left[18,800 - A_i^{t-1} \right] .NGL_i^t$$

where A_i^{t-1} = per capita equalized assessment in community i in t-1

NGL_i^{t-1} = the net general levy of the local government which encompasses own source tax revenue and other levies, payments in lieu of taxes, and grants from the provinces.

t = years.

5. Quebec

The Quebec Equalization scheme, introduced in 1980 incorporates a fiscal deficiency factor and local tax effort. The explicit formula for an equalization grant to each local community (G_i) is

$$G_i = \left[\frac{\frac{2}{3}\left(\frac{\Sigma A_i}{\Sigma N_i}\right) - \frac{A_i}{N_i}}{\frac{\Sigma A_i}{\Sigma N_i}} \right] T_i$$

where A_i = a portion of real property assessment of municipality $_i$(10)

N_i = population

T_i = local tax revenue, excluding business tax revenue.

Thus, if a community's per capita assessment was less than 2/3 of the per capita assessment for all communities, it would be eligible for a grant.(11) The grant can be increased by raising local own source effort thereby rewarding tax effort only for the community which raises taxes.

6. Saskatchewan

The equalization grant formula introduced in Saskatchewan in 1975-1976 allowed for payments to be made based on the category of the local jurisdiction, the categories being based on population. The grant for the ith jurisdiction in the jth category was

$$G_{ij} = \left[\frac{\Sigma A_{ij}}{\Sigma N_{ij}} - \frac{A_{ij}}{N_{ij}} \right] N_{ij} \left[\frac{\Sigma t_{ij}}{N_j} \right]$$

where A_{ij} = taxable assessment in jurisdiction i in population category j

N_{ij} = population in i^{th} jurisdiction in category j

t_{ij} = the mill rate in the ith jurisdiction in category j

The grant scheme was similar to those in other provinces with respect to the gap between actual and average or benchmark assessment. Including the mill rate does provide a unique feature since by raising its mill rate a local government can increase its grant if it's entitled to one. In addition, grants to other communities in that category also rise.

By 1982, Saskatchewan had revised its scheme to incorporate need, reflected by different costs of services in each jurisdiction. The grant scheme is now represented by the following formula

$$G_{ij} = k \left[\frac{\Sigma C_{ij}}{\Sigma N_{ij}} - \bar{A}_{ij} \left(\frac{\Sigma t_{ij}}{N_j} \right) \right] N_{ij}$$

where $k < 1.0$

C_{ij} = cost of services in community i in category j

$\bar{A}_{ij}$ = equalized assessment in community i in jurisdiction j

The formula indicates that if the per capita tax contribution by a

community (assessment times average tax rate) is less than the per capita average cost of services for all communities, it will receive a grant equal to some proportion of that deficiency. The inclusion of the mill rate and cost of services creates an interesting sensitivity of the grant to fiscal variables. First, if a community increases its per capita expenditure (costs), the grant will rise unless it is financed by a rise in the tax rate that just offsets the increased deficiency. If the expenditure or portion of expenditures is financed from own source revenue, the balance would always be maintained. If, however, the expenditure side includes programs where there is a shared cost arrangement, a one dollar increase in expenditure can be financed locally by a less than one dollar rise in local taxes.

B. Revenue-Sharing

For many years, municipalities across Canada have campaigned to obtain access to revenue sources with growth potential. The reasons for their persistence in this goal were documented in the earlier part of this paper. While many schemes have been proposed to alleviate the fiscal imbalance at the local level, only a few provinces have enacted legislation to deal with the matter.

In 1975 two Canadian provinces introdued a form of provincial-local revenue-sharing. Manitoba's per capita unconditional grants were drawn from a fund based on 5% of the province's personal income tax revenue. While the revenue was obviously endogenous, so too was the base in the federal-provincial context since it depended partly on the outcome of federal-provincial fiscal arrangements. The revenue sharing arrangement in effect in British Columbia in the mid-seventies transferred one-third of all revenue from gas exports (over $1 per m.c.f.) to local governments through per capita grants.

