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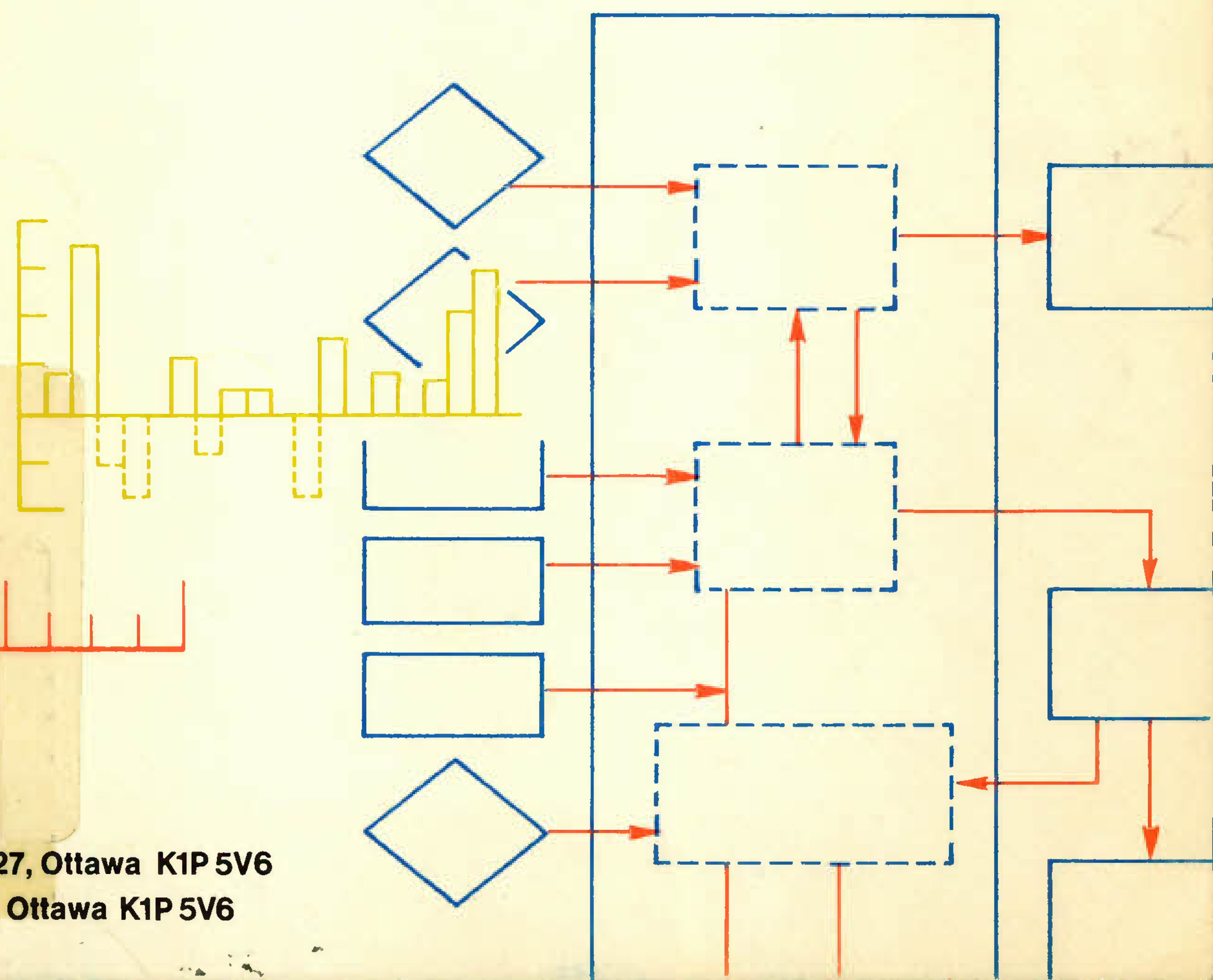

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DISCUSSION PAPER NO. 108

The Distribution of Benefits and Costs of Social Security in Canada 1971-1975

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ABSTRACT

An examination of the social security system in Canada for the years 1971, 1973, 1974, and 1975 reveals that the system, while progressive in all years with respect to total benefits paid to families, became less so over those years. The reasons for this trend were the increase in relative size of the Family and Youth Allowances and Unemployment Insurance programs, both of which were regressive in the distribution of benefits and became more so from 1971 to 1975.

