

FISCAL FEDERALISM AND THE WELFARE STATE: A THEORY APPLIED IN  
AN  
EXAMINATION  
OF FEDERAL PROVINCIAL FISCAL ARRANGEMENTS AFFECTING  
EDUCATION

by

FRANK STRAIN

A thesis  
presented to the University of Manitoba  
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## ABSTRACT

The federal provincial fiscal arrangements have recently become the subject of academic attention. Two distinct views of the federal provincial fiscal arrangements dominate the academic discussion. The first view, which is found primarily in the work of political scientists, focuses on the constitution. The fiscal arrangements are seen as a policy instrument which enables different orders of government to discharge their constitutional responsibilities. The second view, which is typically associated with economists, is different. Economists emphasize the role of the fiscal arrangements in assuring allocative efficiency and horizontal equity.

It is possible, however, to adopt a third view. The fiscal arrangements can be seen as an integral part of the welfare state. The arrangements assure that all citizens, regardless of province of residence, can access the basic requisites of well being. This third view is the starting point of this thesis.

The first part of the thesis develops a theoretical framework which emphasizes welfare state aspects of fiscal federalism. The framework has two important features: (1) it builds on recent work developing nonParetian approaches

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to welfare economics and (2) it provides an alternative to the neoclassical public choice theory of federalism. In the second part of the thesis the theory is applied in an examination of the federal provincial fiscal arrangements affecting education.

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## Chapter I

## INTRODUCTION

In recent years Canadian federalism has experienced serious challenges. The most obvious and serious of these challenges are associated with the maturation of Quebecois nationalism: the election of the Parti Quebecois, the 1980 Referendum, and the repatriation of the British North America Act. Less conspicuous, but of almost equal importance, are the recent attacks on the system of fiscal arrangements between federal and provincial orders of government. These federal provincial fiscal arrangements are the topic of this thesis.

The federal provincial fiscal arrangements have been referred to as "the glue that holds the country together". (Economic Council of Canada, 1982, 10) Unfortunately, rising resource revenues in the Western provinces have undermined the traditional basis for equalizing fiscal capacities. Indeed some, such as British Columbia Premier Bill Bennett, have even argued that the Equalization program should be scrapped to free monies to support "richer" provinces hit hard by recession. Also, extra billing and user

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charges continue to threaten the Medicare and Hospital Insurance programs. The de facto shifting of responsibility for unemployed employables (from federally supported U.I.C. to provincial welfare programs) is unfairly penalizing citizens (poor and nonpoor alike) of the "poorer" provinces. And government restraint, generally, continues to adversely affect all federal provincial fiscal arrangements.

The federal provincial fiscal arrangements have been the subject of much study. However, in this thesis we offer a fresh perspective. Our starting point is a normative position. We believe that the federal provincial fiscal arrangements should be based on a strong normative foundation. We offer two rationales for this stance. First, if one does not base the arrangements on a normative foundation one risks losing public support originally won by appeals to fair sharing. As Moore (1981,243) notes "if payments are to be no more than one element of bargaining between provinces, each giving priority to self interest, any outcome consistent with preserving the union must be equally acceptable." Second, it is impossible without a normative foundation to debate formula, extra billing, defacto shifting of responsibilities, etc. in anything but an ad hoc manner. Because we believe a normative foundation is necessary we hold that debate surrounding the federal provincial fiscal arrangements should place more emphasis on the normative basis of proposals for reform.

Economists are generally agreed that a strong normative foundation is necessary in public policy analysis. Typically economists approach the federal provincial fiscal arrangements from a public finance perspective. Their analysis is based on a coherent normative framework: Paretian welfare economics. Also they draw on a well developed normative political economy: modern public choice.

In this thesis we follow the example of these economists by emphasizing the importance of a normative public policy - political economy framework. However, we do not use the Paretian welfare economics - public choice approach. Instead we employ a framework that takes as its point of departure the concept of the "welfare state". The International Encyclopedia of the Social Sciences defines the welfare state as "the institutional outcome of the assumption by a society of the legal and therefore formal and explicit responsibility for the basic wellbeing of all its members [my emphasis]". Canadian economic historians have often referred to the birth of the welfare state as the second national policy. This indicates its importance in Canadian federalism. For example, the late David Alexander expresses this view:

"The 1937 Royal Commission on Dominion - Provincial Relations was set the task of defining a common [Canadian] purpose. Its report was born in controversy and buried by World War II. But its vision was recaptured in the 1945 White Paper on Employment and Income, and in related legislation and dominion-provincial agreements of the post war decade. This was the second fundamental policy instrument of Canadian history.... The first na-

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tional policy generated unacceptable inequality of opportunity and social security among classes and regions. The second used the taxing power of the dominion and provincial governments to redistribute income to offset these inequalities..( Alexander,1983,146) .

The importance of this second national policy has not received sufficient attention from economists working on questions of fiscal federalism within the public finance tradition. Giving priority to the "welfare state" in an examination of fiscal federalism requires an alternative normative framework to that provided by Paretian welfare economics and public choice. Our alternative is introduced in Part I of this thesis.

We begin introducing our normative framework in Chapters Two and Three. Although our framework is not new - the approach was first suggested by social and political philosophers Braybrooke(1968) and Resher(1971) and has been formalized by economists Sen(1976), Kakwani(1980), and Blackorby and Donaldson(1982) - it will be unfamiliar to most. As introduction the basic ideas of our approach are presented in Chapter Two. The approach is then formalized in Chapter Three.

Chapter Three also introduces our extension of the work of Sen -Kakwani - Blackorby and Donaldson to enable application in a federal setting. We indicate how our extension can be employed as a conceptual framework for addressing debate surrounding the formula finance of social welfare programs.

Chapter Four is devoted to a discussion of the normative political economy of federalism. We introduce our approach and contrast our welfare state perspective with modern public choice. The welfare state perspective, which follows almost directly from the formal theoretical framework in Chapter Three, is not unfamiliar. Indeed it resembles, in many respects, the position of the Canadian New Democratic Party.<sup>1</sup>

In Part II of the thesis we apply our framework in an examination of the federal provincial arrangements for financing one area of the welfare state: education. Chapter Five focuses on the federal provincial fiscal arrangements affecting education. In addition to describing the constitutional setting this Chapter identifies programs relevant in a discussion of minimum - national standards in education. In Chapter Six we illustrate how our framework can be employed to indicate the consequences of disparities in the demand for public services and the capacity to finance them. We will also show that in spite of the existence of federal provincial programs to finance education systems disparities in demand and capacity still lead to serious disparities in service provision.

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<sup>1</sup> In contrast, the Paretian - public choice approach used by many economists leads to libertarian type policy conclusions: no minimum standards, very decentralized federalism.

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The implications of using our framework in the design of programs to finance the welfare state in a federal country are examined in Chapter Seven. Specifically the Equalization program and the post secondary education components of the EPF are examined and the financial implications of adjustments based on our theoretical framework are revealed. Chapter Eight presents a summary and our conclusions.

PART I

FISCAL FEDERALISM AND THE WELFARE STATE: THEORY

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Chapter 2

## A RELATIVE NEEDS FRAMEWORK: AN OVERVIEW

"Following forty years of unprecedented critical inquiry, both at the theoretical and at the empirical level, economics is currently in a state of flux, with controversies raging in almost all its branches, and with the monism of the neoclassical message effectively replaced by a pluralism of competing view points.... There is, however, a single important exception to this encouraging story, namely welfare economics.... The dominating effect of the substantial input of resources into welfare economics throughout the Western world during the renaissance period of economic science, has been that of tightening the grip exercised by the Paretian dogma over members of our profession until we are now faced with a dangerous hegemony in the economic theory of public policy" (Rowley and Peacock, 1975, 1).

Although the Paretian approach to questions of economic policy has long dominated debate and the formal welfare economics literature, the reason for this domination is not obvious. There are alternative and normatively appealing value bases for policy analysis. The alternatives are consistent with individualistic and democratic thinking. Often they provide guidance in the evaluation of a wider range of public policies. Yet, unfortunately, these non Paretian frameworks have been inadequately explored.



In this chapter we introduce a non Paretian normative framework which emphasizes "welfare state" concerns. This normative framework was first proposed by philosophers interested in the ethics of public policy (see Braybrooke (1968) and Resher (1973)). Amartya Sen (1973) is a well known economist who employs this approach. Following Sen and Braybrooke we will call our normative framework a "relative need - comparative census" framework.

The distinguishing feature of this "welfare state" approach to questions of "social welfare" is its focus on the basic requisites of man's well being; especially the most basic of requisites: health, economic adequacy, and access to avenues of self advancement. The explicit reference to basic requisites of well being and presumption that welfare judgements can be based on objective census data is bound to be seem controversial to economists. Unfortunately, this is because the ideas and language of our framework are only familiar to minority. In this opening chapter we offer a general description of the proposed framework and give some indication of why this framework has been adopted.

The opening section of the chapter introduces the framework. Those aspects of the approach which we think some will find contentious are identified (the choice of distributive properties and our method of interpersonal comparisons and aggregation) and defended. The second section focuses on Paretian welfare economics. We document the weaknesses

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of that approach and argue that the alternative employed in this thesis deserves more attention than it is currently given by economists. In the final section we offer a brief summary.

### 2.1 A RELATIVE NEEDS - COMPARATIVE CENSUS FRAMEWORK

The salient first feature of the approach to note is the emphasis on distribution. Comparative judgements about alternative policies are based on the extent to which the policies under consideration parcel out advantages and misfortunes among the individuals of a society. Thus, one is asked to consider policies as promoting or hindering health, educational opportunities, housing provision, personal incomes, etc., rather than merely promoting or hindering an "efficient" allocation of resources.<sup>2</sup>

The concern with how advantages and misfortunes are distributed does not, however, extend to encompass the question of which distribution is best. Different individuals hold different ideas about which distribution is best, and, as is well known, the famous Arrow (1963) impossibility theorem leaves little hope of finding a "satisfactory" collective distributive judgement from the distributive judgements of individuals.<sup>3</sup> Nonetheless, it is difficult to imagine that

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<sup>2</sup> Indeed, it is almost impossible to define an "efficient" allocation of resources. This statement, which is a strong one, is elaborated below.

<sup>3</sup> Satisfactory in this context means a collective choice

people in our society are unconcerned with whether a particular policy would make the collectivity "better off" with respect to health, "better off" with respect to education, or "better off" with respect to housing provision, etc. The framework adopted in this thesis enables analysts to address these concerns without necessarily becoming bogged down with the Arrow impossibility results.

The distributive concerns of people in our society are embodied in the "relative need - comparative census" framework by utilizing objective census data (and, in some instances, by relying on diagnostic tests by experts) to determine whether the basic needs (basic requisites of well being) of individuals are being met. The approach is not, however, merely descriptive. One must choose a distributive property of interest and a set of criteria which can be used as a basis for distributive judgements (deciding who is poor/not poor or whether one distribution is more or less equal than another). Both choices are contentious.

Choosing the distributive property of interest requires facing the cash-in kind transfer debate which has played such a major role in social policy debate among economists. One group of economists argues that income should be the only distributive property of interest (see, for example, Friedman (1980)). Income provides general purchasing power thus income adequacy is sufficient to enable individuals to

rule satisfying Arrow's axioms.

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meet basic needs such as nutrition, housing, health, education, etc. Another group, which includes Rawls (1973), Thurow (1974), and Tobin (1970), take a broader approach. They argue that, in principle (Rawls), and given the position of society generally (Tobin and Thurow), the distribution of certain basic requisites of well being especially health, income adequacy, and educational opportunity warrant attention.<sup>4</sup> Either position can be adopted by those who employ our normative framework. In this thesis we adopt the positions of Rawls, Tobin, and Thurow.

Choosing the set of criteria which can be used as a basis for distributive judgements is still more problematic. Two difficulties arise. The first is the necessity of interpersonal comparisons (and thus of choosing information sources

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<sup>4</sup> Tobin observes:

Our society, I believe, accepts and approves a large measure of inequality, even inherited inequality.... But willingness to accept inequality in general is, I detect, tempered by a persistent and durable strain of what I call specific egalitarianism. This is the view that certain specific scarce commodities should be distributed less unequally than the ability to pay for them. Candidates for such sentiments include the basic necessities of life, health, education and citizenship (1970,448).

There are a variety of explanations for specific egalitarianism. Pauley (1970), Lindsay (1969), Garfinkel (1973) and others base their explanation on the existence of consumption externalities. Thurow, in contrast, claims that it is necessary to separate individual preferences:

which allow one to make such comparisons in a practical way). The second is the necessity of finding a method of interpersonal aggregation. The first difficulty is met in our use of census data, census classifications, and diagnostic tests. Although census classifications (poor/not poor; healthy/not healthy; do/do not have access to educational opportunities) do not require comparisons of utility they do involve interpersonal comparisons. However, these types of comparisons are made in everyday life and receive ethical support in the writings of a number of utilitarians (see for example Braybrooke (1968) and Simon (1974)). Indeed, Nicholas Resher (1972, 17) goes as far as to argue:

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"A person's welfare is determined by his state and condition in certain specifiable and overt respects: health, financial status, and the like. Judgements of welfare are matters of (objective)

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into those that concern the ideal rules of the economic game (communism, capitalism, etc.) and the best distribution of economic prizes (the desired degree of equality of inequality) and into those that concern the maximization of personal utility in the current economic game (1974, 192).

Thurow labels the former individual societal preferences and the latter private personal preferences. He goes on to argue:

that a societies interest in the distribution of medical care springs not from unspecified externalities that affect private personal utility but from our individual societal preferences that the "rights of man" include "the right to life".... Similar arguments could be made for education (192).

Rawls, on the other hand, emphasizes the importance of

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knowledge and not matters of (subjective) feeling.....Welfare hinges upon objectively determinable circumstances, and a sphere of action is consequently opened up for the effective workings of "outside" expertise.

The second difficulty is the need for a method of interpersonal aggregation. Clearly the method cannot be based on individual value judgements concerning "social welfare" since the Arrow impossibility results will come into play. However, if the exercise is confined to aggregating interests rather than views, the impossibility results can be avoided (Sen (1977,82)). The resulting welfare judgements are not definitive; as Sen notes "the exercise is limited by using only that information which can be rather mechanically collected, and usually also by keeping the exercise confined to welfare judgements of a limited nature rather than presenting a total judgement about overall social welfare (1977,54). Nonetheless, the exercise does have normative appeal and policy relevance.

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educational opportunity in his system of justice. He describes his system, in practice, as follows:

The intuitive idea is familiar. Suppose the law and government act effectively to keep markets competitive, resources fully employed, property and wealth (especially if private ownership of the means of production is allowed) widely distributed by appropriate forms of taxation, or whatever, and to guarantee a reasonable social minimum. Assume also that there is fair equality of opportunity underwritten by education for all; then the resulting distribution of income and the pattern of expectations will tend to satisfy the difference principle (1973,87).

In this thesis the problem of aggregating interests arises in our use of poverty and inequality measures. The actual measures employed are introduced in Chapter 3. For the present it is only important to note that poverty and inequality measures belong to a general class of normative indicators (including national income measures) defined with normative motivation and incorporating interpersonal weighting in some easily tractable way (Sen, 1977, 53). There are two methods of incorporating interpersonal weighting which have normative appeal. The first involves specifying (axiomatically) desirable properties which any proposed measure should satisfy. Proposed measures are then examined to determine if they have the desired properties. The second is based on explicitly specified weighting schemes. This approach (originally employed by Dalton (1926)) involves deriving measures from an explicit social welfare function which assures the weighting scheme is both explicit and ready for scrutiny.<sup>5</sup> Both approaches are considered in Chapter 3.

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<sup>5</sup> This is evident in the work of Atkinson (1970, 1975). Atkinson's inequality measure is based on an inequality aversion parameter the value of which is chosen arbitrarily. In the optimal income tax literature, where this aversion parameter is also employed, both additive utilitarianism and Rawlsian maxi - min distributive rules are captured by appropriate choice of the parameters value. The arbitrariness of this choice leaves a degree of freedom when making distributive statements. As well, the sensitivity of such statements to underlying distributive judgements can be assessed (see also Blackorby and Donaldson (1980)).

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It is important to emphasize the limited nature of the welfare judgements which can be drawn using the "needs - census" framework. The framework is not in the same tradition as the Bergson-Samuelson social welfare function. Abram Bergson, who first developed the social welfare function, wrote of:

a welfare function,  $W$ , the value of which is understood to depend on all variables that might be considered as affecting welfare: the amounts of each and every kind of good consumed by and service performed by each and every household, the amount of each and every kind of capital investment undertaken, and so on. The welfare function is determined by specific decisions on ends that are introduced into the analysis. Given the decisions on ends, the welfare function is transformed into a scale of values for the evaluation of alternative uses of resources (Bergson (1938,312)).

Thus, the social welfare function, as conceived by Bergson, is firmly within an evaluation tradition which holds that policy evaluation can be strictly a matter of calculation - one combines facts, principles (in the welfare function principles are the specific decisions on ends), and deduces by strict logic which policy is to be selected. In philosophy many have subscribed to this ideal - beginning with Plato and including Aristotle, Aquinas, Locke, and Kant. Utilitarianism, Paretian welfare economics, and Rawls' Just Social Contract, also fall within this tradition.<sup>6</sup> However, the framework introduced here does not.

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<sup>6</sup> Lindholm and Braybrooke (1963) characterize this tradition as one searching for a rational deductive ideal.



There is no pretense to being able to make total judgments about overall social welfare. For example, suppose liberty is a value which always takes precedence to need.<sup>7</sup> Does it naturally follow that information on the basic needs of individuals are unimportant? Is a comparison of policies on the basis of their impact on the basic needs of individuals no longer useful? An examination of needs might or might not be valuable in an evaluation of social policy. An examination of needs might or might not be useful in formulating statements about overall "social welfare". It is our position that, regardless of application, an examination of needs is valuable: i.e. an examination of needs is valuable in its own right.

It is important to note, however, that we do draw on the work of Bentham, Bergson, and Rawls, especially in our focus on ends.<sup>8</sup> Nonetheless, because welfare judgements drawn from our framework are limited, the approach is not vulnerable to the general criticisms of end state evaluations such as those advanced by Nozick (1973). Indeed, it is possible to discuss our approach in a "rights" context. We will not,

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<sup>7</sup> Separating need (basic requisites of well being) from liberty is, in our view, inappropriate. Following the liberal Marxist C.B. MacPherson we would argue against the traditional Lockian view of liberty and for a view which acknowledged inequality as a possible limit on freedom.

<sup>8</sup> Note that, in contrast, the Arrowian version of a social welfare function does not require ends to be formulated. Instead of formulating ends one relies on direct preferences among various states of affairs in society. Clearly, the framework used here eschews this approach as well.

however, do so here.

The "needs - census" framework, in addition to limiting the scope of welfare judgements, also abandons "welfarism" which has long been the dominant tradition in economics. Sen (1977b, 1559) defines "welfarism" as a general approach of making no use of any information about social states other than that of the personal welfares generated in them. (Individualistic utilitarianism is the more popular terminology.) The rejection of "welfarism" may appear to be a serious drawback. The proposed framework is based on distributive or egalitarian concerns. Yet, the most common conception of equality is based on equating welfare levels. However, as Sen notes:

If equality is defined not in terms of welfare but some other characteristics, e.g., income, wealth, education or treatment by the law, then welfarism may, in fact, be unable to accommodate even equality. (This problem is present even if equality is conceived "ultimately" in terms of welfare, but in the absence of detailed welfare information, other characteristics are chosen as surrogates) (1977b, 1561).

Welfarism is also unable to accommodate the concepts of liberty and rights. Nozick's (1974) historical framework and emphasis on process rather than ends is thus denied under welfarism. In general, welfarism is unable to accommodate some of the most general principles or values that have been widely acclaimed in our society. The rejection of "welfarism" is thus not a serious drawback of the approach. Moreover, when welfare information is poor it will be neces-

sary to employ additional information (national income, provincial income, inequality, poverty) in social welfare analysis. Thus the framework adopted here could also be used by those who are strongly wedded to the "welfaristic" approach.

## 2.2 PARETIAN WELFARE ECONOMICS: THE NECESSITY OF AN ALTERNATIVE

The dominant approach to questions of economic policy among economists - Paratian welfare economics - can be seen as a weak form of "welfarism". It will, as a consequence, share some of welfarisms' weaknesses. Some of these difficulties have been examined in detail elsewhere (see Little (1950), de V. Graaff (1957), Mishan(1960), Nath(1969), and Sen(1979)). However, the recent literature developing an "efficiency" based perspective on federalism necessitates reconsideration of the difficulties associated with the Paretian framework.

Paretian welfare economics was built on a basic judgement: when a change in the allocation of resources in a society resulted in at least one person being better off and no person worse off social welfare was said to have increased. This basic judgement can be separated into three important components: 1) a conception of social welfare based on, and only on, the individuals who, collectively, comprise the society under consideration; 2) a definition of individual welfare based on and only on individual prefer-

ences; and 3) the Pareto criteria (a change increases social welfare only if it increases the welfare of at least one individual without decreasing the welfare of any other).

This judgement is nontrivial and is unlikely to attract universal support. Yet, as Rowley and Peacock (1975,10) note: if this value judgement is denied - and we are, each of us, free to reject it in whole or in part if we so decide - the essential relevance of Paretian welfare economics is undermined.

The first aspect of the Paretian value judgement is not in dispute. The individualistic perspective incorporated in the Paretian value judgement is a characteristic of much of Western liberal democratic thought. This perspective is shared by the needs - census framework which focuses on the welfare (health, educational opportunities, and other basic requisites of well being) of individuals.

The second and third aspects of the Paretian judgement are, however, more contentious. The second aspect, in particular, has been subject to significant criticism. Marxist economists, such as Gintis (1972), criticize the ahistorical nature of the assumption. Preferences, they argue, are not given but rather are socially determined and change continuously. Thus, if in the course of moving to a preferred position the preference structure changes (as is likely the case) welfare statements are impossible. Liberals, such as

Rowley and Peacock (1975) equally reject the identification of preferences with welfare, but on different grounds. They argue that a change which, although preferred by all, (and thus social welfare improving to the Paretian value judgement) limits individual freedom decreases social welfare.<sup>9</sup> Still others argue that the view of man underlying the identification of preferences with welfare is based on naive psychological hedonism. Those holding this view believe economists must adopt a more sophisticated view of choice since with a movement away from "naive psychological hedonism" the identity of personal preference and personal welfare is lost (Sen, 1978, 329).<sup>10</sup>

However, the most frequently advanced criticism of the Paretian judgement is less sophisticated. Simply stated the identification of welfare with preferences misrepresents the concept of welfare as the term is commonly understood. An unfortunate consequence of this misrepresentation is the conservative bias of the Paretian framework. A single objection (the violation of the preferences of even one individual) is sufficient to deny welfare judgements. Yet, in everyday life people are not this conservative. As Braybrooke notes:

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<sup>9</sup> See also Sen (1970) on the "Impossibility of a Paretian Liberal."

<sup>10</sup> Psychological hedonism has also been criticized on other grounds. If a person's interests are defined in a way such that every choice is seen to be furthering the individual's interests, positive choice theory is rendered impossible. On this see L. Boland (1983).

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"At bottom, welfare includes many matters, evidence as to which may run contrary to evidence as to the accommodation of preferences: food; safety; clothing; shelter; medical care; education; congenial employment; companionship. When evidence on these matters does conflict with evidence about preferences, evidence about preferences will be superseded, for it has at most a presumptive claim to being evidence about welfare. An economy in which a single maharajah held sway over millions of half starved untouchables might have arrived at a Pareto optimum, so long as the maharajah did not care to change. But assuming a redistribution of income could be carved out without the economy collapsing, it would have to be said that the economy was very far from doing as much as it could for the welfare of the people involved. If the millions of half starved untouchables sincerely expressed themselves as preferring the state of affairs that contributes so much to the comfort of the maharajah and so little to their own necessities, it would have to be said, in the ordinary sense of "welfare" that, their preferences notwithstanding, their welfare was not being served." (1968, 129-30).

Nonetheless, it must be admitted that a number of impressive lines of reasoning converge in support of identifying preferences with welfare. First there is an ethical basis for linking preferences and welfare. Respect for preferences is valued because the dignity of man requires both respect for and exercise of freedom of choice. This is the position of contractarians such as Rawls, Buchanan and Tullock, and Hochman and Rogers, who define "good" as that which emerges from agreement among free men. This position, in which Pareto efficiency and unanimity are ineluctably linked, is appealing. It is not, however, the position of many economists actually employing the Paretian judgement.

A second basis for linking welfare and preferences is an empirical one. Almost every individual will claim diminished welfare when not allowed to follow his/her own preferences. This rational is, however, much weaker than the ethical justification. Most individuals will also claim diminished welfare if denied access to health care or education. Thus, there is also empirical support for adopting a convoy concept of welfare (which includes the expression and satisfaction of preferences as an ingredient).

Although the contractarian position is held by a number of economists the domination of the Paretian judgement among economists generally is probably based as much on reasons within economics as on either the moral or empirical rationales mentioned above.<sup>11</sup> Modern economic theory is built on the notion of preference (which is considered primitive) thus the Paretian judgement which identifies preference with welfare allows economists to move easily from positive choice theory to discussions of policy: i.e. the acceptance of the Paretian judgement enables economists to employ economic theory in both predicting the consequences of policies and discriminating among policy alternatives. In short, the Paretian judgement gives economic theory an im-

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<sup>11</sup> Superficial evidence of this is found in the importance of the Paretian judgement in discussions among economists and its conspicuous absence in the policy discussions of political scientists and social and political philosophers. Two recent surveys of the views of professional economists in the UK and US by Brittan (1973) and Karl, Pope, Whiting, and Wimmer (1979) are extremely interesting in this respect.

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portance in policy debate it would not otherwise enjoy.

The combination of modern economic theory and the Paretian framework also provides a basis for some of the most important achievements in social science. Modern mathematical economics has established that it is logically possible to describe an economy in which millions of agents, each heeding only their own preferences and responding only to the information provided by prices, can attain a coherent disposition of resources (known as a competitive equilibrium). Moreover, modern mathematical economics has established that every competitive equilibrium is Pareto optimal and (under more stringent conditions) that every Pareto optima can be reached via a competitive equilibrium given the appropriate distribution of initial endowments.<sup>12</sup> These findings represent a major intellectual achievement providing as they do a rigorous framework within which to assess the claims of a number of social philosophers (Smith, Spencer, Sidwick, and others) who have attempted to examine the relationship between the pursuit of self interest and the public good. Significantly, the same framework has also been used to identify sources of market failure which in turn have become sufficient conditions for considering resort to nonmarket channels of resource allocation (Arrow, 1969). The market failure argument has also been used as a basis for a critique of market based economic systems. Thus

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<sup>12</sup> These two results are known as the Two Fundamental Theorems of Welfare Economics.



one need not depart from the subject of preferences in discussing either the virtues or defects of a market economy.

The additional step of establishing criteria based on modern mathematical economics and the Paretian judgement and designed to guide actual policy is much more problematic. Indeed, serious logical and descriptive limitations of pure theory leave one unable, in principle, to say anything about policy.

The pure theory, which underlies modern welfare economics, is the Arrow - Debreu version of a Walrasian general equilibrium. In that theory decision units are divided into two groups: households, who have a preference ordering over all possible trades, and firms, which must choose a production plan from the existing "book of blueprints." Given terms of exchange for every pair of goods which any agent might wish to exchange the firms and households choose their best course of action: households engage in their most preferred trades and firms maximize profits. The competitive equilibrium vector of prices is one in which the plans of agents are realized.

It is important to stress that these results are a logical possibility - nothing more! Frank Hahn clarifies the assumption of complete markets:

To understand the significance of the postulate of complete markets, one has to understand the economic classification of goods. It is obvious that butter today in Warwick is, from any traders point of view, not interchangeable one for one for butter

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today in Cambridge. So, certainly we want to distinguish goods not only by their physical characteristics but also by their location. But, butter today in Warwick is not, from any traders point of view, the same as butter tomorrow in Warwick. So we must also distinguish goods by the date at which they are available. However, we are not yet through. Butter today in Warwick when weather is hot will be valued differently by individuals from butter today in Warwick when it is cold.... The postulate of complete markets herefore implies there is given to the individual terms on which he can trade butter in Warwick tomorrow if cold for butter in Warwick today if hot. That is, every good, as defined, has a price and so a market on which it is traded. (Hahn(1982,3)).

The postulate of complete markets is clearly at variance with the facts. But without it the Fundamental Theorems no longer hold.<sup>13</sup> This fact, well known to students of pure theory, is rarely acknowledged in textbook treatments which rely on a two sector general equilibrium model.<sup>14</sup>

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<sup>13</sup> The assumption is crucial in macroeconomics as well. Hahn argues that this is the crucial insight of Keynes (see Weintraub (1979) for a discussion within an orthodox framework). Post Keynesians also draw on this fact in noting the existence of pervasive uncertainty. The possibility of rational choice is denied by Post Keynesians (see Shackle (1968,1979) or Heiner(1983)).

<sup>14</sup> There have been two attempts to salvage the fundamental theorems. Both have been unsuccessful. The first relies on the rational expectations hypothesis. But, rational expectations equilibria are not unique and it has been shown (Radner (1981)) that they are not, in general, Pareto efficient. The second attempt is found in a recent paper by Bewely (1980) where he argues that, in certain circumstances, the holding of money balances provides all the insurance possibilities provided by complete markets. However, Bewely (1983) has since admitted that his original analysis was incorrect. In any case, most economists would agree that neither escape is particularly appealing.

Convexity is also a requirement. Increasing returns which are large relative to the size of the economy can bring down the entire theoretical structure of neoclassical economics (see Arrow and Hahn (1970) for a rigorous treatment of the problems that arise when trying to prove the existence of a competitive equilibrium price vector in the face of significant increasing returns). As well, with increasing returns one expects the emergence of market power - and a consequent breakdown of conditions necessary to prove the fundamental theorems. For an interesting and insightful critique of the convexity assumption and a discussion of why it may be inappropriate in models of "real" economies see Kaldor (1982).<sup>15</sup>

In addition to descriptive limitations there are also logical limitations. The assumptions that agents are both price takers and rational maximizers may conflict. Aumann's (1964,1966) work on a continuum of traders has established that these hypothesis conflict unless each agent is represented by a single point on a continuous line (see also Hurwicz (1972)). Otherwise rational maximizers will act strategically. The solution of the resulting noncooperative game will, in general, not be Pareto optimal (Aumann (1964)).

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<sup>15</sup> Increasing returns are extremely important in Post Keynesian economics. Indeed, notions such as "circular and cumulative causation" which are so important in the nonequilibrium framework of the Post Keynesians rely heavily on increasing returns. Also, increasing returns are extremely important when considering regional issues and Canadian federalism (see Myrdal (1957) and Kaldor (1970)).

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The assumption that information is like any other good (i.e. has a price) conflicts with the assumption of complete markets. Grossman and Stiglitz (1976) have shown that equilibrium, costly information and complete markets are mutually inconsistent.

In addition, given the plethora of public goods, externalities, and transaction costs the Lipsey-Lancaster (1956) Theory of the Second Best leaves the pure theorist unable to make statements about policy designed to improve resource allocation. Certain rules of thumb may be used (see Ng (1980)). However, without a logical foundation these rules of thumb rely heavily on the beliefs of the economist using them. Thus the value basis is much broader (and unfortunately unstated) than that provided by the Paretian judgement in Paretian welfare economics.

Pure theory offers little help in guiding actual policy. Nonetheless, it is legitimate to ask whether the Paretian judgement provides a basis for applied policy analysis. In applied work, Paretian economists take as given the existing distribution of income and wealth and do not concern themselves with the allocation of any net gain (the presence of which signifies the desirability of any allocative change) resulting from a policy initiative. This practice has received significant attention in the literature (see Kaldor (1939), Hicks (1940), Scitovsky (1941), Samuelson (1950), and Mishan (1965)) where it is concluded that compensation tests

often produce contradictory results.<sup>16</sup> Mishan (1973) argues that this allocation paradox can be resolved only if the welfare combinations under consideration are identified as alternative distributions of a hypothetical goods collection. Significantly, this resolution of the allocation paradox transforms the problem into one of comparing alternative distributions. But this is precisely the type of situation in which Paretians stand impotent. Thus, despite attempts by applied policy evaluators, distributive concerns can not be assumed away. This result has led Mishan to pose the question: Do Economic Evaluations Have Any Validity in the West Today? and answer negatively (1983,256-65).<sup>17</sup>

### 2.3 CONCLUSION

The need for a framework designed to provide a basis for addressing distributive concerns based on "relative needs" or a "comparative census" was introduced in this chapter. Our purpose was to explain, in very general terms, the key features of the approach and to indicate the position of the framework vis-a-vis the perennial concerns of the welfare economics and social choice literature.

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<sup>16</sup> The problem arises due to the possibility of intersecting social indifference curves.

<sup>17</sup> See also Mishan (1981) especially Chapter 46 entitled "On the Impossibility of Showing the Superiority of an Optimal over a Nonoptimal Position." (pp. 345-53).

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It was noted that the "needs - census" framework is not a framework designed to provide a basis for total judgements about overall social welfare. Significantly the limited scope of the framework provides an escape from the classic impossibility results of Arrow. It was also noted that the framework focused on the income, health, educational opportunities, etc, rather than on ordinally measured personal utilities (welfare levels). Expanding the information base was necessary to enable normatively appealing distributive judgements. Indeed, without some type of additional information even distinguishing rich from poor is impossible.

The method of introducing the additional information necessary to provide a basis for distributive judgement was based on the work of Sen and Rawls. The use of nonutility information was motivated by a suggestion of Sen who argues that economists, if they want to say anything of substance about policy while not, in the process, denying basic values widely held in our society, must use nonutility information in their analysis. The choice of nonutility information (census data on health, income, education, etc.) follows Rawls, who, in his theory of justice, judges disadvantage in terms of access to "primary social goods."

The Paretian framework of orthodox economics received special attention. Although the weakness of the Paretian framework have been documented in detail by others a restatement of these weaknesses was considered necessary given

recent emphasis on efficiency based approaches to questions of fiscal federalism.

With this discussion as introduction we are ready to delve deeper. The needs - census framework is formalized in Chapter 3 where it is also argued that the framework not only provides a basis for addressing distributive concerns in policy evaluations but also provides a basis for a normatively appealing approach to formula financing intergovernmental transfers in a federal state. The framework also has implications for the way we view federal organizations. These are explored in Chapter 4.

## Chapter 3

NEEDS AND THE WELFARE STATE: TOWARDS A  
THEORETICAL FRAMEWORK

The "needs - census" framework introduced in Chapter 2 is based on an approach to normative economics advocated by Amartya Sen. The significant features of that approach are the emphasis on basic requisites of well being and the use of nonutility information as a basis for normative judgments. In this chapter the "needs - census" framework is formalized to provide a theoretical foundation for applied work addressing questions involving the welfare state.

The proposed theoretical framework will be introduced in an intuitive way. We begin by restricting attention to what might be called a private good situation. First, we define individual needs. An aggregate needs index based on the needs of individuals is then presented. Finally, we review a variety of approaches to measuring needs (which are based on work involving the measurement of poverty by Sen (1976), Kakwani (1977, 1980), and Blackorby and Donaldson (1980)).

Our focus is then expanded to include private goods publicly supplied on an egalitarian basis, mixed goods, and Samuelson public goods. The role of diagnostic tests, as an alternative to the census, is also discussed. It is argued



that national health care systems, such as Medicare in Canada, have a built in mechanism for identifying needs and for linking transfers to needs.

Our attention then shifts from the measurement of needs of individuals to the needs of groups of individuals comprising states or provinces. Two measures of jurisdictional need are presented. These measures have three important attributes. First, the measures are based on the needs of individuals. Thus, the group need measure is derived directly from individual needs. Second, the measure of provincial need, because it is based on a measure of individual need defined with normative motivation, has normative appeal. Third, the measure of jurisdictional need can be used as a basis for formula financing the elimination of jurisdictional need in a federal country. In combination these three attributes enable us to employ the "needs - census" framework in an assessment of the current federal - provincial fiscal arrangements and as a basis for considering reforms to that system based on the distributive justice paradigm. As well these attributes lend significant appeal to the framework as a basis for evaluating a wider range of social (redistributive) policies in federal states.

### 3.1 A NEEDS FRAMEWORK: AN INTRODUCTION

#### 3.1.1 Needs: A Definition

It is easiest to introduce the formal "needs - census" framework in a private good context. That is, in a context in which one focuses on individual needs either with respect to a private good or with respect to income. One begins by selecting a good, service or income,  $X$ . One then chooses a cutoff or poverty line,  $X^*$ . If  $X(i) < X^*$  individual  $i$  is classified as "in need." The extent of his/her need is  $(X^* - X(i))$ .

This definition of need is not metaphysical nor is it vulnerable to the general criticisms of Culyer et. al. who argue:

word "need" ought to be banished from discussion of public policy, partly because of its ambiguity but also because...the word is frequently used in..."arbitrary" senses...Indeed...in many public discussions it is difficult to tell, when one says that "society needs...", whether he means that he needs it, whether he means society ought to get it in his opinion, whether a majority of members of society want it, or all of them want it. Nor is it clear whether it is "needed" regardless of the cost to society. (1972,114).

Our definition of "need" is unambiguous. Nonetheless, it must be admitted that there is a degree of arbitrariness (or more specifically a degree of freedom) in our definition since "needs" depend on the choice of  $X^*$ . A high cutoff implies high needs. However, we consider this arbitrariness an asset of our measure.

Because we leave the definition of  $X^*$  open our framework can accommodate a variety of social philosophies. For example one can define the cutoff by stressing the absolute minimum (subsistence) level of service or income. This is the approach employed by Statistics Canada when defining their low income cutoff. Alternatively one can define the cutoff in terms of some fraction of the mean,  $U$  (i.e.  $X^* = aU$  where  $0 \leq a \leq 1$ ). This is a relativist approach which, rather than defining basic requisites in absolute terms, links requisites to the standard of living of society in general. The relativist approach underlies the Canadian Council on Social Developments (1979, 5) approach to measuring poverty. A final option is based on egalitarianism where the cutoff is defined as the average level found in the society in question.

A society need not reflect a single social philosophy. One society may choose an income cutoff using the absolute approach, a health care cutoff reflecting specific good egalitarianism, and an education cutoff defined relative to education levels that prevail in society generally. Indeed, the welfare state, as it has developed in Canada, seems to exhibit just such a stance.

### 3.1.2 Measuring Needs of a Population

The definition of  $X^*$  provides the basis for classifying individuals (i.e. for making interpersonal comparisons). If  $X(i) < X^*$  an individual is classified as in need and we have a basis for a partition of the population into needy and nonneedy. There is a long tradition of measuring needs (Braybrooke (1968), Resher (1972)) and poverty (Towsend (1958), Weisbrod (1965), and many others) by simply taking a headcount to determine the proportion of the population which are needy or poor. The head count can be expressed as:

$$F(X^*) = \int_0^{X^*} f(X) dX = Q/N \quad (2.1)$$

where  $Q$  = the number of needy individuals

$N$  = population

$f(X)$  = population density function

$F(X)$  = cumulative distribution function

An alternative, which is employed as a poverty measure by the United States Social Security Administration, is the so called poverty gap. The poverty gap is actually a measure of total social needs and is measured by summing over the individual needs of needy individuals: i.e.

$\sum_{i=1}^Q (X^* - X(i))$  where  $i=1, \dots, Q$  are the needy individuals. This total is also equal to  $Q(X^* - U^*)$  where  $U^*$  is

the mean income of the poor.<sup>18</sup>

The poverty gap, however, has a serious weakness; it is not sensitive to the ability of society to meet the needs of the needy. An alternative measure which would indicate the relative ease or difficulty of eliminating poverty is the ratio of total needs to the total amount socially available. This ratio, defined as a measure of relative needs and denoted P is:

$$P = \text{total needs} / \text{total available} \quad (2.2)$$

which, in turn, can be expressed in two alternative ways:

$$\begin{aligned} P1 &= Q [X^* - U^*] / NU \\ &= F(X^*) [X^* - U^*] / U \end{aligned} \quad (2.2a)$$

or

$$\begin{aligned} P2 &= Q [X^* - U^*] / NUy \\ &= F(X^*) [X^* - U^*] / Uy \end{aligned} \quad (2.2b)$$

where U is the mean  $[(1/N) \sum X(i)]$  of the yardstick X, Uy is the per capita income and N is the population. Clearly P1 defines needs relative to the availability of the good or service under consideration while P2 defines needs relative to total output (income) of society. Significantly, both measures reduce to a poverty index first suggested by Kakwani (1977) when defined with respect to income.

