

The Financing of Higher Education in the '70's: A Viewpoint from Ottawa.

Douglas G. Hartle *

I INTRODUCTION

Higher education has emerged as a major Canadian industry over the last decade, absorbing a rapidly increasing share of the nation's resources. Illustrations of this point are readily available. If we compare data for 1971-72, the latest year for which comprehensive figures are available, with data for 1960-61, we find that participation rates in Canada reached a point in 1971 where the number of full-time post-secondary students was equal to 18.6 per cent of the 18-24 age group. In 1966 it stood at 14.4 per cent, and in 1961 at 10.6 per cent. Total expenditures by post-secondary institutions rose more than sevenfold from 1960-61 to 1971-72. Whereas such institutional expenditures amounted to less than 0.9 per cent of GNP in 1960-61, they accounted for roughly 2.6 per cent of GNP in 1971-72. In addition, student aid from governmental sources and the post-secondary institutions in 1971-72 was twenty-five times total student aid in 1960-61.

These statistics are impressive. It is also clear that this most rapid development in the post-secondary sector in our history resulted from the passing of the Federal-Provincial Arrangements Act in 1967, which encompassed provisions for cost-sharing in higher education. During the first five years of the program, the number of full-time students in universities, colleges and other post-secondary institutions across Canada increased by 191,000 to a total of 501,000. This gain exceeded by a wide margin the full-time enrolment increase recorded in any previous five-year period. In addition to full-time students, an estimated 250,000 persons attended post-secondary institutions on a part-time basis in 1971, and another 200,000 were high school students at the senior matriculation level.¹

* Douglas G. Hartle was, until October 1st, Deputy Secretary (Planning) of the Treasury Board Secretariat of the Government of Canada. The views expressed are not necessarily those of his previous employer. The contributions of the following are gratefully acknowledged: A.R. Dobbell, T.R. Robinson, D. Sewell and K. Wreaks. Needless to say, the responsibility for errors and weaknesses is his own.

Figures on the financial side are equally eloquent. Transfers from the Federal to the Provincial Governments in support of post-secondary education will this year amount to nearly \$1.1 billion, a substantial rise from the \$422 million level in 1967-68 ! It is estimated that taking all forms of support for post-secondary education into account, higher education accounted for fully 6.4 per cent of gross federal expenditures in the latest year for which comprehensive data are available.

The expiry in 1974 of the current federal-provincial cost-sharing arrangements for post-secondary education provides all of those involved in post-secondary education — academics — administrators — students — with a valuable opportunity to assess where we have been going and where we should be going. The subject has, of course, recently absorbed the attention of several Commissions appointed by the Provincial Governments. The Federal Government has also been examining its future role in post-secondary education. While it is too early to comment on the current federal-provincial negotiations concerning future financing arrangements for higher education, it may be appropriate to review past federal experience in post-secondary education and to raise some of the questions which, in my opinion, should be considered in assessing the desirable future federal role.

II. *REAL vs. FINANCIAL FLOWS IN POST-SECONDARY EDUCATION*

In the economics of post-secondary education, the "*real*" flows — the resources consumed and the benefits created within the educational sector, must be distinguished from the web of financial flows by which purchasing power is transferred among sectors of the economy to balance the actual resource costs of educational activity. These "*real*" flows reflect the demand for those skills or talents resulting from formal education, balanced against the costs, both capital outlays and operating expenditures, of mounting educational activities.

The demand for skills, talents, or knowledge creates an induced demand for places at educational institutions or a demand for educational services (courses, facilities, etc.). This demand for a place at an institution, perceived by the educational sector to be an important determinant of educational outlays, is the result of the decision by each individual to seek entry, having weighed his desire for more formal education against some perception of likely costs.

Governments attempt to reflect social consensus regarding the overall value of education to society by influencing, via financial and other policies, the size and structure of the total educational sector. Thus they determine the amount and kind of facilities to be made available — that is, the *supply* of educational opportunities which will interact with the student's own demands. Educational institutions then attempt to accommodate these influences by providing the facilities and talents to mount educational activities, within the resource constraints imposed by governments. Total demands for places are rationed via fees, setting academic standards, or other means. The costs incurred by the

institutions in providing educational activities, together with the costs incurred by the students as a result of their participation in those activities, constitute what may be called the costs of the educational process.

As we have seen, student enrolment is a critical factor for government planners as well as post-secondary educators. Such enrolment can be described as the product of two basic elements :

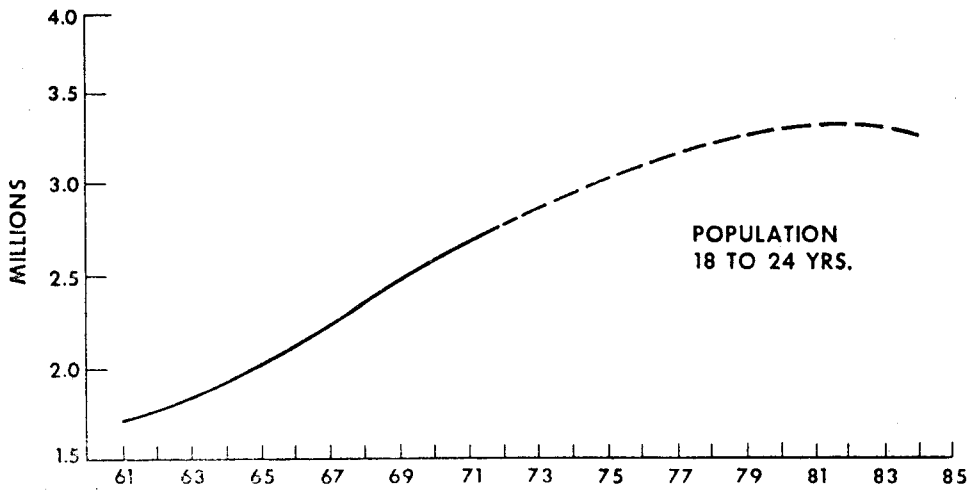
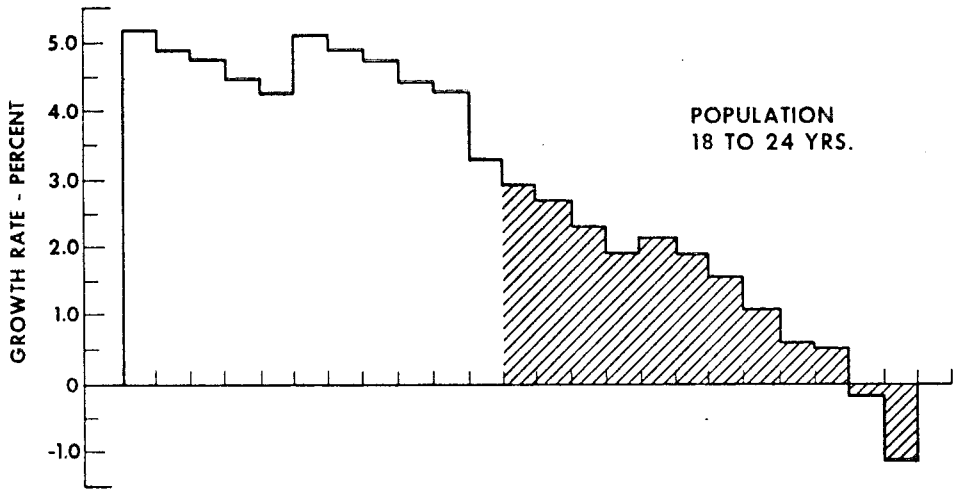
- 1) the total size of the age group from which post-secondary students are normally drawn ; and
- 2) the participation rate relevant for that age group.

Around 80 per cent of the post-secondary student body is currently drawn from the 18 to 24 years age group, and this age group will continue to supply the vast majority of recruits to post-secondary education, despite the trend towards greater "continuing" or adult education. As Chart 1 indicates, the period of rapid rates of increase in the 18 to 24 population is over. For the balance of the 1970's the rate of growth in this age-group, according to our projections, will be significantly below the 4-5 per cent rates experienced in the 1963-69 period, and will decline continuously for at least the next 10 years. Projections indicate that the *total* number in the age group will actually decline in 1983-84.

The second basic determinant of post-secondary enrolment is the proportion of the population in "eligible" age-groups which chooses to participate in higher education. Chart 2 shows the historical experience and projections of the trend in the participation rate for the 18 to 24 years age group. As can be seen, this participation rate almost doubled from around 10 per cent in 1960 to approximately 19 per cent in 1972, but its rate of growth has tapered off since 1970. Projections suggest a continued increase in the participation rate for this age group in the next decade, although the rate of growth will not be as rapid as that experienced in the 1960's. It is worth noting that projections of participation rates summarize all that is discretionary in individual enrolment decisions. If attitudes of young people swing markedly against formal education, or if they respond to higher fees by staying away, these projected rates may prove far too high. If a budding "leisure society" swings toward the individual satisfactions associated with education, these forecast participation rates could be low. The point is that a consistent analysis should take into consideration the likely impact of policy changes upon individual decisions and their consequences for these estimated participation rates.