The total costs of social security that could be directly allocated to families in the form of premiums or contributions, and income tax allocations, were progressive in all years examined. There were significant fluctuations in the distributions from year-to-year but no tendency to greater or lesser progressivity over the period. One of the most progressively redistributive elements of cost was the income tax allocation which decreased in size relative to benefits paid from 1971 to 1975. The distribution of benefits net of these direct costs showed a decline in progressivity over the period, although they remained progressive in all years.

While both the total benefits and total direct costs of social security increased from 1971 to 1975, total benefits grew at a much greater rate than direct costs allocated to families. As a result an increasing proportion of the total cost of social security was transmitted via indirect taxes and also through an increasing deficit.

Five social security programs were examined individually to determine who received the benefits from each program and who paid the costs. On a total benefits basis the Old Age Security, Guaranteed Income Supplement, and Canada and Quebec Pension Plan programs were found to be progressive and increasingly so from year-to-year, while the Unemployment Insurance and Family and Youth Allowances programs were regressive and increasingly so over the period. Benefits net of marginal costs were found to be progressive for all programs in all years except for the Family and Youth Allowances program in 1971.

Despite the progressivity of all programs, on a net basis, there appears to exist substantial possibility of reducing the cost of social security while increasing the progressivity of the system and the benefits paid to the least well off families. Alternative program structures have been suggested in the cases of the Family and Youth Allowances program and the Unemployment Insurance program that, where possible, consider the integration of the program benefits with the personal income tax system, and include family characteristics in the determination of benefits rather than simply the characteristics of the individual.

RESUME

Une étude du régime canadien de sécurité sociale au cours des années 1971, 1973, 1974, et 1975, révèle que bien que l'ensemble du régime ait été progressif au cours des quatre années, il l'est devenu moins. Les raisons de cette tendance sont l'accroissement de l'importance relative des programmes d'allocations aux familles et aux jeunes et des programmes d'assurance-chômage, qui tous deux étaient déjà régressifs en ce qui concerne la répartition des prestations et le sont devenus encore davantage de 1971 à 1975.

Les coûts totaux de la sécurité sociale qui pouvaient être attribués directement aux familles sous forme de primes ou cotisations, et de quote-part de l'impôt sur le revenu, étaient progressifs pour toutes les années étudiées. La répartition d'une année à l'autre enregistrait des fluctuations appréciables, mais on n'a pas décelé au cours de la période de tendance à une plus forte ou à une moins forte progressivité. L'un des éléments de coût les plus progressivement redistributifs était la quote-part de l'impôt sur le revenu dont l'importance a diminué par rapport aux prestations payées de 1971 à 1975. D'un autre côté, la répartition des prestations nettes de ces coûts directs, montrait un fléchissement de la progressivité au cours de la période en cause, même si elles sont demeurées progressives durant toutes les années.

Bien que de 1971 à 1975, l'ensemble des prestations et des coûts directs globaux de la sécurité sociale aient augmenté, les prestations totales se sont accrues à un taux beaucoup plus élevé que les coûts directs attribués aux familles. En conséquence, une proportion croissante du coût total de la sécurité sociale a été retransmise sous forme d'impôts indirects et d'un déficit grandissant.

Cinq programmes de sécurité sociale ont été examinés individuellement afin de déterminer qui reçoit les prestations de chaque programme et qui en paie le coût. Sur la base de l'ensemble des prestations, on a constaté que les programmes de sécurité de la vieillesse et du supplément de revenu garanti, ainsi que le Régime de pensions du Canada et le Régime de rentes du Québec étaient progressifs et le devenaient davantage d'une année à l'autre, alors que les programmes d'assurance-chômage et d'allocations aux familles et aux jeunes étaient régressifs et le devenaient de plus en plus au cours de la période. Les prestations, nettes des coûts marginaux, se sont avérées progressives pour tous les programmes et toutes les années, sauf pour le programme d'allocations aux familles et aux jeunes en 1971.