<sup>18</sup> Proof:

$$\begin{aligned} \sum_{i=1}^Q (X^* - X(i)) &= QX^* - \sum_{i=1}^Q X(i) \\ &= QX^* - Q \left( \sum_{i=1}^Q X(i) / Q \right) \\ &= Q(X^* - U^*) \end{aligned}$$

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Kakwani employed a "transfer of income" approach to derive his poverty index and interpreted  $P$  as "the percentage of total income which must be transferred from the non poor to the poor so that the income of everyone below the 'poverty level' is raised to  $X^*$ " (1977, 238). If  $X^* = U$ , it can be shown that  $P$  leads to the relative mean deviation measure of inequality (Kakwani (1980, Lemma 5.10, 80). Although the needs measures  $P_1$  and  $P_2$  diverge when  $X$  is not income both measures continue to retain the normative appeal of the poverty index defined with respect to income.

Sen (1976) had previously suggested a similar measure. He advocated a "relativist" view of poverty and thus a weighting system which would place more weight on the needs of the very needy. His view draws on Runciman's (1966) work on relative deprivation.

The problem identified by Sen is to find a set of weights,  $v(X^*, X(i))$ , to apply to the needs of individuals ( $X^* - X(i)$ ), so that those which have greater needs receive more weight in the needs measure. There have been a variety of weighting schemes suggested. Sen (1976) proposed a weighting system based on the rank of individual  $i$  in the income distribution. Kakwani (1977) suggested a weighting scheme where the weights assigned to the needs of individual  $i$  is proportional to the income of all other persons above him but below the poverty line  $X^*$ . Both schemes generate poverty indices which use a Gini index as a measure of

income inequality among the poor.<sup>19</sup> The Kakwani index derived in the way is:

$$P3 = [F(X^*)][(X^* - U^*) / (1 + G^*)] \quad (2.3)$$

where  $G^*$  is the Gini index of inequality among the poor.

Notice that if the needy all have the same needs,  $G^* = 0$ , the measure reduces to  $P$  the transfer index. Also as  $G^*$  rises (the distribution of needs among the needy becomes more "unequal") the index  $P3$  rises indicating a situation of greater social need.

What is the "normative significance," if any, of the needs measures examined thus far? There are two approaches which can be employed to scrutinize the different poverty measures: the axiomatic approach and the social welfare function approach. Both are employed here.

Consider first the axiomatic approach. Three axioms, which any proposed poverty measure should satisfy, have been suggested in the literature.

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<sup>19</sup> Gini (1912) proposed the following inequality measure:

$$G = \int_0^{\infty} \int_0^{\infty} |X - y| f(X) f(y) dXdy$$

which is known as the Gini index. The welfare implications of the Gini index have been widely debated (see Atkinson (1970), Newbury (1970), Sheshinski (1972), Das Gupta, Sen and Starret (1973), Rothchild and Stiglitz (1973) and Sen (1973)). The welfare implications of including a Gini index,  $G^*$ , in the poverty index are considered below.

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Axiom 1: Given other things, a reduction in income of a person below the poverty line must increase the poverty measure.

Axiom 2: Given other things, an increase in the proportion of poor in society must increase the poverty measure.

Axiom 3: Given other things, a pure transfer of income from a person below the poverty line to anyone who is richer must increase the poverty measure.

The headcount ratio,  $F(X^*)$ , only satisfies Axiom 2. Consider, for example, a transfer from a needy individual to an individual not in need. Clearly,  $F(X^*)$ , is unchanged. But both Axioms 1 and 3 are violated. Indeed, a transfer from the neediest of the needy to someone less needy may even reduce  $F(X^*)$ . The headcount ratio is, therefore, not a particularly appealing measure of needs - despite its frequent use.

The poverty gap or total social needs measure,  $Q(X^* - U^*)$ , does not fare better. It will satisfy Axiom 1 not Axioms 2 and 3. As an example consider a transfer to a needy individual from a nonneedy individual with a pretransfer income of  $X^*$ . Also assume that initially the needy have equal needs. The transfer will reduce the poverty gap, increase the headcount ratio, but increase inequality among the poor. Thus the poverty gap - social needs measure can lead to preverse results.



The transfer index,  $P$  (and  $P_1$  and  $P_2$ ), is a function of both the headcount and the poverty gap. It will as a consequence satisfy Axioms 1 and 2. Axiom 3 is still violated since the  $P$  index treats "a buck as a buck." Only when the needy have equal needs will the  $P$  index satisfy all three axioms. The transfer index does, however, have other appealing attributes which make it attractive as a basis for determining jurisdictional needs (see below).

Only the  $P_3$  index satisfies all three axioms. However,  $P_3$  is just one of a general class of need measures which make use of three need indicators: the percentage of needy, total social needs, and the distribution of needs among the needy. Thus, in addition to  $P_3$ , there are a variety of normatively appealing needs indices.

This general class of need measures relies on the Gini index as a measure of inequality among the poor. An important question which must be addressed is whether the Gini is appropriate as a measure of inequality. There are a variety of alternative measures of inequality - in addition to the Gini, there are the coefficient of variation, relative mean deviation, logarithmic dispersion measures, etc. Unfortunately the alternative measures do not provide the same ranking of distributions. Because the alternative measures conflict, a substantial literature concerned with the problem of choice among alternative measures has arisen. Although that literature has not settled the question of which

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measure is "best," it has illuminated many subtle factors important in assessing alternative measures.

The literature has revealed that every inequality measure implies or is implied by a social welfare function (see Sen (1973), and Blackorby and Donaldson (1979,1980a)). Thus the choice among inequality measures is equivalent to a choice over alternative social welfare functions. Specifically, since welfare functions specify weighting schemes the problem is to choose the most attractive weighting scheme. Critics of the Gini index argue that attractive weighting schemes (social welfare functions which are symmetric and quasi concave) do not yield the same ranking of distributions as the Gini index would give (see Das Gupta, Sen, and Starret (1973), and Rothchild and Stiglitz (1973)). However, if the distributions yield nonintersecting Lorenz curves the Gini does yield the same ranking as any quasi-concave social function would give them. Thus, difficulties arise when the Lorenz curves intersect. Therefore the general class of poverty measures which employ the Gini index are not always appropriate.

Atkinson (1970) employed an alternative approach to measuring inequality. He began by deriving an inequality measure directly from a social welfare function rather than starting with an inequality measure and examining its welfare implications. The resulting measure has considerable intuitive appeal since it can be interpreted as the percent-

age of income which could be lost in achieving equality without reducing social welfare<sup>20</sup>

Blackorby and Donaldson (1980) have developed a class of ethical indices for the measurement of poverty by drawing on the work of Atkinson. They employ the same approach as Atkinson to derive their class of ethical poverty (or needs) indices although they do not impose Atkinson's restrictions on the social welfare function (Blackorby and Donaldson impose only two restrictions: symmetry and S-concavity). Their index is easiest to derive if the Atkinson restrictions are imposed (see footnote 20).

Blackorby and Donaldson begin by defining the notion of the representative income of the poor ( $X^\dagger$ ). This concept is identical to Atkinson's equally distributed equivalent income except attention is restricted to the poor. That is

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<sup>20</sup> Atkinson's measure of inequality is derived using the concept of the equally distributed equivalent income ( $X^\dagger$ ), the level, which if received by every individual, would result in the same level of social welfare as the present distribution. Atkinson assumed that the welfare function was additive, separable, and symmetric and that each individual was endowed with the same strictly concave utility function. From the definition of the equally distributed equivalent income we have:

$$n u(X^\dagger) = \sum_{i=1}^n u(X(i))$$

Defining social welfare as a function of total output and an inequality index we have:

$$W = n u[U(1-A)]$$

where  $U$  is mean income and  $A$  is an inequality index. The inequality index can be made explicit. Note:

$$n u(X^\dagger) = n u[U(1-A)]$$

which yields:

$$A = 1 - (X^\dagger/U)$$

which is Atkinson's inequality index.

the representative income of the poor is that income which if enjoyed by each poor person is ranked as socially indifferent to the current distribution. Thus:

$$QU(X\ddagger) = \sum_{i=1}^q U(X_i) \quad (2.4)$$

and if the welfare of the poor can be considered as a function of the average income of the poor and an inequality index we have:

$$QU[U^*(1-A^*)] \quad (2.5)$$

$$\text{or setting } QU[U^*(1-A^*)] = QU(X\ddagger) \quad (2.6)$$

$$\text{we have } A^* = U^* - X\ddagger / U^* \quad (2.7)$$

the Atkinson inequality index except defined over the poor.

The class of poverty indices suggested by Blackorby and Donaldson have the following functional form:

$$P_4 = H(F(X^*), X^* - X\ddagger / X^*) \quad (2.8)$$

and one can be defined specifically as

$$P_5 = F(X^*) [X^* - X\ddagger / X^*] \quad (2.9)$$

The general class of need indices suggested by Blackorby and Donaldson satisfy the three axioms introduced above. Moreover, Blackorby and Donaldson show that this class of need indices have ethical content (for every needs index there is a corresponding social evaluation function) provided the social evaluation function is separable into rich and poor components.

Thus there are a wide variety of needs indices to choose from. As with inequality indices there is no best measure. The choice of measure will depend on the application of our approach. The need indices P1 and P2, which are based on the Kakwani poverty index, are employed in this thesis.

These indices are appropriate given the emphasis on fiscal finance. Fiscal requirements are insensitive to inequality of needs since the size of a transfer budget will not depend on the distribution of needs among the needy. For example, two individuals, each requiring \$50 to reach the threshold  $X^*$  require the same transfer as two individuals one of whom requires \$99 and the other \$1 to reach the threshold  $X^*$  (Hum (1983, 94)). Thus given the interpretation of P1 and P2 as transfer indices (the proportion of total available which must be transferred to the needy to eliminate needs) they are relevant for fiscal questions rather than P3, P4 or P5.

### 3.1.3 Needs: Other Measures

Thus far focus has been restricted to what has been called the private good case. Many of the goods and services of interest in public policy analysis do not fall into this category. One class of goods of interest is private goods which are publicly supplied on egalitarian (or compulsory) terms. Education is, perhaps, an example.<sup>21</sup> Another

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<sup>21</sup> Education may have external effects. For a detailed dis-

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class of goods important in public policy are public goods. Public goods are, by definition, supplied on an egalitarian basis. The classic example is national defence. A final class of goods and services will be labelled diagnostic goods and services. In this class needs are identified by diagnostic test rather than on the basis of census data. Medical care and a variety of social welfare services fall under this heading.

One might want to entertain other classifications as well. For example, Gillespie (1980, 79-80) suggests viewing certain goods by separating three analytic dimensions: a collective consumption option demand component, and individual consumption component, and an equal need component. An individual might be prepared to pay for the option of consuming medical care in the future. Since provision of the option does not reduce supply to anyone else the provision of the option can legitimately be considered as a public good. At the same time individuals may benefit from specific medical care (a private good characteristic since current supply to others is reduced). Finally, individuals may be concerned with limited or constrained level of consumption of medical care by low income individuals (Lindsay (1969)).

Private goods publicly supplied on an egalitarian basis differ from private goods, thus a new definition of needs is necessary. The needs of any one individual can still be de-

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cussion see below.

defined relative to the threshold (i.e. individual needs are  $X^* - X(i)$ ). However, since the good is supplied on an egalitarian basis all individuals are consuming  $X(i) = U^*$ . Thus total social needs are  $N[X^* - U^*]$  and the needs indices P1 and P2 can be expressed as:

$$P1 = [X^* - U^*] / U^* \quad (2.10)$$

$$P2 = (X^* - U^*) / U_y \quad (2.11)$$

Clearly, if needs are positive  $X^*$  must be greater than  $U^* (=U)$ .

Note that if the private good is supplied on an egalitarian basis there is no need for adjustments for inequality among the needy. This is also true in the case of public goods.

In the public good case individual needs are again defined as  $(X^* - X(i))$ . However, since the elimination of the needs of any one individual would also simultaneously eliminate the needs of the collectivity we have a measure of total social needs equal to the individual need measure (i.e. social needs are  $X^* - X(i)$ ). Given public goods are, by definition, supplied on an egalitarian basis this can be rewritten as  $X^* - U^*$  which in turn is equal to  $X^* - U$ . Thus the indices P1 and P2 can be written:

$$P1 = (X^* - U) / NU \quad (2.12)$$

$$P2 = (X^* - U) / NU_y \quad (2.13)$$

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where needs are positive only if  $X^* > U$ .

If  $X$  were defined in benefit rather than quantity terms one could use the private good versions of the needs index. However, since benefit incidence studies typically allocate benefit on the basis of income the distribution of needs could be attributed to the distribution of income. For this reason a benefit incidence approach is not employed here.

One may, however, want to define the standards in cost terms. For example, the minimal educational standard may be defined as eleven years of elementary and secondary education. Given the cost function  $Z = Z(X)$  where  $X$  = years of primary and secondary education one defines the minimum standard as  $Z^* = Z(X^*)$ .

It is also possible to introduce tags to isolate target groups in the general population (on the economics of tagging see Akerlof (1978)). For example, one might not want to base the measure of educational needs on the population generally but instead to restrict concern to the school age population. This restriction is commonly invoked in discussion of education needs.<sup>22</sup>

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<sup>22</sup> However, many argue that the education of adults will become increasingly important in the coming years. Thus other approaches to tagging may be appropriate. For a discussion of tagging - including a discussion of tagging education for manpower reasons - see Section II.



Formally the introduction of tagging changes the definition of  $F(X^*)$ . In the education example we have:

$$F(X^*) = \int_0^{X^*} \int_0^{a^*} f(X, a) da dX \quad (2.14)$$

where  $a^*$  is the maximum age of the target population and  $f(X, a)$  population density function defined in terms of both  $X$  and  $a$ . Tagging will always reduce per capita costs of eliminating needs (see appendix to this chapter for proof).

#### 3.1.4 Needs and Diagnostic Tests

The "needs - census" framework, despite emphasis thus far, need not rely exclusively on census data. In certain circumstances needs can be determined by diagnostic test. This is clearly the case in health care. The incorporation of diagnostic needs tests broadens our framework and enables us to avoid problems of measurement (for a discussion of the conceptual difficulties inherent in the measurement of health see Culyer (1978)).

The "relative needs - comparative census" framework also provides a conceptual framework for considering a broad range of public policy questions. As an example consider A.K. Sen's use of the framework in assessing the cash vs. in kind debate involving health care:

While this is perhaps not the occasion to comment on the relative merits of giving ill people cash subsidies against those providing them with free medical services. I would nevertheless comment briefly on an aspect of the problem which seems to me to touch on the question of decidability of

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relative needs. I do not wish to go into the organizational advantages of providing medical services through a national health network and the possible economies of scale involved in this but it is pertinent to note that the provision of cash subsidies opens up greater possibilities of abuse through pretensions of greater needs, thereby be-deviling the problem of decidability. When medical services are provided in kind the link up with needs is more direct and the practical problem of identifying needs is to that extent reduced. The national health service has a built in system of attempting to match payments to needs, and this is of obvious relevance to any comparison of the merits of the two systems of compensation (1973,79).

Krashinsky (1981) is another who employs a variant of the needs framework. Krashinsky, following Lancaster (1971), stresses the importance of household production functions and argues that output enjoyed from a fixed input will not be the same across individuals. He interprets these differences in the ability to transform input into output as differences in needs and uses this notion of need to advocate in kind provision of rehabilitative social services.

There are numerous other applications of the "needs - census" framework. It must be stressed that the novel feature of the approach is its emphasis on the needs of individual citizens. In the remainder of this chapter the framework is employed to derive a measure of community or jurisdictional need based on the needs of the individuals within that community relative to the needs of individuals in other communities. This needs measure is employed to derive a performance index (originally developed by Musgrave (1961)) and in suggesting a new approach to formula financ-

ing the equalization of jurisdictional needs. The problem of cost-sharing the elimination of needs is also addressed.

It must be emphasized that the needs framework, although suggesting a new perspective on fiscal finance, does not necessarily imply a system of intergovernmental transfers. Indeed, we are only suggesting that social policy should be based on needs. Formula financed intergovernmental transfers are but one way to meet the needs of individuals in a federal country. This fact will be of fundamental importance in our policy discussions in Part II of this thesis.

### 3.2 NEEDS IN A FEDERAL STATE: A THEORETICAL FRAMEWORK

#### 3.2.1 Jurisdictional Need Defined

The needs indices,  $P_1$  and  $P_2$  can be employed to develop a measure of jurisdictional or provincial need. The  $P_1$  and  $P_2$  indices are attractive for two reasons. First, both indices have an attractive interpretation: i.e. they can be interpreted as yielding a measure of per capita expenditure needs. Second, the indices  $P_1$  and  $P_2$  can be decomposed into, jurisdictional needs indices,  $P(j)$ , one for each province  $j = 1, \dots, m$ . This decomposition was originally illustrated by Kakwani (Theorem 15.1, 330) and can be generalized beyond Kakwani's poverty index to apply to both needs indices introduced here.

Theorem 1: If the population is divided into a number of mutually exclusive groups, the needs index in the whole population is equal to the weighted average of the needs indices in each group, the weights being proportional to (a) the share of each group defined with respect to the chosen good or service (in the case of P1); or (b) the income share of each group (in the case of P2). I.e. :

$$P1 = [1/U] \sum_j U(j) f(j) P1(j) \quad (2.15)$$

and

$$P2 = [1/Uy] \sum_j Uy(j) f(j) P2(j) \quad (2.16)$$

where  $f(j) = N(j)/N$  (the proportion of population in jurisdiction  $j$ );  $U(j)$  is the average holding of good or service  $X$  in community  $j$ ; and  $Uy(j)$  is the mean income in community  $j$ .

Proof: Note that

$$\begin{aligned} F(X^*) &= Q/N = (Q/N(j)) (N(j)/N) = \sum_j Q(j)/N(j) (N(j)/N) \\ &= \sum_j f(j) F(j) \end{aligned}$$

$$\begin{aligned} U^* &= Q(j)U(j)/Q = 1/Q \sum_j [Q(j)/N(j)] [N(j)/N] nU^*(j) \\ &= N/Q \sum_j F(j) f(j) U^*(j) = 1/F(X^*) \sum_j F(j) f(j) U^*(j) \end{aligned}$$

Thus (a)  $P1 = [1/U] F(X^*) (X^* - U^*)$

$$\begin{aligned} &= [1/U] \sum_j F(j) f(j) [X^* - 1/F(X^*) \sum_j F(j) f(j) U^*(j)] \\ &= [1/U] [ \sum_j F(j) f(j) X^* - \sum_j F(j) f(j) U^*(j) ] \\ &= [1/U] [ \sum_j F(j) f(j) [X^* - U^*(j)] ] \\ &= [1/U] [ \sum_j F(j) f(j) U(j) [X^* - U^*(j)] / U(j) ] \\ &= [1/U] [ \sum_j f(j) U(j) P(j) ] \end{aligned}$$

and (b)

$$\begin{aligned}
 P_2 &= [1/U_y] \left[ \sum_j F(j) f(j) \{X^* - U(j)\} \right] \\
 &= [1/U_y] \left[ \sum_j f(j) U_y(j) F(j) \{X^* - U(j)\} / U_y(j) \right] \\
 &= [1/U_y] \left[ \sum_j f(j) U_y(j) P_2(j) \right]
 \end{aligned}$$

Theorem 1 is significant in several respects. First, it establishes a relationship between the provincial needs indices and the national needs index. Second, if  $X^*$  is defined as a national redistributive target it is possible to decompose this target into provincial elements for analysis or implementation. Of course  $X^*$  need not be identical for all jurisdictions. If each province establishes its own  $X^*(i)$  national uniformity no longer obtains. Finally, the theorem is significant in that it provides our measure of relative jurisdictional need.

The needs index for province  $j$ ,  $P(j)$  is a measure of the needs of individuals in jurisdiction  $j$ . It is not, however, a measure of relative jurisdictional need. A measure of relative jurisdictional need must indicate the needs of the group of individuals comprising jurisdiction  $j$  relative to the needs of the groups of individuals comprising other jurisdictions. Thus the measure of relative jurisdictional need must be based on the needs of groups of individuals.

There are two distinct approaches one could take to measure relative jurisdictional need. One would be to focus on disparities in per capita needs. The other would be to fo-

cus directly on disparities in relative needs. We will explore both options.

### 3.2.1.1 Relative Jurisdictional Needs: The Per Capita Needs Approach

Consider first the measure based on per capita needs. Recall that the total needs of the needy could be measured by  $Q[X^* - U^*]$ ; thus per capita needs in the federation are  $Q[X^* - U^*]/N$  which is equal to  $P1U$  and  $P2Uy$ . The total needs per capita of jurisdiction  $j$  can be similarly calculated to yield  $P1(j)U(j)$  or  $P2(j)Uy(j)$ . Thus if either  $P1(j)U(j) > P1U$  or  $P2(j)Uy(j) > P2Uy$  then per capita needs in jurisdiction  $j$  are greater than per capita needs nationally. The group of individuals comprising jurisdiction  $j$  can therefore be considered in relative need (i.e. as a "have not" province).

Notice that the determination of needs at the jurisdictional level is based on the needs of individuals. Also notice that it is possible to actually measure the extent of the relative need,  $E(j)$ ,  $E(j) = P1U - P1(j)U(j) = P2Uy - P2(j)Uy(j)$  which is expressed in per capita terms to facilitate cross jurisdictional comparisons.

### 3.2.1.2 Relative Jurisdictional Needs: The Relative Needs Approach

The second approach to measuring relative jurisdictional need involves focusing directly on the needs index  $P(j)$ . (Definition  $P_2(j)$  will be used in the discussion which follows.) If  $P(j) > P$  citizens of jurisdiction  $j$  will need to devote a larger proportion of the income available to them to the elimination of needs than the nation as a whole. Thus if  $P(j) > P$  we could consider the group of individuals comprising jurisdiction  $j$  as in need. Notice that the determination of needs at the jurisdictional level is again based on the needs of individuals. The specific needs measure we employ is  $t(j) = (P_2(j) - P_2) U_y(j)$  which is larger the larger the deviation of  $P_2(j)$  from  $P_2$ .

Our proposed framework, therefore, provides a basis for actually estimating relative needs: the relative needs of individuals in a group, and the relative needs of groups (or provinces) within a nation. The methodology will be employed in this thesis to actually calculate needs. This contribution is completely independent of the discussion of intergovernmental grants. Thus, even if one disagrees, in principle, with our search for a normative framework for the federal - provincial fiscal arrangements, the estimates of needs should still be of significant interest.

### 3.2.1.3 Needs and Performance Indices

The needs measures can also be used to assess performance of states. Musgrave (1961) was the first to suggest

the use of performance index. Following Musgrave, we will define the state or provincial performance level as:

$$L(i,j) = A(i,j)/P_2(i,j)U_y(j) \quad (2.17)$$

where  $L(i,j)$  is the performance level calculated with respect to good or service  $i$  in jurisdiction  $j$ ,  $A(i,j)$  is the per capita fiscal spending on good or service  $i$  in jurisdiction  $j$  and  $P_2(i,j)U_y(j)$  is the per capita needs calculated for good or service  $i$  and jurisdiction  $j$ . If  $L(i,j)$  is equal to one the jurisdiction is spending enough to meet the needs of its individual citizens. If  $L(i,j) < 1$  needs are not being met and  $L(i,j) \times 100$  can be interpreted as the percent of needs with respect to good or service  $i$  being met in jurisdiction  $j$ . The performance index can be estimated as a basis for an assessment of the current federal - provincial fiscal arrangements.

### 3.2.2 Relative Jurisdictional Needs Measures and Fiscal Transfers

The relative jurisdictional needs measures,  $E(j)$  and  $t(j)$ , and the needs index  $P(j)$ , can be used to suggest a new perspective from which to view intergovernmental transfers. The distinction between our relative jurisdictional needs measure and the provincial needs index suggests an important analytic distinction when considering questions surrounding social policy in a federal country. First, one objective may be to assure the relative jurisdictional needs are elim-



inated. The elimination of jurisdictional needs would assure either (1) that the per capita tax required to eliminate the needs of individuals is the same in all jurisdictions (if focus on  $E(j)$ ) or (2) that the proportional income tax rates imposed to finance the elimination of needs are the same in all jurisdictions (if focus on  $t(j)$ ). Thus focus the relative jurisdictional needs indices, could be considered an "equalization" emphasis. On the other hand, the objective may be to eliminate individual needs. This is a conceptually distinct problem since eliminating relative jurisdictional needs in no way implies eliminating the needs of individuals. Provinces may eliminate individual needs on their own or there may be additional monies injected by an other level of government. Thus focus on  $P(j)$ , the provincial needs index leads one to consider cost sharing, block funding, and other types of transfers designed to spread the cost of eliminating needs across levels of government.

The analytics of our need indices can also be discussed in the more traditional language of public finance. Note that our approach provides a synthesis of horizontal and vertical equity concerns. The vertical equity concerns are embodied in the needs index  $P(j)$  while horizontal equity concerns are reflected in the jurisdictional need indices  $E(j)$  and  $t(j)$ . The problem of horizontal fiscal imbalance arises if  $E(j)$  or  $t(j)$  are not equal zero for any  $j$ . The problem of vertical imbalance arises when the order of gov-

ernment responsible for vertical equity (i.e. achieving  $P(j) = 0$ ) is unable to do so due to inadequate tax capacity. Traditional public finance concerns therefore remain but they show up in a new form.

Turn first to the "equalization" problem using our first measure of relative jurisdictional need.<sup>23</sup> Recall that jurisdiction  $j$  is in relative need if  $P_1(j)U(j) = P_2(j)U_y(j) > P_1U = P_2U_y$  and that a measure of relative jurisdictional need is:

$$E(j) = P_1U - P_1(j)U(j) = P_2U_y - P_2(j)U_y(j) \quad (2.18)$$

Clearly, in this case, jurisdictional need is defined relative to national needs. There are other options. For example, jurisdictional need of jurisdiction  $j$  could be defined relative to the need of the least needy jurisdiction. In that case the relative needs of jurisdiction  $j$  would be defined as:

$$\begin{aligned} E(j) &= \min[P_1(j)U(j)] - P_1(j)U(j) \\ &= \min[P_2(j)U_y(j)] - P_2(j)U_y(j) \end{aligned} \quad (2.19)$$

Other standards are also open such as the average of the two richest provinces (least needy), the average of five (representative) provinces, or the needs of the largest province (say Ontario). Thus there are a variety of alternative def-

<sup>23</sup> The second measure,  $t(j)$ , is not covered in detail in this Chapter. See Chapter Seven for details, an application, and a discussion of considerations important when choosing between the alternative measures.

initions of  $E(j)$  available. The choice is arbitrary and will reflect pragmatic as well as philosophical considerations. In what follows we define  $E(j)$  as in (2.18) although the discussion applies regardless of the chosen definition.

The measure of relative jurisdictional need is:

$$E(j) = P1U - P1(j)U(j) = P2Uy - P2(j)Uy(j) \quad (2.18)$$

Multiplying through by the population of jurisdiction  $j$  yields:

$$\begin{aligned} E(j)N(j) &= N(j) [P1U] - N(j) [P1(j)U(j)] \\ &= N(j) [P2Uy] - N(j) P2(j)U(j) \end{aligned} \quad (2.20)$$

which states that  $E(j)N(j)$ , the measure of jurisdictional need with respect to  $X$  times the population of jurisdiction  $j$  equals the difference between  $N(j) [P1U]$  ( $= N(j)P2Uy$ ), which can be interpreted as either jurisdiction  $j$ 's per capita share in total national needs or as the needs of jurisdiction  $j$  if needs did not vary with respect to jurisdiction, and  $N(j) P1(j)U(j)$  ( $=N(j) [P2(j)Uy(j)]$ ) which is the actual needs of the jurisdiction. It follows that  $E(j)N(j)$  can be interpreted as the transfer to/from each jurisdiction  $j=1, \dots, m$  which would effectively equalize per capita needs across jurisdictions.

Equalizing relative jurisdictional needs and equalizing intergovernmental transfers are, therefore, directly related. Not only can the needs index be used to determine relative jurisdictional needs but also the system of intergo-

vernmental grants necessary to eliminate relative jurisdictional needs.

The jurisdictional need - transfer index,  $E(j)N(j)$ , can be modified to encompass Samuelsonian public goods and private goods publicly supplied on an egalitarian basis. As noted above (pp 40-45) the needs of the individuals within a jurisdiction (say jurisdiction  $j$ ) are  $[X^* - U(j)]$  when defined for a Samuelsonian public good and are  $N(j)[X^* - U(j)]$  when defined for a publicly supplied private good. Thus the jurisdictional need measure is

$$E(j) = [X^* - U] - [X^* - U(j)] = [U - U(j)] \quad (2.21)$$

regardless of whether defined with respect to a Samuelsonian public good or with respect to a private good publicly supplied on an egalitarian basis. The "equalizing" transfer defined with respect to the Samuelsonian good is simply,  $E(j)$ , while the equalizing transfer defined with respect to the publicly supplied private good is:

$$E(j)N(j) = N(j)(U - U(j)) \quad (2.22)$$

where, in both cases, the transfer assures that the cost of eliminating needs in jurisdiction  $j$  is equal to the cost which it would face if the country were a unitary state.

The total transfer to/from any jurisdiction to eliminate jurisdictional need is the sum of transfers associated with all goods and services defined as basic requisites of well

being. In this respect the approach suggests a set of transfers similar to that of the pre 1977 Canadian Equalization program which was designed to equalize tax capacity by assuring every province received tax revenue equal to that which would have been collected if the province applied the Canadian average tax rate to the Canadian average tax base for each of twenty nine tax sources. When viewed in this way the suggested approach points to a question which must be answered - i.e. what goods and services should be chosen as a basis for a "needs" transfer system. This question is one which must be answered in the political domain. However, our framework does suggest some restrictions on the set of goods and services to be considered.

Milton Moore (1881,249-250) offers an interesting classification of government expenditure areas and indicates which should and should not be included in a needs based Equalization program. His list is largely congruent with ours and is summarized below.

1. INCLUDE:

- a) Intentionally Redistributive Expenditures
  - i) All education: elementary, secondary, and post secondary (until and unless the primary beneficiaries are required to pay the cost of post secondary education).
  - ii) Public health care; hospital insurance; medicare; and related expenditure.

- iii) All welfare expenditures: income maintenance including economic development of depressed regions as an alternative to cash income maintenance.
  - iv) Protection of persons and property: mainly fire and police protection.
- b) Expenditures Not Properly Financed by Benefit Taxation
- i) General provincial Government: the administration of justice and detention, expenditure on sports, culture, and the like.

2. Exclude:

- a) Expenditures Properly Financed by Benefit Taxation
- i) Highways and all municipal public works: streets, roads, sewers, and similar projects financed by provincial governments.
  - ii) Public transit systems.
  - iii) Utilities and subsidies to them: water, electricity, and gas distribution.
  - iv) To the extent feasible: all economic development spending nor reasonably classified as job creation for unemployed and underemployed persons.

Moore's list, which is only suggestive, reflects our emphasis on the "welfare state" and basic requisites of well being. However, the "needs-census" framework, while highlighting the same general areas, provides an alternative to focusing exclusively on government expenditure as a proxy

for needs. This alternative is clearly our needs index. An illustration of the "needs - census" alternative is presented in Part II of the thesis where applied policy applications are emphasized.

In concluding our discussion of the transfer formula it is important to reemphasize that the "needs" formula we developed assures that the per capita tax revenue required to finance the elimination of "needs" is equal in all provinces. Thus the formula also captures tax effort (defined as revenue per capita). Note that  $P_2$  can be interpreted as the tax rate which, when applied to average income, will yield revenue equal to the per capita expenditure needed to eliminate needs. Thus, the definition of relative jurisdictional need can be rewritten as:

$$E(j) = tU_y - t(j)U_y(j) \quad (2.18a)$$

where, if we consider the tax base to be total income and denote the national base  $B$  and the provincial base  $B(j)$ , we have a transfer formula:

$$E(j)N(j) = tB[N(j)/N - t(j)B(j)/tB] \quad (2.20a)$$

which is remarkably similar in appearance to the formula employed in the pre 1977 Canadian Equali-

zation program.<sup>24</sup>

However notice that the transfer index formula does not capture differences in "ability to pay". Thus a particular (and unsatisfactory) definition of tax effort has been employed. In Part II chapter 7 we indicate how the second approach to defining relative jurisdictional need suggested by our framework can be extended to generate a transfer formula which could be used to assure tax burdens are the same in all provinces.

Also, as mentioned above, transfers allocated using our formula do not assure needs of individuals within any jurisdiction will be eliminated. The objective of eliminating the needs of individuals is conceptually distinct from the objective of assuring that the per capita expenditure necessary to eliminate individual needs are the same for all groups (provinces).

The necessity and nature of a system of transfers will depend on the assignment of responsibilities within the federation. Although a welfare state perspective is discussed in detail below (Chapter 4) it is useful to consider briefly three

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<sup>24</sup> The pre 1977 Canadian Equalization formula was

$$tB[N(j)/N - B(j)/B]$$

The tax rates in the two formulas are not the same.



different possibilities here.<sup>25</sup>

1. Federal government responsible for eliminating individual needs: provided the federal level of government has access to "sufficient" revenue there is no need for any transfers to other orders of government.
2. Provincial governments responsible for eliminating individual needs: provided each provincial government has access to "sufficient" revenue there is no need for transfers from other levels of government to achieve vertical equity. A system of redistributive intergovernmental transfers assuring the per capita expenditure necessary to eliminate individual needs are the same for all provinces could be established to assure horizontal equity.
3. Both federal and provincial levels responsible for eliminating individual needs: a wide variety of transfers are possible in this case. Both levels of government may share responsibility for eliminating indi-

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<sup>25</sup> The positions advanced here are descriptive. In chapter 3 these positions are scrutinized by paying close attention to the problem of primary citizenship. Primary citizenship, an issue which is identified in the contractarian literature, is the fundamental assignment problem in normative studies of federalism.

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vidual needs by formally agreeing to share the cost of meeting the objective (this could take the form of explicit cost sharing, block funding, transfers of tax room, etc.). There is scope for assuring that per capita expenditure necessary to eliminate individual needs is the same for all provinces. Equalizing tax capacity is also a possibility.

The case where both federal and provincial levels are responsible for eliminating individual needs is the most interesting. Consider first the case where the federal government shares in the cost of achieving an objective  $X^*$ . In the private good case the cost of achieving an objective  $X^*$  in province  $j$  is  $Q(j)(X^* - U^*(j)) = G(j)^*$  [the poverty gap]. The division of cost is determined by the choice of cost sharing rate,  $b$ ,  $0 < b < 1$ . In the Samuelsonian public good case the objective is simply  $X^*$  and the federal and provincial cost shares would be  $bX^*$  and  $(1 - b)X^*$  respectively. For the private good publicly supplied on an egalitarian basis, the federal share of the cost of eliminating individual needs in province  $j$  is  $b(N(j))X^*$ .

The cost sharing transfer can also incorporate an element of "equalization." There are a variety of ways of doing this. "Equalization" can be introduced by assuring that there are no relative jurisdictional needs (as defined above). In the case we have (where  $A_p$  is provincial expenditure devoted to eliminating needs):

1. For the private good:

$$\begin{aligned} A_p &= (1 - b) [Q(j) (X^* - U^*(j))] + N(j) E(j) & (2.21) \\ &= [N(j)/N] Q (X^* - U^*) - b [Q(j) (X^* - U^*(j))] \end{aligned}$$

2. For the Samuelsonian public good:

$$A_p = (1 - b) X^* + E(j) \quad (2.22)$$

3. For the private good publicly supplied on an egalitarian basis:

$$A_p = (1 - b) X^* + E(j) N(j) \quad (2.23)$$

In each of these cases the formula assures that the province is responsible for its per capita share of national need minus the federal government contribution to meeting its actual needs. In aggregate the provinces are responsible for  $(1 - b) \times 100$  percent of national needs and the federal

government is responsible for  $b \times 100\%$  of national needs.

Hum (1983) has suggested an alternative approach to cost sharing transfers. He argues that the cost sharing rate,  $b$ , should be a function of the needs index,  $P_2$ . This index rises as the number of needy increase, as the gap  $(X^* - U^*)$  rises, and as the mean income,  $U_y(j)$ , falls. In other words the needs index classifies a province as relatively more needy if it has more needy persons, its needy population are needier, or its provincial mean income is lower. Specifically, Hum (1983, 85) suggests that:

$$b = \begin{cases} k & \text{if } P_2(j) = \min P_2(j) \\ k + c(P_2(j)) & \text{if } P_2(j) > \min P_2(j) \end{cases} \quad (2.24)$$

where  $k$  = the base cost sharing rate and  $c$  is the addition to the cost sharing rate associated with a  $P_2(j) > \min P_2(j)$ . In addition Hum argues that a second cost sharing rate,  $b'$ ,  $0 < b' < 1$ , could be employed, if desired, as a basis for cost sharing expenditure above the established standard  $X^*$ . The use of an additional cost sharing rate on expenditure above the established standard transforms the transfer from a closed ended grant to an open ended one.

Block funding could also be based on the cost sharing rate,  $b$ , where, rather than sharing expenditure, a block transfer of  $bG^*$ ,  $bX^*$ ,  $b(N(j))X^*$  would be used as the basis for sharing responsibility for eliminating the needs of individuals. The block grant could also incorporate an element of "equalization" by using either the approach suggested by (2.21), (2.22), and (2.23) or (2.24).

### 3.3 CONCLUSION

The "needs" indices introduced in this chapter can provide a normatively appealing basis for examinations of "social welfare" from a "welfare state" perspective. It was argued that a wide variety of areas are amenable to analysis using the proposed theoretical framework. However, one area received most attention: the finance of social policy in a federal country.

The "needs" indices provided a new perspective on federal-provincial fiscal finance. An important new analytic distinction - the distinction between individual and jurisdictional needs - was introduced and it was argued that this distinction was fundamental when considering questions involving the finance of social policy in a federal country. One may wish to eliminate relative jurisdictional needs. It was noted that the elimination of relative jurisdictional needs would assure that the tax (per capita or proportional

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income tax rate) required to eliminate the needs of individuals is the same in all jurisdictions. Thus a focus on jurisdictional need could be considered an "equalization" emphasis. On the other hand, one may wish to eliminate individual needs. This is a conceptually distinct problem since eliminating jurisdictional needs in no way implies eliminating the needs of individuals. Provinces may eliminate individual needs on their own or there may be additional monies injected by another level of government. Thus focus on individual needs leads one to consider cost sharing, block funding, and other types of transfers designed to spread the cost of eliminating needs across levels of government.

The theoretical framework introduced in this chapter can also be employed in a reassessment of the literature on federalism. The literature on federalism is reviewed in the following chapter. A new, welfare state perspective, is also introduced.

## Chapter 4

FEDERALISM, FISCAL FINANCE, AND THE WELFARE  
STATE4.1 INTRODUCTION

Federalism has been much discussed in economics and political science. Nonetheless, despite significant intellectual effort, there is no agreement on a precise definition of federalism. The only point of commonality among scholars of federalism seems to be that a federal state occupies the ground between a unitary state and a loose alliance of governments.

In a unitary state the national government is supreme. Other levels of government may exist but they only gain authority at the pleasure of the national government. In an alliance, on the other hand, member states are politically independent. A central government body may exist but, if so, it exists at the pleasure of the component governments. The federal state lies between the two because no order of government is merely an agent of another. Rather, orders of government are accountable only to their citizens.

Given the vagueness of the consensus view of federalism it should not be surprising to observe that there is sharp

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disagreement over the appropriate assignment of fiscal power in a federal state. We will not resolve those disagreements here. We will, however, suggest that a welfare state perspective can shed new light on old questions.

The first two sections of this chapter review the classical and public choice approaches to fiscal federalism. The third section presents a welfare state perspective. Three issues are of particular interest: the assignment of legislative powers, the role of intergovernmental transfers, and the legitimacy of the notion of national standards. These issues are explored using each of the three approaches.