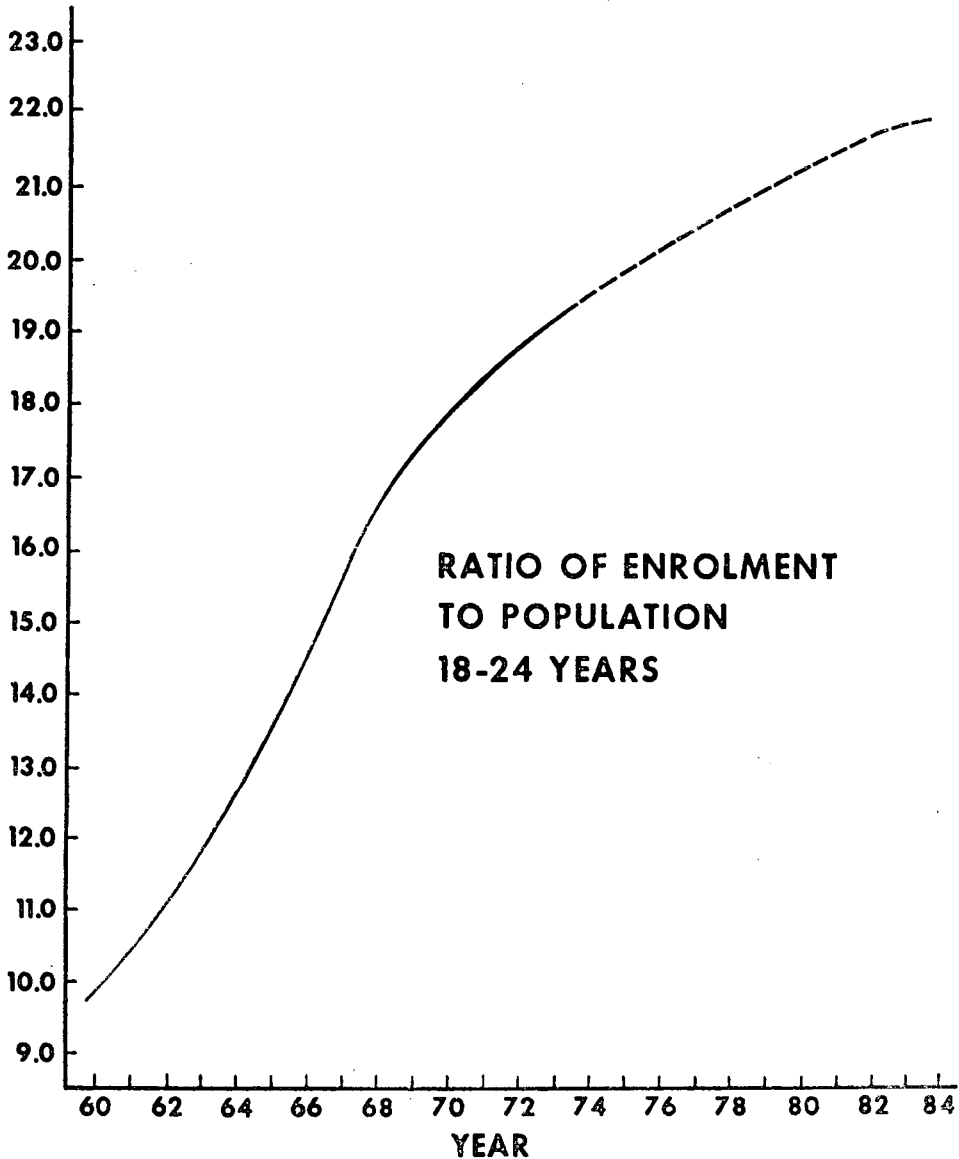
Finally, projections of the total number of students who will enrol in post-secondary education in the next decade are given in Chart 3. As well as taking into account changes in the size of age groups and the participation rate of the 18 to 24 population, these projections incorporate assumptions about the growth rates in : participation in other age groups (greater growth is anticipated in participation rates for adults

CHART 1
**TOTAL POPULATION GROWTH
 AGE GROUP 18 TO 24 YEARS
 1961 TO 1984**



continuing their education than for youths in the 18 to 24 years age group) ; full-time and part-time schooling (the latter is expected to grow faster) ; and enrolment in universities and the nonuniversity post-secondary sector (the latter is expected to grow faster).

CHART 2
PARTICIPATION RATES

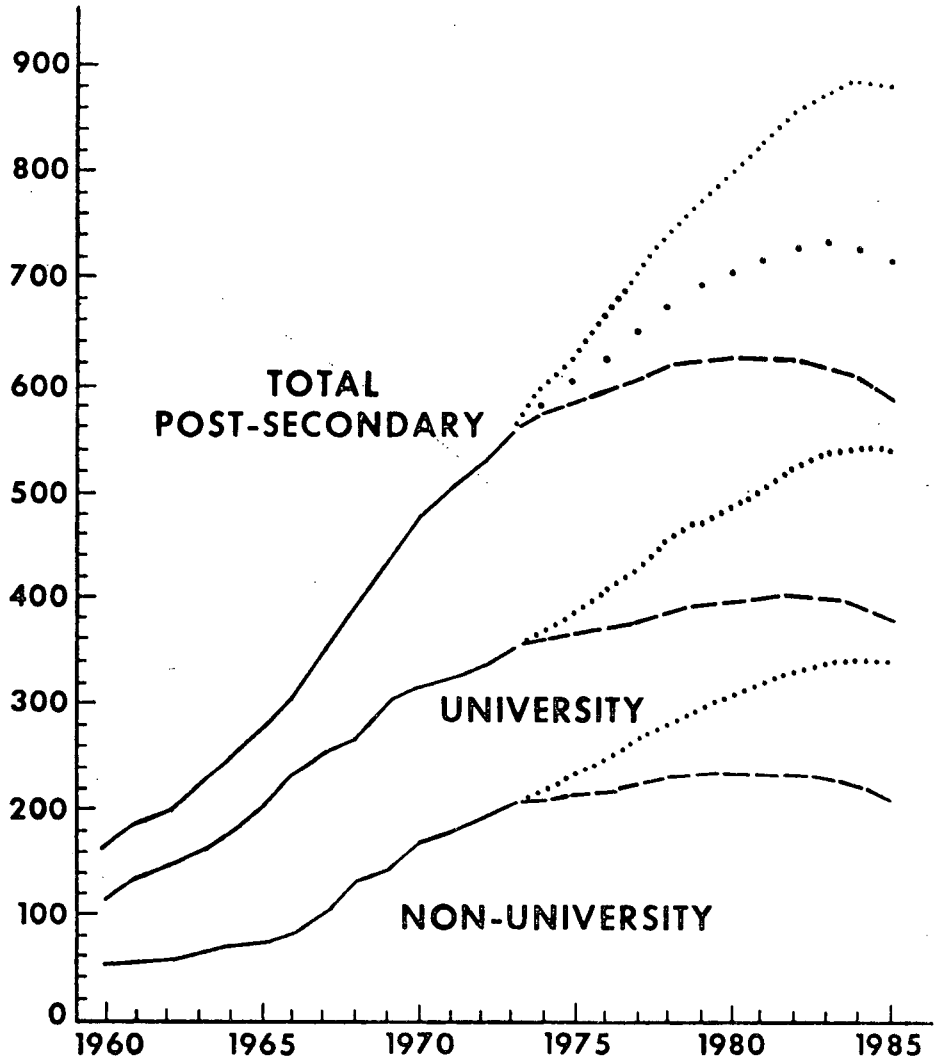


Generally speaking, the projections indicate that the pressures on post-secondary enrolment which characterized the 1960's, and which played a large part in bringing

CHART 3

POST-SECONDARY ENROLMENT

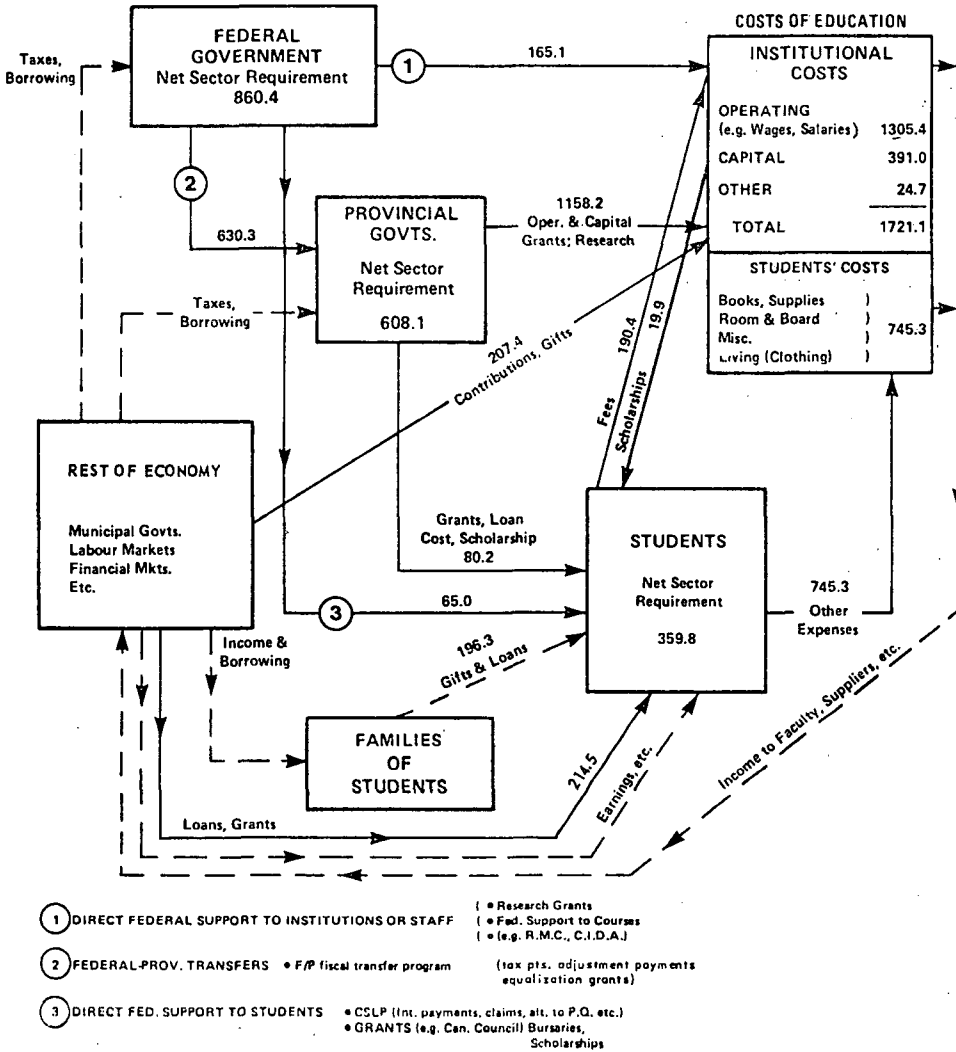
(X 1000)



————— OBSERVED
- - - - - "LOW" PROJECTION
..... "HIGH" PROJECTION
..... MEDIUM PROJECTION
(LOW UNIVERSITY, HIGH
NON-UNIVERSITY TRENDS)

CHART 4

BASIC STRUCTURE OF POST-SECONDARY EDUCATION FINANCING FLOWS 1969-70 (\$ MILLIONS)
(EXCLUDING VOCATIONAL & OCCUPATIONAL TRAINING)



about the current federal-provincial fiscal transfer arrangements for post-secondary education, are not likely to be repeated in the foreseeable future.