Malgré la progressivité de tous les programmes sur une base nette, il semble tout à fait possible de réduire le coût de la sécurité sociale tout en accroissant la progressivité

du régime et en augmentant les prestations versées aux familles les plus démunies. L'auteur propose des modalités alternatives aux programmes d'allocations aux familles et aux jeunes, et d'assurance-chômage. Il propose, lorsque c'est possible, que le versement des prestations soit intégré à l'impôt sur le revenu des particuliers, et que les caractéristiques familiales entrent dans le calcul des prestations, et non plus seulement celles des individus.

ACKNOWLEDGEMENTS

The author wishes to express his appreciation for the vital and substantial contribution to this paper of Gail Oja, Director, Consumer Income and Expenditure Division of Statistics Canada, and the members of the Division directly involved in this work for the better part of 1977. He would also like to express thanks to those members of the Council staff involved in the preparation of charts and tables and the typing of numerous drafts. While this paper has benefited from the helpful criticisms and suggestions of many, responsibility for shortcomings, errors, or omissions in concept and calculation remains solely that of the author.

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1.0 Introduction

One of the functions of government that is currently receiving increasing attention is that of income redistribution. The main instruments used by governments in redistribution at the individual and family levels are the programs that form the social security system. Included in these social security programs are: the Old Age Security Pension, the Guaranteed Income Supplement, the Canada and Quebec Pension Plans, Family and Youth Allowances, Veterans' Pensions, Unemployment Insurance, Workmen's Compensation and the Canada Assistance Program. Certain direct income transfers from government to persons, such as interest payments on government debt and salaries and pensions of government employees, are not considered as part of the social security system.

Social security transfers have increased from roughly $2 billion in 1961 to over $11 billion in 1975, an annual compound growth rate of approximately 13.5 per cent. The result has been an increase in social security transfers as a per cent of GNP from 4.9 per cent in 1961 to 7.1 per cent in 1975. Yet, the effectiveness of social security programs in redistributing income is questioned because of the increasing inequality[1] of the redistribution of total income[2] over the same period. While

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[1] *Thirteenth Annual Review*, Economic Council of Canada, Chapter 2, 1976.

[2] Income is used to designate funds received from all sources, while earnings, employment earnings, or employment income excludes dividends, interest, other investment income, government transfer payments, and private pension payments.

income redistribution is not the only objective, nor necessarily the primary objective of each individual social security program, it remains a fundamental objective of the social security system. It is this objective that this presentation will examine, on a more comprehensive basis than has been done before with respect to effects on economic families.[3]

Many people still associate social security with the old notion of welfare or government handouts. While welfare, or social assistance, still forms part of social security transfers, the system is much broader and more diversified as can be seen from Table 1.

Table 1

DISTRIBUTION OF SOCIAL SECURITY TRANSFERS
BY MAJOR PROGRAM, CANADA, 1975

	(Per cent)
Unemployment Insurance (UI)	26.1
Old Age Security (OAS)	21.6
Family and Youth Allowances (FYA)	16.3
Canada Assistance Plan (CAP)	14.0
Guaranteed Income Supplement (GIS)	7.0
Canada and Quebec Pension Plans (C/QPP)	6.0
Other[1]	9.0
Total Social Security Transfers	100.0

1. Other includes Workmen's Compensation, pensions and assistance to veterans and the indigenous population assistance to blind persons, assistance to disabled persons, and unemployment assistance. Many of these items commenced being integrated into the CAP program in 1966.

Source: Statistics Canada (National Accounts) and estimates by the Economic Council of Canada.