Our emphasis stems from our concern with the direction of recent debate, and, in particular, recent calls for more decentralization, the elimination of conditional grants, and the abrogation of national standards. In our opinion the parameters of the debate have been defined too narrowly and, as a consequence, contributors have felt comfortable making very broad and general statements. For instance, Geoffrey Young, echoing the sentiments of many economists, was able to state that the concept of minimal national standards loses its appeal provided one believes that the provincial governments are as legitimate an expression of the democratic process as the federal government (1977,41). Thus federalism and minimal national standards in areas of provincial control are rendered incompatible. We would like to show that this and similar statements are based on an approach to



democracy as narrow and single focused (on preference) as the Paretian approach to welfare.

## 4.2 CLASSICAL FEDERALISM

### 4.2.1 Classical Federalism Defined

The study of federalism has traditionally been dominated by constitutional scholars. As a consequence the literature is replete with studies emphasizing formal constitutional provisions and jurisprudence. The now classic constitutional study of federalism is due to Wheare (1946). Wheare defines federalism as a system of general and regional governments encompassing the federal principle (1946,10). The federal principle identifies a method of dividing powers. Both general and regional governments are, within a sphere, coordinate and independent (1946,10). The "classical" approach to federalism is based on this federal principle.

One of the most significant features of the classical approach is the way it narrows the definition of federalism. Classical federalism is not merely associated with forms of government which lie somewhere between a unitary state and an alliance but rather with those where powers are divided among orders of government so that each is supreme within its own sphere. Thus federalism, in the classical sense, is defined with respect to the constitutional division of powers.

Although Wheare and other constitutional scholars were primarily interested in taxonomy - the classification of constitutions and forms of government - others have extended "classical federalism" to encompass normative concerns over the design of government. This second group of classical federalists stress accountability. Pierre Elliot Trudeau clearly articulates the underlying normative position when he argues:

A fundamental condition of representative democracy is a clear allocation of responsibilities: a citizen who disapproves of a policy, a law, a municipal-by-law, or an education system must know precisely whose work it is so he can hold someone responsible for it in the next election (1968,79).

This position has important implications. Although the assignment of individual legislative responsibilities is important the clear division of these responsibilities is much more so. Independence is paramount. Thus classical federalists focus on the division of powers rather than the assignment of individual legislative responsibilities.

#### 4.2.2 Classical Federalism and Intergovernmental Transfers

Independence has important implications for intergovernmental transfers. The influence of classical federalists, and their focus on independence, on fiscal finance is evident in a statement of principles presented by Canadian Minister of Finance Mitchell Sharp in 1966. Consider the first three principles:

(1) The fiscal arrangements should give both the federal and provincial governments access to fiscal resources sufficient to discharge their responsibilities under the Constitution.

(2) They should provide that each government be accountable to its own electors for its taxing and spending decisions and should make these decisions with due regard for their effect on other governments.

(3) The fiscal arrangements should, through a system of equalization grants, enable each province to provide an adequate level of public services without resort to rates of taxation substantially higher than those of other provinces.

The first principle relates to the possibility of vertical imbalance. It indicates that if an imbalance between revenue sources and responsibilities exists the classic response is a transfer of tax room or tax sources.

The second principle relates to accountability. It has important implications for the use of conditional grants and the specification of national standards. As Mitchell Sharpe noted in 1966:

We must recognize that the continuous and cumulative use of shared cost programs in fields of jurisdiction which are primarily provincial, would result in a greater and greater proportion of provincial budgets being devoted to programs whose costs are shared by the federal government, leading to a continuing influence on provincial decision making. The result would be to reduce the fiscal responsibility of the provinces and to hamper them in establishing their own priorities.

Therefore, classical scholars would agree with Young when he declares national standards in areas of provincial jurisdiction and federalism incompatible.

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The third principle relates to the horizontal imbalance which arises when various governments of the same order differ with respect to expenditure needs and/or revenue raising ability. Interest in horizontal imbalance is a response to the principle of horizontal fiscal equity. Equity demands that all citizens in all provinces enjoy some "foundation" or average level of service without exerting more than average fiscal effort (on this view see Carter (1968)). The classic instrument to redress this imbalance is the unconditional grant.<sup>26</sup>

Although establishing the existence of horizontal and/or vertical imbalances and choosing the appropriate instrument for redressing such imbalances have been the central preoccupations of economists working within the classical tradition they have also addressed broader constitutional concerns. Economists recognize that fiscal arrangements aimed at correcting imbalances can be designed in two ways. It is possible to design grants respecting the division of powers entrenched in the Constitution. Or, it is possible to redesign the Constitution de facto by the appropriate choice of fiscal arrangements. This second option has been widely used (see Smiley (1980,66-213) for a discussion of the Canadian experience). The result has been a blurring of responsibilities.

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<sup>26</sup> An unconditional grant is necessary to assure independence of the recipient government.

#### 4.2.3 Classical Federalism Today

De facto constitutional amendments via changes in fiscal arrangements have undermined classical federal principles in many countries. Is the appropriate response a return to classical federalism? The answer obviously depends on the reasons for de facto amendments. If, as is likely the case, these changes reflect the increasing interdependence of governments due to an increasingly interdependent society, there is no reason to "reestablish" a classical federalism. This is the position of the recent Parliamentary Task Force on Federal-Provincial Fiscal Arrangements:

In the integrated and interdependent community of the closing years of the 20th century, the 'classical' model of federalism, based on the principle of fiscal responsibility (which would assign each province the revenue sources necessary to permit it independently to provide the services allocated to it, or to discharge responsibilities assigned to it under the BNA Act) is not appropriate nor can a system of unconditional "National Adjustment Grants" be exclusively relied on for this purpose (1981,4).

The day-to-day operation of federal systems, especially the Canadian federal system, have not reflected classical principles for some time. The response of academic political scientists has been to focus on the administrative aspects of the interdependencies. Their work is found in the "executive federalism" literature. Academic economists, on the other hand, have turned their attention to basic accountability questions using their own set of analytic techniques. This body of economic research, which falls under

the general heading of public choice is reviewed in the following section.

#### 4.3 THE PUBLIC CHOICE APPROACH TO FEDERALISM

##### 4.3.1 Introduction to the Public Choice Perspective

Public choice has been defined as the economic study of nonmarket decisionmaking, or simply as the application of economics to political science (Mueller, 1979,1). Like Paretian welfare economics, normative public choice emphasizes the relationship between institutions (although non-market) and the ability of individuals to choose the alternative most preferred by them in any given situation. Because public choice theorists use the competitive market model of economics as an ideal against which nonmarket institutions are assessed, public choice has also been referred to as the "market surrogate school" (Bennett, 1980,18).

Three features of the market are considered desirable by public choice theorists: (1) individuals are free to choose their most preferred alternative; (2) individuals face a large choice set (i.e. there are many alternatives from which to choose); and (3) suppliers are responsive to individual preferences.<sup>27</sup> Not surprisingly, public choice theo-

<sup>27</sup> Although public choice theorists make much of the virtues of the market, it is generally recognized that there are several weaknesses in their position. First, they tend to finess the distribution problem by assuming initial endowments have been "justly" decided. This weakness was

rists will pose the following questions when evaluating public sector institutions: How can individuals articulate their preferences? Are individuals free to choose their most preferred option? Are the suppliers of public sector policies responsive to individual preferences? Is the choice set large or small? These questions are basic to discussions of democracy. As such they are fundamental when evaluating different institutional and constitutional arrangements.

The public choice theorist's search for institutional arrangements in the public sector which are as attractive as the market is a difficult one. In the market place individuals can indicate their attitudes toward price-quality characteristics of a good or service by increasing (entry) or decreasing (exit) their purchases (Hirschman (1970)). In the the public sector signalling via entry and exit is not generally feasible. And when it is it tends to be costly. Typically the method employed to voice individual preferences in collective decision making is voting. However, voting

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discussed in detail in Chapter 2. Second, there is the Keynesian problem ( a non problem in the eyes of many Chicago School - public choice theorists). Capital accumulation tends to proceed in an erratic fashion with a high cost in unemployed resources. Finally there is the difficulty first identified by Marx. Marxian philosophy holds that man realizes his essence through creative activity, through work. But under capitalism men must sell command over their labour power. Thus they lose control over work and become alienated from themselves (the implications of this are explored in a burgeoning Marxist literature on the labour process and has not been considered by the Chicago school advocates of the free market.)

is an unattractive way of making decisions. In the absence of unanimity voting always leads to decisions which are arbitrary and unresponsive to the preferences of some. Moreover, collective action, even when in the interests of all is unlikely to be voluntary. Therefore, there will be an element of coercion in collective action not present in the market.

The market failures associated with collective goods and services and a concern for coercion associated with collective provision lie at the heart of public choice analyses of public sector institutions. The focus on collective goods is not restrictive. As Mancur Olson, a leading public choice theorist, notes:

The achievement of any common goal or the satisfaction of any common interest means that a public or collective good has been provided for that group. The very fact that a goal is common to a group means that no one in the group is excluded from the benefit or satisfaction brought about by its achievement.

It is of the essence of an organization that it provides an inseparable, generalized benefit. It follows that the provision of public or collective goods is the fundamental function of organizations generally. A state is first of all an organization that provides public goods for its members, the citizens: and other types of organization similarly provide collective goods for their members (1965, 15, emphasis in original).

Public choice analysis generally begins by noting the reason for market failure. In the market individuals are willing to pay a price for goods and services. Why? Because if they do not pay the price the supplier of the good



can deny them the opportunity of consuming. However, with a collective good, those who do not pay can enjoy its benefits provided the good is supplied to someone. (A collective good, by definition, is a good characterized by nonrivalry and nonexcludability). It will not be the individuals interested to pay for his consumption since, if the good is supplied at all, it is automatically obtained free of charge. But if consumers won't pay there is no reason for producers to produce (see Head (1962,197-219) for a detailed discussion of this nonappropriability problem).

Public choice theorists then note the absence of the economists fiction - the benevolent and omniscient planner - who is charged with responsibility for setting the appropriate supplies of collective goods and services. Given the absence of the planner analysis must turn to the problem of organizing collective action. The nonexcludability property of collective goods and services not only presents problems for market action but also for collective action. Individuals are unlikely to voluntarily join together to supply a collective good or service even when each individual stands to gain from collective action (see Frolich and Oppenheimer (1978, 32-65) for a complete discussion). This political failure leads to an interesting paradox referred to in the literature as "the paradox of nonparticipation." Rational individuals will often need to be, and will agree to be, forced to do what they wanted to do anyhow, i.e. some coer-

sive means have to be established to force individuals to articulate what they actually wish to see incorporated as public policy (Frolich and Oppenheimer (1978,64) and Sproule-Jones (1974,120)).

Public choice theorists also note the impossibility of finding attractive methods of group choices (Arrow, 1963). This is a basis for scepticism among public choice theorists of people like Trudeau (see quote above) who hold that representative democracy has some special ethical appeal.

In summary, two aspects of public sector activity are emphasized in the public choice literature. The first is the ability of public sector institutions to supply valued activities (collective goods and services). Provision of collective goods and services is necessary if individuals are to pursue the course of action they consider best. The second is the potential of these same public sector institutions to deny individuals the opportunity to pursue preferred activities (due to the coercion which is a necessary part of collective activity). These two contradictory features of public sector institution are the focal point of normative public choice research on federalism.

#### 4.3.2 Public Choice and the Welfare State: A Digression

The public choice framework emphasizes public goods. But, can the services associated with the welfare state be

viewed as public goods? Although we will advocate an alternative to the public good view of the welfare state in Section 4 we must admit that the public good view is more attractive than most of its rivals. Discussions of the welfare state and redistribution are typically based on one of three models: the insurance model; the taking model (which assumes the poor majority can secure redistributive transfers from the rich minority via the franchise); or the public good model. We will briefly review each of these models to indicate why the public good view can be considered the most attractive of the three.

#### 4.3.2.1 The Insurance Model

The basic insurance model of microeconomics indicates that risk averse individuals, each facing the same risk, can gain by acting collectively to hedge against it. This risk pooling arrangement (which, typically, would be organized privately via entrepreneurial initiative) will produce redistribution at any point in time since payments contributed by some members of the community go to others who suffer misfortune.

However, private insurance markets may not emerge when risks differ and are unknown to the insurer (see Akerlof (1973) and Rothchild and Stiglitz (1976) on the asymmetric information problem) or when risk can be influenced by the actions of the insuree (a problem referred to as moral haz-

ard: see Arrow (1963)). If private markets do not emerge collective action using the state may be called for. This is the argument originally advanced by Arrow (1963). Arrow argues that insurance is the prime motivation for many redistributive policies when he notes " a good part of the preference for redistribution expressed in government taxation and expenditure policies and private charities can be interpreted as a desire for insurance (1963,947-48) .

The welfare state appears to reflect the insurance motive (see also Brennan (1973) and Pauly and Willet (1972)). Medicare and Hospital Insurance, Unemployment Insurance and Workman's Compensation have insurance components. Thus the insurance model may offer some insight into the welfare state.

If the welfare state is a response to the insurance motive it is relatively easy to suggest the appropriate constitutional arrangements. Welfare state functions should be assigned to the national government. This proposition is based on the literature on risk pooling - the more people in the pool, the lower the cost of risk, the better off the individual.<sup>28</sup>

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<sup>28</sup> However, the marginal gains from risk pooling decline as group size increases. If there are administrative costs these will limit the optimal pool size.

However, the link between the welfare state and the insurance motive is probably much weaker than the above would suggest. With differences in risk, asymmetries in information, and moral hazard it is still unclear why public sector insurance programs emerge. The self insurance option is likely to be preferred by many given the premium inflation associated with the information asymmetries and moral hazard (see Zeckhauser (1975) for a formal examination of this point). Thus an alternative to the insurance motive is likely operative in the establishment of social insurance programs.

Feldstein (1977) argues that social insurance programs are best seen as "event conditioned" payment schemes. Event conditioned programs may be influenced by the insurance motive. However, some other motivation such as empathy and the recognition of need is more likely. Old Age Security, for instance, is event conditioned (i.e. payment is linked to reaching a certain age) yet old age is not treated as an insurable risk. Although other programs (Hospital Insurance, Medicare, Unemployment Insurance, etc.) are associated with insurable risks they also involve substantial cross subsidization which in turn suggest an a priori case for a move toward increased self insurance (see Zeckhauser (1975)). The relative absence of criticism of cross subsidization in social insurance programs seems to imply some

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other motive is very important.<sup>29</sup> Indeed, the view that social insurance programs comprise a "social safety net" seems to suggest that the link between individual needs and certain events may be more important as a source of support for those programs than concern for insurance.

#### 4.3.2.2 The Taking Model

Redistribution may be related to the narrow pursuit of self interest and the granting of universal franchise. The earliest work based on this model is due to Downs (1957). In the Downs model redistribution from the rich to poor is a device used by parties to obtain votes. With a universal franchise and an unequal income distribution the support of many low income voters can be bought at the expense of a few wealthy voters. Significantly, the political strategy of redistribution in favour of the bottom 51% always dominates other strategies.

This redistribution is desirable. According to Buchanan (1975) the efficiency of taking redistribution is a consequence of the property right inherent in the franchise. The traditional approach in economics is to define property rights only with respect to initial endowments. However, the granting of universal franchise gives every member

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<sup>29</sup> Hum (1981) argues that unemployment insurance is a merit good.

of society a contingent claim on the final goods and services available in the whole community. Thus if the social choice rule associated with the franchise is majoritarian zero sum redistribution can be efficient.

The Downs-Buchanan view suggest the emergence and desirability of the welfare state. This is particularly true when recent work by Usher (1980) which suggests that health care and education will be socialized under majority rule is also considered. If this model is correct, the federalism literature suggests that the welfare state functions should be assigned to the national government. The argument is straightforward. Since the power of any government to extract income and wealth coercively from a person is related inversely to the locational alternatives that are available to that person the national government is best able to redistribute (Buchanan, (1974,22)).

However, the Downs model is not without weaknesses. Life cycle considerations may come into play. If low income voters expect they might be in the high income brackets in the future they might not favour redistribution. Voters with high incomes can exert influence on government not available to low income earners. This might even result in redistribution from poor to rich. Also disincentive effects may be important. If redistributive taxation adversely affects total income redistributive demands may be reduced.

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Recently public choice theorists have advanced more sophisticated models of redistribution based on taking (this group of models is found in the literature on rent seeking). These models abandon the view that redistribution is related to income. The rent seeking literature (for recent surveys see Tollison (1979), Trebilcock, Hartle, et. al. (1980), Hartle (1983)) emphasizes the costs and benefits of organizing to achieve gains through the state. The rent seeking literature would suggest that because interests of the poor are diverse and because group size is large they are unlikely to secure redistribution in their favour. This prediction is consistent with much redistribution actually observed (empirical evidence suggests income is only tenuously related to who pays and who receives - see Rogers (1974)). Thus the taking model is not the most attractive approach to the welfare state.

#### 4.3.2.3 The Public Good Model

The public good model is based on the existence of interdependencies. The potential donor and donee both have utility functions which they wish to maximize subject to a budget constraint. The interdependence arises because the donee's utility, income, or consumption of a particular good or service appears as a relevant argument in the utility function of the donor, i.e. the donor benefits from the utility, income, or consumption of the donee and is willing to pay to secure these benefits.



The benefit can take many forms: the rich person may be altruistic (Hochman and Rogers (1969)); the poor person may be politically more amenable to the rich person keeping his wealth when he is educated and not desperately poor (Brennan(1973)); redistribution may be necessary to preempt revolution and thus maintain (legitimate) the existing system of productive relations which are the source of the rich person's wealth(O'Connor (1973), Gough (1979)); etc. Collective action is necessary to internalize the hypothesized externality since the external benefits have the nonexcludability and nonrivalry characteristics of public goods.

Thus welfare state functions can be treated like any other public good. In the discussion of public choice and federalism which follows we only discuss redistributive functions when necessary. In general we will treat redistribution as an other public good. A critique of the public good approach is left to Section 4.

#### 4.3.3 Federalism and Public Choice

##### 4.3.3.1 Introduction

It is possible to isolate four distinct approaches to federalism in the public choice literature. The first takes the work of Samuelson (1954,1955,1958) as its point of departure. Economists dominate here. Some, Breton (1965,1966), Weldon (1966), Oates (1972) highlight the rela-

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tionship between the spatial distribution of benefits of collective action and jurisdiction size. Others, Buchanan (1965), Olson (1965) emphasize the relationship between goods characterized by partial rivalry and congestion costs and optimal group size. A second approach focuses on coercion. Some, Pennock (1959), Tullock (1969) note the relationship between group size and potential coercion. Others, Teibout (1956,1961), Buchanan (1974) highlight exit (inter-jurisdictional mobility) as a means of escaping coercion. The third and fourth approaches combine the first two. Breton and Scott (1978,1980) offer a synthesis which provides a framework for determining the optimal assignment of responsibilities in a constitution. Ostrom (1969,1971,1974) and Sproule-Jones (1974,1975) on the other hand, offer an alternative synthesis which focuses on the "just" (in a Rawlsian sense) constitution. Each of the approaches are reviewed below.

#### 4.3.3.2 The Economics Approach

Samuelson (1954,1955,1958) was the first economist to systematically explore the implications of the indivisibility and nonexcludability characteristics of collective goods. He contrasted the pure private good (a good which has the property that the consumption of a group is equal to the sum of the consumption of the individuals in the group) and the pure collective good (a good which, once supplied to one is

simultaneously supplied to all). One of the most important implications of Samuelson's analysis was that group size should be as large as possible since increases in membership will always benefit the new member yet impose no costs on existing members due to the characteristics of the collective good.

However, pure public goods are rare. There may be a spatial dimension if benefits associated with public good provision diminish with distance from the point at which they are supplied. Teibout (1956,1961), Breton (1965,1966), Evan (1969), Oates (1972) and others have analysed these local public goods. They note that the technical characteristics public good have important implications for collective organization. First, it is argued that collectives should be defined by spatial considerations. Geographical boundaries should be drawn so that the benefits of collective good provision are exhausted. This would generate the "perfect mapping" solution of Breton (1965). Second, it is argued that, since there are many public goods, each supplied over a specific geographical area, a "federal" structure is appropriate. The case for "federalism" based on local public goods is found in the "decentralization theorem" of Oates:

For a public good - the consumption of which is defined over geographical subsets of th total population, and for which the costs of providing each level of output of the good in each jurisdiction are the same for the central or respective local government - it will always be more efficient (or at least as efficient) for local governments to provide the Pareto efficient levels of output for their respective jurisdictions than for the cen-

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tral government to provide any specified and uniform level of output across jurisdictions (1972,35).

"Publicness" is not only limited by geography. Buchanan (1965) identified a range of goods, which he called club goods, for which the optimal group size lay between one and infinity. Club goods differ from pure public goods in two respects: congestion costs can be positive and exclusion is possible. Expanding group size imposes congestion or crowding costs on all members. These crowding costs lead members of the collective to expand membership only to the point where the reduction in costs (as a larger number of members now share the cost of the good or service) is just equal to the reduction in benefit due to congestion or crowding.<sup>30</sup> Thus the degree and nature of publicness associated with different goods demanded will determine the type of "federal" structure.

Three features of the "economics" literature are worthy of note. First, collectives are defined by the technical characteristics of collective goods. Individuals will be members of many collectives (citizens of many governments). Second, federalism is defined broadly. Indeed federalism is defined as a system of collective action within which the individual is simultaneously a member of many collectives.

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<sup>30</sup> This is simply a restatement of a first order or necessary condition. The reduction in cost must also exceed the reduction in benefit over the inframarginal membership expansion if this rule is to yield maximum net benefits to members of the club.

There is no mention of constitutional provisions which give a system of decentralized collective action legal protection. Third, the economists version of federalism does resemble the classical type since members of each collective are responsible for delivery and financing of each collective good or service.

#### 4.3.3.3 Coercion and Federalism

The "economics" approach is not at all concerned with coercion associated with collective good provision. In part this simply reflects the use of some type of omniscient planner assumption (usually in an assumption that preferences are known). This assumption assures imposition of optimal Lindhal pricing schemes and the appropriate geographical boundaries. Of course, it also eliminates all problems of preference revelation. In part the absence of concern with coercion also reflects the belief that the existence of many collectives will result in a large choice set. Individuals will then be able to escape coercion by choosing collectives which they prefer.

The option of choosing the collectives which provide the types and levels of collective goods and services preferred by different individuals has been emphasized by Teibout (1956,1961) and Buchanan (1965,1967). Teibout describes the self selection process whereby individuals sort themselves into collectives as voting-with-the-feet. The clustering of

individuals will eliminate coercion since like individuals will act with unanimity.

The decentralized model of Teibout and Buchanan suggests a market like solution to collective action. Some collectives will supply collective goods in large quantities, other collectives may supply only small quantities, "each community will do its own thing and everyone will be satisfied" (Musgrave and Musgrave, (1976,619). The logic, it is argued, applies to all collectively supplied goods and services including welfare state services: education, health care, and income redistribution. The income redistribution case has been examined by Buchanan (1974) and Pauly (1974).

In the Buchanan model "localist" model of the federal welfare state it is assumed that taxpayers in the local community are interested only in the income level of the local poor and that they make no identification of the members of this group as such. Buchanan examines two cases. In the first it is assumed that taxpayers are immobile while the poor are free to respond to different levels of transfers. He argues:

If we ignore costs of migration, one condition for equilibrium in this model is that the transfer payments per person be equal in all localities. The potential recipients will distribute themselves among communities to insure that this condition is fulfilled. The system of interaction between welfare or transfer recipients on one hand and local taxpayers on the other generates an equilibrium which is Pareto optimal....

The interaction becomes more complex when we allow a Teibout-like adjustment among potential

taxpayers to accompany the migrational adjustments of welfare recipients. The equilibrium that will be produced retains Pareto optimality characteristics, however, since persons will tend to locate themselves among the spatially competitive local governments in accordance with their own preferences for redistributive activity. Although migrational adjustments of potential recipients insure that transfers per person are equal in all localities the the transfers away from taxpayers may differ among separate communities, with the tradeoff being made in terms of the number of recipients" (Buchanan, (1974,34).

The Buchanan-Teibout view underlies many discussions of decentralized federalism. However, it is important to recognize that their case for decentralization (in a normative sense) is built on a set of questionable assumptions (see Mueller (1979,125-148) for a detailed discussion, see also below). As a consequence coercion must remain an important concern in discussions of public sector institutions.

Pennock (1959) was the first to deal directly with the coercion issue. He argued that the smaller the size of a collective the more responsive (the less coercive) it will be. Therefore, even if a Teibout process does not generate unanimity decentralization will still decrease coercion. The logic of Pennock's argument can be seen in a relatively simple example. Suppose a collective makes its decisions by majority rule. Assume that a majority (6,000 to 4,000) prefer policy A to A\*. The governing body will carry out policy A which pleases the majority and displeases the minority. Now suppose the collective is divided in two. There may still be a majority for A in both of these smaller units in

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which case the division would not make a difference. However, the division can make a difference. Suppose in one of the units a majority favours A\* (3,000 to 2,000). Then a larger number of people are pleased by the public choices (7,000 rather than 6,000) and 1,000 people will consider themselves better off.

Tullock (1969,22) argues that this principle is a perfectly general one and indicates that the individual will suffer less cost from government activity of which he disapproves the smaller the collectivity. Pushed to the extreme the Pennock argument results in all collectivities consisting of but one individual. At this extreme Tullock's generalization is surely correct. However, if collectives are comprised of more than one individual Tullock's position need not be accepted. The reduction in coercion costs associated with smaller collectivities occurs because the population becomes more homogeneous. However, as Margolis (1961) suggests it may be more common for homogeneity to decrease with smaller groups since the effect of merging views to obtain consensus is removed; thus smaller groups tend to polarize into extremes thence increasing faction and sectionalism (Bennett (1980,38)).

The coercion emphasis stands in stark contrast to the benefit emphasis in the "economics" literature. The two bodies of literature should be seen as polar cases. Both coercion costs and benefits must be treated in a complete discussion of federalism.



#### 4.3.3.4 The Optimal Constitution: The Public Choice Approach

The picture of federalism painted by the literature surveyed thus far lacks realism and normative appeal. There are at least two reasons for this. First, the literature places too much emphasis on collective organization to secure the supply of a single good or service. As a consequence the literature suggests the existence of many collectives each supplying only one public good or service. Second, the literature does not discuss the role of politicians or formal constitutions. As a consequence the literature offers an unsatisfactory view of the supply side of collective action. These defects have been remedied in the recent literature.

Tullock was one of the first to note the inadequacies of the "economics" approach and its suggestion that the optimal structure of government should be based on spatially defined collectives each based on the characteristics of the public good supplied. He argued:

It is, I presume, reasonably clear that this system would not be an optimum government organization.... If we contemplate an actual voter attempting to deal with this multitude of government units, it is fairly certain that he would not even bother to participate in elections which controlled many of them (Tullock (1969,26)).

Tullock goes on to argue that: (1) individuals will rely on specialized agents, the politicians, the political entrepreneurs, who are charged with securing provision of public

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goods and (2) that the politicians would be charged with supplying not one public good but whole clusters of them. Both suggestions had important consequences for the public choice literature.

The introduction of clustering had several important effects. First, it tended to undermine the Tiebout hypothesis that voting-with-the-feet could solve the coercion problem. As one expands the number of public goods in the Tiebout model the number of polities required to provide a choice set large enough to assure unanimity also grows. If the number of public goods is very large, one reaches a solution in which the number of communities equals the size of population (Mueller (1979,129)). Second, clustering introduces the constitutional problem: who should be responsible for securing what? This is considered in more detail below. Third, clustering leads to interdependencies (spillovers and spillins) and thus intergovernmental relations.

Interdependence is almost inevitable when clustering public goods and services. Only when all clustered public goods and services have the same spatial characteristics will a "perfect mapping" be possible. Otherwise there will be spillovers and spillins. Although spillovers are frequently cited as justification for conditional grants and the abrogation of classical federal principles it is important to note the existence of interdependencies are neither necessary nor sufficient conditions for abandoning classical

federal principles. Spillovers and spillins may cancel (Teibout (1961,91)). Externalities may be internalized via voluntary negotiations among governments (Coase (1960), Williams (1966)). Or spillovers may not be Pareto relevant (by luck or design) ((Buchanan and Stubblebine (1962)).

The introduction of politicians, or political entrepreneurs also had important effects on the public choice literature. Because politicians, like other economic agents, are portrayed as self interested and because politicians can only achieve their objectives if elected, the public choice literature has increasingly emphasized the relationship between preferences of voters and the behavior of politicians. This has enabled public choice theorists to stretch the market analogy to the supply side of the public sector. In the market place, suppliers, driven by the profit motive and constrained by competition and an enforced system of property rights, respond to the preference of consumers when supplying private goods. In the political arena, politicians, driven by self interest and the need to be reelected, and constrained by the system of rights and obligations established in the constitution, respond to the preferences of voters to supply public goods. Thus the introduction of politicians forced public choice theorists to recognize that the constitutional system of rights and obligations are as important in public life as the system of property rights in the life of the market.

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The design of constitutional provisions is, in part, a problem of deciding which clusters of collective goods (functions of government) should be assigned to which order of government. Breton and Scott (1978,1980) have used the public choice literature to discuss the optimal constitution. Their work is an extension of the initial insights of Tullock (1969).

Breton and Scott argue that the constitution should be designed to minimize organization costs. They define organization costs broadly to include all of the following: (1) the cost of noninternalized externalities which arise due to clustering; (2) the cost of lost voter control (which, throughout this chapter, has been identified as coercion costs); (3) mobility costs (associated with the exercise of the exit option); (4) administrative costs; (5) coordination costs (negotiation costs associated with securing economies of scale or internalizing externalities); and (6) signalling costs (preference revelation via voting, protests, letters to the editor, etc.) Note that this definition of organization costs incorporates the welfare of citizens as well as the efficiency of government. In fact, the minimization problem defined over organization costs is simply the dual of the standard economic maximization problem defined over welfare or utility (Breton and Scott (1980,59)).

Two positions taken by Breton and Scott are of interest. First, they argue that "the minimization of organizational

costs as they relate to redistribution could, and apparently does, lead to concurrent authority in this area" (1978,128). Thus they argue that the classical federal model is not appropriate if the constitution is defined to minimize organization costs. Second, they argue that national standards may be implemented to minimize organizational costs. The national standards should only be applied in areas where negotiation costs would otherwise be prohibitive (Breton and Scott (1980). Thus, in contrast to Buchanan and Teibout, Breton and Scott do not argue that diversity is always appropriate in collective action.

#### 4.3.3.5 Federalism and the "Just" Constitution

Ostrom (1969,1971,1974) and Sproule-Jones (1974,1975), unlike authors of the literature survey thus far, adopt a political science approach to federalism. Their work draws heavily on the public choice literature but takes as its point of departure The Federalist (1778) papers of Hamilton, Madison, and Jay. Hamilton, Madison, and Jay argue for a federal structure because it provides a system of checks which protects the citizens from tyranny. Specifically it is argued that the establishment of polity with wide representation enlarges the public view which can be brought to bear on any issue, thus limiting the possible effects of narrow sectarian interests (tyranny of the minority). At the same time maintaining a loose federation of states safe-

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guards minorities from the "tyranny of the majority" thus preventing local interests being overridden (Bennett (1980,39)). Ostrom and Sproule-Jones give The Federalist papers a modern flavour by employing the tools of public choice and Rawls' Theory of Justice as Fairness.

Ostrom and Sproule-Jones reject "classical federalism" at the outset. This rejection is largely based on their view of politicians. They see no reason why politicians should be seen as benevolent and omniscient. And if politicians are not benevolent and omniscient it is far better to have many politicians (i.e. orders of government) involved in public service provision than to allow one group of politicians (orders of government) have complete control. Therefore overlap, duplication, and concurrence of powers are considered desirable since they facilitate the signalling of citizen-consumer preferences about the mix of goods and services they wish to see provided by government, since they increase the range of access points within and between government activities (Sproule-Jones (1975,42)).

"Classical federalism" is rejected for other reasons as well. Overlap, duplication and concurrence afford wider opportunities for internalizing interdependencies between individuals and/or organizations (private or public) and for seeking remedies for incurring consumption (coercion) costs. Also, overlap, duplication, and concurrence result in competition among governments. It is argued that this competi-

tion leads to better packages of policies both locally and nationally (Sproule-Jones (1975,43)).

The advocacy of overlap, duplication, and concurrence can also be based on Rawl's Theory of Justice as Fairness. The essential point is easy to identify. Individuals who are risk averse and behind the veil of ignorance will wish to insure against the possibility that they will constantly be among the set of individuals who, over time, are net losers from collective activity. A federal structure of government exhibiting de jure and/or de facto concurrence provides the necessary insurance coverage.

The application of the Rawlsian approach can best be appreciated by contrasting the views of Ostrom and Sproule-Jones with those of others in the public choice tradition. All authors working within the public choice framework agree that the appropriate role of government is to provide the institutional structure which allows individuals to realize the benefits of collective good provision without subjecting them to "undue" coercion. There is, however, substantial disagreement over the appropriate definition of "undue." Breton and Scott argue for an institutional structure which maximizes net benefits (minimizes organization costs). Buchanan, Teibout and others argue that coercion costs should be zero and believe the voting-with-the-feet should be relied on to secure this result.<sup>31</sup> Ostrom and Sproule-Jones

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<sup>31</sup> Note , however, that Buchanan does recognize the limita-

accept some coercion as inevitable and argue, based on Rawls, that the best institutional structure is one which provides individuals the opportunity to assure they do not, in the long run, suffer as a consequence of collective action.

Federalism offers the individual a variety of ways of escaping long run coercion. Like citizens of a unitary state, the citizens of a federation can use voting and other types of direct political action to voice their concerns. However, the citizens of a federation will enjoy a larger number of access points through which they can signal their preferences. Citizens of a federation can also vote-with-their-feet. And, the power of veto which exists in the presence of defacto concurrence but de jure independence, can also provide an escape from coercion in a federal state.

The links between Ostrom and Sproule-Jones and Hamilton, Madison, and Jay should be clear. Hamilton, Madison and Jay are concerned with tyranny. Ostrom and Sproule-Jones are concerned that individuals may be net losers from collective activity. Hamilton, Madison and Jay argue that federalism establishes the external checks necessary to prevent tyranny. Ostrom and Sproule-Jones argue that federalism is more likely to be "fair" than other forms of government. Significantly the Ostrom - Sproule-Jones formulation avoids the

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tions of the localist position. See: Buchanan and Goetz (1972).



devastating logical critique of the federalist papers presented by Dahl (1956).

#### 4.3.4 Public Choice and Federalism: Summary

It is useful to draw out some features of the public choice literature. First, federalism is seen to be synonymous with multiple orders of government. Its distinguishing feature is that individuals are simultaneously members of more than one collective (citizens of more than one government). Using the language of the principle-agent literature, we could say that each government is an agent of its citizens. Thus views based on the belief that one order of government should be an agent of another (Brian Peckford) are inconsistent with the public choice view of federalism.

Second, the public choice literature emphasizes the importance of the benefits of collective good provision and the associated coercion costs. According to public choice theorists the most important function of a constitution is to establish an institutional setting which allows individuals to realize the greatest benefits of collective good provision without subjecting them to "undue" coercion. This is best accomplished via a federal constitution since multiple orders of government are better able to deliver the different collective goods demanded and individuals possess a variety of means which they can employ to escape coercion.

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Third, there is a remarkable diversity of views in the public choice literature. Some authors advocate a decentralist-localist form of classical federalism. Others argue for concurrence, duplication, and overlap.

Nonetheless, despite the diversity of views public choice theorists do share a common position: they give priority to preferences by focusing on the benefits of collective action (which individuals prefer to have more of) and the associated coercion costs (which individuals prefer not to experience). Granting priority to preferences has several important consequences. First, all public choice theorists favour a very decentralized federal system. Second, minimal or national standards are rejected in all but exceptional circumstances. Third, intergovernmental transfers, including conditional grants may be called for to deal with externalities, minimize organization costs, or to provide a means of securing de facto concurrence.

In recent years the public choice framework has become very influential among economists. It is important to recognize, however, that it shares a narrow preference based foundation with Paretian welfare economics. As a consequence, it is vulnerable to the criticisms of Paretian welfare economics. Therefore, alternative normative frameworks may be more attractive. One alternative is advanced in the following section of this chapter.

#### 4.4 FEDERALISM AND THE WELFARE STATE: A NEW APPROACH

##### 4.4.1 Introduction

We associate the modern welfare state with a system of government in which the state assumes responsibility for assuring the basic well being of all members of society. Although respect for preferences is important in the democratic welfare state we wish to emphasize that it is not the only concern. Thus the welfare (access to basic requisites of well being) should also be considered in discussions of federalism.

Also, most advocates of democracy, whether philosophers or laymen, would not support a notion of democracy which focused on preferences alone. Rights and the welfare of citizens would also be considered important. Moreover, only a small minority would argue, on ethical grounds, the preferences, rights, and welfare should be ranked lexicographically thereby giving one of the desired characteristics of democracy priority regardless of the state of the others. Nonetheless, this is precisely what contributors (employing either a classically federal or public choice approach) to current debate over federalism do. A welfare state perspective would incorporate concern for preference, rights, and welfare (see Braybrooke (1968) for a thorough discussion of preference, rights, welfare, and democracy).

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The welfare state has been defined as the "institutional outcome of the assumption by a society of the legal and therefore formal and explicit responsibility for basic well being of all its members" (Girvetz (1968,512)). In a federal nation, however, individuals are members of more than one society. You can be a citizen of a province or state and of a country at the same time. But then a relevant question is: which society should assume legal and therefore formal and explicit responsibility for basic well being of all its members? Unfortunately there is no easy answer. Every federal society will arrive at its own solution based on political and historical factors.

#### 4.4.2 Preference and the Welfare State: A Digression

How does the welfare state perspective differ from the public choice view? The public choice theorists argue that taxpayers benefit from welfare state activities and therefore, are willing to pay to assure they are supplied. As a consequence public choice theorists do not see a conflict between preferences and welfare. Moreover, they would argue that welfare state activities will not be supplied if there is no desire or preference for them. Nonetheless, we will argue that the welfare state perspective does offer an attractive alternative to the public good view.

The welfare state perspective we are advancing draws on the work of Braybrooke (1968), Thurow (1974), Okun (1975) and Sen (1978).

As Braybrooke argues:

Preferences, of course, operate in giving welfare weight. If no one preferred - in politics - attending to welfare to attending to other peoples preferences (even for the most part their own), governments as we know them would not be likely to override preferences opposed to welfare. But people do have a widely shared conception of welfare taking precedence over opposed preferences: and their preferences and actions give practical effect to this conception (1968,136).

People prefer to have their own preferences overridden? How can this be? We believe the answer lies in a distinction between individual societal preferences and personal private preferences drawn by Thurow (see Chapter 2, footnote 3).<sup>32</sup> Thurow argues that people have two types of preferences: preferences with respect to the "rules of the game" which are referred to as individual societal preferences and preferences used in day to day living known as personal private preferences. The former govern ethical choices and are employed when making decisions with respect to the type of society one would like to live in, the latter reflect the cost-benefit calculus given the existing society and its "rules of the game". Arthur Okun employs this distinction to argue that individual societal preferences result in the emergence of certain "rights" or universal entitlements which stand above the game itself.<sup>33</sup> He includes the following in his list of "rights": the right to vote; of free

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<sup>32</sup> For a similar distinction see Harsanyi (1953,1955,1977).

<sup>33</sup> Okun recognizes that his use of the term "rights" is much broader than most political theorists typically employ.

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speech, to life, to receive a basic education, to receive equal treatment before the Law and to enjoy equality of opportunity.

The distinction between the public choice view and the welfare state perspective is a substantive one yet there is no definitive way to decide which is "best." Nonetheless, we find the welfare state perspective appealing for two reasons. First, the public choice approach has some disquieting implications. For example, the public choice approach would suggest that buying and selling votes would make public choices more like market choices - thereby enabling people to pursue their most preferred course of action. Also, the public choice approach suggests the voting franchise, at least with respect to welfare state activities, must be restricted to potential donors whose utility functions contain arguments for income or consumption levels of the poorer members of the community (Buchanan (1975,53)). We do not consider these implications attractive. Second, we feel the public choice view fails to explain certain features of the existing welfare state. As James Rogers, a leading public choice theorist, notes:

The precise nature of [redistributive] preference is too complex to be represented by simply putting the income levels of the poor (or their consumption levels of particular goods) in those who have larger incomes. Preferences toward redistribution appear to be heavily influenced by the Puritan ethic of individual responsibility and moral virtues of work and industry (Rogers (1975,199)).

We would argue that personal societal preferences offer one explanation. Moreover, we would also argue that individual societal preferences underlie other important features of the welfare state in all countries.