III THE FLOW OF FUNDS IN POST-SECONDARY EDUCATION

It was noted above that the real flow of resources into the educational sector can be distinguished from the network of financial arrangements which ultimately support (and influence) that real resource commitment.

Chart 4 presents a "snapshot" view of flows of funds in post-secondary education in a recent year. The Chart traces flows of funds from the ultimate suppliers of funds (the federal, provincial and municipal governments, the private sector of the economy and students) through intermediate allocators of funds (such as the provincial governments) to the two eventual spenders of educational funds (the educational institutions and students).

(1) *The Major Flows*

As indicated by the numerals 1-3 in Chart 4, federal support of post-secondary education is accomplished through three main channels : direct support of institutions by such means as the funding of research and the operation of military colleges ; transfers to the provinces under the Federal-Provincial Fiscal Arrangements Act ; and direct support of students through student aid plans. These three channels of finance also indicate the principal instruments by which the structure of post-secondary education can be affected in the future. Working within the flow-of-funds framework, moreover, it is evident that possible changes in these instruments cannot be discussed in isolation, either from each other or from other financial flows in post-secondary education.

(2) *Recent Trends in Sources and Uses of Funds*

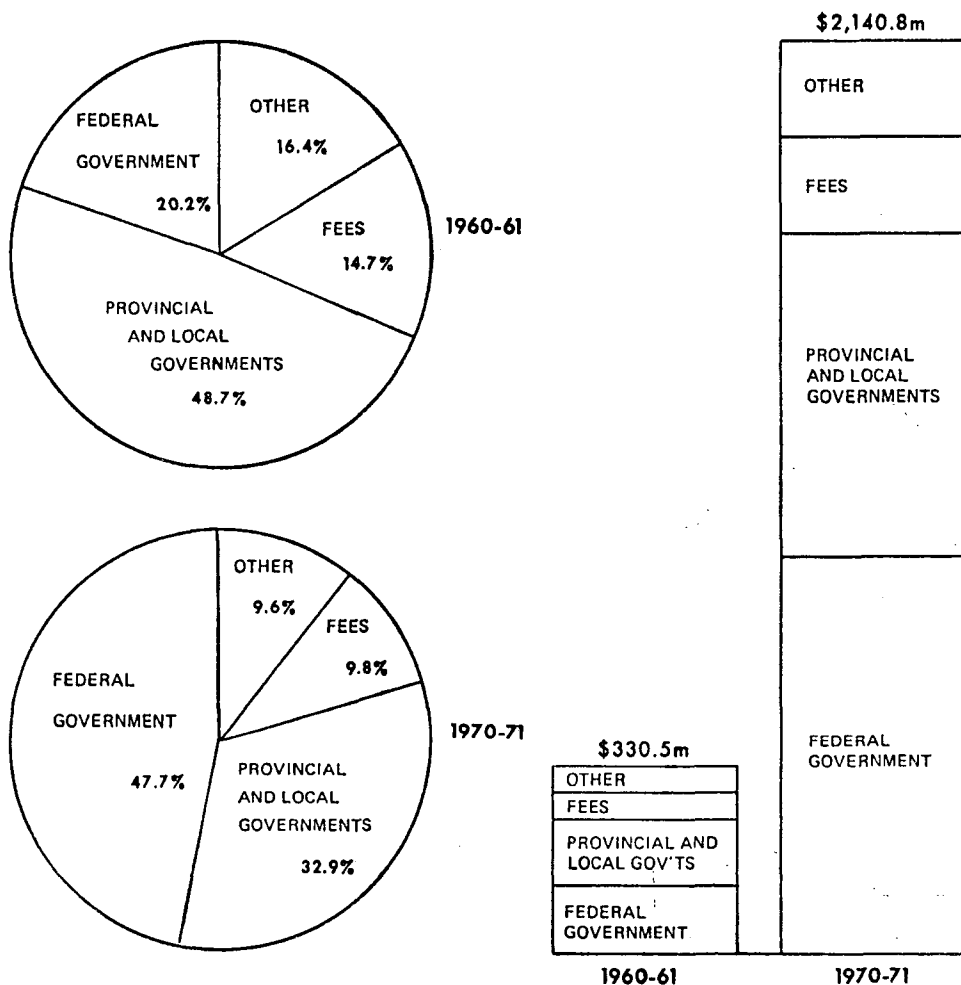
In contrast to the "snapshot" view of financial flows at one point in time illustrated in Chart 4, the changes occurring over time in the *volume* and *sources* of funds flowing to the two ultimate spenders in post-secondary education — institutions and students — can also be shown as in Charts 5 and 6.

Chart 5 indicates that important changes have occurred in the sources of funds flowing to *institutions* over the last decade. Federal funds now account for roughly one-half of all post-secondary institutional operating expenditures, as opposed to approximately one-fifth in 1960-61. Funds from other levels of government have declined in *relative* importance as a source of post-secondary institutional revenues over the past decade. However, Chart 5 shows the increasingly overwhelming dominance of all levels of government as a source of funds for the post-secondary institutions. Whereas governmental funds already accounted for two-thirds of institutional revenues in 1960-61, by 1970-71 four-fifths of institutional revenues were derived from governmental sources.

Corresponding to the rising importance of governmental funds as a source of institutional revenues over the last decade is the *declining importance of student fees*,

CHART 5

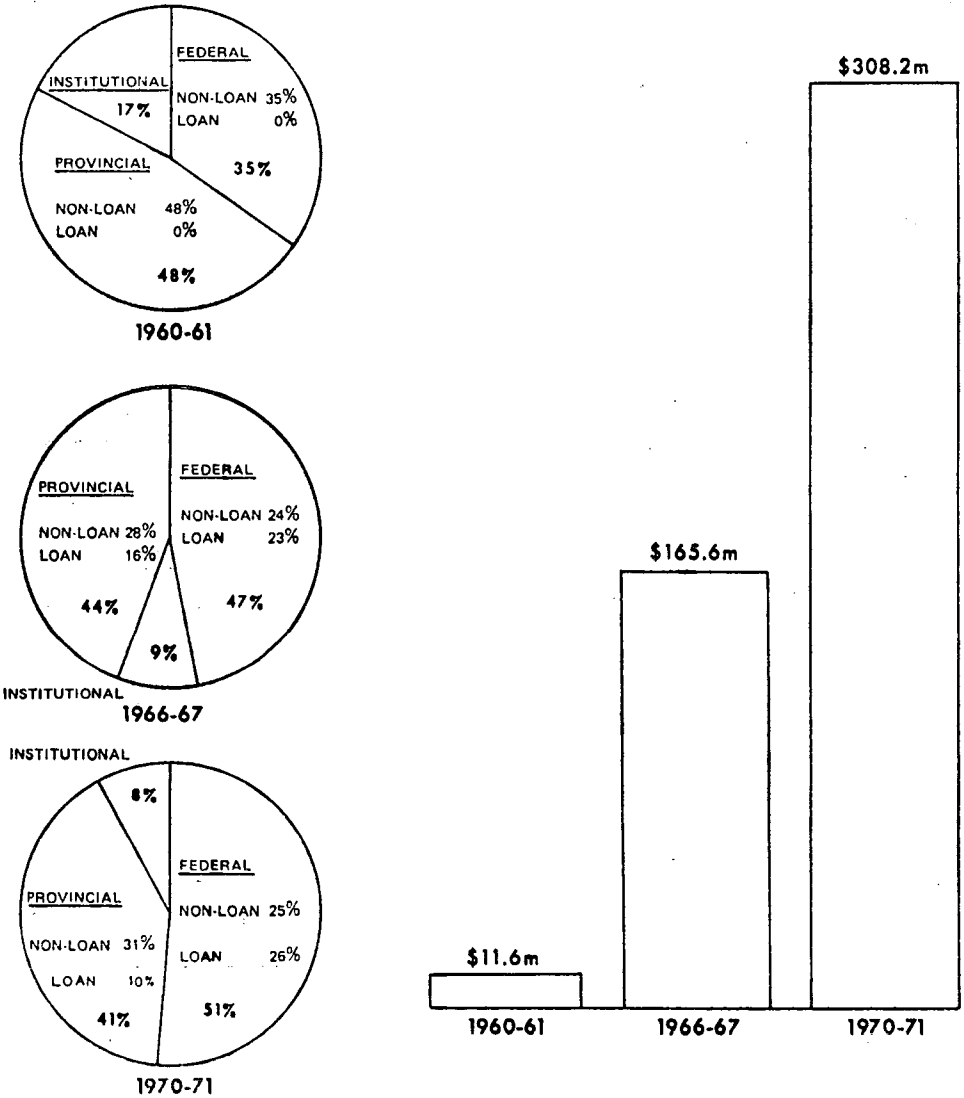
**SOURCES OF FUNDS FOR OPERATING EXPENDITURES
POST-SECONDARY INSTITUTIONS**



which now amount to only ten per cent of institutional expenditures. Such calculations of the contributions of students to the cost of their own education might also take account of government transfers paid directly to students. Subtracting the total non-loan governmental aid to students from total fees paid reveals that the *net* contribution of students was reduced to 1.9 per cent of the operating expenditures of post-secondary institutions in 1969-70. I realize, of course, that student aid is used to support living expenses of some

CHART 6

**TOTAL STUDENT AID BY TYPE AND BY SOURCE
1960-61, 1966-67, 1970-71**



students as well as to pay the fees of the educational institutions so that the student contribution to the total costs of post-secondary education is considerably greater than 1.9 per cent.