By 1981, four provinces had established revenue-sharing schemes between the province and local government sectors. Manitoba had altered its earlier arrangement to include corporate taxes and in addition, change the structure so that the revenue pool is now composed of

a) 2.2 percentage points of personal income tax
b) 1 percentage point of corporate taxable income.

The inclusion of corporate income as a base for the fund renders the revenue pool more susceptible to swings in the business cycle.

British Columbia's scheme now has three parts:

a) 1% of personal income tax
b) 1% of corporate taxable income
c) 6% of the revenue from gasoline fuel tax, sales tax and other indirect tax sources.

Since enpenditure on taxable goods is less volatile than personal income and corporate profits, the broadening of the base provides slightly more stability for the fund from which per capita grants to local governments are drawn.

Nova Scotia's scheme is more simple; ;basic operating grants as of 1979 are increased by the percentage growth in total provincial revenue. The grants are then allocated according to the formula described above incorporating equalization.

V. Conclusions

The purpose of this paper was to outline the various policies employed at the provincial-municipal level and to relate them to the theory of inter-governmental finance. We can summarize the policy implication for PMFR of the theory of intergovernmental fiscal relations as follows:

1. Where benefits and burdens can be clearly defined, those who benefit should bear the burden. This would imply greater reliance at the municipal level on residence based taxes and user charges and a lower rate of tax on nonresidential property.

2. Conditional matching grants from provincial to municipal governments should be restricted to financing those expenditures that have benefit spillovers or provincial merit good characteristics.

3. Tax harmonization between municipalities is important, particularly with respect to property taxes since they are source based. Uniform provincial-wide assessment at uniform rates is therefore desirable while tax exporting and tax competition should be discouraged.

4. Equalization grants to municipalities can be justified on several grounds: horizontal fiscal balance, fiscal equity and fiscal externalities. The grants should be unconditional and take account of differences in fiscal capacities, needs and costs.

5. Provincial governments have the responsibility to eliminate vertical fiscal imbalance at the local level. A combination of pure revenue sharing, the introduction of a local income tax, greater reliance on the residential property tax, or the shifting or particular expenditure functions (e.g., education) to the provincial level, are feasible solutions.

Therefore there are several theoretical justification for equalization grants and revenue sharing schemes at the provincial-municipal level. We have outlined some of the main programs in current use across Canada. A detailed critique, and proposals for improvement, of these programs is left for future work.

Footnotes

* This is a revised version of a paper presented to the ACEA Meetings in November of 1982. Professor John Graham, the discussant of the paper at the Meetings, made several valuable suggestions for improving the paper. We have also benefitted in the last few months from comments and correspondence from several provincial and local finance officials including M.C. Masters of the Nova Scotia Department of Municipal Affairs; Glenna Carr of the Ontario Ministry of Municipal Affairs and Housing; John Wright of the Saskatchewan Budget Bureau; Ron McNeil of the Prince Edward Island Department of Community Affairs; and Bryan MacDonald of the New Brunswick Department of Finance. An earlier version of this paper is available as University of Guelph Discussion Paper, No. 83-1.

(1) Note that vertical fiscal imbalance is not seen as a problem in Breton and Scott (1978) if it arises from an efficient assignment of powers. Musgrave (1964) would argue that VFI if inefficient.

(2) The classic article outlining equalization formulas and their effects is Musgrave (1961). His favourite plan equalizes performance per effort unit and generates redistribution from low need - large base states to high need - small base states.

(3) For comparisons between the Canadian, Australian and West German equalization schemes see Hunter (1980) and Courchene and Copplestone (1980). Hunter concludes that VFI is worse in Australia but that the Australian equalization grants scheme is superior to the Canadian and West German ones.