Most studies on income distribution treat only the distribution of benefits of social security. Yet, the impact upon families of social security programs is determined not only

3 When we speak of economic families, or simply families, we shall mean economic families and unattached individuals. For a definition see: Statistics Canada, Income Distributions by Size in Canada, Catalogue 13-207 (Annual), 1975, pp. 10-11.

by who receives the benefits, but also by who bears the costs. Some of the programs are contributory, and all the programs except C/QPP require major funding from government revenues, and hence from personal income tax. Of equal interest, then, should be the distribution of the costs that can be allocated to families.

This discussion paper presents the first results of a study of the distribution of benefits and costs[4] of social security in Canada for the years 1971, 1973, 1974, and 1975. The years examined cover a period during which there were major changes in the Family and Youth Allowances program, the Unemployment Insurance program, and the personal income tax system, and more minor changes in some of the other programs. It was also a period that included varying economic conditions; strong growth, a recession, double digit inflation, and rising unemployment.

In the next section the results for the total social security system are presented, while in subsequent sections we examine five individual programs.

2.0 The Total Social Security System

In presenting the results for the total social security system it is first necessary to point out that the costs that have been allocated to families do not represent the entire costs of social security to those families. The allocated costs represent the direct costs borne by families in the form of premiums and allocations of federal and provincial income taxes used to

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4 For details of how the costs were calculated see Appendix B. For details on the adjustments made to the benefits reported in the Surveys of Consumer Finances see Appendix C.

support social security programs.[5] Table 2 gives the size of the different cost components that have been allocated to families as a percentage of total benefits paid under social security for the years studied.

Table 2

SIZE DISTRIBUTION OF BENEFITS AND COSTS OF SOCIAL SECURITY AS A PER CENT OF TOTAL BENEFITS PAID, CANADA

	1971	1973	1974	1975
	(per cent)			
Total Benefits Paid to Families	100.00	100.00	100.00	100.00
Premiums Paid by Families[1] (C/QPP and UI)	17.0	16.1	17.7	16.7
Federal Income Tax Allocation[2]	41.2	38.0	30.9	28.5
Provincial Income Tax Allocation[2]	5.7	6.3	5.7	5.1
Total Direct Costs Paid by Families[3]	63.9	60.4	54.3	50.3

1. The premiums paid for C/QPP and UI have been calculated for each family using the program rules. Employer contributions are not included.
2. The income tax allocations have been calculated by applying the ratio of the respective government's expenditure on social security to total expenditure to the federal and provincial income taxes paid by the family. The ratios were calculated using data from Statistics Canada (Federal and Provincial Government Finance).
3. Total Direct Costs is the sum of the premiums and the income tax allocations.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

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5 It is not feasible to allocate the contributions from other sources (corporate taxes, sales taxes, etc.) to families due to the lack of data. Although it is relatively easy to calculate the employer contributions for the Canada and Quebec Pension Plans and for Unemployment Insurance, these have not been included in the costs allocated to families. While there is little doubt that employees bear a proportion of the employer contributions in lower wages or salaries, there is no evidence to indicate that these costs should be treated any differently than corporate taxes, or other overhead costs, and thus shared with shareholders and consumers through lower profits and higher prices respectively. In the following sections we make a different set of assumptions and shift the employer contributions entirely to employees through wages or salaries.

From Table 2 we see that the costs allocated to families relative to benefits received have declined significantly over the years studied. While both benefits and direct costs have increased, benefits have done so at a substantially greater rate due to: changes in the Family and Youth Allowances program and the Unemployment Insurance program; nearly universal indexation of social security benefits during rapid inflation; and an increasing unemployment rate. Direct costs paid by families, on the other hand, have increased much more slowly reflecting the lower rate of increase of the federal income tax allocation, due in part to the indexing of the personal income tax system for inflation. The result has been that indirect costs, which have not been allocated to families, have increased substantially.