(3) *Federal Government Support of Institutions,
Provinces, and Students*

Direct federal support to post-secondary *institutions* encompasses such activities as operation of the military colleges, subsidies for research, and the training of registered nurses. Assisted research has been the fastest growing component of direct federal support for institutions, and now accounts for 60 per cent of direct federal subsidies to institutions.

The most rapidly growing element of total federal expenditures on post-secondary education has been the fiscal transfer to the *provinces*. Under the Federal-Provincial Fiscal Arrangements Act of 1967, provinces were initially entitled to receive 50 per cent of eligible operating expenditures incurred for post-secondary education and the equivalent of the senior matriculation level in high schools or \$15 per capita, whichever was greater. New Brunswick, Newfoundland and Prince Edward Island have been reimbursed under the per capita payment provision of the Act, and since 1967-68 the "entitlement" of these provinces has been escalated by the annual rate of increase in eligible post-secondary operating expenditures in all provinces.

Formally, the fiscal transfer to the provinces is made up of two components: equalized tax points and cash adjustment payments. The tax point transfer consists of 4.357 equalized points of the personal income tax and 1 equalized point of corporate taxable income. The cash adjustment payment is determined residually as the amount by which a province's entitlement exceeds the value of the equalized tax points.

Over the period 1967-68 to 1973-74, total annual transfers to the provinces have increased from \$422 million to an estimated \$1,066 million. All told, it is estimated that a total of \$5.3 billion will have been transferred to the provinces when the present fiscal transfer arrangement expires in 1974.

Chart 6 reveals that *student aid* from governmental sources and the post-secondary institutions in 1970-71 was almost double the amount made available in 1966-67 and twenty-five times student aid in 1960-61. Currently, about 8 per cent of all student aid flows through the institutions themselves (almost exclusively the universities). The Federal Government supports slightly more than half of non-institutional aid to students, and the Provincial Governments slightly less than half.

Non-repayable aid presently amounts to about sixty-five per cent of total student aid. However, the Federal and Provincial Governments support quite different proportions of the repayable and non-repayable aid available to students. The Provincial Governments are the principal source of non-repayable student aid, provincial non-loan student aid being three times provincial loans to students. Student loans supported by the Federal Government are about equal to federal non-loan student aid.²

IV ALTERNATIVE DIRECTIONS FOR GOVERNMENT POLICY

When the present program of federal subsidies to higher education was initiated in the Fiscal Arrangements Act of 1967, the overriding concern of the Federal Government was to allow the provinces to accommodate pressures on post-secondary enrolment, and to promote access to educational opportunities, by the injection of federal funds. As we have seen, these pressures on enrolment have been accommodated, and the various factors underlying enrolment are unlikely to lead to a repetition of large rates of growth in the numbers of post-secondary students in the foreseeable future. The expiry of the Fiscal Arrangements Act in 1974 permits a reassessment of the federal role and federal goals in the financing of higher education.

(1) *Interpretation of Goals and Criteria for Policy Choices*

It seems useful to introduce briefly the question of why government is involved in educational activities at the post-secondary level at all. If such activity is undertaken by an individual to increase his or her earning power, benefits accrue directly to that individual. Why should the individual not bear all of the relevant costs? Similarly, if the individual enters post-secondary education not in the expectation of monetary returns but for the intangible benefits and personal pleasures, immediate or deferred, that education promises, he or she can best judge their value relative to their costs. Here too, why should we not expect the individual to be fully responsible for meeting those costs? Is there any necessary role for government — bearing in mind that that subsidy of these training or consumption aspects of higher education entails diversion of scarce resources from other social uses, and loads the costs onto taxpayers generally, including many individuals who do not directly reap any gains from participation?

Before we proceed to attempt an answer to this question it has to be recognized that for many people the role for government in higher education is simply to mobilize resources for the support of an activity which is expected to fulfill some general social goals which are seldom articulated in concrete terms. If this attitude is widespread, involvement by governments is likely to continue, whether or not analysis views such intervention as "rational", or founded on objective evidence of social benefits that justify social investment.

In viewing past federal policies and possible future directions, however, there is a responsibility to go behind this general expression of social will, and attempt to identify more specifically what purposes are intended to be served by government intervention, why in fact many people seem to desire government involvement in post-secondary education, and what — if any — public goals might be jeopardized by the absence of such involvement.

State intervention in post-secondary education may simply have the objective of correcting for market "imperfections" which prevent the individual from investing suf-

ficiently in higher education to maximize *his own well-being*. The existence of such market imperfections means that from the point of view of efficiency in the allocation of society's resources, too little investment in higher education would be undertaken relative to investments in physical capital without government policies designed to correct for this bias.

Another important reason for state subsidies to higher education is the belief that higher education produces benefits for society which cannot be appropriated by the individuals who undertake higher education. Where such "externalities" occur, private decisions may lead to an insufficient amount of higher education being undertaken from society's point of view. The conclusion that less than a socially "optional" amount of higher education might be produced in the absence of public subsidies is therefore an "efficiency" argument for public intervention in the sector, like the arguments for remedial action to correct for market imperfections which inhibit investments in human capital by the individual.

Finally, government intervention may have the objective of equity in treatment of its citizens, and in the case of a federal government, equity in treatment of the federation's component regions. The Government of Canada's concern with the goals of inter-regional and interpersonal equity requires little emphasis: many programs attest to the importance attached to these objectives, which may be loosely interpreted as those of helping low-income persons and regions. These equity goals may also be taken to subsume the goal of equal opportunity, which implies a desire to remove artificial impediments preventing individuals from realizing their individual capacities.

(2) *Measures Aimed at Several Goals*

Some types of government intervention in post-secondary education may be aimed simultaneously at advancing both equity and efficiency objectives. Thus, it has long been argued that owing to institutional arrangements in the labour market, too little investment in higher education and other types of "human capital" may be undertaken relative to investments in physical capital such as plant and equipment. The difficulty arises from the disparate liquidity of the assets formed as a result of "human" and "physical" capital formation. Individuals who wish to borrow funds for physical capital formation can offer the assets to be acquired as collateral for the loan, and these assets can consequently be liquidated by the lender in the event of default on the loan. On the other hand, potential lenders for the fact of human capital formation can acquire no such collateral, because the prospective investment will be "embodied" in the borrower, who cannot, of course, be sold in the event that he defaults on the loan.

As a consequence, in the absence of state intervention in the market for "human capital," individuals will be prevented from making efficient investments in activities like higher education and total national production and consumption will be lower than it could be. Moreover, this market "imperfection" means that such investments in higher

education as are undertaken in practice will be financed largely from the resources of individuals and their families. It follows that persons from low-income backgrounds will be at a substantial disadvantage in making such investments.

These arguments suggest that governments eliminate these market imperfections by "simulating" a human capital market; for example by acting as a guarantor for higher education loans made to individuals. And, of course, the Canada Student Loans Plan was introduced in 1964 precisely to cope with some of these difficulties faced by individuals who wish to borrow money to finance their own higher education.

(3) *Interregional Equity*

I earlier differentiated the federal goal of inter-regional equity from the goal of interpersonal equity on the grounds that the regional effects of central government policy have an importance of their own in a federation. For this reason, the effects of the current cost-sharing program in higher education on disbursements of federal monies to the individual provinces is of concern. Chart 7, which relates per capital fiscal transfers for post-secondary education to the provinces in 1971 to per capita provincial incomes in that year, suggests a generally positive relationship between levels of federal support for post-secondary education and the average income of a province's residents. That is, the wealthier provinces have benefited the most under the terms of the current cost-sharing agreement, British Columbia being the conspicuous exception to the general rule.

Explanations for this phenomenon arise on the sides of both supply and demand. Thus, it is well documented that the demand for higher education rises faster than income in countries such as ours. On the supply side, there is some evidence that the wealthier provinces can afford to mount larger post-secondary programs, and are, hence, able to take greater advantage of shared-cost arrangements.