(4) Gatti and Tashman (1976) develop a formula to finance local education based on an equalizing matching grant. The matching portion is designed to pay for spillovers while the equalizing portion is a revenue equalization grant designed to achieve equal fiscal capacities with respect to education expenditures between jurisdictions (Feldstein's "categorical equity"). The formula also takes into account tax exporting of the nonresidential share of the property tax base.

(5) McMillan and Norton (1981) compare the U.S. general revenue sharing program with unconditional grant programs in Alberta and Saskatchewan. They conclude the Albertan scheme does not ;meet fiscal need or fiscal equity criteria and that HFI in Alberta has worsened since the early 1970s as a result.

(6) Boadway and Flatters (1982) and the Economic Council of Canada (1982) argue that differences in NFBs between provinces basically arise from two sources: (1) residence-based taxation by provincial governments that is distributionally non-neutral and (2) the provincial use of source based taxation which can be exported to nonresidents who own provincial resources. They conclude the equalization grants are necessary to equalize NFBs between provinces in order to achieve fiscal equity. (See Scott [1982] for critical reviews of the E.C.C.'s proposals on equalization.)

(7) Markusen (1977) has argued that the fiscal externalities imposed by migration between declining and expanding regions may be very large due to the lumpiness of public capital. She recommends taxes on immigrants to growing regions and subsidies to economic activities locating in declining regions.

(8) Since migrants ignore these externalities local governments may have an incentive to encourage immigration whenever the tax saving exceeds the congestion cost. (See the exchange between Starrett [1980] and Boadway [1982].)

(9) There is disagreement on this, however, since Buchanan (1961) and Graham (1964) argue that total benefits are important to location. Fiscal equity would therefore require equalized service levels and tax burdens between municipalities.

(10) With certain classificiations of buildings, only a percentage of the assessment is included in the standardized real property assessment. (See Canadian Tax Foundation, Provincial & Municipal Finances 1981, Toronto, 1982, p. 189.)

(11) The 2/3 factor is incorporated to reflect the varying needs of municipalities based on the size of the municipality.

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ANOTHER LOOK AT THE SECONDARY RESERVE REQUIREMENT AS AN INSTRUMENT OF MONETARY POLICY.

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I. Introduction

In 1967 the secondary reserve requirement became an instrument of Canadian monetary policy when the Bank of Canada was given the power to establish secondary reserve ratios to a maximum of 12% of deposit liabilities. The requirement was instituted for various reasons (see Botha, 1972a and Dean, 1975) but its power as an instrument (supposedly) lies in its effect on the more-to-less liquid asset (MLA) ratio.

Its specific advantage lies in its use to supplement a contractionary monetary policy during an economic expansion. To the extent that chartered banks can sell government bonds to meet the increased demand for loans, and to the extent that the deposits of borrowers have a greater income velocity than the deposits given up by the purchasers of the bonds, the contractionary policy will be frustrated. Since secondary reserves consist of day-to-day loans, treasury bills and excess reserves, an increase in the secondary reserve requirement will increase the MLA ratio and reduce the ability of chartered banks to finance the new loans (see Dean, 1975, p. 72 and Johnson, 1963, pp. 215-15).(1)

The effect of changes in the secondary reserve requirement on the MLA ratio has been analyzed by Dean (1975). But what about the effect on the money supply? Since excess reserves can be used to meet secondary reserve requirement changes, it seems prudent to inquire whether changes in the requirement alter the money supply by their effect on excess reserves. If, in fact, changes in the secondary reserve ratio generate changes in the money supply, then the power of the secondary reserve requirement as an instrument of monetary policy increases.

Existing models of the Canadian monetary sector have ignored any effects of secondary reserve ratio changes on excess reserves. This is due, in part, to the fact the excess reserves of chartered banks are quite low as a proportion of deposit liabilities, so for convenience excess reserves are sometimes assumed to be zero (see Courchene and Kelly, 1971, p. 221, and Dean, 1975, p. 77). And, it is due to the fact that econometric models have used data that did not cover a time span that allowed for much variation in the secondary reserve ratio.(2)