#### 4.4.3 The Welfare State Perspective and Federalism

What are the implications of the Thurow-Okun position for the welfare state in federal countries? If one follows Okun one would argue that individual societal preferences lead to the establishment of entitlements or rights. Entitlements relevant (although not necessarily supported in every society) to discussions of the welfare state include: the "right" to live life without falling below a specific standard of living, the "right" to life (and thus to medical and hospital care when needed); and the "right" to equality of opportunity (especially as it relates to the education system). But how should these rights be enforced in a federal system?

The federal problem, from a welfare state perspective, is the problem of weighting individual societal preferences. Do individual societal preferences with respect to the nature of the national society take priority? Or do individual societal preferences with respect to the provincial society receive the greatest weight? The answers to these questions do not depend on concerns such as the spatial distribution of benefits associated with public good provision.

Rather, the answers are more likely rooted in the societies which comprise the federation, the history of the country, and the nature of the compromises which have shaped its existence.

Federalism is a compromise. With federation the nation emerges as an integrated economic and political unit. A national society comes into being. However, provincial societies continue to exist. Provincial governments retain their autonomy and are free to act in their citizens best interest. Problems emerge when nation and province conflict.

Consider first the difficulties which can arise in conflict outside the welfare state. Flatters and Lipsey (1983) argue that the Canadian common market has fallen apart because it is in the interests of provincial societies to introduce restrictions on trade and mobility. They also argue that the interests of the national society are best served by the common market. How is this conflict between national and provincial societies to be reconciled? Flatters and Lipsey argue :

a constitutionally enshrined set of institutions and principles ... seem to us to be the best way to ensure the maintenance of Canada as an integrated economic and political unit. (1983,42)

Flatters and Lipsey argue that national interests must be given priority in discussions of mobility and free trade "rights". Politically this amounts to assigning primary citizenship to the nation. Does it also follow that prefer-



ences with respect to the national society should be given priority in discussions of welfare state "rights"? We would argue that if a federation is to be an integrated economic and political unit there must be a well defined national society. Individuals within that society must express preferences with respect to welfare state "rights" in that society and these basic "rights" must be enforced. However, provincial societies must enjoy significant autonomy. Many welfare state activities are directly related to matters such as language and culture which are valued by provincial societies, thus individual societal preferences with respect to these matters in the provincial societies must also receive significant weight. A compromise must be struck; a compromise which balances the necessity of recognizing a national society with recognized national "rights" and the necessity of preserving sufficient provincial autonomy. In our view one federal compromise is a welfare state where national "rights" are reflected in national standards and provincial autonomy is reflected in provincial control over delivery systems.<sup>34</sup>

National standards are an important feature of Canadian federalism. One asset of our framework is that it emphasizes this. For example, individual societal preferences with respect to the nature of the national society underly

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<sup>34</sup> Provincial societies may choose to exceed national standards. Thus we do not see provincial governments as merely administrative agents of the federal government.

the "right" of equals to be treated equally regardless of province of residence. Without strong individual societal preferences for horizontal equity operating at the national level it is hard to see why equalization programs receive the support they do. Other "rights" which give rise to national standards may include the "right" to life (and thus to medical care when needed), the "right" to an adequate income, and the "right" to equality of opportunity.

In Canada "rights" and thus national standards have considerable support. As Pierre Trudeau notes:

Canadians everywhere now feel a sufficient sense of responsibility for their compatriots in other parts of the country that they are prepared to contribute to their well being.... [One] of the most important ways of giving expression to this concern is by provision to every citizen, wherever he lives, of adequate levels of public services - especially health, welfare, and education services (1969,28-30).

The degree of commitment to national standards among Canadians, although not necessarily among Canadian politicians, is also evident in Section 36 of the Canadian Constitution.

36. (1) Without altering the legislative authority of Parliament or of the provincial legislatures, or the rights of any of them with respect to the exercise of their legislative authority, Parliament and the legislatures, together with the government of Canada and the provincial governments, are committed to:

(a) promoting equal opportunities for the well being of all Canadians;

(b) furthering economic development to reduce disparity in opportunity;

(c) providing essential public services of reasonable quality to all Canadians.

36. (2) 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 reasonable levels of taxation.

The agreement of the federal and nine provincial governments on this provision (weak as it is) at least indicates that politicians believe Canadians are committed to national standards.

The "rights" argument also applies in the United States. As James Maxwell, a leading American expert on intergovernmental fiscal relations, argues "rights" provide a better explanation for many conditional grants than the more popular spillover theory:

The explanatory merit (of the spillover) theory is limited (as a theoretical justification of specific purpose grants). Spillovers can seldom be objectively measured; if they could, it seems certain that they would differ from state to state for the same service (quite apart from differences in fiscal capacity), and variable matching ratios of this sort are difficult to conceive. Moreover, many federal grants do not fit the spillover rationale. For example, public assistance grants are to be justified on broad humanitarian grounds - the federal responsibility to see that the needy disadvantaged people are able to achieve a minimum standard of living. Since state governments, left to themselves, will not provide this standard, federal intervention by specific purpose grants is indicated. The justification of a grant is therefore, that the federal government should pay state-local governments to act as its agents in achieving a level and/or quality of service which seems desirable in the national interest (1975, 84-85).

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Actually defining national standards is more problematic. However, it is not our concern here. The choice of standard in our theoretical framework (Chapter 3) is captured in the choice of  $X^*$ . How the choice of  $X^*$  is made - whether by referendum, federal-provincial negotiation, the common will, etc. - is immaterial to the basic argument.

But what about state or provincial societies? Our position is that the delivery systems associated with welfare state activities should bear the mark of the provincial society. For example, decisions about curriculum in education, about the structure of the health care sector (degree of emphasis on community health centres, etc.), about social services, voucher systems, etc. should be local. National standards, on the other hand, would relate primarily to per capita expenditure levels as well as to basic mobility and portability provisions necessary to maintain the national society. Thus equalization in both horizontal and vertical (i.e. assuring basic "rights" are enforced) dimensions is seen as a responsibility of the national society. Provincial societies are free to establish their own delivery system and, if they wish, exceed the national standards. Thus, the welfare state perspective suggests a view of federalism which incorporated national standards while allowing provincial flexibility.

The relationship between the welfare state perspective and the need indices of Chapter 3 should be clear. The

threshold,  $X^*$ , is the national standard. Any individual (i) facing  $X(i) < X^*$  is below the nationally specified standard and it will cost  $X^* - X(i)$  to assure the standard is met.  $P_2(X^*)U_y$  is the per capita expenditure necessary to bring all up to the national standard. However, if we allow needs to vary across provinces the per capita tax revenue required to meet the national standard will vary across provinces. Thus if provincial flexibility is introduced a system of intergovernmental transfers is necessary since national standards are based on the national society. Otherwise citizens of the national society would face discrimination on the basis of province of residency - but this would imply that there is no national society. A transfer is therefore necessary if national standards are enforced on the wishes of the national society. In some instances, conditional transfers may also be called for to assure province governments enforce the standards established by the national society.

#### 4.4.4 Conclusion

The welfare state perspective focuses on the existence of "rights" with respect to access to certain basic requisites of well being.<sup>35</sup> The focus on "rights" highlights the importance of citizenship. If citizens are first members of the

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<sup>35</sup> Some political philosophers argue that individuals have a moral obligation to assure the social system has institutions which assure the system satisfies the needs of all members of the society. (see Plant, et. al. (1980), especially p 51 and 94.

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national society (Canadians first, Manitobans second) the national society has an obligation to assure the needs of all members of the national society are met. On the other hand, if citizens are first members of the provincial society members of the provincial society have an obligation to assure the needs of the provincial society are met. Thus the position one adopts on primary citizenship is key to the position one adopts with respect to the federal welfare state.

Significantly, assigning primary citizenship to the national society does not imply federal responsibility for the delivery of welfare state services. Provincial autonomy, subject only to national standards (based on a national definition of needs) and assumption of financial responsibility by the national society, is possible. Indeed, it may well be desirable for reasons enumerated by public choice theorists.

We believe many Canadians feel that Canadian federalism is a compromise system where primary citizenship is national and provincial autonomy is encouraged.<sup>36</sup> We also believe Section 36 of the recently repatriated Canadian Constitution is indicative of this compromise. Our discussion of federal provincial fiscal arrangements in the Chapters that follow will reflect this view of Canadian federalism.

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<sup>36</sup> One federal political party, the New Democratic Party, explicitly adopts this position.

#### 4.5 CONCLUSION

In this chapter we examined the political economy of the theoretical framework introduced in Chapter 3. That theoretical framework suggested an approach to federalism which we labelled the welfare state perspective. It was argued that this perspective is absent in current debate.

The main purpose of this chapter was to use the proposed perspective to reply to recent calls for the abrogation of national standards, more decentralization (without qualification), and the elimination of conditional grants. We examined three approaches which could be used to address these issues: classical federalism, the approach which has dominated Canadian policy debate; public choice, an approach employed by many economists; and our own welfare state perspective. The different approaches yielded very different conclusions.

Although both the public choice and classical federalist positions dismissed national standards we argued that national standards are a fundamental feature of federalism. National standards simply reflect the individual societal preferences of citizens in the national society with respect to a variety of "rights."

Both public choice and classical federalist approaches would also suggest the desirability of decentralization of welfare state activities. Decentralization, in the sense of

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introducing provincial flexibility, is also called for from a welfare state perspective. However, a welfare state perspective or a public choice view would qualify the call for decentralization. National standards, in the case of the welfare state perspective, and concerns such as spatial limits on benefits associated with collective goods, cost minimization, and the desirability of concurrence, in the case of public choice, could not go unmentioned.

Conditional grants are frowned upon by classical federalists. Public choice theorists argue conditional grants may be necessary to internalize externalities, minimize organization costs, or assure de facto concurrence. Those who adopt a welfare state perspective, while not dismissing concern over externalities, suggest conditional grants may also be called for to assure national standards.

With the exception of their implications for national standards, the public choice and welfare state perspectives seem to generate similar conclusions. However, we would like to emphasize that redistribution is not a central concern of public choice. Indeed, in many respects it is anti-redistributive. Experience with public choice in practice, Nixon's New Federalism, indicates that decentralization in the absence of national standards results in less redistribution (Haskell (1976)). This is partly because local government, functioning as representatives of the property owning classes, rarely find it necessary to respond to the



voting population in general, and partly because the lower the level of government the less inclined to think about what is conducive to a good and just society (Brown (1982,12)).

The antiredistributive bias of public choice is also evident in the Ostrom - Sproule-Jones version which is based on Hamilton, Madison, and Jay. As Dahl reminds us:

The Madisonian style of argument provided a satisfying, persuasive, and protective ideology for minorities of wealth, status, and power, who distrusted and feared their bitter enemies - the artisans and farmers of inferior wealth, status and power, who they thought constituted the "popular majority" (1956,30).

The conservative bias of public choice, like the conservative bias of Paretian welfare economics, should not be surprising given the emphasis on preferences. A welfare state perspective provides an interesting alternative approach to redistribution in federal countries.

PART II

EDUCATIONAL FINANCE IN CANADA: AN APPLICATION OF  
THE NEEDS FRAMEWORK

## Chapter 5

## EDUCATION AND CANADIAN FEDERALISM

5.1 INTRODUCTION

A necessary prerequisite to a discussion of educational finance in Canada based on our theoretical framework is a thorough understanding of the institutional details of the existing system. This chapter provides a brief descriptive overview of the constitutional setting and of the evolution of federal-provincial programs relevant to a discussion of educational finance. Two federal-provincial programs receive special emphasis: the Canadian system of Equalization and the post secondary education provisions of the EPF program.

The constitutional setting is described in Section One. Because the written constitution defines the system of rights and obligations which constrain the legislative activity of our politicians it is bound to have a significant effect on the way education is financed. This is certainly true in Canada; the British North America Act has played a major role in shaping the Canadian education system.

The history of federal-provincial programs in educational finance is examined in Section Two. Our interest in the

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history of federal-provincial programs in education stems primarily from our interest in determining the underlying motivation for these policy initiatives. The "welfare state - needs framework" emphasizes distributive concerns (equality of opportunity and/or minimum standards). We are interested in identifying the federal-provincial programs which are explicitly aimed at achieving national redistributive objectives.

We identify two programs which reflect the federal compromise discussed in the previous chapter. Equalization and the post secondary education provisions of the Established Program Financing (EPF) legislation both shift financial responsibility for education (a policy area considered provincial) to the national society. In Section II of this chapter we trace the evolution of these policy instruments. We note that the Equalization program, from the time of its introduction in 1956, has been explicitly redistributive. The nature of redistribution achieved via Equalization formulae has, however, been a continual source of controversy. In contrast, we note that the EPF arrangements for post secondary education evolved out of a program of direct grants to universities. The original grants, although containing an element of redistribution, were specific purpose and not explicitly redistributive. However redistribution became increasingly important. By 1977 the link between post secondary education and the EPF had been broken. Today the EPF

transfer has one function: it transfers money collected from the national society to the provincial governments.

In Sections III and IV we examine the current Equalization and EPF Programs in detail. A concluding section summarizes the chapter and sets the stage for our analysis of educational needs and federal provincial programs which follow in Chapters VI and VII.

## 5.2 THE CONSTITUTIONAL SETTING

### 5.2.1 Introduction

The written constitution is the obvious starting point for a study of federal-provincial aspects of educational finance. The constitution is the legal document which assigns legislative powers with respect to educational matters. Thus, it defines the parameters within which the system of educational finance evolves.

The constitution also allocates tax powers. This aspect of the constitution is equally important in a system of educational finance. A government may be assigned power to legislate in an area of public policy but it can only exercise these legislative powers if it has revenues sufficient to finance its policies. May (1967,55) notes the significance of this:

If all functions -- expenditure-incurring and revenue-raising -- are allocated between the two levels of governments according to which level can carry them out most effectively, or simply on the basis of which functions one level is prepared to

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give up, there is no reason at all why expenditure obligations and revenue sources should balance at either level. Even if there was an initial balance, changes in economic conditions and new demands for public services would be bound to upset the balance.

The "fiscal imbalance" problem described by May has left a deep mark on the Canadian system of educational finance. Indeed, it is small exaggeration to assert that federal-provincial relations constitute a series of reaction and adjustment to the misalignment of resources and responsibilities; and the various tax agreements and intergovernmental transfers are the technical devices which often forestall the more difficult and drastic measure of constitutional amendment (Hum (1982,5)).

A third feature of the Constitution of interest is provisions which affect the ability of one order of government to impose conditions on transfers to another order of government. Constitutionally imposed limitation on the set of available intergovernmental transfer systems will have a direct impact on the system of educational finance. Moreover, as noted in Chapter Four, the constitution can be changed de facto by choosing the appropriate system of intergovernmental grants. Thus limitations on the set of available intergovernmental transfers also have an important indirect impact.

### 5.2.2 Education and the Constitution

The belief that the written constitution of Canada assigns responsibility for education to the provinces is widely held in Canada. However, the constitutional assignment of legislative authority over education is not unambiguous. Responsibilities for educational matters are assigned by the British North America Act in the following terms:

In and for each Province the Legislature may exclusively make Laws in relation to Education, subject and according to the following Provisions:

1. Nothing in any such Law shall prejudicially affect any Right or Privilege with respect to Denominational Schools which any Class of Persons have by Law in the Province at Union:
2. All Powers, Privileges, and Duties at the Union by Law conferred and imposed in Upper Canada on the Separate Schools and Schools Trustees of the Queen's Roman Catholic Subjects shall be and the same are hereby extended to the Dissident Schools of the Queen's Protestant and Roman Catholic Subjects in Quebec;
3. Where in any Province a System of Separate or Dissident Schools exist by Law at the Union or is thereafter established by the Legislature of the Province, an Appeal shall lie to the Governor General in Council from any Act or Decision of any Provincial Authority affecting any Right or Privilege of the Protestant or Roman Catholic Minority of the Queen's Subjects in relation to Education:
4. In case any such Provincial Law as from Time to Time seems to the Governor General in Council requisite for the due Execution of the Provisions of this Section is not made, or in case any Decision of the Governor General in Council on any Appeal under this Section is not duly executed by the proper Provincial Authority in that Behalf,

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then and in every such Case, and as far only as the Circumstances of each Case require, the Parliament of Canada may make remedial Laws for the due Execution of the Provisions of this Section and of any Decision of the Governor General in Council under this Section.

The four restrictions on provincial jurisdiction over education which focus on minority education rights and denominational schools although important, are not our concern here. We would, however, like to emphasize the sweeping qualification to the exclusivity of provincial legislative powers contained in the phrase "in and for each province...". As Peter Leslie (1980,363) notes this phrase implies that some aspects of education may extend beyond the area of uniquely provincial concern. Thus, despite popular belief, federal involvement in education in the national interest or to secure national standards is not precluded by constitutional law.

Nonetheless, provincial autonomy in educational matters is important in Canada. Indeed, the federal government has almost always denied encroachment on provincial autonomy in education; these denials have been especially vehement on occasions when the federal government was becoming involved most directly (Neatby (1976,417)). There are two good reasons for rhetorical support for provincial autonomy. First, as Cameron (1936, 11) notes:

The most important reason for ... making education in Canada a provincial matter was the presence in the country of "two nations warring in the bosom of a single state"... The province of Quebec,



overwhelmingly French and Roman Catholic, would never have consented to a plan for confederation which removed schools from provincial control. Confederation of the Province of Canada would have been quite impossible unless each province was allowed to retain control of education within its boundaries.

Education is of fundamental importance in creating institutions which express, preserve, and promote the development of language and culture. This fact remains important today, especially in Quebec.

A second reason for rhetorical support for the principle of provincial autonomy in education arises out of the nature of education itself. Parents have a special interest in education. A very decentralized delivery system is therefore demanded to assure parental input with respect to the amount and types of education supplied to the nation's children.

Nonetheless, the rhetorical support for provincial autonomy in educational matters has not been without qualification. Indeed there is a fundamental debate about the very definition of education. The federal view has been presented by John Turner, then Minister without Portfolio in the Pearson government. He argued "[I]n the federal view, education means the imparting of knowledge through a standard curriculum during the period of childhood, adolescence, and youth" (1966). In contrast consider the provincial view as espoused by the Quebec Royal Commission of Inquiry on Constitutional Problems. The Commission argued "Education, whose object it is to improve man, may be defined as a processus (sic) of cultural access" (1956).

The Commission also argued that education involved the preservation of "the totality of the rational and spiritual values forming the collective patrimony of a determined human group: modes of life, morals, customs, traditions, languages, laws, etc. (1956).

The Courts have never interpreted either the "In and for each..." provision or the meaning of "education" of Section 93. The one relevant Supreme Court of Canada pronouncement on Section 93 was made, obiter dictum by Chief Justice Duff in 1938. Chief Justice Duff stated:

It is well not to forget, in examining the constitutionality of enactments of the character of those before us, that by Section 93 (subject to the provisions having for their purpose the protection of religious minorities) education is committed exclusively to the responsibility of the legislatures; and that, as regards the subject, the powers of legislatures are not affected by the clause at the end of Section 91. We should also recall that Section 93 (as is well known) embodies one of the cardinal terms of the Confederation arrangement. Education, I may add, is, as I conceive it, employed in this Section in its most comprehensive sense (Supreme Court Reports. 1938,398).

### 5.2.3 Federal Tax and Spending Power

The BNA Act gave the federal government the power to raise revenues "by any Mode or System of Taxation" while it restricted the provincial governments to direct taxation. This assignment of tax powers placed the federal government in an advantageous position vis a vis the provinces. The federal government controlled the lucrative and flexible tax

sources thus it could always meet its expenditure responsibilities.<sup>37</sup> The provinces, on the other hand, might be forced to agree to some sort of fiscal arrangement to meet their responsibilities.

The assignment of tax powers was based on social, economic and political conditions in 1867. The Fathers of Confederation allocated what were then the most costly functions of government to the federal government leaving local and inexpensive matters such as health, welfare, and education to the provinces. Of course the world changed in ways unforeseen by the Founding Fathers. The emergence of the "welfare state," in particular was a significant development which contributed to fiscal imbalance. La Zorte (1958,214) describes the transformation in education:

The task of providing public education which in the beginning seemed so simple has expanded into a business of major proportions. Instead of a one room log school, heavy winter enrollments, schooling that ended at the grade 4 or 5 level for the majority of pupils and a teaching staff with little of either education or training, we have today, as a result of social and economic changes in the intervening years, modern graded and composite schools, compulsory fulltime attendance to age 15 or 16 years, an expanded elementary grade curriculum, a large high school population, and relatively higher standards of teacher education and certification. In 1867 education was the cheapest and simplest of governmental services, easily administered and cheaply financed by local parents and rate payers; today... it has become the most expensive and complex of our social services.

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<sup>37</sup> Since OPEC this contention is debatable. In fact, some argue that a fiscal imbalance now exists - with the resource rich provinces in the drivers seat.

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The growth of the welfare state, the assignment of expenditure responsibilities, and the allocation of tax powers were bound to result in a vertical fiscal imbalance. The federal government would therefore be likely to find itself in a position where it would be transferring monies to the provinces. An important constitutional question in such a situation is: Can the federal government attach conditions to these transfers?

Constitutional scholars seem to agree that federal government can attach "strings" to transfers. There are three possible justifications. The opening words of Section 91 of the BNA Act state: "It shall be lawful for the Queen, by and with the Advice and Consent of the Senate and the House of Commons to make Laws for the Peace, Order, and Good Government of Canada." Judicial interpretation of the Peace, Order, and Good Government clause has resulted in two types of situations where the federal government can legally enter provincial jurisdiction: temporary emergency or when the matter is of national concern or has a "national dimension." (See Smiley (1980,24-25) for a discussion) Section 91:1(A) which gives Parliament the power to legislate with respect to "The Public Debt and Property" is also considered to give the federal government constitutional authority to place conditions on its grants. Finally, it is argued that inter-governmental transfers are a gift not a law. This is the position of F.R. Scott (1977,261) who argues, on the basis

of the prerogative power of the Crown, that Parliament has the power to spend the monies at its disposal as it chooses. The Courts have accepted this gift analogy.

#### 5.2.4 Constitutional Setting: Summary

The written constitution does not unambiguously assign responsibility for education to the provinces. Nonetheless, the principle of provincial autonomy in educational matters has strong support. This is especially true in the case of elementary and secondary education. The commitment of all Canadians, and especially Quebecois, to the principle of provincial autonomy, not the formal constitution defines the parameters of the system of educational finance in Canada.

The commitment to provincial autonomy has resulted in the creation of ten distinctive systems of education. (12 if the Yukon and Northwest Territories are counted.) The diversity is remarkable. For example elementary and secondary education are organized in eleven levels in Newfoundland and Quebec; twelve levels in Nova Scotia, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan, Alberta, and British Columbia; and thirteen levels in Ontario. Nova Scotia has an additional compulsory pre elementary year. Quebec has CEGEP, etc. Nonetheless, the provinces have not had a completely free hand.

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The assignment of tax powers and the ability of the federal government to use the types of transfers it chooses provide a context for federal involvement in many matters within provincial jurisdiction. Education has not been immune to these pressures and the federal government has become involved in the educational field. The following section reviews the history of federal involvement in education.

### 5.3 THE HISTORY OF FEDERAL INVOLVEMENT IN EDUCATION FINANCE IN CANADA

#### 5.3.1 Introduction

The purpose of this section is to provide an overview of federal provincial initiatives in education. Our interest is not in a detailed historical account but rather in noting the nature of and rationales for federal presence in the educational field. The "welfare state - needs framework" emphasizes distributive concerns (equality of opportunity and minimum standards) thus we are interested in identifying the federal-provincial programs which are explicitly aimed at achieving national redistributive objectives.

Our redistributive thrust will also be evident in our discussion of the different initiatives. We will be interested in determining whether the major initiatives contributed to equality of opportunity or, instead, served to exacerbate inequalities already present due to disparities in

tax capacities and differences in needs. This theme is sustained into Chapter 6 where the redistributive impact of the two most important programs, Equalization and EPF, is assessed.

### 5.3.2 The Years 1867-1939

The period 1867 to 1912 saw little federal government involvement in education. Education was a local (parish or municipal) responsibility and a relatively low cost area. Thus the earliest transfers, the statutory subsidies, were not motivated by concerns related to education. The only two important federal initiatives in education appear to be the establishment of the Royal Military College in 1876 and a gift, in the form of a 150,000 acre endowment, to the University of Manitoba.

Public pressure for federal involvement in education began to build just after the turn of the century. Business, labour, and agricultural groups interested in vocational and occupational education first provoked federal action. In 1910 the federal government appointed the Royal Commission on Industrial Training and Vocational Education. This Royal Commission left a mark on most federal initiatives in the period that followed.

The first conditional grant program in Canada was introduced in 1913 under the auspices of the Agricultural In-

struction Act. The program was a response to demands for vocational training emanating from the agricultural community. As Eggleton and Kraft (1939,41) note:

For some years a conviction had been growing that due attention was not being given to the training of young men and women for farm life. The potentialities of "scientific agriculture" were beginning to be realized, but they had not yet found expression in the school curricula. The "drift to the city" was believed to be largely due to the failure to make agriculture an interesting career. Young men and women planning to enter professions were getting more academic and cultural attention than those who preferred to stay on the farm.

Eggleton and Kraft argue that the federal government response was necessary because provincial governments did not have sufficient revenue to act alone (1941,40). The grants were not matching. Thus, despite the absence of adjustments based on need or tax capacity, the program did not severely penalize poor provinces.

In 1919 the federal government introduced the Technical Education Act which committed the federal government to spend ten million dollars over a ten year period on upgrading vocational training and industrial education. The grants were of the matching type - a fact which made it difficult for the poorer provinces to access available monies. When the Act lapsed in 1929, Ontario was the only province to have taken full advantage of the allotted funds. James Maxwell, in Federal Subsidies to Provincial Governments in Canada (1937) argued that these grants not only favoured rich provinces but also induced poor provinces to engage in schemes beyond their fiscal strength.



As the end of Technical Education Act neared another Royal Commission to study vocational education was struck. This Royal Commission resulted in Vocational Education Act in 1931. However, with the depression and the associated decline in revenue and rise in expenditures, the federal government was forced to rethink its involvement in education. The Vocational Education Act was never proclaimed - despite the fact that it had passed both Houses of Parliament. The Technical Education Act was given two extensions which prolonged its existence until 1939 (Parliamentary Task Force on Federal-Provincial Fiscal Arrangements 1981,56).

The depression directed federal attention to another aspect of the education system - the absence of occupational skills among those leaving school. In an attempt to alleviate this problem the federal government introduced the Unemployment and Agricultural Assistance Act which contained provisions for conditional subsidies to support various occupational training projects. This Act was proclaimed in 1937 and was replaced in 1939 by the Youth Training Act.

Federal involvement in education in the years 1912 to 1939 reflected the work of the 1910 Royal Commission on Industrial Training and Vocational Education. The objectives were purely economic - the national economy required a continuing supply of skilled manpower to assure economic growth. The one program introduced in the period which did not emphasize vocational training was the establishment of

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the National Research Council. However, the National Research Council's focus on research and development also reflects an economic orientation.

No program reflected concerns for equality of opportunity or other redistributive objectives. Indeed the 50-50 cost sharing approach adopted in many programs of this period probably exacerbated educational disparities since only rich provinces were in a position to take full advantage of the available monies and since resources of the poor provinces were probably diverted from primary and secondary education and into vocational training. Thus, it seems safe to say that welfare state concerns were not the motivating factor in any of the early programs.

### 5.3.3 The Royal Commission on Dominion Provincial Relations

The Royal Commission on Dominion - Provincial Relations was established in 1937. The depression had led to a fiscal crisis; not only were the provinces unable to finance unemployment relief or supply sufficient welfare type services but also the depression had been quite uneven in incidence and some provinces found themselves in significantly worse financial shape than others. The Royal Commission on Dominion-Provincial Relations (Rowell-Sirois), a response to this crisis, was charged with undertaking "a reexamination of the economic and financial basis of Confederation and of the

distribution of legislative power in light of social and economic developments of the last seventy five years." (Royal Commission on Dominion Provincial Relations Report, Book I, 1940,9) Its report, released in 1940, was one of the most important in Canadian history.

The Commission did not have mandate to study education. Education was considered a provincial matter. However, the Commission came to the conclusion that education was too important to ignore and four extremely important recommendations on educational finance resulted.

The first important recommendation related to equality of educational opportunity. The depression had increased the disparities in education opportunities and the poorer provinces were lobbying for federal action to establish some sort of equity in this important field. Their position was articulated in a submission to the Commission by the Province of New Brunswick.

Education is of national importance. Equality of educational opportunity should obtain throughout the nation.... The burden of education should be distributed as evenly as possible throughout the nation, otherwise equality of opportunity will not be established (1938, 37-38).

A brief by the Province of Prince Edward Island echoed these sentiments:

The standard of education should be the same throughout Canada. Some provinces are unable to maintain this standard. It remains for the Canadian government to equalize this difference (1938,22-25).

The Royal Commission responded with its recommendation for a system of National Adjustment Grants. The Commission argued:

The quality of education and welfare services is no longer a matter of purely provincial and local concern. In Canada today, freedom of movement and equality of opportunity are more important than ever before and those depend in part on the maintenance of at least minimum standards for education, public health, and care of the indigent (Book II, 1940, 128).

Their emphasis on minimum standards was based on a "welfare state perspective." The Commission states: "... national duty and decency, if Canada is to be a nation at all, [and] equity and national interest demand that residents [of poorer areas] be given average services and equal opportunities" (Book II, 1940, 128).

Although the Commission lamented the disparities in educational opportunities throughout the country its recommendation for National Adjustment Grants did nothing to assure the goal was met. The Commission believed that a free hand in education was a necessary part of provincial autonomy. To assure autonomy the Commission recommend that the National Adjustment Grants be established to assure all provinces could supply an average level of public services without imposing tax burdens greater than the Canadian average. These grants were to be unconditional.

The second major recommendation of the Commission related to education was that "the federal government should have

full power to provide employment aid for those recognized as unemployed employables...[This]would make the training of unemployable youth a matter of even greater federal concern than at present" (Book II,1940,26). Thus the Commission was advocating a greater role in manpower training for the federal government. The objective here was clearly economic.

A third recommendation related to higher education. The Commission offered the following advice: "it is conceivable that even the provinces might welcome a small Dominion grant to their universities made contingent on the maintenance over a period of some years of the provincial grants to their universities and on the preservation of high academic standards" (Book II, 1940,52). The Commission suggested the grants could be given on a per capita basis. Also the Commission argued for scholarships and bursaries to attract more students from low income groups.

The final recommendation relevant to discussions of education was the suggestion that a council, analogous to the National Research Council be established. The purpose of this Council would be to support research work in the social sciences.

Although the recommendations of the Rowell-Sirois Royal Commission did not translate directly into public policy they did shape policy discussions for years to come. In the discussion which follows we will trace the evolution of two

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themes found in the Royal Commissions recommendation. First, we focus on the evolution of the "equalization" theme expressed in the recommendations for National Adjustment Grants. Second, we turn to the universities and trace the history of federal involvement in post secondary education.

#### 5.3.4 Equality of Opportunity

The Rowell-Sirois Royal Commission had addressed the equality of educational opportunity issue by recommending a system of National Adjustment Grants. In this section we trace the transformation of the Rowell-Sirois recommendation into the instrument used to achieve equality of opportunity/minimum standards objectives today - the system of Equalization payments. The Equalization program will be examined in more detail later in the chapter.

The proposal for a system of National Adjustment Grants was part of a larger package which called for provinces to withdraw from personal and corporate income taxes and succession duties and for a transfer of responsibility for unemployed employables from the provinces to the federal government. However only the transfer of responsibility for unemployed employables was acceptable to the provinces. The "have" provinces were not willing to give up their taxing powers in return for an "allowance" from the federal government and the "have not" provinces were not very happy with being raised merely to the national average. (Van Loon and Whittington, 1981,282).

The system of National Adjustment Grants rejected by the provinces would have assured that every province could supply the Canadian average standard of educational service without forcing any province to fall short of the Canadian average standard with respect to other public services or to tax more heavily than the Canadian average. This would have been accomplished through a formula which included calculation of disparities in both service standards and tax effort. All provinces but Ontario, Alberta and British Columbia would have been recipients of National Adjustment Grants.

A conference called to discuss the Rowell-Sirois recommendations in January 1941 broke down on the second day. However, the conference set the stage for the temporary coordination of government finances during the war period.

With the outbreak of World War II fiscal finance disputes became secondary to the needs of conflict. The federal government, which had constitutional responsibility for defence, demanded sole access to the lucrative personal and corporate income tax fields to finance the war effort. Although the provinces were unwilling to withdraw permanently they were willing to withdraw temporarily if the terms were right. The payments offered by the federal government in compensation were tailored to win acceptance (Moore, 1966,26). The federal government contracted to "rent" the tax room for either the provincial and municipal revenue

lost or the net interest paid on provincial debt. All provinces signed the Wartime Tax Agreements with Quebec, Ontario, Manitoba, and British Columbia opting for a "rent" equal to lost revenue and with the remaining provinces opting for a "rent" equal to the cost of debt service. The agreements expired in 1947.

At war end the federal government moved to adopt the Wartime Tax Agreements to the needs of peace time. At the top of the Federal agenda was a desire to establish a Beveridge type welfare state in Canada.<sup>38</sup> This Federal initiative had two components. The first called for Keynesian macroeconomic policies to guarantee full employment and significant income growth. This was found in the White Paper on Employment and Income. The second focused on specific welfare state activities. However, because provincial governments had constitutional responsibility for most welfare state activities this second component required provincial agreement. The federal government presented its "Green Book" proposals at the Conference on Reconstruction in 1945. The package included proposals for: sole federal access to personal and corporate income tax fields in exchange for a per capita payment to each province; a federal Old Age Pension Scheme for those over 70 years of age; a conditional grant program to encourage the introduction of provincial Old Age

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<sup>38</sup> W.H. Beveridge was the architect of the British Welfare State. A summary of his ideas can be found in Full Employment in a Free Society.



Pension Schemes for those between 65 and 69 years of age; and a system of conditional grants to encourage the adoption of hospital insurance. The package was rejected by the provinces.

The Federal government responded with a new proposal in 1946 which focused only on taxation. It involved a "tax rental" arrangement. The federal government desperately wanted to retain control of the lions share of income taxes. Federal politicians believed this was necessary to assure the federal government a leading role in managing the economy and developing the welfare state. A consequence was a "tax rental" proposal designed to secure provincial support.

One of the most important features of the "tax rental" proposal was the federal offer to assure the seven "have not" provinces more revenue than they could raise on their own without substantial tax increases. From the federal point of view the proposal was a success. Eight provinces (with the exception of Ontario and Quebec) entered tax rental agreements. The proposal was also significant. The arrangement provided participating "have not" provinces with additional revenue which could, if the province so chose, be used to improve their education systems.

In 1956 the transfer to "have not" provinces was separated from the tax rental arrangements. The Tax Sharing Arrangements Act continued the policy of renting tax room. How-

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ever, the "rent" would equal the yield of the transferred tax room. A separate program provided for "equalization" transfers. The "equalization" grant to a province was equal to the difference between the yield of the three standard taxes (personal and corporate income taxes and succession duties) in the two high yield provinces and the actual yield of those taxes in the province. Provinces which did not enter a tax sharing agreement still qualified for "Equalization" payments.

The separation of the tax rentals and equalization in 1956 was an extremely important development. Prior to 1956 the transfers were a cost incurred by the federal government in its attempt to retain control over lucrative tax fields. After 1956 Equalization was a cost incurred by the federal government as a matter of principle to strengthen the fiscal positions of the "poorer" provinces. However, the program did not resemble the system of National Adjustment Grants advocated by the Royal Commission on Dominion-Provincial Relations. The Rowell-Sirois recommendation was based on a principle which held that every provincial government should be able to supply the Canadian average standard of public services at a cost no greater than the Canadian average tax effort. In contrast the 1956 Arrangements reflected a less ambitious redistributive objective; it only guaranteed the per capita yield of the three standard taxes in the two high yield provinces.

The inadequacy of the 1956 Arrangements was quickly acknowledged. In 1958 the federal government introduced Special Atlantic Provinces Adjustment Grants. These grants were needed to increase the fiscal capacities of the provincial governments of the Atlantic Provinces.

The Tax Sharing Arrangements Act expired in 1962. Rather than proposing to again "rent" tax room the federal government simply offered to collect taxes for the provinces. Federal tax rates were lowered to give the provinces "room". Provinces occupied the vacated "room" by increasing their tax rates.

Under the 1962 Tax Collection Agreements the Equalization program was continued but the formula was changed. Fifty per cent of gross natural resource revenues, on a three year moving average basis, were added to the revenues which would be equalized. Also, rather than bring provinces up to the per capita yield in the two high yield provinces the new formula assured only the national average per capita yield.

In 1964 the formula was changed again. The equalization standard was reset at the yield of the two high yield provinces. Resource revenues were removed from the formula except that per capita resource revenues in excess of the national average were deducted from the payment otherwise payable.

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The changes in the formula did not reflect a move to some principle of equalization which was to replace the original Rowell-Sirois dictum. Instead the changes were ad hoc responses to problems with the formula itself. As Davenport (1982) notes the 1962 changes were a response to two problems. First, the original formula resulted in a per capita payment (1957/58) to Alberta (\$10.32) which was higher than the payment to Quebec (\$9.74) even though per capita personal income and resource revenue were higher in Alberta than in Quebec by \$169 and \$106 respectively (1982, 14). This led to pressure for the inclusion of resource revenues. However resource revenues could not simply be added. Full equalization of resource revenues would have resulted in Ontario becoming a "have not" province. Ontario would have "achieved" this status despite a personal per capita income 19% above the national average. Thus the 1962 changes were an ad hoc compromise which assured Ontario, Alberta, and British Columbia were actually classified as "have not" provinces.

The 1964 changes were also ad hoc. Lester Pearson, in the heat of a federal election campaign, had promised to reestablish the equalization standard to the two high yield provinces. To assure Ontario was not classified as "have not" natural resource revenues were removed from the formula. To assure Alberta and British Columbia were not classified as "have" resource revenues in excess of the national average per capita were deducted from the grant otherwise payable. (see Davenport (1982) for a more detailed treatment)

1967 was a year of significant change in the Equalization program. In an explicit statement of the objectives of the Equalization program then Finance Minister Mitchell Sharpe stated:

The fiscal arrangements should, through a system of equalization grants, enable each province to provide an adequate level of public services without resort to rates of taxation substantially higher than those in other provinces.

To achieve this objective a representative tax system approach to the formula was introduced. The representative tax system (RTS) formula assured that every province could raise revenue by applying the national average tax rates on their own tax bases equal to that they would have received had they been able to tax the national average per capita bases. Significantly provincial nonresource revenues were now great enough to allow the inclusion of resource revenues without generating a payment to Ontario. The 1967 formula incorporated 16 tax bases; the number of tax bases rose to 19 in 1972, 20 in 1973, 29 in 1977, and 33 in 1982.

It is important to note that, despite the explicit statement of objectives, the RTS formula focused only on tax capacity. The yield of the national average tax bases at national average tax rates is a poor proxy for the expenditure required to assure adequate levels of public services. As a consequence differences in expenditure needs, which are unaccounted for in the RTS formula, will give rise to differences in public service provision and/or tax burdens de-

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spite the equalization of tax capacity. This difficulty is examined in more detail in Chapter 7:

When energy prices rose in the early seventies the RTS formula began to generate anomalous outcomes reminiscent of those experienced with the original program. In 1974 the federal government altered the program to cut costs and assure Ontario did not become a recipient of an Equalization transfer. In 1977, the formula was modified again (only fifty per cent of nonrenewable resource revenues were included). Also a personal income override was introduced to assure Ontario "have" status. Finally in 1982 nonrenewable resource revenues were reintroduced in full and the personal income override was dropped. However the Equalization standard was changed from simply the Canadian average to that of five "representative" provinces (Alberta and the Atlantic provinces were not considered representative). This again assured Ontario would not become a "have not" province.

The purpose of this section was to trace the evolution of the Canadian Equalization program. We need to stress that the Equalization program has strengthened the fiscal positions of the "have not" provinces and that this, in turn, has probably resulted in improved education systems. Thus the Equalization program must be considered an important, albeit indirect component of the Canadian system of educational finance.