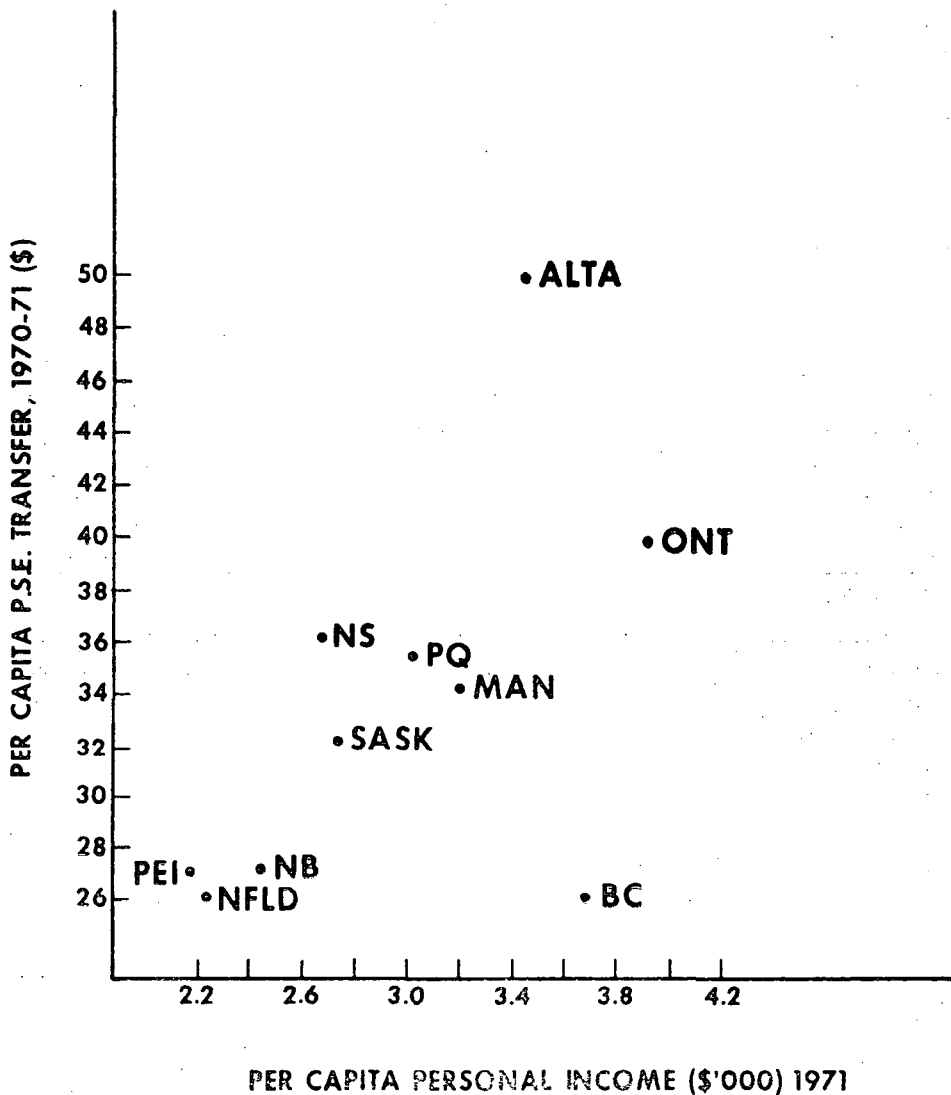
Recent proposals by the Federal Government to move towards a standard per capita transfer to the provinces for each youth in the 18-24 years age group presumably have been aimed, at least in part, at correcting the differences in provincial post-secondary entitlements which have arisen under the present cost-sharing program.

(4) *Interpersonal Equity*

Before seeking to determine how equitable among persons the present arrangements for financing Canadian higher education are, we first need to ask another question. Who can or should proceed to higher education? The obvious answer is that entry to higher education has been and must be fundamentally determined by the individual's ability to use the experience effectively, and it follows that post-secondary institutions will continue to rely primarily on measures of academic ability to decide who goes to our school of higher learning and who does not. This assumption leads to substantial implications for governmental pursuit of the goal of interpersonal equity in higher education.

CHART 7

PER CAPITA POST-SECONDARY EDUCATION
TRANSFER AND PERSONAL INCOME, 1971



A frequent interpretation of the goal of interpersonal equity as it relates to higher education has been the objective of attaining equity in treatment of those *within the sector*. This interpretation of the objective has largely been reflected in a concern about

the socio-economic composition of the student population. As is well-known, most students presently come from relatively high-income backgrounds.

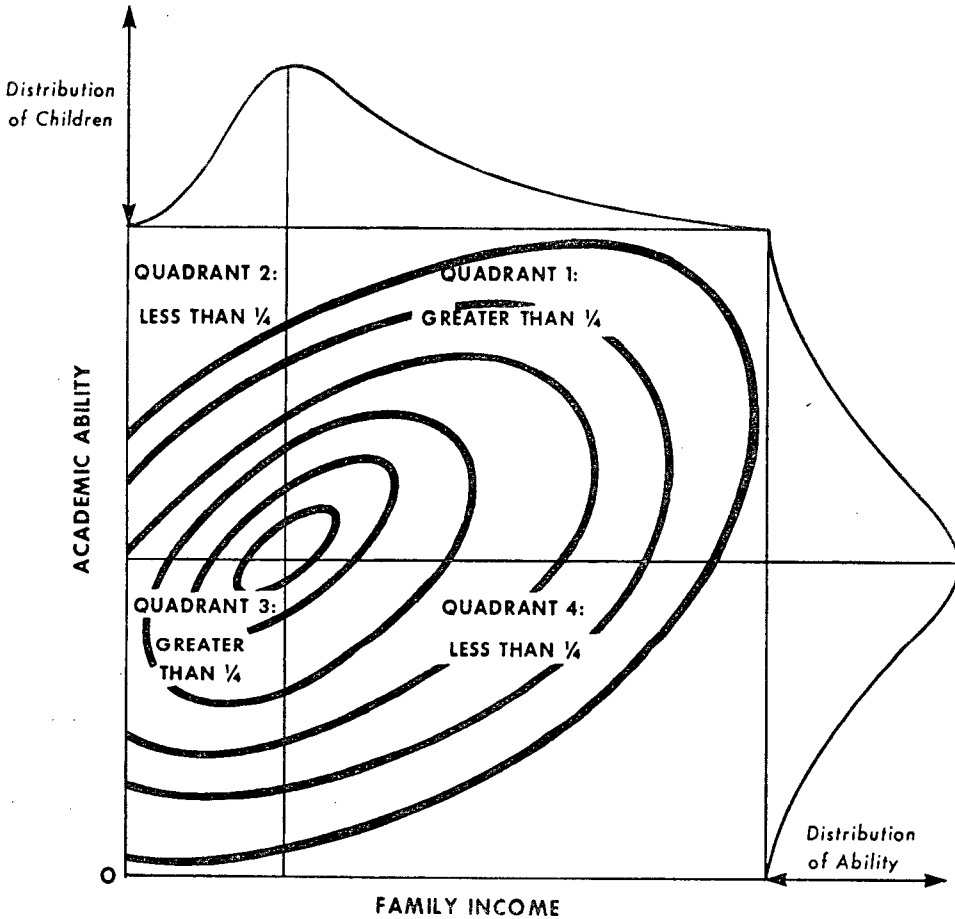
While the objective of altering the socio-economic composition of the student body is undoubtedly well-meaning, there is in fact considerable doubt concerning whether much can be done to achieve this objective *by expenditures at the post-secondary level of education*. Unfortunately, the ability of students as measured by any of the conventional indices appears to be highly correlated with parental income. An impressionistic picture of this correlation is given in Chart 8. The parental income of children is represented as highly skewed, while the "measured ability" of children is shown as being distributed normally in the familiar bell-shaped pattern. The contour map in Chart 8 indicates that greater than one-quarter of all high-ability children come from high-income families, and correspondingly fewer from families having less than modal incomes.

The immediate implication of this association between academic ability and parental income is that even if youths with the required levels of ability participated in higher education to the same degree, attendance would still be much greater for youths from high-income families. The unfortunate fact is that altering this ability differential among children from different parental income backgrounds may only be possible by taking remedial measures very early in the life of the child. The literature reflects some doubt about whether much can be achieved once a child enters the schooling system³ and expenditures at the post-secondary level of education would seem to be irrelevant to this problem.

Let us now introduce the present methods of financing higher education, and consider how these affect our equity goals. I would like to contrast a *laissez faire*, or what I shall call a "19th Century" situation, with our present methods of financing. The 19th Century situation is illustrated in Chart 9. Attendance at post-secondary institutions is seen to be correlated with family income. Attendance of a small number of high-ability students from low-income backgrounds is supported by charity (foundations, churches, etc.), while the fees of most students are financed from parental income. Parental income also permits the attendance of some students who do not have the requisite ability to complete post-secondary education. There is no financing burden on the taxpayer whose children do not participate in higher education.