An examination of government financial statistics reveals that the growth of government general expenditure over the period has outpaced the growth of government general revenue indicating the increasing use of deficit financing by government. Since social security growth has been substantially greater than the growth of total government expenditure it is reasonable to assume that an increasing proportion of the costs of social security is being shifted forward via the deficit. Considering only the indirect costs financed from government general revenue, since the growth of corporate income taxes is higher than that for most other forms of indirect taxes, it appears that a relatively greater percentage of social security costs is being transmitted through the overhead of the corporate sector. Without speculating on the stabilization properties of these trends one can say, that over the years included, the social security system has been one of the leading fields of government activity which has provided increasing direct benefits to families without reflecting the associated costs in as direct and immediate a manner.

The distribution of the total benefits paid to families and the total direct costs paid by families ordered by total income after tax is shown, by quintile, in Table 3.

Table 3

DISTRIBUTION OF TOTAL BENEFITS[1] AND TOTAL COSTS[1] OF SOCIAL SECURITY ACROSS ALL ECONOMIC FAMILIES ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE[2], CANADA

Quintile	1971 Total Benefits	1971 Total Costs	1973 Total Benefits	1973 Total Costs	1974 Total Benefits	1974 Total Costs	1975 Total Benefits	1975 Total Costs
	(per cent)							
First	25.1	0.9	24.4	1.0	24.0	1.0	23.4	0.8
Second	28.9	7.9	26.4	7.3	25.1	7.9	25.2	7.3
Third	17.5	16.5	17.4	16.0	17.1	16.9	18.2	16.4
Fourth	14.2	24.8	15.8	25.4	17.1	25.2	16.2	25.8
Fifth	14.3	49.9	16.0	50.3	16.7	49.0	17.0	49.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1. Both benefits and costs are on a before-tax basis. Total costs include only the direct costs.

2. All family units are divided into five quintiles each containing 20 per cent of the families. The first quintile contains the family units with the lowest total after-tax income, while the fifth quintile contains the families with the highest after-tax incomes.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

As can be seen from Table 3 the total social security benefits paid are distributed in a progressive manner in all years. The distributions become less progressive over time with the share of the lowest quintile constantly declining and that of the highest quintile constantly increasing. The direct costs allocated to families are also distributed progressively in all years, however, in this case there is no clear trend to greater or lesser progressivity over time even though there are significant year-to-year fluctuations.

The largest proportion of transfer payments are consistently paid to the second quintile. This is due to transfer payments being included in total income after tax used for ordering families. There are a substantial number of families (or unattached individuals) with no after-tax income -- for example students who do not qualify for transfer payments -- found in the first quintile. There are also a number of families with very little income other than transfer payments found in the second quintile. If transfer payments were excluded from total after-tax income when ordering economic families we would get the largest proportion of transfer payments being concentrated in the lowest quintile.

The net effect of the changes in the distribution of total benefits and total direct costs by quintile is given in Chart 1 where the net benefits[6] are plotted for each year by quintile. We can observe that the net benefits display a trend towards less progressivity reflecting the trend in total benefits, and the declining percentage of costs allocated to families. There appears to be a significant break between 1971 and the subsequent years, a period during which there were major reforms to the Unemployment Insurance Act and the Income Tax Act. The years subsequent to 1971 show a very slight drift