However, the program has two major weaknesses. First, the grants are unconditional. Thus the transfers are not explicitly designed to secure education or other welfare state standards. Second, the formula, which was based only on government revenues, neglected differences in expenditure needs and occasionally generated unacceptable outcomes. Ad hoc responses to the resulting anomalies - parameter changes to assure "have" provinces are not classified as "have not" "(?)" - have resulted in a program without a clear normative rationale.<sup>39</sup> Unfortunately the absence of a clear normative rationale may undermine the program (see Moore (1981) for a detailed discussion).

#### 5.3.5 Direct Federal Education Support

In addition to proposing the System of National Adjustment Grants the Rowell - Sirois Commission recommended a larger federal role in manpower training and federal grants to universities. The federal government did not, however, express great interest in manpower training. Indeed there would be a twenty year gap between the introduction of the Vocational Training Coordination Act (which replaced the Youth Training Act) in 1942 and the next major piece of fed-

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<sup>39</sup> Another way of visualising this problem is to focus on the way provinces are classified as "have" or "have not". One can focus on tax capacity (the RTS approach). One can focus on total income available (an approach advocated by Davenport (1982)). Or one can focus on income available and its distribution (an approach examined by Hum and Strain (1983)). Unfortunately the different approaches yield contradictory outcomes.

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eral legislation in the area of technical and vocational training, the Technical and Vocational Training Assistance Act (1960). Universities, on the other hand, did attract federal attention. Direct federal involvement in post secondary education would dramatically change the way education was financed in Canada during the post war period.

The shift of federal interest from vocational and technical education to university education was remarkable. Federal involvement in university education began with the passage of the Veterans Rehabilitation Act in 1945. This piece of legislation provided for bursaries to veterans, enabling them to attend university at little or no cost to themselves. The Act also provided direct grants to universities in recognition of the fact that that student fees represented only about 40 percent of operating costs.

The Veteran's Rehabilitation Act was extremely important for Canadian universities. Unfortunately, however, the grants were designed to end with the termination of training of veterans. Moreover by 1950, the inevitable decline in the number of veterans enrolled became an important factor in new financial difficulties for Canadian universities (Parliamentary Task Force on Federal-Provincial Fiscal Arrangements, 1981,57).

Federal interest in the universities was sustained with the appointment of the Royal Commission on National Develop-



ment in the Arts, Letters, and Science (the Massey Commission) in 1949. The Massey Commission identified three major problems in the Canadian post secondary education system: a financial crisis; underdeveloped programs in the arts and humanities; and the orientation of the system toward a small educated elite. The Commission recommended greater federal action.

Specifically, the Commission recommended:

(a).... The Federal Government make annual contributions to support the work of the universities on the basis of the population of each of the provinces of Canada.

(b).... These contributions be made after consultation with the government and universities of each province to be distributed to each university proportionately to student enrollment.

(c).... All members of the National Conference of Canadian Universities be eligible for the federal grants mentioned above (Report of the Royal Commission on National Development in the Arts, Letters, and Sciences (1951,355)).

Shortly after the Commission's Report was tabled in the House of Commons, the Prime Minister announced that:

The government has...reached the conclusion that it is in the national interest to take immediate action to assist universities to perform functions which are quite essential to the country (House of Commons Debates (1951,4278)).

The action taken by the government was to introduce a grant program which transferred fifty cents per capita directly to the universities. The transfer was increased to \$1.00 per capita in 1957, to \$1.50 in 1958, and to \$2.00 in 1962.

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The grants to universities, although welcomed by the universities, were not popular with all provinces. Provincial reaction was understandable. Education was considered a provincial responsibility yet there had been no consultation with the provinces before the federal government introduced the program.

The unilateral action by the federal government provoked an especially vigorous reaction from Quebec. The Quebec government argued that this was an invasion of the constitutional responsibilities of the provinces and forbade its universities to accept the grants. The dispute was unfortunate in view of the fact that the Prime Minister of the Province of Quebec appeared to be well disposed to accept a gentleman's agreement with Ottawa (Peichinis (1971,70-1)). Quebec universities did not receive the federal grants until 1959.

In 1959, Quebec, on the understanding that a new system of "fiscal equivalents" would be introduced the following year, began to accept the federal grants. The Federal government withdrew from the corporate income tax to the extent of an additional equalized percentage point on the understanding that the Quebec government would increase its grants to universities by at least \$1.50 per capita. Quebec grants to universities were increased by \$1.75 per capita.

The resolution of the dispute between Ottawa and Quebec was precedent setting. Subsequent educational finance arrangements (and arrangements generally financing the welfare state) would include an "opting out" provision. The "opting out" provision provided for a transfer of tax room to provinces wishing to act on their own.

In 1962 the Association of Universities and Colleges of Canada appointed their own Commission to study university financing in Canada. The Bladen Commission (1965) projected massive increases in costs and enrollments and recommended substantial increases in federal and provincial financial contributions to universities. Specifically the Commission argued for a continuation of per capita federal grants and suggested increasing these to \$5.00 in 1965/66 and escalating at \$1.00 per head per year (1965,73). The federal government followed the recommendation and increased the grant to \$5.00 per capita.

In 1966, in the face of mounting evidence that university enrollments were likely to double in the next ten years, the federal government proposed to assist the provinces in financing the anticipated costs of post-secondary education by a special arrangement of fiscal transfers (Parliamentary Task Force on Federal-Provincial Fiscal Arrangements (1981,59)) The Federal-Provincial Fiscal Arrangements Act, 1967, initiated a programme of transfer of revenues to the provinces to replace the per capita payments made directly

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to universities. The transfer consisted of an abatement of four equalized percentage points of personal income tax and one equalized percent of corporate tax plus an adjustment payment calculated to bring the total transfer to each province up to the greater of fifty percent of the allowable operating costs of post secondary education or \$15.00 per capita.<sup>40</sup> The transfer was unconditional.

Despite being officially unconditional the post secondary education transfer could be seen as a matching grant in the seven provinces (all but Newfoundland, New Brunswick and Prince Edward Island) where the grant was based on operating expenditure. A \$1.00 provincial grant on allowable expenses would cost the province involved only \$.50. Moreover, if provinces could convince donors or students to pay part of the allowable expenses it would still receive the grant.

The changes in 1967 increased the flow of money to the universities although now through the provinces. The "poor" provinces facing the de facto matching arrangement were still unhappy with the transfer because of the absence of any element of equalization. The Equalization program does not provide full equalization (see below for a more detailed discussion) thus the "poor" provinces had to charge higher tax rates than wealthier provinces to raise their fifty percent of operating revenue. The citizens of "poor" provinces

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<sup>40</sup> \$15.00 was roughly equal to the 50% of per capita operating expenditures in Canada as a whole.

therefore had to accept a greater tax burden than those in wealthier provinces to qualify for the same transfer.

In 1972 a ceiling was placed on the growth of post secondary education transfers. The federal government instituted this change in attempt to gain some control over its expenditures. The de facto matching feature of the 1967 program meant that the provincial governments could determine the amount of the federal budget allocated to post secondary education. The provinces, too, were unhappy. The provinces disliked the red tape associated with the conditional grant. Also, the fact that conditional grant distorted provincial planning in areas considered in provincial jurisdiction was considered objectionable. These were all important influences on the set of federal proposals first tabled in 1976.

The Established Program Financing sections of the 1977 Federal-Provincial Fiscal Arrangements Act represented a major shift in financing the three major shared cost programs: hospital insurance, medicare, and post secondary education. Although the transfers were based on an extremely complex formula (described below in section on EPF) it is not inaccurate to portray the arrangement as a simple per capita unconditional grant. (The hospital insurance and medicare provisions did have some strings attached.) The transfer was made in part in cash in part in a transfer of tax points.

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Because the grant was allocated on a per capita basis it was not related to the demand for post secondary education in the provinces. Because the grant was unconditional it was not linked to provincial spending on post secondary education: i.e. the provinces were free to spend the monies in any way they chose. Thus, the 1977 EPF transfer had only one function: it improved fiscal capacity. Post secondary education was affected only indirectly.

In 1982 new legislation simplified the EPF arrangements. The transfer became a straightforward per capita grant without the many complications of the 1977 arrangements. The tax point/cash form of transfer was continued in this new legislation.

The 1977 and 1982 EPF arrangements are examined in more detail below.

#### 5.4 THE EQUALIZATION PROGRAM

The purpose of this section is to present an overview of the Canadian Equalization program.<sup>41</sup> We focus on three aspects of the program. First, we describe the formula and indicate how it works. We then introduce the objectives of the program. Finally, we indicate the extent to which the program design can meet the objectives.

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<sup>41</sup> For a more detailed discussion see Perry (1983), Courchene (1984), or Hum and Strain (1984).

#### 5.4.1 The Formula

The current Equalization program is designed to insure that all provinces can access revenue per capita (which they raise using national average tax rates) at least equal to that they would have received if they had levied the national average tax rates on the per capita tax bases of the five "representative" provinces. There are thirty-three revenue sources included in the formula.

The calculation of an Equalization payment is, at a conceptual level at least, quite simple. Because provinces raise revenues from a number of sources the first step in calculating the Equalization payment is to identify the bases from which revenue is actually raised. For example, the base for revenues from the retail sales tax is the value of retail sales. Once the tax bases for each of the 33 revenue sources are identified it is possible to actually calculate the tax bases of individual provinces, the national tax bases, and the tax bases of the five representative provinces (Quebec, Ontario, Manitoba, Saskatchewan, and British Columbia). Dividing total national revenue by the national base then yields the national average tax rate. Thus if total retail sales tax revenues equalled \$100 million and total retail sales (the base) equalled \$1000 million the national average sales tax rate would be 10%. Similar calculations would produce national average rates for each source.

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The Equalization payment due with respect to the sales tax is calculated as the difference between the per capita yield of the provincial sales tax base and the per capita yield of the tax base of the five representative provinces when both are taxed using the national average sales tax rate. If a province had a sales tax base of \$100 million the yield of that base at national average rates would be \$10 million. If provincial population was two million the per capita yield would be \$5.00. Also, if the total tax base of the five representative provinces was \$600 million and the population of these provinces was 10 million the per capita yield using the national average tax rate would be \$6.00. Therefore a transfer of \$1.00 per person is required to assure that the province receives the per capita sales tax revenue it would have received had it levied the national average tax rate on the per capita tax base of the five representative provinces.

The total Equalization entitlement is found by similar calculations for each of the other thirty two revenue sources. The outcomes of these calculations (which may be positive or negative) are summed. If the sum is positive, the total is the per capita entitlement; if the sum is negative the entitlement is zero.

What is the impact of the Equalization program? The single most important feature of the program is that the "poorer" provinces can tax the tax bases of the five "representa-



tive" provinces at the national average tax rate. Thus these provinces do not have to constrain their expenditures because their tax bases are smaller than the tax bases of the representative provinces.

#### 5.4.2 Objectives of the Equalization Program

The stated objective of the Equalization program is to assure all provincial governments sufficient revenues to provide reasonably comparable levels of public services at reasonably comparable levels of taxation. This objective has been interpreted in a number of ways. Many economists have argued that the purpose of the program is to assure horizontal fiscal equity - the equal fiscal treatment of equals regardless of province of residence. Others (for example Davenport (1982)) argue that the Equalization program should be designed to achieve fiscal redistribution. The purpose of fiscal redistribution would be to reduce the sacrifice of private consumption necessary to achieve a given level of public services. Still others adopt a welfare state perspective to argue that Equalization is necessary to assure the burden of financing national standards in welfare state programs under provincial control is invariant with respect to residence.

The horizontal fiscal equity rationale was first suggested by Buchanan (1950). He adopted variant of our welfare state perspective and argued for a "rights" approach to Equalization. He argues that Equalization grants:

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do not represent charitable contributions from rich to the poor, and are not analogous to ability to pay in any interpersonal sense. The principle (of equity) establishes a firm basis for the claim that citizens of low income states within a national economy possess the "right" that their states receive sums sufficient to enable these citizens to be placed in a position of equality with their equals in other states" (Buchanan (1950,569)).

Buchanan argues that the fiscal residuum, the difference between contributions made and the value of public services received, should be equal for similar individuals regardless of residence. Others (see, for example, Boadway and Flatters (1983)) have argued that equality of fiscal residua is also a necessary condition for economic efficiency. If fiscal residua differ this will trigger inefficient migration. The migration equilibrium condition - equality of comprehensive incomes - will not be consistent with maximum output unless fiscal residua of like individuals are the same in all provinces.

Fiscal redistribution, on the other hand, is concerned with vertical equity. The objective is to improve the economic well being of individuals. The welfare state approach also emphasizes vertical equity but is distinctive in its focus on the burden of securing standards (minimum incomes, equality of opportunity, access to health care) in different provinces.

### 5.4.3 Objectives and Program Design

The present Equalization program is not designed to assure reasonably comparable levels of public services at reasonably comparable levels of taxation. It only assures that every province can secure revenue at least equal to the revenue which could be raised by applying the national average tax rates on the representative provinces per capita bases by applying the national average tax rates to their own tax bases. Moreover, the formula does not assure horizontal fiscal equity. As Davenport (1982) notes the tax base formula will achieve fiscal equity only if taxes are proportional to market incomes and benefits are equal in absolute amounts. Canada does not satisfy the conditions of this special case.

Also, the current formula is inconsistent with fiscal redistribution. The problem here is that the formula is based on government revenue. Personal income does not receive sufficient weight.

The current program does not reflect welfare state concerns either. Adjustments for needs and costs are necessary. Suppose that schoolage children are a greater proportion of the population in one province than in others. The cost of securing a given standard of education services would be greater in that province. Therefore the citizens of that province would either have to sacrifice more pri-

vate consumption than citizens of other provinces or enjoy less or poorer quality nonwelfare state public services to assure standards are maintained in their province. This disparity would also arise if the province faced higher factor costs rather than a higher proportion of school aged children.

The absence of a clear normative rationale for the Equalization formula is a major weakness of the current program. Our normative framework, the welfare state approach to Equalization, is used to derive an Equalization formula below (Chapter 7).

## 5.5 POST SECONDARY EDUCATION AND THE EPF

The purpose of this section is to discuss the post secondary education provisions of the EPF. The format is similar to that adopted in the previous section on Equalization. We begin by describing the program and illustrate how it works. We then note the program objectives. Finally we indicate the extent to which the program design is capable of meeting the objectives.

### 5.5.0.1 The Formula

The present financing arrangements are governed by legislation passed in 1982. The 1982 legislation was shaped by the arrangements in place between 1977 and 1982. We will begin by discussing the 1977 legislation.

The 1977 Established Program Financing Arrangements covered Hospital Insurance, Medicare, and Post Secondary Education. The transfer was a "block" grant and did not distinguish between the programs. However, the federal government did indicate that the transfer could be decomposed on the basis of the ratios which were obtained in 1975-76, the base year. The decomposition yields 50.5% allocated to Hospital Insurance, 17.4% to Medicare and 32.1% to Post Secondary Education.<sup>42</sup>

The EPF transfer was based on the national average per capita contributions to Hospital Insurance, Medicare, and Post Secondary Education in 1975-76. Indeed, basic structure of the EPF arrangement can be captured by viewing the EPF transfer as a per capita grant equal to the national average contributions to the three "established" programs in 1975-76 and escalated using a three year compound moving average of nominal GNP per capita. There are important (and complex) subtleties lost when the program is viewed in this way. Nonetheless this view certainly captures the essence of EPF transfer.

The base year contributions to the "established" programs are illustrated in Table 1. The national average per capita transfer, \$212.65, was the base EPF transfer.

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<sup>42</sup> See footnote on page 220 for a critical discussion of this decomposition.

TABLE I

## Base Year Contributions to EPF Programs

Province	\$Millions	\$Per Capita	%of costs
Newfoundland	104.2	189.77	57.4
Prince Edward Island	20.9	178.48	65.9
Nova Scotia	165.3	201.71	52.3
New Brunswick	127.1	191.07	58.1
Quebec	1427.4	231.01	46.9
Ontario	1721.8	210.69	50.1
Manitoba	212.6	209.75	53.0
Saskatchewan	179.8	198.15	53.7
Alberta	381.2	214.36	48.7
British Columbia	472.9	194.35	46.7
TOTAL	4813.2	212.65	49.3

Source: Parliamentary Task Force on Federal-Provincial Fiscal Arrangements (1981,70)

The description of the EPF program offered above, while capturing the essence of the transfer, misses some of its important features. The 1977 arrangement did not specify a straightforward cash transfer; rather, the transfer was in part cash and in part a transfer of tax room. The arrange-

ment also included provisions for transitional payments, leveling adjustments, and a special transfer to provide compensation for the termination of the 1972 Revenue Guarantee Program. These features of the 1977 arrangements are most easily understood if the simple description offered above is kept in mind.

Consider first the leveling adjustment. Note that the base year contributions in 1975-76 varied across provinces and that no province received exactly the national per capita average (Table 1). The leveling adjustment was simply a provision to "level down" provinces above the national average and "level up" those provinces below the national average. The intent was to smooth the transition to the new program. The leveling was complete by 1982.

The EPF transfer was designed to be approximately half cash, half tax. The cash part of the transfer does not present problems. The "basic cash" transfer was equal to one half the national average per capita contributions to the established program in 1975-76 escalated using the three year compound moving average of nominal GNP per capita. The tax transfer was more problematic since a tax point transfer yields different revenue per capita in different provinces. Under the 1977 arrangement the tax point transfer was chosen on the basis of the yield in the high yield provinces. A tax point transfer of 12.5 personal income tax points and 1 corporate income tax point yielded revenue in the high yield

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province approximately equal to the value of the cash transfer. The tax points were eligible for equalization through the Equalization program thus the value of the tax points was no less than the national average. Also a set of transitional payments were instituted to assure no province received less than the escalated national average per capita payment in 1975-76.

The federal government believed that the transitional payment would only be temporary. They expected the value of the tax points to grow faster than the cash payment since, with a progressive tax system, income tax revenues grow faster than income. Thus the transitional payment was seen as a temporary measure to assure that no province lost as a result of taking part of the transfer in tax points. There were no provisions to limit the gains enjoyed by rich provinces as a result of the tax rather than cash transfer.

The final major complication in the 1977 arrangements was the additional transfer intended to compensate for the termination of the 1972 revenue guarantee program. This transfer was also part cash and part tax: the basic cash transfer was \$7.63 (approximately the value of one equalized tax point) escalated using the three year compound moving average of GNP per capita and the tax point transfer was one equalized personal income tax point. The compensation for the Revenue Guarantee was part of a negotiated settlement where the provinces agreed to integrate the Hospital Insur-



ance program into the EPF arrangements in 1977 rather than waiting until 1980 when the Hospital Insurance Agreements were due to expire.

The 1982 EPF arrangements were much simpler. The total EPF transfer was set at the escalated average national per capita transfer for the three programs in 1975-76. The tax point transfer was increased to 13.5 equalized (using the new five representative province standard) tax points. The cash transfer made up the difference. All of the other complications in 1977 were eliminated. The leveling had been completed in 1982; thus the leveling adjustment was irrelevant. The transitional payments were no longer necessary to assure that each province received the escalated 1975-76 national average per capita transfer. And, the negotiated settlement re the 1972 Revenue Guarantee was not renewed. Thus the transfer was simplified to a straightforward per capita grant.

The 1982 EPF program satisfied two groups of critics of the 1977 arrangements. One group objected to the complicated structure of the 1977 EPF. After all they argue it was essentially a straightforward per capita grant (see Boadway (1980,86)). The 1982 arrangements eliminated many of the complications. A second group, primarily the poor provinces, had objected to the arrangement because it favoured the rich provinces. Although the Equalization program had assured all provinces at least the national average per

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capita revenue from the tax point transfer the rich provinces would enjoy a still greater transfer. The 1982 approach to calculating the cash transfer eliminated this feature of the 1977 arrangements.

#### 5.5.1 Achieving the Objectives of the EPF: Post Secondary Education

Gunther and Van Loon (1981, 149-50) list three federal objectives in the post secondary sector. First there are economic objectives which relate primarily to manpower training and research and development. Second there are distributive objectives. These include support for equality of access to post secondary education by providing assistance for basic infrastructure in order to make possible a common standard of educational facility and programming across Canada and a commitment to support greater equality of opportunity for individuals by reducing personal income barriers to post secondary education. Finally there are citizenship objectives. These relate to areas such as bilingualism, Canadian studies, etc.

Is the EPF designed to achieve any of these objectives? No, like Equalization the EPF grant is unconditional thus the federal government has no direct influence on post secondary education. However, the EPF is an important source of funds for the provinces. Thus it is likely to have an important indirect impact on the post secondary education sector.

The EPF program is particularly significant in the "poor" provinces. Tax collection to finance the EPF program are greatest (in per capita terms) in the rich provinces. Yet the per capita transfer is the same regardless of whether a province is rich or poor.

However, it is important not to overstate the amount of redistribution in the EPF. If the objective is to improve the standard of service in the poorer provinces the Equalization program is a much better instrument. As the Economic Council of Canada (1982,61) notes federal funds spent on Equalization payments would benefit a province like Newfoundland seven times more than the same amount spent on equal per capita grants under EPF.

The EPF is also important as a contributor to equality of opportunity in the poorer provinces. Low income students can often afford to attend university only if they are living at home. If low income provinces could not support quality post secondary education institutions low income students might be discriminated against on the basis of residence. This discrimination would be inconsistent with equality of opportunity. Nonetheless, a student assistance program along the lines suggested by Graham (1981,85-91) or Rosenbluth and Scott (1981,220-227) could be more conducive to equality of opportunity.

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The per capita grant is not without weaknesses. For example the per capita EPF grant does not account for provincial differences in needs. As Courchene (1979,22) notes:

Prince Edward Island will now receive the same amount per capita as Ontario. Yet the proportion of its population enrolled in university is lower than that for Ontario, and its operating costs are probably also considerably lower, in part because it has few graduate schools and in part because teaching salaries are lower. Under these circumstances it is difficult to justify equal per capita transfers

We will discuss needs in the following two chapters.

## 5.6 CONCLUSION

The purpose of this chapter was to provide an overview of the Canadian system of educational finance. We began with a discussion of the Constitution and its assignment of legislative responsibilities. We noted that the British North America Act specified that "In and For Each Province the Legislatures may exclusively make Laws in relation to Education". However, we also noted that Section 93 is not free of ambiguities. A general commitment among Canadians to provincial control over education is probably a more important constraint for federal action in educational finance than the formal provisions of the BNA Act.

We also reviewed the history of federal involvement in education. Our review indicated a substantial federal presence in education. Unfortunately it is extremely difficult

to identify and measure the full extent of federal involvement in education. (Neither level of government is prepared to reveal this information.) However, Table 2 gives some indication.<sup>43</sup>

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<sup>43</sup> Note: the federal government has direct responsibility for operating and supporting areas of education not discussed in this chapter. Federal responsibility includes education of: Indian and Inuit people; residents of the Northwest Territories and the Yukon; inmates of federal penitentiaries; and armed forces personnel and their dependents.

TABLE II

## Federal Expenditures on Education

## Elementary/Secondary Education

Indian and Eskimo Education.....	248.1
DND.....	56.1
CIDA.....	40.5
Filmstrips, School Broadcasting.....	5.7
Canadian Correctional Services.....	5.3
Other Minisries.....	27.8
Subtotal.....	383.5

## Post Secondary Education

Nova Scotia Coast Guard College.....	4.5
RN Education in Hospitals.....	25.6
Other Operating Grants.....	2.1
Scholarship, Student Aid.....	4.9
Other Ministerial Expenditures.....	32.1
Subtotal.....	70.5

## University Education

Military Colleges.....	38.4
National Health and Welfare.....	1.3
Environment.....	.8
Natural Sciences and Engineering Research Council.	137.1
Social Sciences and Humanities Research Council...	17.4
Medical Research Council.....	72.4
Research Grants from other Ministries.....	42.5

Scholarships and Student Aid.....	74.7
Costs of Loans to Students.....	63.0
CIDA.....	23.0
Other Ministerial Expenditures.....	28.4
Subtotal.....	498.0
Vocational Training	
Manpower Training.....	797.9
Language Training.....	73.6
Canadian Correctional Services.....	6.4
Operating Capital.....	12.9
Other Federal Training Institutions.....	4.9
CIDA.....	7.0
Other Expenditures.....	42.2
Subtotal.....	944.6
Transfers to Provinces	
Post Secondary Education (EPF).....	3074.8
Minority Language Programs.....	205.1
Subtotal.....	3279.9
TOTAL.....	5176.5

Source: Parliamentary Task Force on Federal Provincial Fiscal Arrangements (1981, 122).

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Two programs, Equalization and the EPF, were singled out for special attention. These programs indirectly affect equality of opportunity and play a role in maintaining some semblance of minimum standards. Thus they are of particular interest given our "welfare state perspective".<sup>44</sup>

Our discussion of Equalization and the EPF also indicated their inadequacy as instruments for achieving equality of opportunity or minimum standards. Indeed, the most important point of this chapter is that there is no mechanism to assure basic standards in education in Canada.

The following two chapters apply our theoretical framework in a more detailed discussion of educational finance in Canada.

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<sup>44</sup> The Canada Student Loan Plan, another program related to equality of opportunity, was not discussed in this chapter. Our intent was not to denigrate its importance; rather we have limited focus to federal-provincial fiscal arrangements to limit the scope of our work.



## Chapter 6

EDUCATIONAL FINANCE AND DISPARITIES IN  
EDUCATIONAL OPPORTUNITIES6.1 INTRODUCTION

Every community must grapple with the issue of equity. In education equity is especially important since education influences the extent to which an individual can shape his/her own destiny as well as the degree to which the individual can contribute to society as a responsible citizen and as a productive worker. Indeed, if the community believes that ability and effort should underly its reward system the issue of equality of educational opportunity can not be ignored.

Securing equity in a federal country like Canada is especially difficult. Provincial jurisdiction and interprovincial disparities in educational needs and tax capacities are likely to result, in the absence of coordinated intergovernmental action, in disparities in educational opportunity. Canadian programs which addressed the equity problem at the national level were identified in the previous chapter. We noted that these programs were not explicitly designed to address equity concerns. Canadian development, historical and constitutional, has not allowed the federal government

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to play a coordinating role and the Council of Ministers of Education, the only provincial body established to coordinate provincial education policy has never received a mandate to implement a program for financing education which would address equity concerns. As a consequence, there are no minimum standards in education let alone equality of opportunity.

The purpose of this chapter is to apply our theoretical framework in a discussion of education in Canada. We begin by discussing how the "needs" measures of Chapter 3 can be applied in an examination of education. We also indicate why provincial jurisdiction coupled with interprovincial disparities in educational "need" are likely to result in disparities in educational opportunity. In the second section of the chapter we actually identify disparities in educational "needs" by comparing the fiscal effort that would be required of each province to meet a common educational standard. In section three we compare the fiscal effort that would be associated with current expenditure levels if education was financed only from provincial income. Finally, in section four, we attempt to account for the federal finance (direct and indirect) of education. We adjust the data for federal involvement to arrive at an estimate of net provincial effort.

6.2 NEEDS AND EDUCATION

The index of need introduced in Chapters Two and Three was relatively straightforward. The index had three components: a head count,  $F(X^*)$ , which measured the proportion of the population defined in need;  $(X^* - U^*)$ , the gap, which measured the average need of those classified in need; and  $U_y$ , per capita income. The formal index was defined as:

$$P(X^*) = F(X^*) (X^* - U^*) / U_y \quad (6.1)$$

The index in this form is ideally suited for measuring poverty or income needs. However, several complications must be addressed if the index is to be applied to measure educational need. First, education is an egalitarianly supplied good. Thus the modifications of Chapter 3 must be introduced: i.e.

$$F(X^*) = \begin{cases} 0 & \text{if } X(i) > X^* \\ 1 & \text{if } X(i) < X^* \end{cases} \quad (6.2)$$

and

$$X(i) = U^* \quad (6.3)$$

The first of these modifications simply reflects the fact that if all citizens receive the same education either everyone is above the standard or everyone is below. The second modification states that since everyone enjoys the same standard of education each individual's consumption will equal the mean.

These modifications reflect a strong view of egalitarian supply. In actual fact education is not as strongly egalitarian as the modifications would suggest. Further adjustments are required.

Education is typically acquired in a particular phase of the life cycle. Thus needs could be defined with respect to a particular subset of the population defined with respect to age. Akerlof (1978) refers to this restriction as tagging. We will tag a subset of the population because our focus is on equality of educational opportunity rather than on the distribution of human capital across the population. Tagging imposes a condition on our cumulative distribution function. Thus if we tag with respect to age

$$F(X^*, a^*) = \int_0^{X^*} \int_{a^*}^{a^{**}} f(X, a) da dX \quad (6.4)$$

where  $a$  is age and the population tagged is the  $a^*$  to  $a^{**}$  age group.

An alternative is to tag on the basis of current enrollment in an education. This approach would include those enrolled in educational programs but who are not in the age group typical of the student body. It would also exclude those in the typical age group who by choice or because qualifications are inadequate were not enrolled in the education program in question. The general impact of either tag is the same since tagging and egalitarian supply imply a head count:

$$F(X^*, a^*, a^{**}) = \begin{cases} 0 & \text{if } X(i) > X^* \\ M/N & \text{if } X(i) < X^* \end{cases} \quad (6.5)$$

M is either the number of people between the ages of  $a^*$  and  $a^{**}$  or the number of people registered in the education program in question. N is the population.

Tagging and egalitarian supply are relatively straightforward complications. A more difficult problem arises when attempting to define education in a way which permits empirical work. Philosophers of education continue to debate the meaning of education in the abstract; a generally acceptable definition for empirical work is, therefore, beyond our grasp.

Our approach is to follow the literature on educational finance and to define the educational standard as a specific expenditure per pupil (see Johns and Morphet (1980) for a discussion). We can offer two defences of this approach to defining education.

First, the definition can be defended using the economics of education literature and the principle of horizontal equity. The economics literature views education as an input/output process. But output standards can not be specified since output is difficult if not impossible to measure. Inputs, on the other hand, can be valued thus it is possible to impose input standards. Input standards will not assure equality of outcomes since the ability and effort of stu-

dents and the quality of teachers will tend to vary despite the standards. However, inputs standards do assure that students of the same ability and exerting approximately the same effort will receive approximately the same quality education provided they face the same standard of teaching.

Second, all Canadian provinces have intraprovincial systems of education finance. Each of these systems incorporates a concern for equality of opportunity by focusing on expenditures per pupil. Thus there is a Canadian precedent for our use of this variable (see Brown (1981) for a discussion of the provincial plans).

#### 6.2.1 Standards, Needs, and Income: A Digression

We expect, a priori, that the standard of education provided in a province will be sensitive to our measure of educational need. The impact of our measure of educational need on the standards can be illustrated using a simple choice theoretic model. Assume: (i) the standard axiom set; (ii) that education is a pure private good; (iii) that tastes are the same in all provinces; and (iv) that education is publicly and egalitarianly supplied ( $U^*=0$ ; see below). Also assume that the public choice is the choice of the median voter.

The median voter in each province will face a budget constraint

$$Y_m = Y_m(d) (1 + P(X^*))$$

where  $Y_m$  and  $Y_m(d)$  are the income and disposable income of the median voter and that  $P(X^*)$  is the tax rate (needs index) associated with an educational standard,  $X^*$ . If the median voter maximizes a well behaved utility function,  $U(Y_m, X^*)$ , the optimal choice of  $Y_m(d)$  and  $X^*$  will be as illustrated in Figure 1 below. Note that the price of a \$1 increase in the educational standard is equal to  $\$(M/N)$  since there are  $M$  students to bring up to the standard and since there are  $N$  citizens to finance the policy.

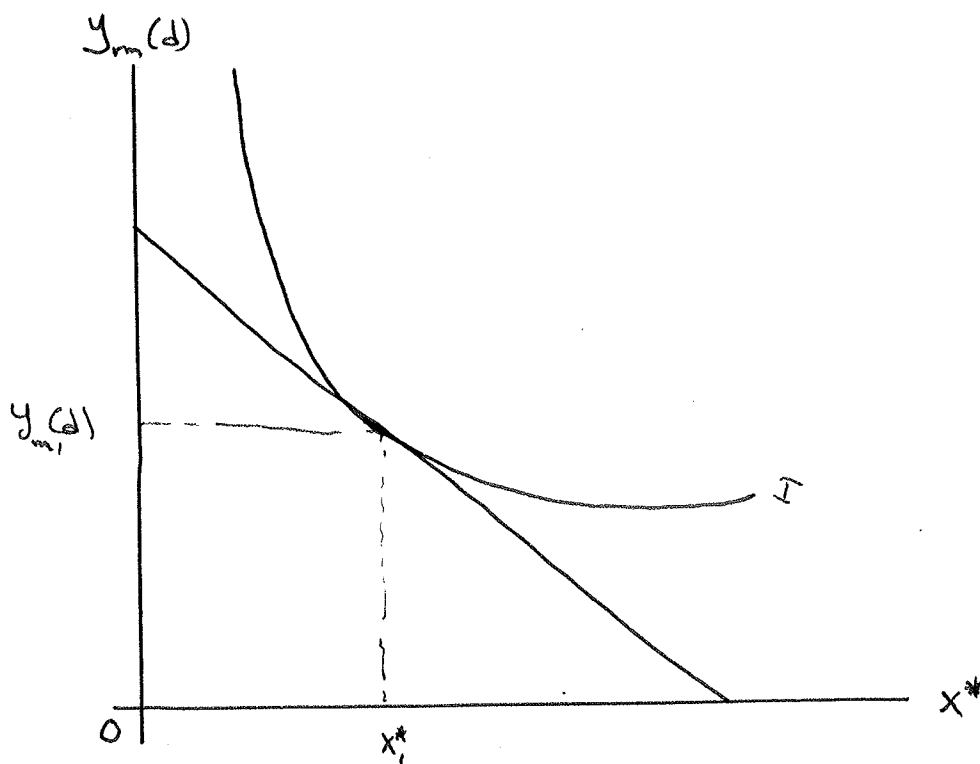


Figure 1

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The model yields two important predictions. First, assuming education is a normal good, the higher the income of the median voter the higher the standard  $X^*$ . Second the lower the price of securing standards, the participation rate  $(M/N)$ , the higher the standards. But the needs as we have defined them are a function of the participation rate and income. Thus, other things equal, we expect the choice of standard to be higher the lower the educational needs index,  $P(X^*)$ .

### 6.3 STANDARDS, EDUCATIONAL DISPARITIES, AND FISCAL BURDENS

#### 6.3.1 Introduction

In this section we measure education need by assuming that education is not currently supplied i.e.  $U^*$  is set equal to zero. We do this for two reasons. First, setting  $U^*$  at zero seems appropriate given that the Canadian education system is basically a public system. If our interest was in measuring need with respect to income setting  $U^*$  at zero would clearly be inadequate since the expenditure required to assure everyone attains at least a minimum income standard is sensitive to  $U^*$ . However, the state is responsible for existing as well as any top up education expenditure. Thus  $U^*$  set equal to zero simply reflects state responsibility for all education expenditure.

Second, we want to emphasize the tax rate interpretation of the needs index. Setting  $U^*$  at zero enables us to inter-



pret the estimated provincial needs indices as the proportional income tax rate that would have to be imposed in each province to finance a system of education which incorporated national standards while retaining provincial responsibility for supply and finance. Thus the needs index gives an indication of relative tax burdens. We examine education in four steps. First, we consider elementary and secondary education. Then we turn to post secondary education. In the third and fourth sections we consider university and total education respectively. We will identify where needs are greatest and the sources of the disparities.

Differences in provincial education systems will make interprovincial comparisons difficult. Thus some might argue that the empirical work reported is misleading. We disagree. Our analysis, subject to the necessary qualifications, generates very interesting results. Moreover, institutional differences tend to disappear when we focus on the total education category.

### 6.3.2 Elementary/Secondary Education

The elementary/secondary education needs indices/tax rates associated with a variety of per student expenditure standards for 1980-81 are reported in Table I. The variation in needs is remarkable. Our index indicates that the Newfoundland government would have to impose an proportional income tax rate of over fifteen percent to secure the per

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student expenditure currently enjoyed in the high expenditure province ( $\max U(i)$ ). Alberta residents, on the other hand, could enjoy this standard at a proportional tax rate of four per cent. In other words, an education system which assured "equality of opportunity" ( $X^* = \max U(i)$ ) while maintaining local responsibility for supply and finance would involve a tax rate on the average income earner in Newfoundland over three times higher than the tax rate imposed on the average income earner in Alberta.

The Table provides a ranking of provinces in terms of elementary and secondary educational need. Newfoundland is the neediest province followed by P.E.I., Nova Scotia, New Brunswick, Manitoba, Quebec, Ontario, Saskatchewan and British Columbia. Alberta is the least needy.

It is interesting to examine these results closely. The standard used to measure need is the same in all provinces thus the variation is not associated with differences in standards. Current education expenditure was ignored by assuming  $U^* = 0$ . Thus differences can not be attributed to current expenditure levels, local preferences, or cost differentials.

The two sources of variation that remain are income and the head count. The higher the income the lower the needs index. The higher the headcount the higher the needs index. It is interesting to look at these sources of variation individually.

The disparities in income are indicated in Table II. Newfoundland has the lowest personal income per capita; Alberta has the highest. The ranking of provinces in between differs slightly from that found in Table I. Prince Edward Island is still the second poorest. New Brunswick and Nova Scotia switch places in the ordering. Manitoba and Quebec maintain their positions. Ontario and Saskatchewan switch and British Columbia remains in the second highest placing. The disparities in educational needs are not, however, accounted for only by disparities in income. The head count is also important.

The variation in headcount is illustrated in Table III. The need indices presented in Table I were estimated using E/S STUDENTS/POPULATION version of the head count. For institutional reasons this definition of the head count is likely other things equal to favour Ontario and Nova Scotia and work against Newfoundland and Quebec. Provincial school systems differ significantly. Both Ontario and Nova Scotia have an additional year while Quebec and Newfoundland have one less than the typical elementary/secondary school system.

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TABLE I : ELEMENTARY/SECONDARY EDUCATION

PROVINCE	TAX RATE (X*:CAN.AVG.)	TAX RATE (X*max U(i))	TAX RATE (X*ONTARIO)	TAX RATE (X*:FIVE PROV. REP. STAND.)
NEWFOUND	0.117735	0.152334	0.105422	0.120642
P.E. ISLA	0.101245	0.130999	0.090657	0.103745
NOVASCOT	0.084965	0.109934	0.076079	0.087063
NEWBRUNS	0.082182	0.106333	0.073587	0.084211
QUEBEC	0.051465	0.066589	0.046083	0.052736
ONTARIO	0.049129	0.063567	0.043991	0.050342
MANITOBA	0.057906	0.074923	0.051850	0.059336
SASK.	0.047920	0.062003	0.042909	0.049104
ALBERTA	0.033275	0.043054	0.029795	0.034097
BRITCOLU	0.042497	0.054986	0.038053	0.043547
TOTAL	0.049609	0.064187	0.044421	0.050834

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TABLE II :PER CAPITA INCOME

PROVINCE	PERSONAL INCOME PER CAPITA
NEWFOUND	7683.9
P.E. ISLA	7958.5
NOVASCOT	9074.3
NEWBRUNS	8319.9
QUEBEC	11060.0
ONTARIO	12680.8
MANITOBA	10996.5
SASK.	11769.9
ALBERTA	13023.5
BRITCOLU	12832.4
TOTAL	11936.6

TABLE III: DEPENDENCY RATIOS

PROVINCE	SCHOOL AGE/WORKING AGE	SCHOOL AGE (E/S)/WORKING AGE	E/S STUDENTS/POPULATION	E/S STUDENTS/EMPLOYED LABOUR FORCE
NEWFOUND	0.819256	0.639094	0.256438	0.817837
P. E. ISLA	0.688987	0.524887	0.214791	0.559872
NOVASCOT	0.655888	0.485651	0.218287	0.574491
NEWBRUNS	0.676496	0.506708	0.217071	0.607104
QUEBEC	0.567438	0.400383	0.185312	0.442877
ONTARIO	0.571423	0.415400	0.219146	0.464641
MANITOBA	0.606509	0.444392	0.213562	0.478531
SASK.	0.657906	0.486188	0.218380	0.505885
ALBERTA	0.631496	0.430978	0.203403	0.395105
BRITCOLU	0.548403	0.393140	0.194704	0.440526
TOTAL	0.578687	0.406021	0.216727	0.452700

The institutional variation in education system will lead to higher elementary / secondary education need indices for Ontario and Nova Scotia and lower elementary / secondary education need indices for Newfoundland and Quebec. However, the grade 13 program in Ontario will lower post secondary enrollments while the CEGEP (Colleges d'enseignement general et Professionel) system in Quebec will tend to increase post secondary enrollments there. Thus an error will also arise when we consider university and post secondary although it will tend to disappear when we turn to education in general in the concluding part of this section of the chapter.