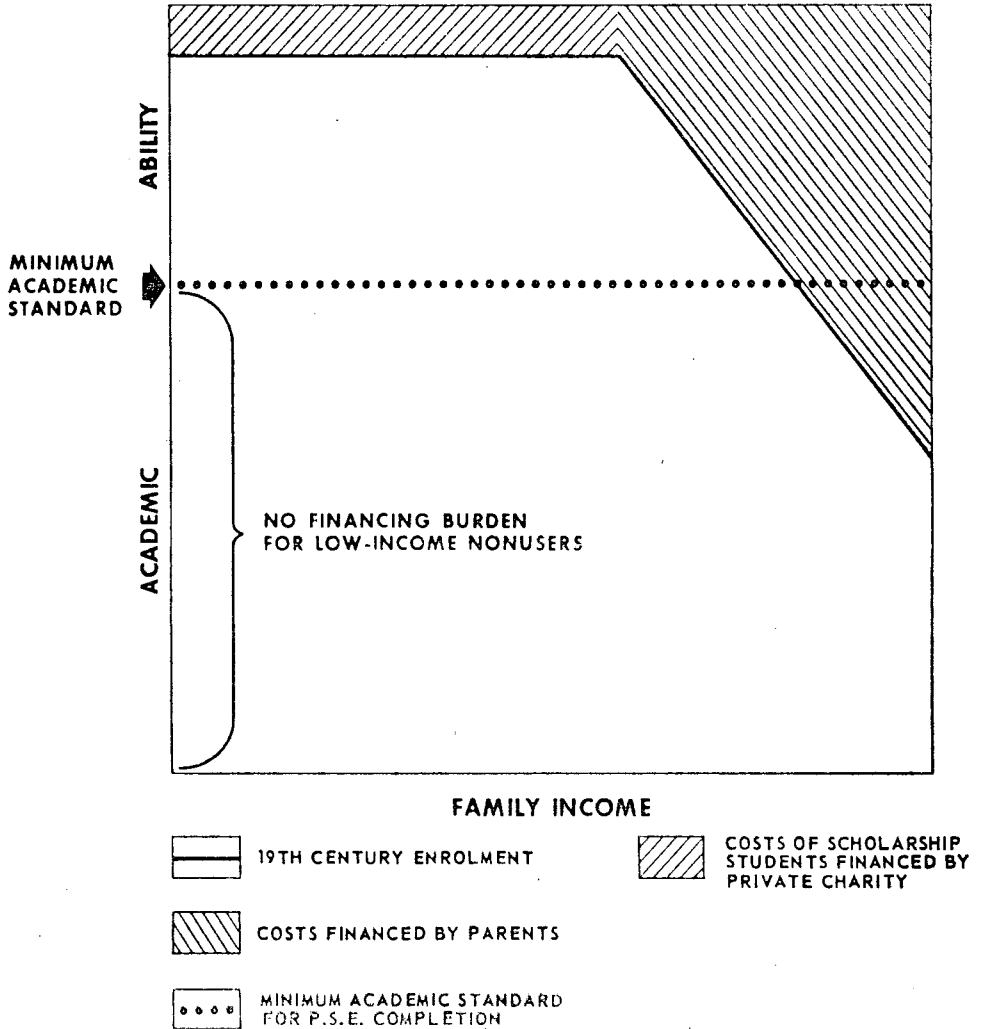
Of course, the current methods of financing Canadian higher education differ substantially from the *laissez faire* picture I have just described. The effect of intervention by all levels of government has been, as indicated earlier, that government support now constitutes about 80 per cent of the revenue of Canadian post-secondary institutions, while fees account for about 10 per cent. These governmental expenditures can be viewed as a flat subsidy to all participants in higher education, regardless of their family background. Chart 10, "The 20th Century Situation," attempts to depict — again in impressionistic terms — the effects of these subsidies.

CHART 8
 CONTOUR MAP
 OF
 DISTRIBUTION OF CHILDREN
 BY FAMILY INCOME AND ABILITY



Immediately evident from Chart 10 is the almost certain increase in enrolment over the 19th Century situation which has resulted from the introduction of substantial government subsidies. The increase in enrolment is represented as not being uniform across all parental income classes, partly owing to the supposition noted earlier: that the academic ability of students is not uniformly distributed by parental income class.

CHART 9
 "19TH CENTURY" SITUATION *
 (I.E. No Governmental Subsidies)

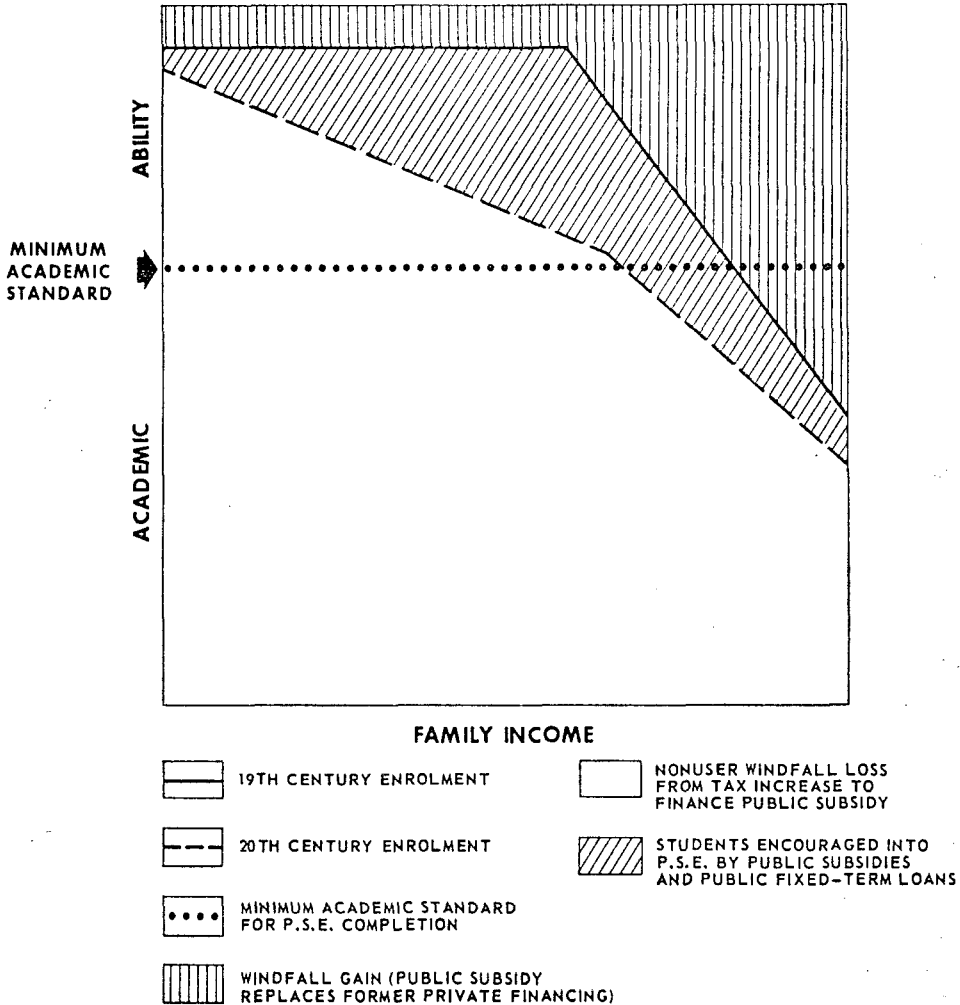


* This chart should be interpreted as follows: each child has a position on the plane. The distribution of the children is in accordance with the contours shown in the previous chart. There is a high probability that children in the cross hatched area obtain post-secondary education, and conversely for the children in the balance of the area.

CHART 10

"20TH CENTURY" SITUATION

I.E. Mixture of Private Finance, Public Subsidies and Public Fixed-Term Student Loans



I would also like to draw your attention to the probable rise which has occurred in the number of students with less than the minimum academic standard required to complete post-secondary education. The provision of extensive governmental subsidies has reduced the incentives of youths to stay out of higher education or seriously consider

alternatives to higher education, and likely has encouraged more youths to become students who cannot "make the grade."

Perhaps most important, however, are the windfall gains and losses which have occurred as a result of government intervention in the sector. The windfall gain accrues to those students (to their families) who would have attended post-secondary education without any governmental subsidy. We have every reason to believe that the numbers of such students are substantial. After all, the monetary returns which accrue from much of higher education — particularly undergraduate schooling — as sufficiently high in *relation to the total public and private costs* to make such schooling an attractive investment to the individual.⁴ Nor do these calculations take account of the nonmonetary attractions—such as immediate and deferred consumption benefits — which are commonly associated with participation in higher education. Where adequate facilities are available which allow students to finance their own education, we might therefore reasonably expect that public subsidies are not necessary to ensure the continued participation of many students. Where the subsidy is not necessary to alter behaviour, of course, it represents a flat transfer from general tax revenues to a specific interest group.

The converse of this proposition, of course, is that as shown in Chart 10 some of the public subsidy to higher education entails a windfall loss to those taxpayers who share the tax burden of the public subsidy but whose children do not participate in higher education.

* * * * *

Our discussion of who benefits and who pays for the costs of higher education has so far been focussed on the parental income of students, thus reflecting a long-standing public concern with the problem of social mobility over time, and also the importance of parental savings as a source of financing for post-secondary participation in the past. Allow me to point out, however, that such a focus on the parental status of students is increasingly anomalous now that every 18 year old Canadian student has federal voting rights and accompanying responsibilities as a citizen. These kinds of considerations have led many to view the question of equity in the financing of higher education costs as a question of the distribution of the costs and benefits over the lifetimes of those who participate in higher education relative to those in their generation who do not.

Shifting attention away from a concern with the parental income of students and towards comparisons of the prospects of students and those who do not get to participate in higher education possibly leads to even more clear-cut attitudes towards the financing of higher education costs. Because students are selected on the grounds of ability, and because higher education augments earnings, on average, post-secondary students have much superior income prospects than do the four-fifths of youths who at present do not participate in higher education. In these respects, therefore, the use of the tax system to subsidize post-secondary education appears to force taxpayers with relatively low incomes

to share in the costs of an activity yielding its greatest benefits primarily to those already having the highest potential incomes.

Of course, it might be asked whether there is any *net* subsidy to post-secondary students, in view of the fact that they pay more taxes on the higher earnings they acquire as a result of receiving a college education. Unfortunately, it is by no means true that — even in aggregate — the higher taxes paid by working graduates have a discounted value sufficient to offset the value of the subsidies they received as students.⁵ Moreover, this type of argument completely ignores a fact noted earlier : that many students would consider higher education a worthwhile investment in its own right, even without the benefit of public subsidies. Where such students would undertake higher education without public subsidies, they would in any event be paying more taxes on the higher earnings they acquire as a result of receiving a college education. It should also be noted that two individuals with the same income will pay the same tax even if one of them did not enjoy an education subsidy.