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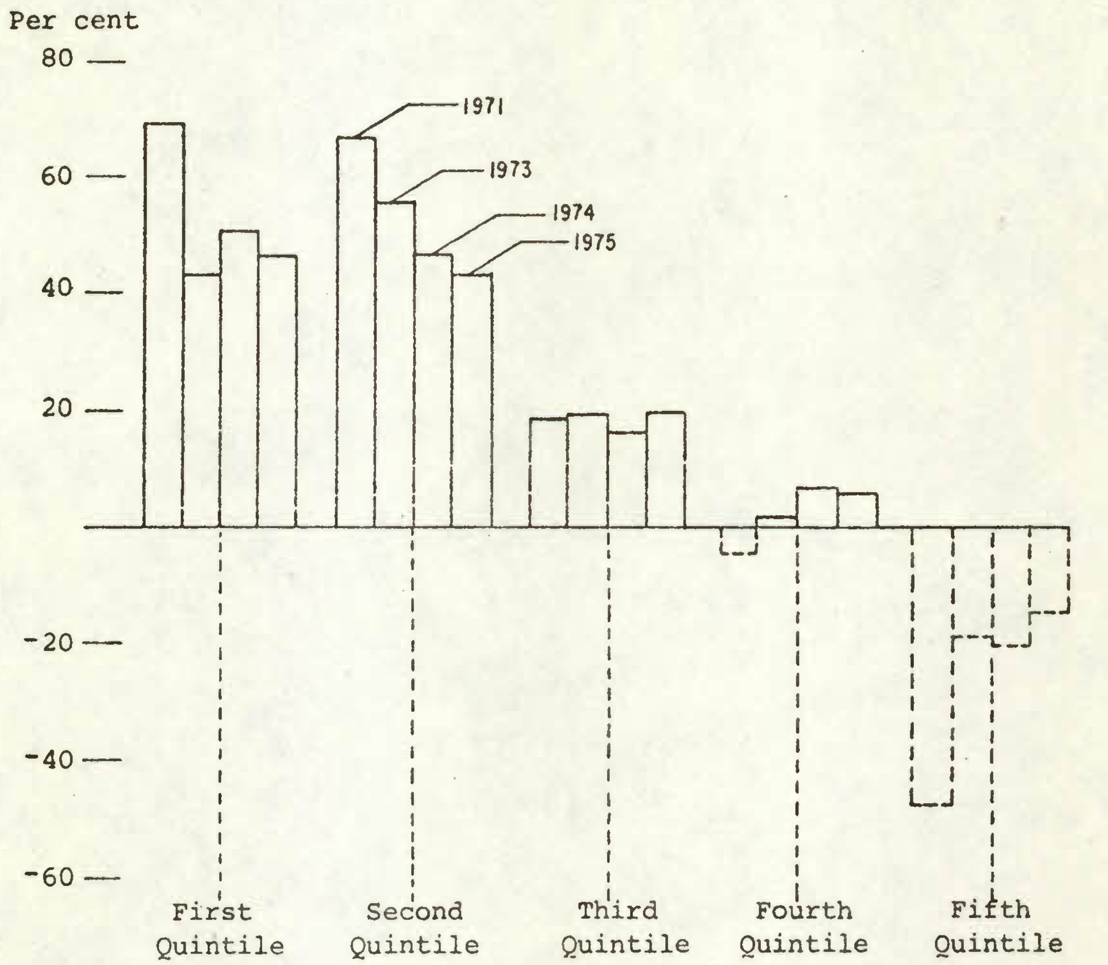
6 Net benefits are calculated as total benefits less total direct costs.

towards becoming less progressive. The net benefits of social security are nevertheless progressively distributed in all years studied.

Chart 1

DISTRIBUTION OF THE NET BENEFITS[1] OF SOCIAL SECURITY ACROSS ALL ECONOMIC FAMILIES ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE CANADA



1. Net benefits are calculated as total benefits less total direct costs. Negative net benefits indicate that the premiums and income tax allocations paid by the family exceed the benefits received by it.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

While Chart 1 tries to present a fair picture of the redistributive impact of social security from the viewpoint of families, it is also of interest to speculate on the redistributive properties had all costs been fully allocated to families. In order to do this let us assume that all indirect costs are allocated to families in proportion to their total income.[7] Since by this process we reduce total net benefits to zero, we present the results in the form of indexes of average net benefits per family by quintile. The calculations have been done only for the two end years, 1971 and 1975. The indexing has been done by setting each quintile

Table 4

INDEXES OF AVERAGE NET BENEFITS OF SOCIAL SECURITY PER FAMILY ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, IN CURRENT AND CONSTANT 1971 DOLLARS,[1] WHERE TOTAL COSTS ARE FULLY ALLOCATED[2], CANADA, 1971 AND 1975