An indication of the relative importance of these institutional variations can be seen by comparing the two versions of the head count. Only Ontario seems to be an outlier. The head count increases between four and six points when population rather than enrollment figures are used in all provinces but Ontario. Ontario increases by only 2.4 points. Thus with the exception of Ontario the reported needs indices are readily comparable. Moreover even the Ontario index is indicative of educational needs there provided the qualification is kept in mind.

A closer look at the dependency ratios indicates that the four Maritime provinces have the greatest needs. Quebec and British Columbia appear to be the least needy. This variation is probably better explained by migration and birth rates than by the institutional details of provincial educa-

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tion systems. Migration is selective. Thus areas which experience high rates of outmigration are likely to face higher proportions of young and old residents than other areas. A relatively low birth rate in Quebec is also likely an important factor in the need differentials.

### 6.3.3 Post Secondary Education

The need indices/tax rates for post secondary education are reported in Table 4. The pattern of needs is very different from that observed in elementary/secondary education. Although Alberta is still the least needy Nova Scotia and Quebec rather than Prince Edward Island and Newfoundland emerge as the high need provinces in this case. To secure equal spending per student in a decentralized system of post secondary education Quebec and Nova Scotia would have to levy a tax rate on average income about 2.75 times that which would be levied in Alberta.

The ranking of provinces by need yields: (from high need to low need) Nova Scotia, Quebec, Newfoundland, Prince Edward Island, New Brunswick, Ontario, Manitoba, British Columbia, Saskatchewan and Alberta. The ranking in this case differs from the observed elementary / secondary education because the head count variation differs. The head count is presented in Table 5.



The head count incorporates two important adjustments. First post secondary enrollments are converted to full time equivalents. The conversion factor employed is that used by Davenport (1981,8). Davenport notes that this adjustment, part time students are converted to full time students using a conversion factor of 0.4, is commonly used by the Quebec government. The second adjustment is intended to account for difference in graduate enrollments. It is generally agreed that expenditures per graduate student are higher than for other post secondary students. Some provinces do not have graduate programs (Prince Edward Island). Others have relatively large graduate programs. Any measure of expenditure need which did not account for the cost differential would, as a consequence, be misleading.

Unfortunately the adjustment is not straightforward. Indeed, given that inputs have elements of joint supply and tend to be complementary any assignment of a differential is necessarily arbitrary. Our approach is no exception. We adopted weights used by the government of Ontario to formula finance Ontario universities. These weights were based on undergraduate/graduate enrollment status and program. The vector of weights and the enrollment vector for Ontario 1980/81 were then used to find an average weight.<sup>45</sup> The average weight was approximately four. Thus one graduate student is equal to four undergraduates.

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<sup>45</sup> Specifically, we took the dot product of the two vectors and divided by total enrollment.

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One should exercise some caution when interpreting the results for post secondary education. In Quebec elementary / secondary ends at Grade 11. However, upon completing Grade 11 typically move into the CEGEP system which is considered post secondary but pre university. The results with respect to universities should be compared with the results reported here. This comparison will suggest that the high needs index assigned to Quebec may well be due to the CEGEP system.

TABLE IV : POST SECONDARY EDUCATION

PROVINCE	TAX RATE (X*:CAN.AVG.)	TAX RATE (X*max U(i))	TAX RATE (X*ONTARIO)	TAX RATE (X*:FIVE PROV. REP. STAND.)
NEWFOUND	0.0244892	0.0318703	0.0216456	0.0232317
P. E. ISLA	0.0229154	0.0298222	0.0202546	0.0217388
NOVASCOT	0.0313327	0.0407765	0.0276945	0.0297238
NEWBRUNS	0.0217925	0.0283608	0.0192620	0.0206735
QUEBEC	0.0311931	0.0405948	0.0275711	0.0295914
ONTARIO	0.0204421	0.0266035	0.0180685	0.0193925
MANITOBA	0.0197445	0.0256956	0.0174518	0.0187307
SASK.	0.0126218	0.0164260	0.0111562	0.0119737
ALBERTA	0.0115605	0.0150449	0.0102182	0.0109669
BRITCOLU	0.0139297	0.0181281	0.0123122	0.0132144
TOTAL	0.0207421	0.0269938	0.0183336	0.0196770

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TABLE V : DEPENDENCY RATIOS

PROVINCE	ADJ. PSE STUDENTS/POPULATION	PSE ADJ. FULL TIME EQUIV./EMPLOYED L.F.
NEWFOUND	0.0232532	0.074160
P. E. ISLA	0.0211934	0.055243
NOVASCOT	0.0350928	0.092358
NEWBRUNS	0.0250937	0.070182
QUEBEC	0.0489644	0.117020
ONTARIO	0.0397515	0.084282
MANITOBA	0.0317452	0.071132
SASK.	0.0250752	0.058088
ALBERTA	0.0308068	0.059841
BRITCOLU	0.0278218	0.062948
TOTAL	0.0395038	0.082516

#### 6.3.4 University Education

The need indices/tax rates for universities are presented in Table 6 and Table 7. Table 6 is based on a head count which incorporates the adjustment to full time equivalent status but not the adjustment for graduate students. The need indices reported in Table 7 incorporate both. Thus a comparison of the two tables allows a crude sensitivity analysis.

Table 6 indicates that Nova Scotia is the high need province. This is not contradicted by the results presented in Table 7. The Table 6 also indicated that Alberta, British Columbia, and Saskatchewan are the least needy provinces. Table 7 also supports this conclusion. However, the adjustment does affect the ranking of the intermediate provinces. Not surprisingly Prince Edward Island, which does not incur costs associated with graduate programs, is considered less needy when the adjustment for graduate students is introduced (rank rises from 7 to 4). Quebec on the other hand is considered in greater need when an adjustment for graduate students is made (rank falls from 4 to 6). Other rank changes are experienced by Newfoundland and New Brunswick (which switch positions), and Manitoba (which moves from 5 to 6).

The dependency ratios and headcounts are reported in Table 8. Note the headcount, whether adjusted or not, is low-

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est in Prince Edward Island and highest in Nova Scotia. Ontario, Manitoba, and Quebec register high adjusted head count ratios. Adjusted head count ratios in Newfoundland and British Columbia are relatively low.

Table 9 reveals some of the sources of variation in the head count ratio. Clearly both New Brunswick and Nova Scotia universities attract relatively large numbers of students from other Canadian provinces. This is an important factor in their high need. Quebec, on the other hand, has the largest proportion of graduate students. Thus finding that the rank of Quebec shifted significantly when we adjusted for graduate students should not be a surprising result.

TABLE VI :UNIVERSITY (F.T. EQUIVILANTS)

PROVINCE	TAX RATE (X*:CAN. AVG.)	TAX RATE (X*:max U(1))	TAX RATE (X*:ONTARIO)	TAX RATE (X*:FIVE PROV. REP. STAND.)
NEWFOUND	0.0228495	0.0292523	0.0193747	0.0222303
P.E.ISLA	0.0194511	0.0249017	0.0164932	0.0189240
NOVASCOT	0.0317770	0.0406814	0.0269447	0.0309159
NEWBRUNS	0.0237074	0.0303506	0.0201022	0.0230649
QUEBEC	0.0150036	0.0192078	0.0127219	0.0145970
ONTARIO	0.0160093	0.0204953	0.0135747	0.0155754
MANITOBA	0.0185549	0.0237542	0.0157332	0.0180520
SASK.	0.0135700	0.0173725	0.0115064	0.0132022
ALBERTA	0.0086336	0.0110529	0.0073207	0.0083996
BRITCOLU	0.0092345	0.0118221	0.0078302	0.0089842
TOTAL	0.0145585	0.0186381	0.0123446	0.0141640

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TABLE VII :UNIVERSITY (ADJUSTED F.T. EQUIVILANTS)

PROVINCE	TAX RATE (X*:CAN. AVG.)	TAX RATE (X*:max U(i))	TAX RATE (X*:ONTARIO)	TAX RATE (X*:FIVE PROV. REP. STAND.)
NEWFOUND	0.0201668	0.0250623	0.0171923	0.0193381
P.E. ISLA	0.0138086	0.0171606	0.0117719	0.0132412
NOVASCOT	0.0295985	0.0367834	0.0252328	0.0283822
NEWBRUNS	0.0195022	0.0242363	0.0166257	0.0187008
QUEBEC	0.0161596	0.0200823	0.0137761	0.0154955
ONTARIO	0.0159234	0.0197888	0.0135748	0.0152691
MANITOBA	0.0181507	0.0225567	0.0154735	0.0174048
SASK.	0.0113773	0.0141391	0.0096992	0.0109098
ALBERTA	0.0086676	0.0107716	0.0073892	0.0083114
BRITCOLU	0.0096568	0.0120010	0.0082325	0.0092600
TOTAL	0.0145588	0.0180929	0.0124115	0.0139606



TABLE VIII :DEPENDENCY RATIOS

PROVINCE	F.T. EQUIV. UNIV. STUDENTS/POP.	F.T. EQUIV UNIVERSITY ST./EMPLOYED L.F.
NEWFOUND	0.0155556	0.0496103
P.E. ISLA	0.0128979	0.0336196
NOVASCOT	0.0255173	0.0671569
NEWBRUNS	0.0195724	0.0547402
QUEBEC	0.0168856	0.0403550
ONTARIO	0.0223204	0.0473244
MANITOBA	0.0213891	0.0479267
SASK.	0.0193288	0.0447758
ALBERTA	0.0164954	0.0320418
BRITCOLU	0.0132239	0.0299196
TOTAL	0.0198796	0.0415245

PROVINCE	ADJ. F.T. EQUIV. UNIV. STUD./POP.	ADJ. F.T. EQUIV. UNIV. ST./EMPLOYED L.F.
NEWFOUND	0.0193395	0.0616777
P.E. ISLA	0.0128979	0.0336196
NOVASCOT	0.0334801	0.0881134
NEWBRUNS	0.0226798	0.0634309
QUEBEC	0.0256182	0.0612251
ONTARIO	0.0312724	0.0663047
MANITOBA	0.0294729	0.0660403
SASK.	0.0228277	0.0528810
ALBERTA	0.0233273	0.0453127
BRITCOLU	0.0194793	0.0440730
TOTAL	0.0280035	0.0584937

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TABLE IX :SELECTED FEATURES OF CANADIAN UNIVERSITY EDUCATION

PROVINCE	STUDENTS FROM OTHER PROVINCES	PER CENT	FORIEGN STUDENTS	PER CENT	GRADUATE STUDENTS	PERCENT	MEDIAN SALARY OF UNIVERSITY TEACHERS
NEWFOUND	293	4.6	294	4.6	537	7.0371	30300
P. E. ISLA	164	12.3	63	4.7	0	0.0000	29679
NOVASCOT	4107	24.1	1760	10.3	1687	8.7810	30661
NEWBRUNS	2753	25.3	668	6.3	541	4.4930	31299
QUEBEC	2519	2.9	8276	9.6	14056	15.0232	40087
ONTARIO	11831	7.3	17367	10.8	19303	11.4985	35432
MANITOBA	1388	8.7	1704	10.8	2074	11.7069	34900
SASK.	1215	8.8	1112	8.0	847	5.3550	38288
ALBERTA	2414	8.0	3156	10.1	3822	11.3261	37536
BRITCOLU	2879	9.4	3080	10.1	4292	13.1358	35442
TOTAL	29577	8.4	37380	10.5	47159	11.7410	

### 6.3.5 Total Education

Table 10 indicates our need indices / tax rates for education in general. The ranking of provinces according to relative need in this case is remarkably similar to the ranking observed in elementary/secondary education. This should not be surprising given that elementary / secondary expenditures tend to dominate all others.

TABLE X : TOTAL EDUCATION

PROVINCE	TAX RATE (X*:CAN. AVG.)	TAX RATE (X*max U(1))	TAX RATE (X*ONTARIO)	TAX RATE (X*:FIVE PROV. REP. STAND.)
NEWFOUND	0.168231	0.205025	0.148592	0.167728
P.E. ISLA	0.147224	0.179424	0.130038	0.146667
NOVASCOT	0.127456	0.155332	0.112577	0.126676
NEWBRUNS	0.120177	0.146461	0.106148	0.119691
QUEBEC	0.083707	0.102014	0.073935	0.082112
ONTARIO	0.074827	0.091192	0.066092	0.074095
MANITOBA	0.085857	0.104635	0.075835	0.084676
SASK.	0.069945	0.085243	0.061780	0.069424
ALBERTA	0.049602	0.060450	0.043812	0.049474
BRITCOLU	0.062297	0.075922	0.055025	0.062069
TOTAL	0.075781	0.092355	0.066935	0.074995

## 6.4 CURRENT DISPARITIES IN EDUCATION

### 6.4.1 Introduction

The purpose of this section is to examine current disparities in education. We assume education is financed provincially and compare the expenditures per pupil and the tax rates implicit in the current expenditure effort. Thus this section presents preliminary data which allow some inferences about expenditure levels and fiscal effort. Our approach clearly abstracts from the system of education finance discussed in Chapter 5. The estimates of tax rates in this section are, as a consequence, only suggestive. Later in this chapter adjustments are made to account for federal government involvement. A more accurate view of provincial fiscal effort and burden will be presented then.

This section is organized using the same structure as the previous one. We begin by considering elementary and secondary education. We then discuss the post secondary sector. Third we treat universities. Finally a general overview of total education is presented. When interpreting the various tables it is advisable to bear in mind the institutional features of the Canadian education system discussed earlier.

### 6.4.2 Elementary / Secondary Education

Table 11 presents our data for elementary / secondary education. The tax rate is estimated using our needs index;

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actual expenditure per pupil rather than a Canadian expenditure standard is used to allow us to interpret the index as a current rather than hypothetical tax rate on average income.

The data is extremely interesting. The four Atlantic Provinces have the lowest expenditure per student in elementary and secondary education. However, it is difficult to argue that this is attributed to local preferences since the implicit tax rates indicate that these provinces impose the greatest tax burdens. Later in the chapter we will try to assess the impact of the federal transfers (especially equalization payments) on this result.

Quebec has, by far, the largest expenditure per pupil. The tax rate is also relatively high, especially given the low head count given in the previous section (recall the proportion of the population enrolled in elementary and secondary education programs was much lower in Quebec than in other provinces). Thus it can be argued that local preferences are important in this result.

The table also indicates that Alberta can finance its expenditure level at the lowest tax rate on average income and that its expenditure per student is higher than eight other provinces. Quebec is clearly an outlier.

TABLE XI : ELEMENTARY/SECONDARY

PROVINCE	E/S EXP PER STUDENT	TAX RATE (UNADJUSTED)
NEWFOUND	2478.25	0.0863708
P.E. ISLA	2560.88	0.0767506
NOVASCOT	2760.41	0.0694272
NEWBRUNS	2832.60	0.0689092
QUEBEC	4370.94	0.0665894
ONTARIO	3024.89	0.0439911
MANITOBA	3088.85	0.0529466
SASK.	3110.15	0.0441184
ALBERTA	3238.31	0.0318975
BRITCOLU	3267.89	0.0411099
TOTAL	3378.18	0.0496086

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### 6.4.3 Post Secondary Education

Table 12 presents data for post secondary education. A comparison of per pupil expenditure on post secondary education and per pupil expenditure on elementary and secondary education indicates that the relative performance of the Atlantic Provinces in post secondary education is better than in elementary / secondary education. This probably reflects the history of cost shared programs in the post secondary field.

The table also indicates four groups of provinces. The Atlantic Provinces have high effort and medium expenditures. Quebec has high effort and low expenditures. Ontario and Manitoba have low expenditures and low effort. Alberta, Saskatchewan and British Columbia enjoy high expenditures and low effort. Although we have not been able to correct for the CEGEP system in Quebec we suspect that such a correction would change our inferences with respect to Quebec significantly (see section on universities below).



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TABLE XII :POST SECONDARY

PROVINCE	PSE EXP PER F.T. EQUIVILANT	TAX RATE (UNADJUSTED)
NEWFOUND	8682.5	0.0274388
P.E.ISLA	7864.0	0.0232551
NOVASCOT	8021.0	0.0324322
NEWBRUNS	8661.3	0.0243577
QUEBEC	7174.7	0.0288810
ONTARIO	6849.3	0.0180684
MANITOBA	7111.0	0.0181187
SASK.	9894.3	0.0161159
ALBERTA	10291.0	0.0153526
BRITCOLU	9628.2	0.0173075
TOTAL	7749.1	0.0207421

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#### 6.4.4 University Education

Expenditures (adjusted and unadjusted) per full time equivalent and the associated tax rate are presented in Table 13. In the absence of the adjustment for graduate students the data indicates that British Columbia and Alberta spend the most on university education followed by Quebec, Newfoundland, Saskatchewan, Nova Scotia, Prince Edward Island, New Brunswick, and Manitoba. Ontario spends the least. Adjusting for graduate students yields the following ranking on the basis of expenditure per student: Prince Edward Island highest, followed by British Columbia, Alberta, Newfoundland, Saskatchewan, New Brunswick, Quebec, Nova Scotia, Manitoba, and Ontario. In terms of tax rates Nova Scotia must impose the highest burden. Nova Scotia is followed by Newfoundland, New Brunswick, Prince Edward Island, Quebec, Manitoba, Saskatchewan, Ontario, British Columbia and Alberta.

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TABLE XIII : UNIVERSITY

PROVINCE	EXPENDITURE PER F.T. EQUIVILANT	EXPENDITURE PER ADJUSTED F.T. EQUIVILANT	TAX RATE (UNADJUSTED)
NEWFOUND	11578.1	9312.82	0.0244774
P.E. ISLA	9535.3	9535.35	0.0171606
NOVASCOT	9984.7	7609.97	0.0293561
NEWBRUNS	9520.4	8216.00	0.0208828
QUEBEC	11980.8	7896.84	0.0166315
ONTARIO	9164.5	6541.09	0.0135748
MANITOBA	9320.7	6764.20	0.0160013
SASK.	10854.1	9190.44	0.0136277
ALBERTA	13381.4	9462.38	0.0106892
BRITCOLU	13836.7	9393.25	0.0118221
TOTAL	10808.1	7672.63	0.0145585

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#### 6.4.5 Total Education

Total education expenditures per student are reported in Table 14. Not surprisingly the pattern here mirrors that found in elementary secondary education. The citizens of the Atlantic provinces receive less education services than other Canadian citizens. They would, in the absence of federal redistributive programs, also have accepted a greater tax burden. other Canadians. In Alberta and British Columbia just the opposite is true. It seems appropriate to view Quebec as an outlier.

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TABLE XIV :TOTAL EDUCATION

PROVINCE	EDUC EXP./F.T. EQUIV.	TAX RATE (UNADJUSTED)
NEWFOUND	3424.00	0.127717
P.E. ISLA	3514.48	0.114473
NOVASCOT	3938.71	0.111165
NEWBRUNS	3798.59	0.101102
QUEBEC	5449.04	0.099757
ONTARIO	3949.22	0.065219
MANITOBA	4015.19	0.075766
SASK.	4259.79	0.065773
ALBERTA	4671.29	0.051478
BRITCOLU	4512.98	0.062390
TOTAL	4471.15	0.074713

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## 6.5 EDUCATION FINANCE AND PROVINCIAL FISCAL BURDENS

### 6.5.1 Introduction

The Canadian system of education finance was discussed in Chapter 5. We indicated that the federal government transfers monies to the provinces to aid education. Thus provinces are not solely responsible for financing education. Indeed, the Equalization program, which was established to assure that all Canadians enjoy reasonably comparable standards of education and other services while facing reasonably comparable tax burdens, is supposed to eliminate some of the disparities observed in the previous section. A complete examination of disparities in fiscal burdens must therefore take the system of federal provincial educational finance into account.

The purpose of this section is to present adjusted provincial burdens. To arrive at adjusted burdens we must isolate federal spending (which is financed using a tax system which is geographically equitable). Thus this section will also give some indication of the extent of federal involvement in education. The adjusted burdens are compared by estimating the proportional income tax rates required to finance current net provincial expenditure.

### 6.5.2 Elementary and Secondary Education

A breakdown of elementary and secondary education by source of funds reported by Statistics Canada in its annual statistical review Education in Canada is reproduced as Table 15. The breakdown is based only on direct spending. As a consequence it is very misleading.

TABLE IV :DIRECT E/S EXPENDITUES (STATITICS CANADA)

PROVINCE	DIRECT FED. EXP E/S	FED. EXP SHARE(E/S)	PROV. EXP E/S	PROV. EXP SHARE(E/S)
NEWFOUND	1082	0.3	327219	90.7
P.E. ISLA	3167	4.7	63479	94.2
NOVASCOT	10723	2.1	393701	77.1
NEWBRUNS	8992	2.1	413643	96.6
QUEBEC	88655	1.7	4542278	87.1
ONTARIO	68610	1.2	3201812	56.0
MANITOBA	64313	9.5	291099	43.0
SASK.	61821	9.4	362378	55.1
ALBERTA	60432	4.1	897636	60.9
BRITCOLU	61118	3.5	974394	55.8
TOTAL	476009	2.8	11509229	67.7

PROVINCE	MUNIC. EXP E/S	MUNIC. EXP SHARE(E/S)	FEES	FEES SHARE(E/S)	OTHER	OTHER SHARE(E/S)
NEWFOUND	9019	2.5	5051	1.4	18399	5.1
P.E. ISLA	0	0.0	202	0.3	539	0.8
NOVASCOT	94468	18.5	2553	0.5	9191	1.8
NEWBRUNS	0	0.0	2997	0.7	2569	0.6
QUEBEC	380696	7.3	119945	2.3	83440	1.6
ONTARIO	2195528	38.4	137221	2.4	114350	2.0
MANITOBA	293807	43.4	10832	1.6	16924	2.5
SASK.	219663	33.4	6577	1.0	7234	1.1
ALBERTA	477560	32.4	14740	1.0	23583	1.6
BRITCOLU	626895	35.9	36671	2.1	47148	2.7
TOTAL	4352087	25.6	340007	2.0	323006	1.9

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The federal government makes a significant indirect contribution to elementary and secondary education. The Official Languages Grant provides monies directly to the provincial governments to support second language (English or French) education. Because these funds go directly to the Consolidated Revenue Funds of the Province, they are not considered direct federal government spending. Equalization grants are not considered direct federal spending since they also go directly to the Provincial Consolidated Revenue Fund and because they are unconditional. However, ignoring Equalization grants in estimating provincial burdens would be difficult to defend. The grants are intended to aid poor provinces in supplying reasonably comparable standards of public services and education is one of the most important and expensive of the public services.

A breakdown of federal expenditures on elementary and secondary education by program is presented in Table 16. It is impossible to determine the exact distribution of Equalization grants among different provincial programs. The approach adopted here is simply to assign a proportion of the Equalization grant to elementary / secondary education equal to the share of elementary/secondary education in the provincial government budget.

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TABLE XVI : FEDERAL ELEMENTARY/SECONDARY EXPENDITURES

PROVINCE	DIRECT FED. EXP E/S	OFF. LANG GRANT E/S	EQUALIZATION E/S	FED. EXP (E/S)/STUDENT
NEWFOUND	1082	695	89947	630.085
P. E. ISLA	3167	456	19623	883.422
NOVASCOT	10723	1934	84045	522.754
NEWBRUNS	8992	13451	92595	760.993
QUEBEC	88655	99741	470593	552.329
ONTARIO	68610	44677	0	59.935
MANITOBA	64313	3238	42227	500.884
SASK.	61821	1108	1318	303.830
ALBERTA	60432	1304	0	135.635
BRITCOLU	61118	3803	0	121.493
TOTAL	476009	173362	693202	266.786

The data of Table 16 is used to revise the Statistics Canada breakdown of expenditure by source. The revised breakdown is presented in Table 17. The revised table reflects the existence of the Canadian system of educational finance.

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TABLE XVII : ADJUSTED E/S EXPENDITURES

PROVINCE	FED EXP E/S	SHARE	PROV EXP E/S	SHARE	MUNIC. EXP E/S
NEWFOUND	91725	0.254246	236577	0.655754	9019
P. E. ISLA	23246	0.344968	43399	0.644032	0
NOVASCOT	96702	0.189375	307722	0.602625	94468
NEWBRUNS	115038	0.268655	307597	0.718345	0
QUEBEC	658989	0.126364	3971944	0.761636	380696
ONTARIO	113287	0.019814	3157135	0.552186	2195528
MANITOBA	109777	0.162158	245635	0.362842	293807
SASK.	64248	0.097690	359951	0.547310	219663
ALBERTA	61736	0.041885	896332	0.608115	477560
BRITCOLU	64921	0.037178	970591	0.555822	626895
TOTAL	1342573	0.078973	10642665	0.626027	4352087

PROVINCE	MUNIC. EXP SHARE(E/S)	FEES	FEES SHARE(E/S)	OTHER	OTHER SHARE(E/S)
NEWFOUND	2.5	5051	1.4	18399	5.1
P. E. ISLA	0.0	202	0.3	539	0.8
NOVASCOT	18.5	2553	0.5	9191	1.8
NEWBRUNS	0.0	2997	0.7	2569	0.6
QUEBEC	7.3	119945	2.3	83440	1.6
ONTARIO	38.4	137221	2.4	114350	2.0
MANITOBA	43.4	10832	1.6	16924	2.5
SASK.	33.4	6577	1.0	7234	1.1
ALBERTA	32.4	14740	1.0	23583	1.6
BRITCOLU	35.9	36671	2.1	47148	2.7
TOTAL	25.6	340007	2.0	323006	1.9

A comparison of the adjusted and unadjusted data reveals that the federal government finances almost eight percent of total Canadian elementary / secondary education expenditure rather than the 2.8 percent indicated in Table 15. This is still small. However, in some provinces federal involvement is significant. For example in Prince Edward Island the federal government finances almost 35 percent of all elementary and secondary education expenditure. On the other hand the federal government finances less than 2 per cent of elementary and secondary education expenditures in Ontario.

The revised data can now be employed to compare net provincial expenditure and net burdens. The data is presented in Table 18.

The data presented in Table 18 indicate that significant disparities remain. Thus the Equalization program has not succeeded in achieving comparable standards and comparable tax burdens. The proportional tax rate Newfoundlanders implicitly accept to finance education system which provides about three quarters of the expenditure per student enjoyed in Alberta is twice that implicitly accepted in Alberta (see Table 11 for gross expenditures per student).

TABLE XVIII :PROVINCIAL DISPARITIES POST ADJUSTMENT

PROVINCE	PROV. + MUNIC. EXP (E/S)/STUDENT	TAX RATE (ADJUSTED)
NEWFOUND	1687.08	0.0587973
P.E. ISLA	1649.29	0.0494298
NOVASCOT	2174.17	0.0546826
NEWBRUNS	2034.79	0.0495006
QUEBEC	3648.15	0.0555779
ONTARIO	2831.86	0.0411838
MANITOBA	2461.33	0.0421900
SASK.	2741.01	0.0388820
ALBERTA	3018.48	0.0297321
BRITCOLU	2989.54	0.0376082
TOTAL	2979.65	0.0437562

### 6.5.3 Post Secondary Education

The breakdown of post secondary education expenditure by direct source is reported in Table 19.

The breakdown by direct source is very misleading. Not only are the Equalization and Official Languages Grant programs not taken into account but also federal contributions via the Established Program Financing Act appear as direct provincial expenditures. An adjustment for each of these is clearly in order.

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TABLE XIX :POST SECONDARY EDUCATION EXPENDITURES

PROVINCE	DIRECT FED. EXPENDITURE	FED. EXP SHARE(POST SECONDARY)	PROV EXP PSE	POV. EXP SHARE(PSE)
NEWFOUND	18453	16.1	85959	75.0
P. E. ISLA	898	4.4	16294	79.8
NOVASCOT	45322	19.0	139784	58.6
NEWBRUNS	14076	9.3	108070	71.4
QUEBEC	126663	5.6	1852449	81.9
ONTARIO	206654	8.8	1650887	70.3
MANITOBA	29885	12.9	163093	70.4
SASK.	19700	8.2	167688	69.8
ALBERTA	57464	8.1	505114	71.2
BRITCOLU	59549	8.1	523440	71.2
TOTAL	625512	8.8	5281313	74.3

PROVINCE	MUNIC. EXP PSE	MUNIC. EXP SHARE(PSE)	FEEES AND OTHER	FEEES AND OTHER SHARE(PSE)
NEWFOUND	0	0	10200	8.9
P. E. ISLA	0	0	1817	8.9
NOVASCOT	0	0	53433	22.4
NEWBRUNS	0	0	29212	19.3
QUEBEC	0	0	282730	12.5
ONTARIO	0	0	490804	20.9
MANITOBA	0	0	38457	16.6
SASK.	0	0	52853	22.0
ALBERTA	0	0	146852	20.7
BRITCOLU	0	0	152180	20.7
TOTAL	0	0	1201268	16.9



The adjustments for the Official Languages Grant and Equalization programs are relatively straightforward. The Equalization adjustment is based on the share of post secondary education expenditures in the provincial budget. The adjustment for the Official Languages Grant program can be made directly using published data. However, adjusting for the EPF is more complicated and more controversial.

The EPF program was described in detail in the previous chapter. We noted that the EPF transfer could be seen as a relatively straightforward per capita grant. The form of the grant might have been complicated but its basic structure was simple. Unfortunately, the complicated nature of the transfer must be acknowledged when adjusting provincial expenditures. Indeed, we will suggest three different approaches and use the three adjustments in our analysis.

Two features of the EPF program are of particular importance. First, the transfer is part tax point, part cash. Second, the transfer includes a grant in lieu of the revenue guarantee. These features give rise to three views of the EPF program.

The first view, which we will call the extreme federal government view, holds that 32.1 percent of the total EPF transfer should be counted as the federal contribution to post secondary education.<sup>46</sup> This position is forcefully ad-

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<sup>46</sup> We assign 32.1 per cent of the total EPF transfer to a province to post secondary education. This is admittedly

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vanced by Gunter and Van Loon (1981,162) who argue the tax points transfer "is guaranteed by federal government and is defined as part of the federal contribution in and for the purposes of the Act". They also argue that the grant in lieu of the revenue guarantee is a grant made under the EPF program not under a revenue guarantee program. In essence their argument is that the negotiations which led to the 1977 EPF agreement resulted in additional federal support for Established Programs. The additional monies were made available when the federal government abandoned the revenue guarantee.

However, Gunther and Van Loon admit that their position on the revenue guarantee is open to debate. The provinces had explicitly argued against the termination of the revenue guarantee. Although the provinces did not get their way, "in the final negotiations relating to the shared cost programs, the federal government did come up with a general sweetener of two additional equalized income tax points, and this had been interpreted as a compromise on Ottawa's part for the termination of the old revenue guarantee" (Courchene (1979,45)). Thus it is not unreasonable to exclude the revenue guarantee portion when adjusting for federal contributions.

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arbitrary. Although 32.1 % of all federal funds allocated under the EPF in the base year went to PSE individual provinces did not necessarily devote this per cent of monies to PSE. We use the 32.1 % figure to keep our work comparable to the work of others not out of any belief that it is the "correct" number.

The final position, which could be referred to as the extreme provincial position, suggests that the tax point transfer should not be considered as part of the federal transfer. Provinces must raise taxes to occupy the tax room vacated by the federal government. Also, the tax transfer can be seen as realignment of revenue sources more in accord with expenditure responsibilities. However, from a legal viewpoint this position does not stand up. The tax point transfer was made in a federal statute. The legislation can be repealed unilaterally and the federal government has the legal right to unilaterally reclaim the vacated tax room. Whether in fact this is politically possible is another matter. We will assume, for the sake of completeness, that it is not politically possible to reclaim the vacated tax room. Given this assumption one can argue that the federal contribution is equal to the cash contribution under the EPF.

Table 20 presents data on the Revenue Guarantee position of the EPF transfer. The total value of this transfer was approximately the value of two equalized personal income tax points. The transfer was part cash part tax point. Table 20 breaks down the transfer into its constituent parts: basic cash, value of the tax point, equalization on the tax point transfer, and the transitional cash payment designed to assure the value equalized tax point transfer was equal to the basic cash transfer.

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The remaining EPF transfer is presented in Table 21. This transfer is also broken down into its constituent parts (see Chapter 5 for a complete description of the various components).

The education expenditures assigned to the EPF on the basis of the three alternative views are reported in Table 22. The extreme federal view involves assigning all unequalized EPF expenditures to the federal government. The intermediate view removes the revenue guarantee portion. The extreme provincial view assigns only the cash transfer to the federal government. Note that the equalization paid out on the transferred tax points is not counted. It is already incorporated directly through the equalization program.

An inventory of federal expenditures on post secondary education is reported in Table 23.

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TABLE XX :EPF EXPENDITURES--REVENUE GUARANTEE

PROVINCE	EPF PSE REV GUAR CASH	EPF PSE REV GUAR TAX POINTS	EPF PSE REV GUAR EQUAL	EPF PSE REV GUAR (TRANS CASH)	EPF PSE REV GUAR
NEWFOUND	2765	1217.9	996.06	551.2	5530
P. E. ISLA	590	253.9	218.28	117.8	1180
NOVASCOT	4049	2264.0	980.01	804.7	8098
NEWBRUNS	3360	1690.1	1003.45	666.1	6719
QUEBEC	29865	21823.2	2105.12	5936.3	59729
ONTARIO	40741	36153.6	0.00	4587.7	81483
MANITOBA	4851	3147.4	738.94	964.6	9702
SASK.	4624	3056.6	0.00	1567.8	9249
ALBERTA	10188	9704.8	0.00	482.8	20375
BRITCOLU	12778	11879.2	0.00	899.1	25557
TOTAL	114113	91481.8	6041.86	16606.9	228243

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TABLE XXI :EPF EXPENDITURES--LESS GUARANTEE

PROVINCE	EPF PSE CASH(LESS GUARANTEE)	EPF PSE TAX POINTS(LESS GUAR)	EPF PSE EQUALIZATION(LESS GUAR)
NEWFOUND	38660	16172	13856.9
P. E. ISLA	8247	3350	3055.6
NOVASCOT	56656	29911	13892.2
NEWBRUNS	47036	22344	14189.2
QUEBEC	417882	291912	32666.2
ONTARIO	570122	487809	0.0
MANITOBA	67874	42463	10256.3
SASK.	64711	41858	0.0
ALBERTA	142549	140850	0.0
BRITCOLU	178808	160090	0.0
TOTAL	1596749	1240932	87916.4

PROVINCE	EPF PSE (less guar)(TRANS CASH)	EPF PSE (LESS GUARANTEE)	EPF PSE(TOTAL)
NEWFOUND	8630	77319	82849
P. E. ISLA	1842	16494	17674
NOVASCOT	12650	113311	121409
NEWBRUNS	10503	94072	100769
QUEBEC	93304	835765	895494
ONTARIO	82313	1140243	1221726
MANITOBA	15154	135748	145450
SASK.	22853	129423	138671
ALBERTA	1699	285099	305474
BRITCOLU	18718	357616	383173
TOTAL	268085	3193682	3421926

TABLE XXII : FEDERAL EPF EXPENDITURES--THREE VIEWS

PROVINCE	NONEQUALIZED EPF PSE	NON EQUAL EPF PSE(LESS GUAR)	EPF PSE CASH(LESS GUAR)
NEWFOUND	67996	63462	47290
P. E. ISLA	14400	13438	10088
NOVASCOT	106536	99419	69508
NEWBRUNS	85576	79861	57517
QUEBEC	860722	803098	511186
ONTARIO	1221726	1140243	652434
MANITOBA	134454	125491	83028
SASK.	138671	129423	87564
ALBERTA	305474	285099	144248
BRITCOLU	383173	357616	197526
TOTAL	3327967	3105766	1864834

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TABLE XXIII : FEDERAL POST SECONDARY EXPENDITURES

PROVINCE	DIRECT FED. EXPENDITURE	OFFICIAL LANGUAGES GRANT	EQUALIZATION ON PSE
NEWFOUND	18453	0.0	23629
P. E. ISLA	898	0.0	5037
NOVASCOT	45322	152.1	29840
NEWBRUNS	14076	2457.7	24192
QUEBEC	126663	36289.1	191919
ONTARIO	206654	4737.1	0
MANITOBA	29885	152.1	23658
SASK.	19700	0.0	610
ALBERTA	57464	1477.6	0
BRITCOLU	59549	0.0	0
TOTAL	625512	43938.1	318094

PROVINCE	NONEQUALIZED EPF PSE	NON EQUAL EPF PSE (LESS GUAR)	EPF PSE CASH (LESS GUAR)
NEWFOUND	67996	63462	47290
P. E. ISLA	14400	13438	10088
NOVASCOT	106536	99419	69508
NEWBRUNS	85576	79861	57517
QUEBEC	860722	803098	511186
ONTARIO	1221726	1140243	652434
MANITOBA	134454	125491	83028
SASK.	138671	129423	87564
ALBERTA	305474	285099	144248
BRITCOLU	383173	357616	197526
TOTAL	3327967	3105766	1864834

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The breakdown of education expenditure by source of funds reported by Statistics Canada can now be revised (Table 19). The revision based on the extreme federalist view of the EPF is reported in Table 24. This table indicates that the federal government finances over sixty per cent of total post secondary education expenditures. The table also indicates a significant variation across provinces.

In Prince Edward Island, the federal government finances ninety nine and a half percent of post secondary expenditures. Allowing for the contribution of fees and private philanthropy the current system of financing post secondary education translates into a windfall gain of over three million dollars for the Prince Edward Island government. Newfoundland and New Brunswick also enjoyed a net windfall gain on the post secondary education account.

The smallest percentage contributions of the federal government were to Alberta and Quebec. However, in both provinces the federal government financed over half of all post secondary expenditures.

If the revenue guarantee portion of the EPF is not considered federal spending on post secondary education the corrected data will appear as reported in Table 25. Table 25 is not significantly different from Table 24.

Even the extreme provincialist view shows substantial federal involvement. Only Alberta can claim to financing

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even half the total post secondary expenditure. The extreme provincialist view is presented in Table 26.

Tables 27, 28, and 29 report per full time equivalent expenditures, the implicit tax rate, and federal expenditures as a proportion of operating costs for each of the three adjustments. Federal involvement in financing post secondary education is most important in the Atlantic Provinces. Indeed, the system of post secondary education finance results in a net subsidy in some instances. Quebec benefits least, relatively speaking. There are two reasons for this. First, the Quebec government has adopted a policy of low fees. Thus more post secondary expenditure is financed out of general tax revenue in that province. Second, direct federal expenditure is a relatively small proportion of the total. The impact of federal support varies over other provinces as well. Manitoba enjoys the highest support, Alberta the least.