Shifting More of the Costs to Students

Provincial commission reports, such as that of the Commission on Post-Secondary Education in Ontario and inter-provincial enquiries such as the Peitchinis Report for the Provincial Council of Ministers of Education, strongly suggest that those participating in higher education should bear more of the costs of the process.⁶

However, proposals to shift more of the burden of higher education costs to students pose problems. Again, a divergence appears between those who think that equitable financing arrangements for higher education should take cognizance of the financial circumstances of a student's parents and those who focus on equity in treatment of students and their peers who do not participate in higher education.⁷

It is frequently argued that shifting more of the burden of higher education costs to students will have adverse effects on the size and socio-economic composition of the student body, if the only means of self-financing available to students are conventional fixed-term loan plans such as the Canada Student Loans Plan. It is argued that, even if the private benefits from higher education are great, eighteen year old students — particularly those from low income backgrounds — are "risk averse," and would not undertake investments in higher education in amounts which are "efficient" from society's point of view if they could only obtain finance through conventional loan plans.

We suffer from a lack of evidence on this hypothesis. Nevertheless, those who accept the hypothesis usually favour dealing with the problem either by student grants which are means-tested with respect to parental income, or by introducing loan plans where repayment is contingent upon income received after completion of schooling, or a combination of these two measures.

Proposals to extend means-tested grants to students would seem to be unacceptable to those who regard the question of equity in the financing of higher education as concerning equity in treatment of students and their peers who do not enter higher education. After all, students are selected on the basis of their ability, and even giving them grants which are means-tested with respect to parental income and paying for these grants partly by taxing the peers of students who do not participate in higher education would seem to amount to a redistribution of income from the relatively poor and ill-endowed to the relatively rich and well-endowed.

Proposals to introduce loan plans where repayment is contingent upon income after completion of schooling would not seem to be subject to the above objection, insofar as these loan plans need not be subsidized out of the public purse. However, this is not to say that such plans are without their own problems. Let me focus attention on one such problem.

Consider the equity effects of proposals to raise fees and simultaneously introduce an income-contingent loan plan. In order to examine only the most important effects, I shall indicate uncertainty by comparing "favourable" and "unfavourable" assumptions concerning the outcome of such proposals.

The probable impact of such a change under 'unfavourable' assumptions is shown in Chart 11. It can be seen that these assumptions imply that the proposals will bring about an overall reduction in the size of the post-secondary sector (enrolment will retreat from the dotted line to the solid line). Chart 11 also reflects the pessimistic assumption that able students from low-income backgrounds are so "risk averse" that they will not undertake loans even where repayment is contingent upon income after completion of schooling. The chart shows the primary beneficiaries of an income-contingent loan plan to be students from middle-income backgrounds.

Chart 12 reflects "favourable" assumptions concerning the proposals to raise fees and introduce an income-contingent loan plan. One can see that a reduction in the number of less-able students from high income backgrounds is balanced by the fact that the introduction of the new loan plan encourages the entry of able students from low and middle-income backgrounds who would otherwise not have entered higher education.

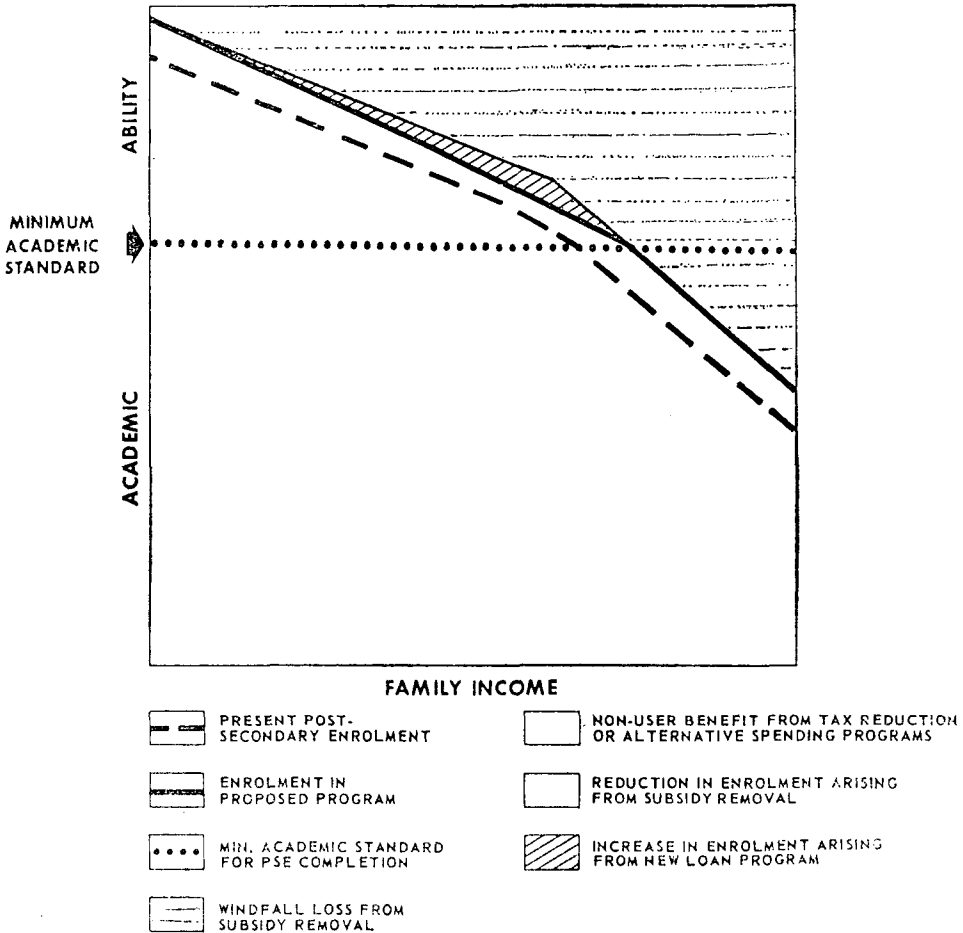
An important thing to note about both Chart 11 and 12, however, is that concern about the effects of proposals to raise fees and introduce income-contingent loan plans on the size of student enrolment and the socio-economic composition of the student body is a concern about *margins*. The charts imply that the vast majority of students now in higher education would remain there after the introduction of the measures contemplated. The charts also imply that these measures would bring about a major redistribution of the financing burden in higher education: the costs would be unequivocally shifted to those who participate in higher education and away from those who do not go on to our schools of higher learning.

CHART 11

EFFECTS OF PROPOSALS FOR

(1) Fees Covering Most of Tuition Cost

(2) Loan Plan Where Repayment is contingent on Income After Graduation :
Unfavourable Assumptions

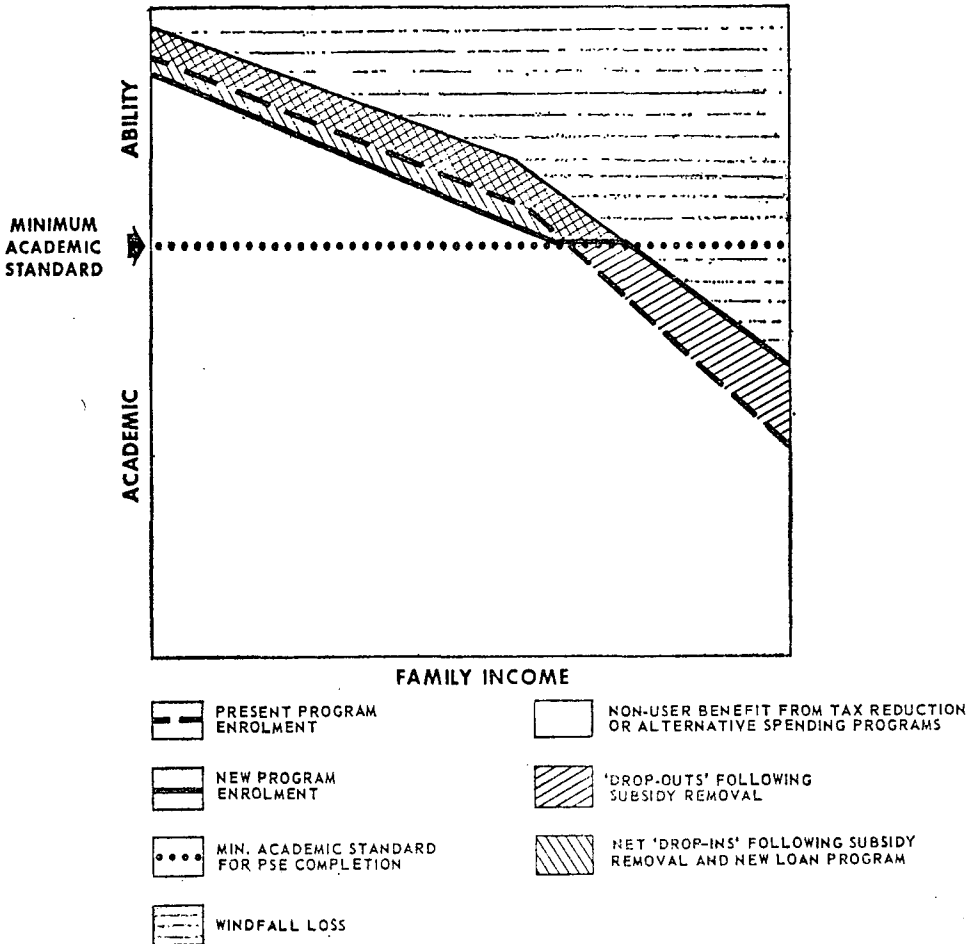


While the important effect of shifting a greater share of the cost burden on to those who attend post-secondary education institutions can be reliably forecasted, the marginal effects on the size and socio-economic composition of the student body are not known. Conceivably, the gain in equity between users and non-users would be more than offset by unfavourable marginal effects. Here, further analysis of income-contingent loan plans could play a useful role in assisting political decision-makers. Can it be

CHART 12

EFFECTS OF PROPOSALS FOR

- (1) Fees Covering Most Tuition Costs
- (2) Loan Plan Where Repayment is Contingent Upon After Graduation Income :
Favourable Assumptions



shown that the "unfavourable" assumptions I have outlined above are unlikely to occur if an income-contingent loan plan were introduced? If not, it seems to me that advocates of such plans are asking Ministers to take a policy gamble with unknown odds in a highly sensitive area.