	Direct Costs Only Allocated			Total Costs Allocated		
		1975			1975	
Quintile	1971	Current Dollars	Constant 1971 Dollars	1971	Current Dollars	Constant 1971 Dollars
First	100.00	195.53	141.18	100.00	188.75	136.28
Second	100.00	187.81	135.60	100.00	168.64	121.76
Third	100.00	295.78	213.56	100.00	407.55	294.26
Fourth	-100.00	412.44	297.79	-100.00	-180.74	-130.50
Fifth	-100.00	-94.64	-68.33	-100.00	-182.93	-132.08

1. The deflator used to obtain the constant 1971 values was the full Consumer Price Index in all cases.

2. The direct costs were allocated as in Table 3, while the indirect costs were allocated proportionally to income.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

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7 This assumption ignores any intertemporal shifting of costs, or any shifting of costs to the foreign sector. As it stands, the assumption is probably too progressive, that is, the lower quintiles should be paying more, and the upper quintiles should be paying less.

value in 1971 to the base value of 100. In this form we are not able to see the relative levels of benefits among quintiles; however, the growth rates of average net benefits are given directly.

When only the direct costs are allocated, the result that every quintile is becoming better off is a reflection of the decreasing direct cost coverage of benefits with the resulting real growth of total net benefits being approximately 107 per cent. The decreasing progressivity of the system is clearly indicated by the highest growth rates being found in the third and fourth quintiles. When total costs are allocated we see that the upper quintiles are now paying more; however, the net benefits are growing less rapidly in the lower quintiles and more rapidly in the third quintile than was the case before the indirect costs were allocated. Here again the trend from 1971 to 1975 is towards less progressivity.

In the sections that follow we shall examine five social security programs individually, concentrating on who receives the benefits of each program and who pays the costs. The evolution of each program will be traced and its redistributive impact will be evaluated. We shall try to isolate the reasons for the declining progressivity of the social security system and, in the case of certain programs, suggest some changes in structure that would increase the progressivity of the program while neither costing more nor lowering the benefits received by the least well off families.

3.0 An Analysis of Five Individual Social Security Programs[8]

The programs evaluated in this section include Old Age Security, the Guaranteed Income Supplement, Family and Youth Allowances, the Canada and Quebec Pension Plans, and Unemployment Insurance. Together these five programs represent slightly over 75 per cent of the total social security transfers in the four years analysed.

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8 The type of analysis we have done is essentially a marginal analysis in which we show the impact of a particular program on economic families relative to a state where the program does not exist. The nature of marginal analysis requires that we consider all direct costs and benefits that affect families due solely to the existence of the program. In the marginal analysis the benefits considered are the total before-tax benefits for the program under consideration. The costs that are included vary from program to program but will include some or all of the following types of costs. If the benefits paid under the program are taxable, then one of the costs is the income tax paid on those benefits. If the plan is contributory, then the before-tax contributions paid under the program are another cost. If, however, the contributions are tax deductible, then an off-set to the cost of the contributions is the income tax saving due to the deductibility of contributions. In the marginal analysis we assume that the entire cost of the employer contribution is shifted to employees' wages or salaries. If, however, employees were to receive these contributions in wages or salaries they would become taxable. Thus, the income tax payable on these shifted employer contributions is deducted from the contributions to end with the cost to employees of employer contributions. The 100 per cent shifting assumption on employer contributions is only one of many that could be made; however, it is the assumption that leaves employers in the same cost position. The last type of cost allocated is an income tax allocation from government general revenues. The ratio of income tax support for a program is calculated as the net deficit of the program to government net general expenditure (specific revenue items have been netted out of the expenditure figures). This ratio is then applied to personal income taxes adjusted by taxes paid on benefits, and tax savings due to contribution deductibility, to reflect the taxes that would have been paid in the absence of the program. All other costs are assumed not to change and are independent of the existence of a particular program.

3.1 Old Age Security

In 1951, the Old Age Security Act was passed and became effective in January 1952. The act provided flat-rate benefits for everyone who met age and residency requirements. Over the years, both the age and residency requirements have been modified so that at present the age requirement is 65 years of age, and the residency requirement is relatively flexible.