TABLE XXIV : POST SECONDARY EXPENDITURES  
FEDERAL POSITION

PROVINCE	FED. EXP	SHARE	PROV. EXP	SHARE	MUNIC. EXP PSE	MUNIC. EXP	SHARE(PSE)	FEES AND OTHER	FEES AND OTHER	SHARE(PSE)
NEWFOUND	110078	0.960437	-5666	-0.04944	0	0		10200		8.9
P. E. ISLA	20335	0.995929	-3143	-0.15393	0	0		1817		8.9
NOVASCOT	181851	0.762353	3255	0.01365	0	0		53433		22.4
NEWBRUNS	126302	0.834455	-4156	-0.02746	0	0		29212		19.3
QUEBEC	1215594	0.537435	763518	0.33756	0	0		282730		12.5
ONTARIO	1433117	0.610267	424423	0.18073	0	0		490804		20.9
MANITOBA	188150	0.812159	4828	0.02084	0	0		38457		16.6
SASK.	158981	0.661759	28406	0.11824	0	0		52853		22.0
ALBERTA	364415	0.513673	198163	0.27933	0	0		146852		20.7
BRITCOLU	442721	0.602203	140268	0.19080	0	0		152180		20.7
TOTAL	4315512	0.607127	1591314	0.22387	0	0		1201268		16.9

TABLE XXVI :POST SECONDARY EXPENDITURES  
PROVINCIAL POSITION

PROVINCE	FED. EXP	SHARE	PROV. EXP	SHARE	MUNIC. EXP	PSE	MUNIC. EXP	SHARE(PSE)	FEES AND OTHER	FEES AND OTHER	SHARE(PSE)
NEWFOUND	89371	0.779772	15040	0.131228	0		0		10200		8.9
P.E. ISLA	16023	0.784744	1169	0.057256	0		0		1817		8.9
NOVASCOT	144823	0.607124	40284	0.168876	0		0		53433		22.4
NEWBRUNS	98243	0.649073	23904	0.157927	0		0		29212		19.3
QUEBEC	866058	0.382899	1113054	0.492101	0		0		282730		12.5
ONTARIO	863826	0.367845	993715	0.423155	0		0		490804		20.9
MANITOBA	136724	0.590175	56254	0.242825	0		0		38457		16.6
SASK.	107874	0.449026	79513	0.330974	0		0		52853		22.0
ALBERTA	203190	0.286413	359388	0.506587	0		0		146852		20.7
BRITCOLU	257075	0.349681	325914	0.443319	0		0		152180		20.7
TOTAL	2852378	0.401286	3054447	0.429714	0		0		1201268		16.9

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TABLE XXVII :SELECTED STATISTICS  
FEDERAL POSITION

PROVINCE	PER STUDENT EXP.(PROVINCIAL)	TAX RATE	FED PSE EXP/PSE OPER COSTS
NEWFOUND	-429.2	-0.0013565	1.08293
P.E.ISLA	-1210.5	-0.0035796	1.30990
NOVASCOT	109.5	0.0004426	1.03281
NEWBRUNS	-237.8	-0.0006687	1.06397
QUEBEC	2421.9	0.0097492	0.68065
ONTARIO	1237.9	0.0032655	0.75682
MANITOBA	148.2	0.0003776	0.98894
SASK.	1169.9	0.0019056	0.84561
ALBERTA	2874.5	0.0042884	0.71913
BRITCOLU	1837.0	0.0033022	0.72823
TOTAL	1734.8	0.0046436	0.77278

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TABLE XXIX :SELECTED STATISTICS  
PROVINCIAL POSITION

PROVINCE	PER STUDENT EXP.(PROVINCIAL)	TAX RATE	FED PSE EXP/PSE OPER COSTS
NEWFOUND	1139.38	0.0036007	0.87922
P. E. ISLA	450.26	0.0013315	1.03214
NOVASCOT	1354.56	0.0054770	0.82251
NEWBRUNS	1367.85	0.0038467	0.82760
QUEBEC	3530.68	0.0142123	0.48494
ONTARIO	2898.30	0.0076457	0.45618
MANITOBA	1726.73	0.0043997	0.71864
SASK.	3274.76	0.0053339	0.57377
ALBERTA	5213.27	0.0077774	0.40097
BRITCOLU	4268.34	0.0076727	0.42286
TOTAL	3329.91	0.0089132	0.51077

#### 6.5.4 Universities

It is possible to focus exclusively on the universities. The Statistics Canada breakdown of expenditures by source is presented in Table 30.

We assign EPF expenditures to the universities on the basis of the universities share of full time equivalents in each province. Adjusting for Equalization, the Official Languages Grant and the EPF yields the revised or adjusted figures. The extreme federal view is presented in Table 31.

The intermediate position (EPF less revenue guarantee) is reflected in Table 32.

Finally the provincial view is given in Table 33.

The impact of the adjustments on expenditures per full time equivalent and the associated tax rates are reported in Tables 34, 35 and 36.

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TABLE XXX :UNIVERSITY EXPENDITURES (STATISTICS CANADA)

PROVINCE	DIRECT FED. EXPENDITURES	FED. EXP SHARE(UNIV.)	PROV. EXPENDITURES	PROV. EXP SHARE(UNIV.)		
NEWFOUND	16461	16.1	.76068	74.4		
P.E. ISLA	211	1.4	12807	85.0		
NOVASCOT	29148	13.5	132787	61.5		
NEWBRUNS	11679	9.0	90706	69.9		
QUEBEC	110713	8.5	984697	75.6		
ONTARIO	194074	11.0	1194439	67.7		
MANITOBA	25574	12.5	143420	70.1		
SASK.	16049	7.9	136109	67.0		
ALBERTA	36551	7.4	396632	80.3		
BRITCOLU	52728	10.5	331431	66.0		
TOTAL	553784	11.1	3497320	70.1		
PROVINCE	MUNICIPAL EXPENDITURES	MUNIC. EXP SHARE(UNIV.)	FEES	FEES SHARE(UNIV.)	OTHER	OTHER SHARE(UNIV.)
NEWFOUND	0	0	7566	7.4	2147	2.1
P.E. ISLA	0	0	1627	10.8	422	2.8
NOVASCOT	0	0	22887	10.6	31092	14.4
NEWBRUNS	0	0	12977	10.0	14404	11.1
QUEBEC	0	0	88571	6.8	118528	9.1
ONTARIO	0	0	208189	11.8	167610	9.5
MANITOBA	0	0	18618	9.1	16777	8.2
SASK.	0	0	15642	7.7	9345	4.6
ALBERTA	0	0	36057	7.3	22721	4.6
BRITCOLU	0	0	36658	7.3	81351	16.2
TOTAL	0	0	449014	9.0	488926	9.8



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TABLE XXXI :UNIVERSITY EXPENDITURES  
FEDERAL POSITION

PROVINCE	FED. EXP. UNIVERSITIES	SHARE	PROV. EXP. UNIVERSITIES	SHARE	MUNICIPAL EXPENDITURES
NEWFOUND	98028	0.958788	-5499	-0.05379	0
P. E. ISLA	14796	0.982004	-1778	-0.11800	0
NOVASCOT	154079	0.713611	7857	0.03639	0
NEWBRUNS	107809	0.830799	-5424	-0.04180	0
QUEBEC	744677	0.571725	350733	0.26927	0
ONTARIO	1116694	0.632935	271819	0.15407	0
MANITOBA	165272	0.807811	3721	0.01819	0
SASK.	133805	0.658658	18353	0.09034	0
ALBERTA	250714	0.507582	182470	0.36942	0
BRITCOLU	314459	0.626203	69699	0.13880	0
TOTAL	3144207	0.630222	906897	0.18178	0

PROVINCE	MUNIC. EXP SHARE(UNIV.)	FEES	FEES SHARE(UNIV.)	OTHER	OTHER SHARE(UNIV.)
NEWFOUND	0	7566	7.4	2147	2.1
P. E. ISLA	0	1627	10.8	422	2.8
NOVASCOT	0	22887	10.6	31092	14.4
NEWBRUNS	0	12977	10.0	14404	11.1
QUEBEC	0	88571	6.8	118528	9.1
ONTARIO	0	208189	11.8	167610	9.5
MANITOBA	0	18618	9.1	16777	8.2
SASK.	0	15642	7.7	9345	4.6
ALBERTA	0	36057	7.3	22721	4.6
BRITCOLU	0	36658	7.3	81351	16.2
TOTAL	0	449014	9.0	488926	9.8

TABLE XXXII : UNIVERSITY EXPENDITURES  
INTERMEDIATE POSITION

PROVINCE	FED. EXP. UNIVERSITIES	SHARE	PROV. EXP. UNIVERSITIES	SHARE	MUNICIPAL EXPENDITURES
NEWFOUND	93984	0.919227	-1455	-0.014227	0
P. E. ISLA	14086	0.934903	-1068	-0.070903	0
NOVASCOT	147636	0.683773	14299	0.066227	0
NEWBRUNS	102909	0.793037	-524	-0.004037	0
QUEBEC	711494	0.546249	383916	0.294751	0
ONTARIO	1055476	0.598237	333037	0.188763	0
MANITOBA	157357	0.769122	11637	0.056878	0
SASK.	125984	0.620160	26174	0.128840	0
ALBERTA	236528	0.478862	196656	0.398138	0
BRITCOLU	297002	0.591440	87156	0.173560	0
TOTAL	2988248	0.598962	1062856	0.213038	0

PROVINCE	MUNIC. EXP SHARE(UNIV.)	FEEES	FEEES SHARE(UNIV.)	OTHER	OTHER SHARE(UNIV.)
NEWFOUND	0	7566	7.4	2147	2.1
P. E. ISLA	0	1627	10.8	422	2.8
NOVASCOT	0	22887	10.6	31092	14.4
NEWBRUNS	0	12977	10.0	14404	11.1
QUEBEC	0	88571	6.8	118528	9.1
ONTARIO	0	208189	11.8	167610	9.5
MANITOBA	0	18618	9.1	16777	8.2
SASK.	0	15642	7.7	9345	4.6
ALBERTA	0	36057	7.3	22721	4.6
BRITCOLU	0	36658	7.3	81351	16.2
TOTAL	0	449014	9.0	488926	9.8

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TABLE XXXIII :UNIVERSITY EXPENDITURES  
PROVINCIAL POSITION

PROVINCE	FED. EXP UNIVERSITIES	SHARE	PROV EXP. UNIVERSITIES	SHARE	MUNICIPAL EXPENDITURES
NEWFOUND	79557	0.778123	12972	0.126877	0
P. E. ISLA	11614	0.770818	1404	0.093182	0
NOVASCOT	120562	0.558381	41373	0.191619	0
NEWBRUNS	83753	0.645417	18632	0.143583	0
QUEBEC	543393	0.417189	552017	0.423811	0
ONTARIO	688985	0.390512	699528	0.396488	0
MANITOBA	119856	0.585827	49138	0.240173	0
SASK.	90589	0.445924	61569	0.303076	0
ALBERTA	138461	0.280322	294722	0.596678	0
BRITCOLU	187651	0.373681	196508	0.391319	0
TOTAL	2117260	0.424382	1933844	0.387618	0

PROVINCE	MUNIC. EXP SHARE(UNIV.)	FEEES	FEEES SHARE(UNIV.)	OTHER	OTHER SHARE(UNIV.)
NEWFOUND	0	7566	7.4	2147	2.1
P. E. ISLA	0	1627	10.8	422	2.8
NOVASCOT	0	22887	10.6	31092	14.4
NEWBRUNS	0	12977	10.0	14404	11.1
QUEBEC	0	88571	6.8	118528	9.1
ONTARIO	0	208189	11.8	167610	9.5
MANITOBA	0	18618	9.1	16777	8.2
SASK.	0	15642	7.7	9345	4.6
ALBERTA	0	36057	7.3	22721	4.6
BRITCOLU	0	36658	7.3	81351	16.2
TOTAL	0	449014	9.0	488926	9.8

TABLE XXXIV :SELECTED STATISTICS  
FEDERAL POSITION

PROVINCE	PROV.EXP./FULL TIME EQUIV.	PROV.EXP./ADJ. FULLTIME EQUIV.	TAX RATE
NEWFOUND	-622.8	-500.9	-0.0013166
P.E.ISLA	-1125.2	-1125.2	-0.0020250
NOVASCOT	363.3	276.9	0.0010682
NEWBRUNS	-397.9	-343.4	-0.0008729
QUEBEC	3226.1	2126.4	0.0044784
ONTARIO	1411.9	1007.8	0.0020914
MANITOBA	169.5	123.0	0.0002911
SASK.	980.6	830.3	0.0012312
ALBERTA	4943.3	3495.6	0.0039488
BRITCOLU	1920.5	1303.8	0.0016409
TOTAL	1964.7	1394.7	0.0026464

### 6.5.5 Total Education

A general picture of education can be captured by focusing on total education expenditures and expenditure needs. The breakdown of expenditures by source offered by Statistics Canada is reported in Table 37.

Federal education expenditures, direct and indirect, are reported in Table 38.

Federal expenditures per student are illustrated in Table 39. Federal expenditures per student are highest in Prince Edward Island and lowest in Ontario and, in general, the "poor" provinces enjoy greater federal expenditure per student than the rich provinces (this should not be surprising given a portion of federal expenditure is through the Equalization Program).

The adjusted share data is reported in Tables 40, 41 and 42. Table 40 indicates that the federal government could argue that it finances over 26 percent of education expenditures in Canada. Thus the federal - provincial system of education finance discussed in Chapter 5 is an extremely important. Indeed, only in Ontario, Alberta and British Columbia are municipalities more significant than the federal government.

The extent of federal involvement is still remarkably large even where the extreme provincial position is adopted.

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Over twenty cents of every dollar spent on education in Canada comes directly or indirectly from the federal government. Also, the conclusion that only in Ontario, Alberta and British Columbia are municipalities more significant than the federal government continues to hold despite the adoption of an extreme provincialist position.

Tables 43, 44 and 45 allow comparisons of provincial (and municipal) expenditures on education and the associated tax burdens. The information reported clearly indicates that citizens of the Atlantic Provinces face the lowest expenditures and the highest tax rate. Alberta, British Columbia, Saskatchewan and Ontario, on the other hand, enjoy high expenditures and low tax burdens. The citizens of Quebec enjoy high expenditures per student but this is associated with a significant tax burden.

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TABLE XXXVII :TOTAL EDUCATION EXPENDITURES (STATS CANADA)

PROVINCE	DIRECT FED EXP	FED. EXP SHARE(TOTAL ED)	PROVINCIAL EDUCATION EXPENDITURE	PROV. EXP SHARE(TOTAL ED)
NEWFOUND	45879	8.6	428469	82.1
P. E. ISLA	12362	12.3	89532	83.8
NOVASCOT	94844	11.6	533782	70.2
NEWBRUNS	62825	10.0	476577	84.3
QUEBEC	500004	6.4	5841027	82.7
ONTARIO	661163	7.8	4390569	55.4
MANITOBA	138530	14.3	504881	52.2
SASK.	148052	15.1	496840	55.2
ALBERTA	187922	7.9	1580149	64.9
BRITCOLU	217311	8.2	1236725	56.4
TOTAL	2176275	8.5	15577551	66.3

PROVINCE	MUNIC. EXPENDITURE	MUNIC. EXP SHARE(TOTAL ED)	FEES	FEES SHARE(TOTAL ED)	OTHER	OTHER SHARE(TOTAL ED)
NEWFOUND	9069	1.7	13870	2.6	26674	5.0
P. E. ISLA	0	0.0	2412	2.4	1508	1.5
NOVASCOT	83397	10.2	30252	3.7	35158	4.3
NEWBRUNS	0	0.0	19476	3.1	16334	2.6
QUEBEC	367191	4.7	250002	3.2	234377	3.0
ONTARIO	2322548	27.4	457728	5.4	339058	4.0
MANITOBA	251872	26.0	30031	3.1	42625	4.4
SASK.	225510	23.0	25492	2.6	40200	4.1
ALBERTA	494782	20.8	68984	2.9	83257	3.5
BRITCOLU	720838	27.2	90105	3.4	127207	4.8
TOTAL	4480566	17.5	1024129	4.0	947320	3.7

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TABLE XXXVIII : FEDERAL EDUCATION EXPENDITURES

PROVINCE	DIRECT FED EXP	OFF LANG GRANTS	INDIRECT FED EXP(EQUALIZATION)	
NEWFOUND	45879	695	117779	
P. E. ISLA	12362	456	27677	
NOVASCOT	94844	2086	113948	
NEWBRUNS	62825	15909	106683	
QUEBEC	500004	136030	605147	
ONTARIO	661163	49414	0	
MANITOBA	138530	3390	73238	
SASK.	148052	1108	1807	
ALBERTA	187922	2781	0	
BRITCOLU	217311	3803	0	
TOTAL	2176275	217300	938237	

PROVINCE	NONEQUALIZED EPF PSE	NON EQUAL EPF PSE(LESS GUAR)	EPF PSE CASH(LESS GUAR)
NEWFOUND	67996	63462	47290
P. E. ISLA	14400	13438	10088
NOVASCOT	106536	99419	69508
NEWBRUNS	85576	79861	57517
QUEBEC	860722	803098	511186
ONTARIO	1221726	1140243	652434
MANITOBA	134454	125491	83028
SASK.	138671	129423	87564
ALBERTA	305474	285099	144248
BRITCOLU	383173	357616	197526
TOTAL	3327967	3105766	1864834



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TABLE XXXIX : FEDERAL EXPENDITURES PER PUPIL

PROVINCE	DIRECT FED EXP/STUDENT	FED. EXP/STUDENT (ADJUSTMENT #1)
NEWFOUND	291.917	1478.39
P. E. ISLA	427.609	1898.80
NOVASCOT	452.362	1513.92
NEWBRUNS	376.147	1622.50
QUEBEC	341.022	1433.58
ONTARIO	303.967	888.37
MANITOBA	564.222	1423.95
SASK.	634.875	1242.02
ALBERTA	366.582	967.90
BRITCOLU	367.181	1021.03
TOTAL	374.690	1146.62

PROVINCE	FED. EXP/STUDENT (ADJUSTMENT #2)	FED. EXP/STUDENT (ADJUSTMENT #3)
NEWFOUND	1449.54	1346.64
P. E. ISLA	1865.53	1749.65
NOVASCOT	1479.97	1337.31
NEWBRUNS	1588.28	1454.51
QUEBEC	1394.28	1195.18
ONTARIO	850.91	626.64
MANITOBA	1387.44	1214.49
SASK.	1202.36	1022.87
ALBERTA	928.15	653.40
BRITCOLU	977.85	707.36
TOTAL	1108.36	894.71

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TABLE XL :TOTAL EDUCATION EXPENDITURES  
FEDERAL POSITION

PROVINCE	FED. EXPENDITURE	FED. EXP SHARE	PROV. EXP	PROV. SHARE	MUNIC. EXPENDITURE
NEWFOUND	232349	0.435541	241998	0.453629	9069
P. E. ISLA	54895	0.546181	46999	0.467622	0
NOVASCOT	317415	0.388218	311211	0.380630	83397
NEWBRUNS	270993	0.431348	268409	0.427235	0
QUEBEC	2101904	0.269041	4239128	0.542604	367191
ONTARIO	1932303	0.227961	3119429	0.368011	2322548
MANITOBA	349612	0.360894	293799	0.303280	251872
SASK.	289640	0.295406	355253	0.362326	225510
ALBERTA	496177	0.208587	1271894	0.534688	494782
BRITCOLU	604287	0.228021	849750	0.320643	720838
TOTAL	6659779	0.260115	11094046	0.433306	4480566

PROVINCE	MUNIC. EXP SHARE(TOTAL ED)	FEES	FEES SHARE(TOTAL ED)	OTHER	OTHER SHARE(TOTAL ED)
NEWFOUND	1.7	13870	2.6	26674	5.0
P. E. ISLA	0.0	2412	2.4	1508	1.5
NOVASCOT	10.2	30252	3.7	35158	4.3
NEWBRUNS	0.0	19476	3.1	16334	2.6
QUEBEC	4.7	250002	3.2	234377	3.0
ONTARIO	27.4	457728	5.4	339058	4.0
MANITOBA	26.0	30031	3.1	42625	4.4
SASK.	23.0	25492	2.6	40200	4.1
ALBERTA	20.8	68984	2.9	83257	3.5
BRITCOLU	27.2	90105	3.4	127207	4.8
TOTAL	17.5	1024129	4.0	947320	3.7

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TABLE XLI :TOTAL EDUCATION EXPENDITURES  
INTERMEDIATE POSITION

PROVINCE	FED. EXPENDITURES	FED. EXP SHARE	PROV. EXP	PROV. SHARE	MUNIC. EXPENDITURE
NEWFOUND	227815	0.427042	246533	0.462128	9069
P.E. ISLA	53933	0.536613	47961	0.477191	0
NOVASCOT	310297	0.379512	318329	0.389335	83397
NEWBRUNS	265277	0.422250	274125	0.436333	0
QUEBEC	2044280	0.261666	4296752	0.549980	367191
ONTARIO	1850821	0.218348	3200912	0.377624	2322548
MANITOBA	340649	0.351642	302762	0.312532	251872
SASK.	280391	0.285973	364502	0.371758	225510
ALBERTA	475802	0.200021	1292269	0.543253	494782
BRITCOLU	578730	0.218377	875306	0.330287	720838
TOTAL	6437578	0.251436	11316248	0.441985	4480566

PROVINCE	MUNIC. EXP SHARE(TOTAL ED)	FEES	FEES SHARE(TOTAL ED)	OTHER	OTHER SHARE(TOTAL ED)
NEWFOUND	1.7	13870	2.6	26674	5.0
P.E. ISLA	0.0	2412	2.4	1508	1.5
NOVASCOT	10.2	30252	3.7	35158	4.3
NEWBRUNS	0.0	19476	3.1	16334	2.6
QUEBEC	4.7	250002	3.2	234377	3.0
ONTARIO	27.4	457728	5.4	339058	4.0
MANITOBA	26.0	30031	3.1	42625	4.4
SASK.	23.0	25492	2.6	40200	4.1
ALBERTA	20.8	68984	2.9	83257	3.5
BRITCOLU	27.2	90105	3.4	127207	4.8
TOTAL	17.5	1024129	4.0	947320	3.7

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TABLE XLII :TOTAL EDUCATION EXPENDITURES  
PROVINCIAL POSITION

PROVINCE	FED. EXPENDITURES	FED. EXP SHARE	PROV. EXP	PROV. SHARE	MUNIC. EXPENDITURE
NEWFOUND	211643	0.396727	262705	0.492444	9069
P. E. ISLA	50583	0.503279	51311	0.510525	0
NOVASCOT	280386	0.342930	348240	0.425918	83397
NEWBRUNS	242934	0.386685	296468	0.471898	0
QUEBEC	1752368	0.224301	4588663	0.587344	367191
ONTARIO	1363012	0.160800	3688721	0.435173	2322548
MANITOBA	298186	0.307808	345225	0.356365	251872
SASK.	238532	0.243281	406360	0.414450	225510
ALBERTA	334952	0.140809	1433119	0.602465	494782
BRITCOLU	418640	0.157969	1035396	0.390695	720838
TOTAL	5196646	0.202968	12557180	0.490453	4480566

PROVINCE	MUNIC. EXP SHARE(TOTAL ED)	FEEES	FEEES SHARE(TOTAL ED)	OTHER	OTHER SHARE(TOTAL ED)
NEWFOUND	1.7	13870	2.6	26674	5.0
P. E. ISLA	0.0	2412	2.4	1508	1.5
NOVASCOT	10.2	30252	3.7	35158	4.3
NEWBRUNS	0.0	19476	3.1	16334	2.6
QUEBEC	4.7	250002	3.2	234377	3.0
ONTARIO	27.4	457728	5.4	339058	4.0
MANITOBA	26.0	30031	3.1	42625	4.4
SASK.	23.0	25492	2.6	40200	4.1
ALBERTA	20.8	68984	2.9	83257	3.5
BRITCOLU	27.2	90105	3.4	127207	4.8
TOTAL	17.5	1024129	4.0	947320	3.7

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TABLE XLIII :PROVINCIAL EDUCATION DISPARITIES  
FEDERAL POSITION

PROVINCE	PROV. + MUNIC. EXP/STUDENT	TAX RATE
NEWFOUND	1597.49	0.0601071
P.E. ISLA	1625.69	0.0535300
NOVASCOT	1882.10	0.0536517
NEWBRUNS	1607.03	0.0431942
QUEBEC	3141.68	0.0588171
ONTARIO	2501.93	0.0418710
MANITOBA	2222.48	0.0426772
SASK.	2490.41	0.0389591
ALBERTA	3446.28	0.0382323
BRITCOLU	2653.75	0.0369750
TOTAL	2681.49	0.0454482

TABLE XLIV :PROVINCIAL EDUCATION DISPARITIES  
INTERMEDIATE POSITION

PROVINCE	PROV. + MUNIC. EXP/STUDENT	TAX RATE
NEWFOUND	1626.34	0.0611926
P. E. ISLA	1658.95	0.0546253
NOVASCOT	1916.05	0.0546195
NEWBRUNS	1641.25	0.0441140
QUEBEC	3180.98	0.0595529
ONTARIO	2539.39	0.0424980
MANITOBA	2258.99	0.0433782
SASK.	2530.07	0.0395795
ALBERTA	3486.03	0.0386732
BRITCOLU	2696.93	0.0375767
TOTAL	2719.75	0.0460966

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TABLE XLV :PROVINCIAL EDUCATION DISPARITIES  
PROVINCIAL POSITON

PROVINCE	PROV. + MUNIC. EXP/STUDENT	TAX RATE
NEWFOUND	1729.24	0.0650644
P.E.ISLA	1774.84	0.0584411
NOVASCOT	2058.71	0.0586862
NEWBRUNS	1775.03	0.0477097
QUEBEC	3380.08	0.0632802
ONTARIO	2763.66	0.0462512
MANITOBA	2431.94	0.0466993
SASK.	2709.57	0.0423875
ALBERTA	3760.79	0.0417213
BRITCOLU	2967.42	0.0413455
TOTAL	2933.40	0.0497178

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### 6.5.6 Conclusion

The empirical work reported in this chapter must be interpreted cautiously given the institutional differences in education systems across provinces. Also, the absence of adjustments for cost differentials is likely to bias results. As Table 46 indicates salaries of elementary and secondary school teachers and university professors vary significantly across provinces. However, we should also note that this table may also be misleading given the staggering of contracts. Equilibrium cost differentials are needed to make the appropriate cost adjustments. The size of differentials will depend on demand/supply conditions and the character (national, regional, provincial, local) of the labour market for educators. Unfortunately, there are no estimates of these differentials. Also, it could be argued that salary differentials are accompanied by quality differentials. Thus cost differentials may simply reflect the underlying disparities.

Thus it does not seem unreasonable to draw out tentative conclusions from our analysis. The first is that the citizens in the Atlantic provinces receive the smallest benefit (measured as gross expenditure per student) and incur the greatest tax burden. More specifically the Atlantic Provinces have had to exert above the national average in relative effort (after allowing for all federal programs including equalization) to provide 20 percent less than the



national average of spending per pupil. The reasons for this result are captured in our needs index presented in section 3. Not only are incomes lower in Atlantic Canada but also the dependency ratios (school age children/population; students/employed population, etc.) were higher.

The reverse generally held in Alberta, British Columbia and Ontario: below average needs due to relatively high incomes and low dependency ratios, and below average effort to provide above average spending per pupil. Quebec appeared to be an outlier with both high expenditures per student and high burdens. This probably reflected local preferences which favour significant education expenditures as a means of protecting Quebecois language and culture.

Our conclusions with respect to education in general could be repeated in a discussion of elementary / secondary education. Indeed the disparities would be exacerbated.

However, our examination of post secondary education and of the universities yielded remarkably different results. Expenditures per student in the Atlantic Provinces were generally above the national average while the associated tax burden was low. Indeed, on some interpretations of federal involvement the data indicated that the provincial tax burden was in fact negative indicating that the federal government financing of post secondary education was so generous that the Atlantic provinces experienced a net gain which

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could be used in other areas. It appears that the federal programs to encourage post secondary education may have been too successful in these provinces. The post secondary education sector is strong but the more fundamental elementary/secondary sector is not.

This finding seems to suggest that the existing system of federal - provincial education finance may have some serious weaknesses. In the following chapter we suggest ways in which a needs adjustment could be introduced into the major transfer programs: equalization and the post secondary education provisions of the EPF.

## Chapter 7

FEDERAL PROVINCIAL FISCAL ARRANGEMENTS:  
ADJUSTING FOR NEEDS7.1 INTRODUCTION

The purpose of this chapter is to extend our theoretical treatment of need and the federal welfare state (Part I of this thesis) to encompass some of the traditional concerns of federal fiscal finance. We focus on two major Canadian federal provincial programs: Equalization and the post secondary education component of the EPF. Our intent is to explore the consequences of adjusting these programs to account for provincial differences in needs.

Our emphasis on need is not original. Indeed some need component is used to effect fiscal transfers in most countries. Canada is an exception not the rule. (Bennett, 1982, 319) Moreover, proposals for "needs" adjusted programs are not new in Canada. Hanson (1961) and Clarke (1969), in monographs published by the Canadian Tax Foundation, have both proposed "needs" adjusted Equalization programs. The Economic Council of Canada (1982) continued the tradition by recommending "needs" adjustments for medicare and hospital insurance components of the EPF. Thus we are travelling a well worn path. However, our approach dif-

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fers significantly from those proposed in the past. Our need adjustments are motivated by a specific position on the nature of the welfare state. Moreover, the need measures are defined using a well developed normative framework.

Our theoretical treatment of need and the welfare state is reviewed in section one. We illustrate two approaches to need adjustment suggested by our normative framework. In the second section of the chapter we explore the consequences of adjusting the Equalization program. A needs adjusted EPF (post secondary education component) is examined in section three. Our discussion is summarized in section four.

## 7.2 NEEDS AND THE WELFARE STATE: THEORY

In Part I (Chapter IV) we examined federalism from a welfare state perspective. We noted that a federal welfare state can assure individual citizens access to basic requisites of well being in a variety of ways. One of these is to recognize that all citizens of the nation have a "right" to the most basic requisites of well being while , at the same time ,recognizing that provinces have the "right" to flexibility in the delivery of welfare state programs. We identified this view as a federal compromise and indicated that it deserves serious consideration, especially in Canada.

This perspective has been adopted by other students of Canadian federalism. For example the Royal Commission on Dominion Provincial Relations argued:

The quality of education and welfare services is no longer a matter of purely provincial or local concern. In Canada today, freedom of movement and equality of opportunity are more important than ever before and those depend on the maintenance of at least minimum standards for education, public health, and care of the indigent.

A welfare state perspective leads one to emphasize national standards in the delivery of welfare state programs. Our approach to measuring need and our approach to federal provincial fiscal finance reflect this.

Two need measures (a measure of individual need and a measure of relative jurisdictional need) were introduced in Chapter 3. These need measures belonged to a more general class of poverty and inequality measures described by Sen (1977) as normative indicators. The attractive properties of these indicators were discussed in detail in Chapters 2 and 3.

The two need measures are analytically distinct. The measure of individual needs captures the total needs of individuals within a group. This measure,  $P(X^*)$ , can be defined as:

$$P(X^*) = F(X^*) [X^* - U^*] / U_y \quad (7.1)$$

where  $F(X^*)$  is the proportion of the population defined as in need,  $X^* - U^*$  is the average need of the individuals, and  $U_y$  is average income. Needs are defined relative to a standard,  $X^*$ . Thus if  $X$  is income  $X^* - X(i)$  is the need of individual  $i$ . In other words need is defined relative to the cost of securing a standard of welfare state service provision and the individual need index measures the proportion of available income needed to secure the welfare state standards.

The measure of relative jurisdictional need, on the other hand, indicates the needs of one group of individuals (citizens of one province) relative to the needs of other groups of individuals. The relative jurisdictional need of province  $j$ ,  $E(j)$ , was defined as:

$$E(j) = P(j)U_y(j) - P(X^*)U_y \quad (7.2)$$

where  $P(X^*)$  and  $P(j)$  are the individual need indices defined with respect to the total (national) population and the population of province  $j$  respectively.  $U_y$  and  $U_y(j)$  are the mean incomes of the nation and province.

The individual need indices measure the proportion of income of the nation and of the province needed to supply a specific standard of welfare state services. Thus  $E(j)$ , the measure of relative jurisdictional need, is the difference between the per capita cost of securing the specified standard of welfare state services nationally and provincially (

province  $j$ ). The index can therefore be interpreted as the transfer required to keep the per capita cost of eliminating needs in a province the same as the per capita cost of eliminating needs under a national program. The relative jurisdictional need index is the transfer necessary to keep the per capita cost of welfare state services the same in all provinces.

The relative jurisdictional need index will capture the existence of provincial pockets of poverty and other redistributive problems. The associated needs equalizing transfer will guarantee that the citizens of each province assume their per capita share of the cost of securing national redistributive objectives. Therefore this transfer can be viewed as an indirect transfer from the citizens of one province to the poor and/or needy in another.

The index  $E(j)$  can be used to adjust transfer programs for needs. For example, suppose a cost shared program was introduced to eliminate poverty. Without using the adjustment  $E(j)$  citizens of provinces with relatively high incidence of poverty would contribute more per capita than provinces with relatively low poverty incidence. With the adjustment  $E(j)$  all provinces would contribute the same tax revenue per capita to the program.

An alternative way of adjusting for needs is to adjust for differences in the sacrifice required to achieve the ob-

jective. One way of doing this is to equalize tax capacity. This approach has many weaknesses (see Davenport (1982) for a discussion). Another way is to focus on total income available. Davenport (1982,32-38) develops an adjusted provincial income measure (API) which will reflect sacrifices in private consumption. This measure can be used to effect a needs adjustment.

Davenport's adjusted provincial income measure can be employed in the individual need measure without affecting any of the theorems presented in Chapter III. Adjusted provincial income per capita is used instead of per capita income in equation (7.1). The modified need index measures the proportion of adjusted provincial income which must be sacrificed to secure the welfare state objective  $X^*$ . If the sacrifice required is not the same in all provinces a needs transfer may be called for.

The adjustment in this case would be designed to assure

$$P(X^*) = P(j) \quad (7.3)$$

where  $P(X^*)$  is the national individual need index and  $P(j)$  is the individual need index calculated for province  $j$ .

The transfer in this case can best be examined by changing notation slightly. Let the cost of eliminating needs be  $C$  i.e.  $C = Q(X^* - U^*)$  the poverty or need gap. Also let API be adjusted provincial income. The equal sacrifice requirement can now be rewritten:



$$C / API = C(j) / API(j) \quad (7.4)$$

If this equality does not hold an adjustment  $T(j)$  is required. The adjustment,  $T(j)$ , assures:

$$C / API = (C(j) - T(j)) / API(j) \quad (7.5)$$

The adjustment,  $T(j)$ , can be interpreted as the equal sacrifice transfer to/from province  $j$ . Rewriting we have

$$T(j) = C(j) - (C/API) API(j) \quad (7.6)$$

The transfer is therefore just sufficient to assure that supplying the standard of welfare state services in jurisdiction  $j$  requires the national average sacrifice of private consumption. The formula can be written in per capita terms:

$$t(j) = T(j)/N(j) = C(j)/N(j) - (C/API) (API(j)/N(j)) \quad (7.7)$$

and rewritten using the need indices as

$$t(j) = P(j) U_y(j) - P(X^*) U_y(j) \quad (7.8)$$

The two approaches to need adjustment reflect our interest in determining ways of financing welfare state standards in a decentralized welfare state. The first approach, which

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we will call Approach #1, could be used to establish a system of transfers which assured that provinces each contribute their per capita share of the cost of achieving the welfare state standards. The second approach, hereafter referred to as Approach #2, on the other hand, could be used to establish a system of transfers which assured that provinces assumed a share of the cost of securing redistributive objectives equal to the provinces share of adjusted provincial incomes. The former assures equal per capita cost; the latter equal sacrifice of private consumption. The implications of employing these need formulas are examined below.

### 7.3 NEEDS AND EQUALIZATION

The Constitution Act, 1981, states that the objective of the Canadian Equalization program is to "ensure that provincial governments have sufficient revenues to provide reasonably comparable levels of public services at reasonably comparable levels of taxation". Although the use of terms such as "reasonably comparable" leave the purpose of the Equalization somewhat ambiguous the underlying focus is clear. Equalization payments should enable citizens of the poorer provinces to access public services comparable in quality to those available in other provinces. Moreover, the Equalization payments should assure that citizens of the poorer provinces are able to do so without having to incur a tax burden greater than incurred elsewhere.

The current Equalization formula focuses only on the tax side (and on that only imperfectly). Specifically the current formula enables poor provinces to raise revenue by levying the national average tax rates on their own tax bases equal to the revenue which could be raised by levying the national average tax rates on the tax bases of the five representative provinces. Thus the formula implicitly assumes that needs are the same in all provinces and thus that the expenditure per capita to secure a standard of public services are just equal to the revenue which could be raised by applying the national average tax rates on the per capita tax bases of the five representative provinces. Clearly this assumption is only appropriate under very special circumstances.

Needs can be formally introduced into the Equalization formula. For example, British Columbia has argued for many years that a mile of highway across the Rockies is more costly to build and maintain than a mile of highway in Manitoba or Saskatchewan. Thus that province argues that variations in cost per mile of highway should be included as a measure of need. Saskatchewan and Manitoba, on the other hand, could argue that although highways are cheaper to build on their territory their economic and geographic conditions are such that they have higher needs with respect to highways, that is, they require more highway mileage per capita than most other provinces (Parliamentary Task Force on

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Federal Povincial Fiscal Relations (1982,161)). Thus those provinces would prefer to define need as required highway milage per capita. There are numerous other possibilities.

Our approach, which is based on our belief that the Equalization program should have a clear normative rationale, emphasizes the Equalization programs role as a policy instrument to achieve welfare state objectives. Rowell-Sirois emphasized welfare state objectives when suggesting the National Adjustment Grants. Welfare state objectives have also been highlighted by others. For example, Milton Moore (1981) argues:

that the equalization payments are income transfers between persons resident in different provinces. Governments are only intermediaries. Since equity relates to persons and not to governments or groups comprised of differently situated persons, the restructuring of payments should be based upon an economic justice paradigm (1981,244).

A welfare state-distributive justice emphasis leads one to focus on government expenditures areas which are redistributive such as antipoverty programs, education, health, etc. (see Chapter III for a suggestive list of expenditure areas included and excluded offered by Moore). Given this emphasis the important question is: Do needs actually vary significantly in these areas. If only minor disparities in needs are observed adjustments would not be called for. If, however, the variations are substantial adjustments are appropriate.

Tables I and II give an indication of expenditure needed to achieve antipoverty objectives in different provinces. Three antipoverty objectives are examined : 1) assuring all census families have income at least one half the Canadian average ( $X^* = U/2$ ); 2) assuring all census families have income at least equal to a Statistics Canada Low Income Cutoff ( $X^* = \text{Stats Can Cutoff}$ ); and 3) assuring an equalitarian society. In Table I the cost per person of achieving the objectives are compared. The disparities are substantial. Note that the "poorer" provinces have the greatest expenditure needs thus the current Equalization program although benefiting these provinces is not adequate and adjustments are called for. Table II examines cost as a proportion of Davenports adjusted provincial income measure. The data indicate that the sacrifice required of Newfoundlanders to secure antipoverty objectives is almost six times the sacrifice required of Albertans.

Tables III and IV enable comparisons of expenditures needed to secure educational standards (defined as a level of expenditures per student). The educational need index was the subject of Chapter VI. Here we define education broadly to include all education activities (the total education category of Chapter VI).

Table III reveals that the cost of securing educational standards is highest in Newfoundland and lowest in British Columbia. Ontario and Newfoundland are the only provinces

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where the cost of securing educational standards exceeds the national average. Table IV indicates that the sacrifice required to achieve standards in education is highest in Newfoundland. Prince Edward Island, New Brunswick, Nova Scotia, Manitoba, Saskatchewan and Quebec would all sacrifice more than the Canadian average. Ontario residents, on the other hand, would sacrifice less than the national average - despite having higher than average expenditure needs. Albertans would have to sacrifice the least.