Social Benefits From Higher Education

Leaving aside the question as to whether or not it would be appropriate to shift more of the burden of financing from the general taxpayer to the individual who acquires the education, there can be little doubt that the present massive federal and provincial subsidies for higher education have been based on the belief that the process leads not only to benefits which are captured by those undertaking higher education, but also to benefits which cannot be captured by individuals and which accrue to society at large. This is not the place for an exhaustive catalogue of the social benefits often claimed to arise from higher education. Nevertheless, governmental support for higher education in Canada has obviously been conditioned by a belief in the social benefits arising from such roles of higher education as those of advancing knowledge, as a critic of the existing social order, in promoting economic growth, in preserving and enriching the cultural heritage of the nation, and in contributing to the functioning of democracy by the creation of a more informed electorate.

An increasing disposition to question the value of the social benefits from higher education has arisen in recent years. Some segments of the public have clearly come to associate negative or undesirable spillovers with the sector. Criticism from the man in the street has been augmented by academic scepticism about the magnitude or even the very existence of external benefits from higher education.⁸ (Parenthetically and paradoxically, it is this academic function of acting as a gadfly of existing social institutions which is surely one of the most valuable external benefits of the higher education sector in our society !)

In assessing the federal role in the financing of higher education, I would expect that there is general agreement with the argument that higher education leads to many of the public benefits traditionally attributed to the sector. This having been said, however, one can still ask whether present financing arrangements are optimal in some sense for the production of these public benefits. Specifically, is the present *degree* of public subsidy necessary to produce these public benefits? Is the present *method* of federal financing conducive to obtaining these benefits? Might *alternative forms of public expenditure* lead to greater benefits for the same cost? I propose to examine these questions in the order in which they have been raised.

In considering the first question, it seems clear that some of these generalized public benefits were made available without cost to the public in general in the days when universities operated entirely without subsidies. Presumably, the greater the subsidies the greater the public benefits — but how much greater per dollar of subsidy? In one instance, at least, even the basic presumption may be invalid. Is the function of universities in providing criticism of public policies likely to be more adequately served by more public subsidies?

One can also question whether other public benefits often attributed to higher education might better be obtained by alternative government program expenditures, and whether present arrangements for federal support of higher education are optimal for achieving the desired objectives. The social and cultural objectives of government are a case in point. Although higher education obviously contributes to the creation of a literate and informed citizenry and to the passing on of our cultural heritage, it is clear that we primarily entrust these tasks to the lower stages of education where attendance is, for the most part, compulsory. Any additional promotion of these objectives which is thought to be necessary perhaps might be better effected by channelling more public monies into lower levels of education, rather than to the one-fifth of the 18-24 years age group which participates in higher education. As Edward F. Denison remarks, "Broad dispersion of these benefits seems more likely to enhance social welfare than heavy concentration on the academically talented."⁹ I am not, of course, suggesting that this is a role that the Federal Government should assume — clearly this is a field for which the provinces are solely responsible. However, the Federal Government's recent proposal to substitute per capita grants to the provinces for the current shared-cost program, if adopted, could remove a bias towards that kind of education which may be least effective in addressing these social and cultural objectives. The attainment of these social and economic objectives also can be pursued by subsidies directed to programs specifically affecting these areas, rather than by the present system of universal federal subsidies to post-secondary education.

One might even question whether the existing system of universal federal subsidies to higher education is the most appropriate method of supporting the sector in the functions where its claims on the public purse are perhaps strongest: that is, in the role of advancing knowledge, particularly by means of "basic research."

The feature which distinguishes "basic" from "applied" research is that its fruits are largely inappropriable by the party undertaking the research and accrue to the public at large. This "public good" characteristic of basic research, as well as its inherent riskiness and the impossibility of insuring against such risks, mean that an inadequate amount of such research may be carried out unless the process is financed by society. The argument in favour of public support of such research activities is also strengthened by the fact that these inappropriable advances in knowledge also advance the goal of economic growth.

Granted, therefore, that a strong case for public subsidies to basic research can be made, it has to be recognized that basic research can be fostered directly without supporting higher education in general: specific subsidies conceivably could be more effective. On the other hand, it has long been argued that some of these research activities are inseparable for much of higher education — especially graduate education. In my own view this is one of the most persuasive arguments for providing an underlying level of public subsidy to higher education,

But how much money should the public provide in order to obtain these social benefits from higher education? Other public goods, such as the goals of reducing income inequality among individuals and regions in Canada, also have strong claims for support by the Federal Government. Moreover, shifting funds from private hands to public hands through greater taxation and borrowing means fewer resources devoted to private purposes. Because resources are limited governments have to make painful choices among alternative "good things." The burden of my argument, however, is that there is no reason to regard the present mix of public and private finance for higher education as ideal. In particular, a number of studies conducted by or for provincial governments have tried to make the case that those who participate in higher education should bear a larger share of its costs. I have tried to set forth some of the basic assumptions on which that case seems to rest. Would further analysis serve to validate those assumptions? If the assumptions are in principle or practice untestable, then those who propose the change are asking Ministers to agree either that the gain in equity between users and non-users is great enough to more than offset any potential deterioration in the number or mix of users or to gamble that the latter unfavourable effects will not occur. Unfortunately, however, the odds are not known! Can Ministers take such a gamble in an area so sensitive as this?

Notes

1. Under the terms of the present cost-sharing arrangement for post-secondary expenditures, operating expenditures associated with high school education at the senior matriculation level are also eligible for federal contributions.
2. The Federal Government's main impact on student aid has been through the Canada Student Loans Plan. The Plan guarantees loans for students attending post-secondary institutions on a full-time basis, and the actual loans are advanced by chartered banks and other designated lenders on the basis of certificates of eligibility issued by provinces participating in the Plan. The Federal Government carries the cost of interest payments on these loans while the students continue full-time studies and for six months afterwards. (Such subsidies are included in non-loan aid to students in Chart 6.) The Province of Quebec does not participate in the Canada Student Loans Plan but receives an alternate payment from the Federal Government which is roughly equivalent to what would have been paid to Quebec students, plus interest costs, if the province had participated in the CSLP.
3. To quote E.G. West,

"Equality of opportunity in lower schooling apparently implies a policy of counteracting environmental handicaps confronting some children. Even this argument seems a little 'innocent' today when studies increasingly show that family influence, both genetic and cultural, play a dominant role in academic performance."

"Efficiency versus Equity in Higher Education," (unpublished manuscript, Carleton University, 1973), p. 21.
4. As is made clear by the information on the "social" rates of return to higher education in the Eighth Annual Review of the Economic Council of Canada. See *Design for Decision-Making*, (Ottawa: Information Canada, 1971), pp. 205-213.

5. This fact can be demonstrated rather simply. The usual estimates of so-called "social" rates of return from higher education calculate what the increase in private earnings *before taxes* associated with higher education represent as a yield on the total costs, both public and private. On the other hand, estimates of "private" rates of return from higher education calculate what the increases in private earnings *after taxes* associated with higher education represent as a yield on the private costs. Provided estimates of the social rates of return fall short of estimates of the private rates of return, it therefore follows that students do not repay in taxes the subsidies they receive while obtaining their education. The Economic Council's 8th Annual Report contains one of the most recent and comprehensive sets of estimates of the returns to higher education in Canada, and shows no case where the "social" rates of return exceed private yields. See Economic Council of Canada, 8th Annual Report, *Design for Decision-Making*, (Ottawa: Information Canada, 1971), pp. 205-213.
6. Stephen G. Peitchinis, *Financing Post-Secondary Education in Canada*, (Calgary: Council of Ministers of Education in Canada, 1971); *The Learning Society*, Report of the Commission on Post-Secondary Education in Ontario, (Toronto: Ministry of Government Services, Ontario, 1972).
7. There are those, of course, who argue that the logic of the goal of interpersonal equity implies higher transfers to those born with less than the average wit among us, and fewer transfers to post-secondary students:

"If poverty or inequality is considered a problem, one should recognize that the poorest among us, and the one most deserving of help from his fellow men, is the one whom nature forgot to endow with brains — and that the way to make it up to him is not to exclude him from school and tax him to pay part of the cost of educating his intellectually well-endowed and no-longer-poor peer group among the children of poor parents, but to give him money in lieu of the brains he lacks. Superior intelligence or skill is undoubtedly more economically useful than the absence of it, but discriminating in favour of it by fiscal subsidization will not necessarily produce a more democratic and poverty free or egalitarian society.

Harry Johnson, "The Alternatives Before Us," *Journal of Political Economy* (May-June, 1972: Special issue on Investment in Education: The Equity-Efficiency Quandary), 289.
8. Thus, according to Hansen and Weisbrod

"Our apparent scepticism about either the existence or significance of the widely discussed external benefits from higher education stems principally from the absence of any substantial body of evidence in support of them".

W. Lee Hansen and Burton A. Weisbrod, *Benefits, Costs and Finance of Public Higher Education*, (Chicago: Markham Publishing Company, 1969), p. 40.
9. "An Aspect of Inequality of Opportunity," *Journal of Political Economy*, 78 (September/October, 1970), 1201.