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TABLE I :DISPARITIES IN COST (POVERTY)

PROVINCE	PER FAMILY COST (X*:U/2)	PER FAMILY COST (X*:STAT CAN CUTOFF)	PER FAMILY COST (X*:U)
NEWFOUND	2967.23	4858.53	8425.50
P.E. ISLA	2725.00	4607.65	8451.48
NOVASCOT	2233.74	3826.41	7216.30
NEWBRUNS	2525.16	4070.10	7204.37
QUEBEC	1854.44	3096.20	5718.96
ONTARIO	1557.12	2631.74	4934.52
MANITOBA	2341.92	3827.14	6882.26
SASK.	1784.29	3037.12	5719.38
ALBERTA	1155.53	2025.26	3949.77
BRITCOLU	1561.71	2634.04	4827.46
TOTAL	1721.91	2895.93	5374.44

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TABLE II :DISPARITIES IN SACRIFICE (POVERTY)

PROVINCE	API	PROP OF API (X*:U/2)	PROP OF API (X*:STAT CAN CUTOFF)	PROP OF API (X*:U)
NEWFOUND	5835	0.508523	0.832653	1.44396
P.E. ISLA	6704	0.406474	0.687299	1.26066
NOVASCOT	7616	0.293295	0.502417	0.94752
NEWBRUNS	6909	0.365488	0.589102	1.04275
QUEBEC	8856	0.209400	0.349616	0.64577
ONTARIO	10431	0.149278	0.252300	0.47306
MANITOBA	8777	0.266825	0.436042	0.78412
SASK.	9218	0.193565	0.329477	0.62046
ALBERTA	13237	0.087295	0.153000	0.29839
BRITCOLU	11176	0.139738	0.235688	0.43195
TOTAL	9885	0.174194	0.292963	0.54370



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TABLE III :DISPARITIES IN COST (EDUCATION)

PROVINCE	PER CAPITA COST (EQUAL OPPORTUNITY)	PER CAPITA COST (X*:CAN AVG)	PER CAPITA COST (X*:REP FIVE PROV)
NEWFOUND	1508.58	1246.39	1237.94
P.E.ISLA	1285.89	1062.40	1055.20
NOVASCOT	1348.13	1113.83	1106.28
NEWBRUNS	1306.86	1079.73	1072.42
QUEBEC	1240.89	1025.22	1018.28
ONTARIO	1374.16	1135.33	1127.64
MANITOBA	1303.65	1077.08	1069.78
SASK.	1312.30	1084.22	1076.88
ALBERTA	1248.30	1031.35	1024.36
BRITCOLU	1175.07	970.85	964.27
TOTAL	1363.01	1126.12	1118.49

TABLE IV :DISPARITIES IN SACRIFICE (EDUCATION)

PROVINCE	API	PROP OF API (EQUAL OPPORTUNITY)	PROP OF API (X*:CAN AVG)	PROP OF API (X*:REP FIVE PROV)
NEWFOUND	5835	0.258540	0.213606	0.212158
P.E. ISLA	6704	0.191809	0.158473	0.157399
NOVASCOT	7616	0.177013	0.146248	0.145258
NEWBRUNS	6909	0.189154	0.156279	0.155220
QUEBEC	8856	0.140119	0.115766	0.114982
ONTARIO	10431	0.131738	0.108842	0.108105
MANITOBA	8777	0.148531	0.122716	0.121885
SASK.	9218	0.142363	0.117620	0.116823
ALBERTA	13237	0.094304	0.077914	0.077386
BRITCOLU	11176	0.105142	0.086869	0.086280
TOTAL	9885	0.137887	0.113922	0.113150

The impact of adjusting the Canadian Equalization Program is examined in Tables V through X. The two approaches introduced above are employed. The first approach (Approach #1) is based on the relative jurisdictional need index. The transfer associated with Approach #1 would assure that the per capita cost of eliminating need was the same in all provinces. The second approach (Approach #2) is based on the individual need index calculated using Davenports adjusted provincial income measure to capture sacrifice of private consumption. The transfer associated with Approach #2 would assure that the sacrifice private consumption required to achieve the specified standard is the same in all provinces.

Antipoverty objectives and education standards are both examined. Tables V, VI and VII focus on antipoverty objectives (see Hum and Strain (1983) for a more detailed discussion of Approach #1). In Newfoundland the per capita transfer required to assure the per capita cost of assuring all census families can secure the Statistics Canada Cutoff is about the same as the per capita Equalization transfer actually allocated under the representative tax system formula. This illustrates dramatically the weakness of the assumption that needs are the same in all provinces. A comparison of actual entitlements and the adjustments under Approach #1 strengthens this point.

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Approach #2 can be considered an alternative to the representative tax system formula. The entitlement allocated using Approach #2 is just the transfer required to assure equal sacrifice of private consumption in securing redistributive objectives. It is also a needs adjusted version of the simplest macroeconomic formula ( $a = 1$ ) of Davenport (1982). A comparison of the entitlement allocated using Approach #2 and the actual entitlement allocated by the representative tax system (RTS) formula reveals the inadequacy of the RTS as an instrument of the federal welfare state. The RTS entitlement is not large enough to assure reasonably comparable tax burdens (sacrifice of private consumption) when securing even the most modest antipoverty objective (standard). Thus one wonders how the RTS formula could assure reasonably comparable standards in a broader a range of public services while also assuring reasonably comparable standards of taxation.

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TABLE V : EQUALIZATION (X\*:U/2)

PROVINCE	APPROACH #1 (1)	APPROACH #2 (2)	ACTUAL (3)	(1/3)	(2/3)
NEWFOUND	406.05	1950.8	641	0.633470	3.04339
P. E. ISLA	373.46	1557.2	733	0.509500	2.12443
NOVASCOT	196.72	907.1	546	0.360294	1.66132
NEWBRUNS	288.01	1321.7	493	0.584197	2.68085
QUEBEC	50.75	311.8	292	0.173817	1.06776
ONTARIO	-63.62	-259.9	0	.	.
MANITOBA	234.84	813.0	336	0.698919	2.41972
SASK.	25.45	178.6	76	0.334821	2.34964
ALBERTA	-207.60	-1150.3	0	.	.
BRITCOLU	-68.27	-385.1	0	.	.
TOTAL	0.00	0.0	0	.	.

TABLE VI : EQUALIZATION (X\*:STAT CAN CUTOFF)

PROVINCE	APPROACH #1 (1)	APPROACH #2 (2)	ACTUAL (3)	(1/3)	(2/3)
NEWFOUND	639.93	3149.1	641	0.99833	4.91279
P. E. ISLA	637.29	2643.6	733	0.86942	3.60659
NOVASCOT	357.62	1595.2	546	0.65498	2.92163
NEWBRUNS	421.01	2046.0	493	0.85397	4.15016
QUEBEC	76.69	501.7	292	0.26264	1.71824
ONTARIO	-101.99	-424.1	0	.	.
MANITOBA	352.71	1255.8	336	1.04975	3.73755
SASK.	57.59	336.6	76	0.75779	4.42886
ALBERTA	-319.13	-1852.7	0	.	.
BRITCOLU	-111.61	-640.1	0	.	.
TOTAL	0.00	0.0	0	.	.

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TABLE VII :EQUALIZATION (X\*:U)

PROVINCE	APPROACH #1 (1)	APPROACH #2 (2)	ACTUAL (3)	(1/3)	(2/3)
NEWFOUND	994.84	5253.1	641	1.55201	8.19509
P. E. ISLA	1145.61	4806.6	733	1.56291	6.55739
NOVASCOT	707.89	3075.5	546	1.29650	5.63285
NEWBRUNS	656.13	3448.0	493	1.33089	6.99391
QUEBEC	131.93	904.0	292	0.45183	3.09594
ONTARIO	-169.82	-736.7	0	.	.
MANITOBA	571.14	2110.3	336	1.69981	6.28057
SASK.	140.71	707.6	76	1.85146	9.31080
ALBERTA	-522.19	-3247.1	0	.	.
BRITCOLU	-233.10	-1248.8	0	.	.
TOTAL	0.00	0.0	0	.	.

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The adjustments required to account for disparities in educational needs are examined in Tables VIII, IX and X. Approach #1 indicates that entitlements of Newfoundland and Nova Scotia should be adjusted upward while the entitlements of Prince Edward Island, New Brunswick, Manitoba, Quebec and Saskatchewan should be reduced.

A comparison of the entitlement associated with Approach #2 and that of the RTS again yields remarkable results. The Newfoundland entitlement under Approach #2 (the transfer required to assure Newfoundlanders sacrifice the Canadian average private consumption in securing equality of opportunity (expenditure per student in the high expenditure province)) is greater than the RTS transfer. Summing the Approach #2 entitlements with respect to antipoverty and education objectives strengthens arguments that the RTS formula is inadequate in securing reasonable comparable standards of public services at reasonably comparable levels of taxation.



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TABLE VIII : EQUALIZATION AND EDUCATION (EQUAL OPPOR)

PROVINCE	APPROACH #1 (1)	APPROACH #2 (2)	ACTUAL (3)	(1/3)	(1/3)
NEWFOUND	194.58	704.01	641	0.30355	1.09830
P. E. ISLA	-28.11	361.49	733	-0.03835	0.49317
NOVASCOT	34.13	297.99	546	0.06251	0.54577
NEWBRUNS	-7.14	354.20	493	-0.01448	0.71847
QUEBEC	-73.11	19.77	292	-0.25037	0.06769
ONTARIO	60.16	-64.14	0	.	.
MANITOBA	-10.35	93.42	336	-0.03080	0.27804
SASK.	-1.70	41.26	76	-0.02236	0.54291
ALBERTA	-65.70	-576.91	0	.	.
BRITCOLU	-138.93	-365.95	0	.	.
TOTAL	49.01	0.00	0	.	.

TABLE IX : EQUALIZATION AND EDUCATION (REP FIVE PROV)

PROVINCE	APPROACH #1 (1)	APPROACH #2 (2)	ACTUAL (3)	(1/3)	(2/3)
NEWFOUND	161.39	581.65	641	0.25178	0.907414
P. E. ISLA	-22.60	298.67	733	-0.03083	0.407457
NOVASCOT	28.83	246.20	546	0.05280	0.450911
NEWBRUNS	-5.27	292.64	493	-0.01069	0.593598
QUEBEC	-59.78	16.33	292	-0.20471	0.055927
ONTARIO	50.33	-52.99	0	.	.
MANITOBA	-7.92	77.18	336	-0.02358	0.229715
SASK.	-0.78	34.09	76	-0.01022	0.448549
ALBERTA	-53.65	-476.64	0	.	.
BRITCOLU	-114.15	-302.35	0	.	.
TOTAL	41.12	0.00	0	.	.

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TABLE X : EQUALIZATION AND EDUCATION (CAN AVG)

PROVINCE	APPROACH #1 (1)	APPROACH #2 (2)	ACTUAL (3)	(2/3)	(2/3)
NEWFOUND	159.94	577.71	641	0.24952	0.901268
P. E. ISLA	-22.80	296.64	733	-0.03110	0.404698
NOVASCOT	28.28	244.53	546	0.05180	0.447858
NEWBRUNS	-5.58	290.66	493	-0.01133	0.589577
QUEBEC	-59.72	16.22	292	-0.20452	0.055550
ONTARIO	49.64	-52.63	0	.	.
MANITOBA	-8.22	76.66	336	-0.02446	0.228160
SASK.	-1.12	33.86	76	-0.01476	0.445520
ALBERTA	-53.64	-473.41	0	.	.
BRITCOLU	-113.73	-300.30	0	.	.
TOTAL	40.49	0.00	0	.	.

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Recent debate over the representative tax system formula has emphasized the inadequacy (and imprecision) of the "reasonably comparable" objective. An alternative normative foundation is necessary. Some argue that the objective should be horizontal fiscal equity. An equalization program designed to secure horizontal fiscal equity would assure that net fiscal benefits for similar individuals regardless of residence. Not only would this assure horizontal equity for equally productive workers with similar tastes but also efficiency since the transfer would eliminate inefficient fiscal and rent seeking migrations.

Others argue that fiscal redistribution should be the objective. An Equalization program based on this objective would assure transfers from high to low income provinces. The macroeconomic formula suggested by Davenport is based on this view (1982).

Our work, which is based on a welfare state perspective, focuses attention on the federal welfare state. In Canada most welfare state functions fall within the jurisdictional domain of the provinces. The Equalization program is an important instrument for sharing the burden of the welfare state. In our view this has not been adequately recognized - largely due to the public good preoccupation of public finance experts. The framework we have developed, on the other hand, does put the welfare state front and center. Moreover, our simulations indicate the inadequacy of RTS approach from a welfare state perspective.

By emphasizing the welfare state we have highlighted the importance of normative political economy in discussions of the Equalization program. What type of welfare state do Canadians want? Do they want to assume responsibility for the basic well being of all members of the national society? Or do they only want to assume responsibility for citizens of their own province? If the welfare state is considered national a needs adjusted equalization program is required to assure the responsibilities are evenly shared.

If the welfare state is considered national (while still allowing flexibility in program delivery) and it is agreed that a needs adjusted equalization program is necessary policy makers must still decide on the appropriate design of the needs adjusted program. First, the policy makers must choose whether they prefer to adjust the RTS formula using Approach #1 or adopt an alternative formula such as Approach #2. The issues here have been discussed by Davenport (1982). Second, the policymakers must choose a standard, X\*. This choice is arbitrary and political. Third, the question of financing must be resolved. The program could be redistributive (transfers to "have nots" financed by the "have" provinces). A redistributive approach would involve citizens of the have provinces assuming their "share" (based on either population share or income share) of the cost of welfare state programs. The program could also be financed by the national government. In this case, cost sharing of

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the welfare state activities would be sensitive to the incidence of federal taxes. Finally, policy makers would have to decide whether the program should be conditional or unconditional. A strong case for standards is implicit in the formulae.

#### 7.4 DISPARITIES, POST SECONDARY EDUCATION, AND THE EPF

The EPF program currently used by the federal government to assist the provinces in meeting their responsibility for post secondary education provides for a system of equal unconditional per capita grants. Recent literature has been quite critical of this approach to financing post secondary education (see for example: Leslie (1980), Rosenbluth and Scott (1982), and CAUT(1983)). In this section of this chapter we continue in this critical tradition. We focus on one serious weakness of the current EPF program: its failure to deal with disparities in needs and fiscal capacity.

The 1977 EPF arrangements represented a major shift in the way post secondary education was financed in Canada. Earlier programs had involved either direct transfers to universities or conditional transfers to provincial governments based on post secondary education expenditures (see Chapter 5 for details). The intent of the transfer was clear. The federal government wanted to assist the provinces in meeting their responsibility for post secondary education. Why? Because the federal government considered a

strong post secondary education sector in the "national interest".

However, after 1977 the link between the post secondary education transfers and post secondary education was broken. The post 1977 transfers were allocated on the basis of population - thus the demand for post secondary education in the provinces was ignored. The transfers were also unconditional; thus the provinces were free to spend the transferred monies in any way they chose.

Today the post secondary education EPF transfer has only one function: it improves the fiscal capacities of the provinces. The transfer therefore only affects post secondary education indirectly. Nonetheless, it is still argued that the transfer is intended for post secondary education. Indeed, the rationale for the program is that it supports post secondary education. In our critical discussion of the program we will assume that the post secondary education transfer is intended for post secondary education. If this assumption is correct our concern that the program fails to account for disparities in needs and capacities must be treated seriously.

There are two reasons for considering the failure to incorporate an adjustment for disparities seriously. First, as John Graham (1971) notes, if the federal government is interested in supporting a service, which although a provin-

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cial responsibility, is of national interest, there must be some provision to permit all provinces to provide similar levels of services. Otherwise citizens of the national government will be discriminated against by province of residence. This is not horizontally equitable. Second, if national standards are an objective, the national community should share the burden of securing them. A per capita transfer does not provide the means for sharing this burden.

As we noted earlier the per capita transfer for post secondary education does contain an element of equalization. Citizens of the poor provinces will benefit since the transfer is financed via a mildly progressive federal tax system. Thus, the burden is allocated according to income (ability to pay). However the per capita transfer only finances part of post secondary education expenditure. Provinces must also finance part. Therefore citizens of provinces with low incomes and/or relatively high demand for the service will face a relatively heavy burden when paying for the balance of the cost of a service considered in the national interest. Thus ideally we would like a transfer which takes disparities in demand and capacities into account.

Following John Graham (1971,221) we will argue that the ideal system of equalization in post secondary education should assure that every province can educate the same proportion of their (relevant) population as well as any other province, and with the same tax burden on its inhabitants.



If the general program of Equalization payments was adequate our concern with equalization in post secondary education would be misplaced. However, the present Equalization program is inadequate - it fails to take demand for public services into account and it uses a poor measure of tax burden. Thus our focus is legitimate.

#### 7.4.1 Disparities and Per Capita Transfers

The problems with per capita transfers are easy to formally identify. First consider the problems which emerge because demands are not taken into account. Define  $k$  as the share of the cost of securing a service standard assumed by the federal government. Then:

$$k = (Z/N) / (X^*M) / N$$

where  $(Z/N)$  is the percapita transfer;  $X^*$  is the standard (defined as a level of expenditure per member of the tagged population);  $M$  is the size of the tagged population; and  $N$  is the population. If  $(Z/N)$  and  $X^*$  are fixed (i.e. if the per capita grant is the same in all provinces and if national standards are considered a policy objective) the cost sharing rate,  $k$ , will be a function of the size of the tagged population,  $M$ , relative to the total population,  $N$ . The federal share is therefore highest in provinces with the lowest demand.

The relevant headcount ratios (M/N) are reported in Table XI. The federal share of post secondary education expenditures will obviously vary across provinces.

Four head count ratios are reported. Each reflects a different definition of the tagged population. The first head count ratio was calculated by tagging the 18-24 age group. Our use of this tag was based on the work of Graham.

As he argues:

The use of the population aged 18-24 in a province as a proxy for the number of potential post secondary education students in a province is not meant to imply that all post secondary education students are between the ages of eighteen and twenty four inclusive.....The 18-24 age group is used because most post secondary students are between those ages. This age group is the most convenient substitute for the number of people in a province who might potentially be able to attend post secondary institutions if, for example, there were sufficient institutions readily available with negligible financial and social barriers to attendance. (Graham, 1971, 222)

An examination of the first head count ratio reveals that the tagged population is relatively small in Ontario and Quebec and relatively large in Alberta. Thus, with constant participation rates, we would expect Alberta to incur the highest cost per capita.

The second head count ratio, the adjusted 18-24 population, is also adopted from Graham. Graham argued that it is necessary to adjust the 18-24 aged population figures - which are a proxy for potential demand - for out of province students. Following Graham we use the adjustment:

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$$\text{ADJ POP (18-24)} = \text{POP (18-24)} * [1 + (\text{Out of Prov Students/Enrolments})]$$

Not surprisingly the Nova Scotia and New Brunswick head counts rise dramatically. As indicated in Chapter 6 the proportions of out of province students are highest in these provinces.

The remaining head counts (the full time equivalent PSE enrollment and the adjusted F.T. equivalent PSE enrollment) were calculated using a formula discussed in Chapter 6. An examination reveals that Quebec and Ontario are incurring the greatest relative demand. The differences between population and enrollment headcounts is primarily due to differences in the participation rate.

Whether the population or the enrollment headcount is most appropriate depends on the context. Enrollment figures reflect current expenditure demands. Thus the enrollment head count can be used to reveal differences in the implicit cost sharing rate and in the design of an equalization adjustment intended to assure the burden of educating enrolled students is the same in all provinces. On the other hand the population head count reflects potential demand. If the objective of an equalization adjustment is to assure that every province can educate the same proportion of their population as well as any other province the population head count should be used in program design.

TABLE XI: HEAD COUNT RATIOS

PROVINCE	POP (18-24)/POP	ADJ POP (18-24)/POP	PSE ENROLMENT/POP	ADJ PSE ENROLMENT/POP
NEWFOUND	0.130663	0.136674	0.0225286	0.0263124
P. E. ISLA	0.127377	0.143045	0.0227453	0.0227453
NOVASCOT	0.133525	0.165704	0.0319675	0.0399303
NEWBRUNS	0.133615	0.167419	0.0250453	0.0281527
QUEBEC	0.108709	0.111862	0.0447687	0.0535013
ONTARIO	0.106620	0.114403	0.0358945	0.0448465
MANITOBA	0.129887	0.141187	0.0298087	0.0378925
SASK.	0.131336	0.142894	0.0254451	0.0289440
ALBERTA	0.160082	0.172889	0.0270982	0.0339302
BRITCOLU	0.127739	0.139746	0.0222625	0.0285180
TOTAL	0.136802	0.148293	0.0347018	0.0425344

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The disparities evident in Table XI are likely to result in an uneven cost sharing as well as disparities in service standards and/or tax burdens. The APPROACH #1 Equalization formula discussed above can be used to correct for such disparities. Recall that the Approach#1 formula assures that the per capita cost of securing an expenditure standard is the same in all provinces. The formula redistributes population, for financing purposes, in a way which assures the head counts are the same in all provinces.

However differences in demand are not the only source of disparities in service standards and or tax burdens. Disparities in the income available to spend on post secondary education within each province are also likely to be an important factor. These income disparities are evident in Tables II and IV where Davenport's adjusted provincial income measure is reported.

If an objective of the federal government is to assure that each province can educate its population as well as any other without incurring greater tax burdens the APPROACH #2 Equalization adjustment is called for. This adjustment would guarantee that citizens of each province assumed responsibility for financing post secondary education in accordance with their share of adjusted provincial income.

Actual post secondary education expenditures per person, per 18-24 year old, per adjusted 18-24 year old, per student

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and per adjusted student are reported in Table XII. There is no evidence of national standards.

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TABLE XII: EXPENDITURE STANDARDS

PROVINCE	PSE EXP/POP	PSE EXP/POP (18-24)	PSE EXP/ADJ POP (18-24)	PSE EXP/PSE ENROLMENT	PSE EXP/ADJ PSE ENROLMENT
NEWFOUND	201.895	1545.16	1477.21	8961.7	7673.01
P. E. ISLA	166.664	1308.43	1165.12	7327.4	7327.42
NOVASCOT	281.480	2108.07	1698.69	8805.2	7049.29
NEWBRUNS	217.343	1626.64	1298.20	8678.0	7720.15
QUEBEC	351.305	3231.60	3140.52	7847.1	6566.29
ONTARIO	272.268	2553.63	2379.90	7585.2	6071.12
MANITOBA	225.743	1737.99	1598.89	7573.0	5957.44
SASK.	248.101	1889.05	1736.26	9750.4	8571.78
ALBERTA	317.032	1980.43	1833.73	11699.4	9343.66
BRITCOLU	267.873	2097.04	1916.85	12032.5	9393.13
TOTAL	295.144	2157.46	1990.27	8505.1	6938.94

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The expenditure data reported in Table XII is used to define expenditure standards. These expenditure standards are used in our simulated EPF adjustments reported in Tables XIII through XXIV. The choice of standards is arbitrary - X\* can assume any value; thus the simulations are only illustrative.

The simulated adjustments indicate the sensitivity of such adjustments to one's choice of objectives, standards, and target group. An indication of this sensitivity can be gained via a closer examination of the adjustments reported in the Tables.

First compare the consequences of different choices of objective. If the objective is to equalize the per capita cost of securing the Canadian average standard and the target group is the population between 18 and 24 only Alberta gains relative to the current program. All other provinces would lose. If, on the other hand, the objective is to equalize the burden of securing the standard (18-24 aged group targeted) Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba and Saskatchewan benefit from the adjustment. Quebec, Ontario, Alberta, and British Columbia would all lose.

What are the results if the enrolled population and not the 18-24 age group were targeted? If the objective is to equalize the per capita cost of securing the Canadian stan-



dard only Quebec and Ontario would gain relative to the current program. However, if the objective is to equalize the burden of securing the standard Newfoundland, Nova Scotia, New Brunswick and Quebec would stand to gain from the adjustments. Other provinces would lose.

Note also that the size of adjustment in every case depends on the standard chosen. The equality of opportunity standard,  $X^* = \max U(i)$ , results in the largest adjustments. In general the lower the standard the smaller the adjustment.

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TABLE XIII: PER CAPITA EPF ADJUSTMENTS  
POP (18-24) X\*=MAX U(i)

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-19.837	161.29	131.033	312.162
P.E. ISLA	-30.457	111.81	120.413	262.678
NOVASCOT	-10.590	90.89	140.280	241.757
NEWBRUNS	-10.300	122.80	140.570	273.667
QUEBEC	-90.784	-44.76	60.086	106.106
ONTARIO	-97.536	-121.95	53.334	28.915
MANITOBA	-22.347	27.21	128.523	178.076
SASK.	-17.663	12.17	133.207	163.038
ALBERTA	75.232	-74.68	226.102	76.190
BRITCOLU	-29.288	-87.03	121.582	63.844
TOTAL	-0.001	-0.00	150.869	150.869

TABLE XIV: PER CAPITA EPF ADJUSTMENTS  
POP (18-24) X\*=CAN. AVG.

PROVINCE	EPFEQ2	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-13.244	107.681	137.626	258.551
P. E. ISLA	-20.333	74.645	130.537	225.515
NOVASCOT	-7.070	60.677	143.800	211.547
NEWBRUNS	-6.876	81.981	143.994	232.851
QUEBEC	-60.609	-29.885	90.261	120.985
ONTARIO	-65.116	-81.419	85.754	69.451
MANITOBA	-14.919	18.163	135.951	169.033
SASK.	-11.792	8.123	139.078	158.993
ALBERTA	50.226	-49.857	201.096	101.013
BRITCOLU	-19.553	-58.100	131.317	92.770
TOTAL	-0.000	-0.000	150.870	150.870

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TABLE XV: PER CAPITA EPF ADJUSTMENTS  
POP (18-24) X\*=ONTARIO

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-15.676	127.454	135.194	278.324
P. E. ISLA	-24.067	88.351	126.803	239.221
NOVASCOT	-8.369	71.819	142.501	222.689
NEWBRUNS	-8.139	97.035	142.731	247.905
QUEBEC	-71.738	-35.373	79.132	115.497
ONTARIO	-77.073	-96.369	73.797	54.501
MANITOBA	-17.659	21.498	133.211	172.368
SASK.	-13.957	9.615	136.913	160.485
ALBERTA	59.449	-59.013	210.319	91.857
BRITCOLU	-23.144	-68.768	127.726	82.102
TOTAL	-0.001	-0.001	150.869	150.869

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TABLE XVI: PER CAPITA EPF ADJUSTMENTS  
ADJ POP (18-24) X\*=MAX U(i)

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-36.49	154.32	114.380	305.190
P. E. ISLA	-16.48	133.39	134.388	284.256
NOVASCOT	54.68	161.58	205.551	312.451
NEWBRUNS	60.07	200.28	210.937	351.146
QUEBEC	-114.41	-65.93	36.458	84.937
ONTARIO	-106.43	-132.16	44.439	18.715
MANITOBA	-22.32	29.88	128.553	180.755
SASK.	-16.96	14.47	133.914	165.339
ALBERTA	77.24	-80.68	228.114	70.189
BRITCOLU	-26.84	-87.66	124.029	63.206
TOTAL	0.00	0.00	150.870	150.870

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TABLE XVII: PER CAPITA EPF ADJUSTMENTS  
ADJ POP (18-24) X\*=CAN. AVG.

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-23.125	97.798	127.745	248.668
P.E. ISLA	-10.445	84.532	140.425	235.402
NOVASCOT	34.653	102.400	185.523	253.270
NEWBRUNS	38.067	126.923	188.937	277.793
QUEBEC	-72.508	-41.784	78.362	109.086
ONTARIO	-67.450	-83.752	83.420	67.118
MANITOBA	-14.143	18.939	136.727	169.809
SASK.	-10.745	9.170	140.125	160.040
ALBERTA	48.952	-51.131	199.822	99.739
BRITCOLU	-17.010	-55.556	133.860	95.314
TOTAL	0.000	0.000	150.870	150.870

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TABLE XVIII: PER CAPITA EPF ADJUSTMENTS  
 ADJ POP (18-24) X\*=ONTARIO

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-27.652	116.94	123.218	267.814
P.E. ISLA	-12.490	101.08	138.380	251.950
NOVASCOT	41.437	122.45	192.307	273.317
NEWBRUNS	45.519	151.77	196.389	302.640
QUEBEC	-86.702	-49.96	64.168	100.906
ONTARIO	-80.654	-100.15	70.216	50.722
MANITOBA	-16.912	22.65	133.958	173.517
SASK.	-12.849	10.96	138.021	161.835
ALBERTA	58.536	-61.14	209.406	89.730
BRITCOLU	-20.340	-66.43	130.530	84.438
TOTAL	0.000	0.00	150.870	150.870

TABLE XIX: PER CAPITA EPF ADJUSTMENTS  
ENROLMENTS  $X^* = \text{MAX } U(i)$

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-146.47	24.60	4.396	175.471
P. E. ISLA	-143.87	-9.50	7.003	141.371
NOVASCOT	-32.90	62.94	117.970	213.814
NEWBRUNS	-116.19	9.52	34.679	160.387
QUEBEC	121.13	164.60	272.000	315.465
ONTARIO	14.35	-8.71	165.221	142.157
MANITOBA	-58.88	-12.07	91.993	138.796
SASK.	-111.38	-83.21	39.489	67.663
ALBERTA	-91.49	-233.08	59.380	-82.211
BRITCOLU	-149.68	-204.21	1.194	-53.338
TOTAL	0.00	0.00	150.870	150.870



TABLE XXI: PER CAPITA EPF ADJUSTMENTS  
ENROLMENTS

X\*=ONTARIO

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-95.524	16.04	55.346	166.914
P.E. ISLA	-93.824	-6.20	57.046	144.675
NOVASCOT	-21.456	41.05	129.414	191.919
NEWBRUNS	-75.775	6.21	75.095	157.077
QUEBEC	78.996	107.34	229.866	258.212
ONTARIO	9.359	-5.68	160.229	145.188
MANITOBA	-38.397	-7.87	112.473	142.996
SASK.	-72.638	-54.26	78.232	96.606
ALBERTA	-59.666	-152.01	91.204	-1.136
BRITCOLU	-97.612	-133.18	53.258	17.694
TOTAL	0.000	0.00	150.870	150.870

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TABLE XXII: PER CAPITA EPF ADJUSTMENTS  
ADJ ENROLMENTS X\*=MAX U(i)

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-152.34	11.31	-1.473	162.185
P.E. ISLA	-185.84	-57.30	-34.972	93.570
NOVASCOT	-24.46	67.23	126.414	218.103
NEWBRUNS	-135.06	-14.80	15.810	136.068
QUEBEC	102.99	144.57	253.861	295.442
ONTARIO	21.71	-0.35	172.583	150.519
MANITOBA	-43.59	1.18	107.278	152.051
SASK.	-127.63	-100.68	23.240	50.193
ALBERTA	-80.80	-216.26	70.066	-65.386
BRITCOLU	-131.63	-183.80	19.240	-32.928
TOTAL	0.00	0.00	150.870	150.870

TABLE XXIII: PER CAPITA EPF ADJUSTMENTS  
 ADJ ENROLMENTS

X\*=CAN. AVG.

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-112.56	8.36	38.307	159.230
P.E. ISLA	-137.32	-42.34	13.554	108.532
NOVASCOT	-18.07	49.68	132.800	200.547
NEWBRUNS	-99.79	-10.94	51.076	139.933
QUEBEC	76.10	106.82	226.968	257.692
ONTARIO	16.04	-0.26	166.913	150.611
MANITOBA	-32.21	0.87	118.660	151.743
SASK.	-94.30	-74.39	56.567	76.482
ALBERTA	-59.70	-159.79	91.166	-8.917
BRITCOLU	-97.26	-135.81	53.611	15.065
TOTAL	0.00	0.00	150.870	150.870

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TABLE XXIV: PER CAPITA EPF ADJUSTMENTS  
ADJ ENROLMENTS X\*=ONTARIO

PROVINCE	APPROACH #1	APPROACH #2	EPF PAYMENT (APPROACH #1)	EPF PAYMENT (APPROACH #2)
NEWFOUND	-106.52	7.91	44.352	158.781
P.E. ISLA	-129.94	-40.06	20.929	110.805
NOVASCOT	-17.10	47.01	133.771	197.879
NEWBRUNS	-94.43	-10.35	56.436	140.520
QUEBEC	72.01	101.09	222.882	251.955
ONTARIO	15.18	-0.25	166.052	150.625
MANITOBA	-30.48	0.83	120.390	151.696
SASK.	-89.24	-70.39	61.631	80.477
ALBERTA	-56.50	-151.21	94.372	-0.336
BRITCOLU	-92.04	-128.51	58.834	22.358
TOTAL	0.00	0.00	150.870	150.870

## 7.5 CONCLUSION

In this chapter we applied our theoretical framework in a critical examination of two major programs affecting education: the Equalization program and the post secondary education provisions of the EPF. We argued that the two programs are unsatisfactory. Specifically we noted that : (1) the Equalization program failed to assure that all provinces could supply basic welfare state services as well as any other province with the same tax burdens and that (2) the post secondary education provisions of the EPF program discriminate against citizens of the federal government by province of residence. We also suggested that our theoretical framework could be employed in program design to deal with these difficulties. The framework was actually employed to produce a series of illustrative simulations.

The results of this chapter reinforce the conclusions of an earlier published paper (Hum and Strain(1984)). We continue to agree with Milton Moore(1978) when he argues that the Equalization formula should be restructured on the basis of the "economic justice paradigm". We also feel that the EPF (which, as Moore notes, relates to "pillars of the welfare state") should be redesigned on the basis of the same paradigm.

## Chapter 8

## CONCLUSION

Recent debates surrounding federal-provincial transfer programs have been influenced by economists. Typically economists have focused on allocative efficiency. They argue that the public sector should be involved in the provision of public goods; that these goods should be supplied via a decentralized federal system of government; and that intergovernmental transfer programs should be designed correct spillovers, eliminate rent dissipating migration, and assure horizontal equity. The economists' views reflect their use of a normative framework, Paretian welfare economics, which emphasizes preference.

In this thesis we offered a different view of intergovernmental transfers and fiscal federalism. Our view was based on a normative framework we called the "welfare state perspective". Our "welfare state perspective" differs significantly from Paretian welfare economics.

We advanced an alternative normative framework for three reasons. First, the new Canadian Constitution provides an explicit, albeit guarded statement of the purposes of federal-provincial transfers. Governments in Canada are committed "to promoting equal opportunities", to "reducing dis-

parities in opportunities", and "to providing essential public services....at reasonably comparable levels of taxation". (The Canada Act 1982, Section 36) They are not committed to correcting spillovers, eliminating rent dissipating migrations, etc..

Second, welfare state activities, activities assuring all enjoy basic requisites of well being: basic income, health care, and equality of educational opportunity, are the largest public expenditure areas (see Appendix I). Although such activities can be viewed in a public good framework they are, in our opinion, better viewed in a framework which emphasizes redistribution, needs, and social rights rather than preference.

Finally, we feel the Paratian framework has many serious weaknesses and we believe economists interested in public policy analysis should be searching for alternative value basis for their work. In our opinion Paretian welfare economics over emphasizes preference. Individual rights (which have been stressed by Nozick (1974)) and welfare (access to basic requisites of well being ("needs")) must also receive weight when evaluating and/or prescribing policy. We, together with almost all political philosophers, prefer not to lexicographically order preference, rights, and welfare.

We introduced our normative framework in Chapter II. Our perspective was heavily influenced by recent work by social

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and political philosophers which emphasizes the importance of "welfare" and the satisfaction of "needs". The position we adopt is actually a weak version of a position advanced by Plant, et. al. (1980). They argue:

If there are necessary conditions for moral actions, irrespective of moral codes, there will be some things that must be classed as needs whatever ones moral position. These conditions include physical survival and autonomy, i.e. freedom from arbitrary interference, ill health, and ignorance; and members of any society have a duty to create a social system that will satisfy these needs as well as possible..... (1980,51)

this view, therefore, there is a strict claim to welfare (understood as basic need satisfaction according to some morally specific conception of satisfaction) and a strict obligation to supply welfare, in this sense, assuming it is possible to do so. The possibility here cannot be denied by an appeal to other social ends, or other social obligations because, as we have already argued, these ends themselves require basic needs to be satisfied.

On this view welfare is an entitlement, and its provision is a strict duty, and this provides the proper basis for regarding welfare as a right. (1980,94)

In Chapter III we developed a formal analytic framework based on our "welfare state perspective". In developing that framework we drew heavily on work on normative indicators by Sen, Atkinson, Kakwani, and Blackorby and Donaldson. We also extended their work in two directions. First we introduced a class of "needs" measures which capture the "needs" of a group of individuals with respect to private goods, public goods, and private goods publicly supplied on an egalitarian basis. Second we introduced a class of rela-



tive jurisdictional need measures which capture the needs of one group of individuals relative to other groups of individuals. The relative jurisdictional need indices were well suited for the evaluation of the welfare state in federal countries. Moreover these need indices could be used in the design of intergovernmental transfer programs intended as part of societies effort to eliminate needs.

In Chapter IV our attention turned to the political economy of federalism. We noted that discussions of federalism among economists are influenced by two normative outlooks: the classical federalism position and public choice. Classical federalists emphasize the division of powers. They argue that overlap, duplication, and concurrence of legislative authority should be avoided since they limit the accountability of political leaders. The public choice theorists, on the other hand, are concerned with individuals ability to pursue the course of action they prefer without being subject to undue coercion. The position of public choice theorists leads them to favour a very decentralized federal system.

The classical federalist and public choice views of federalism have important implications for the welfare state in a federal country. Classical federalists believe national standards in welfare state services are inappropriate if the constitution assigns responsibility for them to the provinces. Classical federalists acknowledge that intergovernmen-

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tal transfers may be necessary to assure provinces have sufficient revenue to meet their responsibilities. But, the transfer system must be unconditional to assure provincial autonomy. Public choice theorists hold that welfare state services should be supplied in a decentralized system. We noted that different public choice theorists have different reasons for preferring a decentralized system. However they agree that a decentralized system is desirable because it is responsive to donor preferences while allowing both donors and recipients the option of voting - with - the - feet.

Our "welfare state perspective" provided a very different view of the federalism and the welfare state. The normative framework underlying the "welfare state perspective" stresses the moral obligation individuals have to assure the social system has institutions which assure the system satisfies the needs of all members of society. In a federal country the fundamental issue to be decided is the issue of primary citizenship. If citizens are first a member of the national society (a Canadian first, a Manitoban second) members of the national society have an obligation to assure the needs of all members of the national society are met. If citizens are first citizens of a provincial society members of the provincial society have an obligation to assure the needs of all members of the provincial society are met. The position one adopts on citizenship is key to the position one adopts with respect to the federal welfare state.

Significantly assigning primary citizenship to the national society does not lead to federal responsibility for the delivery of welfare state services. Provincial autonomy, subject only to national standards (based on the national definition of needs) and the the assumption of financial responsibility by the national society, is possible. Indeed, it is desirable for reasons enumerated by the public choice theorists.

We believe that many Canadians feel that Canadian federalism is a compromise system where primary citizenship is national and provincial autonomy is encouraged. (The Constitutional provisions discussed above also seem to reflect this.) Our discussion of federal-provincial fiscal arrangements in this thesis indicated some of the implications of this view.

We applied our "welfare state perspective in Part II of the thesis where we discussed the federal provincial arrangements for financing education in Canada. In Chapter V we reviewed the institutional characteristics of the Canadian system noting constitutional constraints, the evolution of programs designed to extend financial responsibility to the national society, and the details of the most important redistributive programs today. Our work in Chapter V indicated that provincial autonomy and national financial responsibility were evident even in the most provincial of policy areas: education.

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In Chapter VI we applied our analytic framework in an examination of educational needs. Our examination dramatically indicated the difficulties of assuring needs are met in a decentralized federal system. For example, in the absence of federal action, equality of educational opportunity would involve a fifteen per cent proportional income tax rate in Newfoundland compared to a three per cent proportional income tax rate in Alberta. Differences in tax prices are at least as important in explaining disparities in educational opportunity as differences in tastes.

We also examined the impact of the current system of educational finance in Chapter VI. We noted that the federal government, despite rhetoric indicating otherwise, is heavily involved in the finance of education. Federal involvement narrowed disparities in tax prices considerably. However, the nature of federal programs probably contributed to an over expanded (relative to elementary/secondary) post secondary education sector in the poor provinces. Also, the current system failed to assure national expenditure standards and thus failed to eliminate disparities in educational opportunities in Canada.

In Chapter VII we indicated how our analytic framework could be employed to yield formulae which could be used in intergovernmental transfer programs designed to secure minimum standards and/or equality of opportunity. The formulae suggested were clearly motivated by our welfare state per-

spective and our view of the Canadian federal compromise. Specifically, the formulae suggested would assure the individuals located in different provinces assumed their share (based on either population or income) of the expenditure required to meet needs (however defined) of the national society.

Although the transfer formula suggested was motivated by welfare state concerns it is important to recognize the resulting transfers need not compromise efficiency as defined by Paretian welfare economists. Improving the standard of education increases the quality of human resources in the poorer regions. Thus labour productivity can be expected to rise. Also, as Buchanan (1952,212) notes, education makes people more alert to the opportunities open to them and more able to take advantage of them. Thus education can increase mobility. (see also Graham(1963))

Buchanan advances similar arguments for transfers intended to improve health and medical care. Improvements in health care enhance productivity and mobility. Antipoverty programs and associated transfers may, however, compromise efficiency. Such programs reduce mobility. Nonetheless, if provincial governments are expected to act strategically by attempting to export their poor (thereby yielding a prisoners dilemma type outcome) intergovernmental transfers which assure national financial responsibility may be efficient as well.

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However, such efficiency considerations are an aside. The thesis here is that the recently repatriated Canadian Constitution Explicitly commits Canadian governments "to promoting equality of opportunities", to "reducing disparities in opportunities" and "to providing essential public services....at reasonably comparable levels of taxation". This commitment reflects, in our opinion, the federal compromise we discussed. We believe therefore that the analytic framework we developed and applied in this thesis has special relevance in discussions of Canadian fiscal federalism.

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