In 1975 there were approximately 1.9 million Old Age Security pensioners, representing about 8 per cent of the total population. This was a growth from 640 thousand pensioners in 1952, representing 4.4 per cent of the population. The increase has been fairly gradual, steepening in the years 1966 to 1970, the period during which the qualification age was lowered by one year every year from 70 years to 65 years.

The benefit rates have also undergone significant changes since 1952. During the period since 1971 benefits have gone from being adjusted annually by changes in the Consumer Price Index, to being adjusted quarterly. The annual benefit rates for the years covered by the analysis have gone from $960 in 1971 to $1,496 in 1975. The total benefits paid under OAS have gone from $1.6 billion in the 1970-71 fiscal year to $2.6 billion in the 1974-75 fiscal year.

The distribution of the benefit and cost components as a percentage of total OAS benefits paid is given in Table 5.

Table 5

SIZE DISTRIBUTION OF BENEFITS AND COSTS AS A PER CENT OF TOTAL BEFORE-TAX BENEFITS PAID FOR OLD AGE SECURITY, CANADA

	1971	1973	1974	1975
	(per cent)			
Total Before-Tax Benefits Paid to Families	100.00	100.00	100.00	100.00
Total After-Tax Benefits Paid to Families	93.33	94.19	93.74	95.78
Income Tax Paid on Benefits[1]	6.67	5.81	6.26	4.22
Income Tax Allocation[2]	45.37	43.18	41.21	36.37
Total Costs Paid by Families[3]	52.04	48.99	47.47	40.59

1. The income tax paid on benefits is also the marginal income tax rate averaged across all individuals who receive OAS pensions.
2. The income tax allocation is entirely from federal income tax.
3. Total costs is the sum of the income tax paid on benefits and the income tax allocation.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

The items include the income taxes paid on the benefits, the after-tax benefit, a general income tax allocation from government general revenue, and the total costs aggregated for the entire population. In examining Table 5, the low income tax paid on benefits leads one to believe that most of the benefits paid under OAS go to low income individuals, which is not necessarily the same as saying that they go to low income economic families since income taxes are paid on an individual basis.[9] The decline in the income tax paid on benefits from

[9] One must be aware that, in the case of a non-taxpayer receiving an OAS pension and no other income, whose spouse has a taxable income, the OAS pension is effectively transferred to the taxpaying spouse by a reduction in the married exemption (except for the standard amount of income allowed all persons without affecting the spouses exemption). However, where the person receiving the OAS pension is taxable at a low rate the benefit is taxable at that low rate regardless of family income, and in many cases only a portion of the OAS benefit is taxable due to the remainder being sheltered by exemptions. What is not reflected in the calculations is that, for a family with one spouse receiving a high income and the other spouse receiving an OAS pension fully taxed at a low marginal rate, the family has lost the value of the married exemption at the higher marginal tax rate.

1971 to 1975 is what one would expect to see when an indexed income tax system is applied to incomes that are fixed or only partially indexed. While OAS pensions have been indexed, other income received by families whose head is 65 years of age or older has been eroded by inflation, so that in 1975 these families representing a larger proportion of all families received a smaller proportion of the total after-tax income than in 1971.

The quintile distribution of total before-tax benefits and total costs of OAS on an income after tax basis is given in Table 6.

Table 6

DISTRIBUTION OF TOTAL BEFORE-TAX BENEFITS AND TOTAL COSTS OF OLD AGE SECURITY PENSIONS ACROSS ALL ECONOMIC FAMILIES ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, CANADA

	1971		1973		1974		1975	
Quintile	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs
	(per cent)							
First	34.0	1.6	37.2	0.8	37.6	0.5	38.0	0.2
Second	32.6	8.7	30.2	7.7	31.7	8.3	31.3	6.2
Third	12.9	15.3	13.8	15.3	11.8	15.5	13.6	15.5
Fourth	9.5	23.0	9.0	23.9	9.2	23.2	8.2	24.3
Fifth	11.0	51.4	9.8	52.3	9.7	52.5	8.9	53.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

Table 6 indicates that the OAS program is progressive in all years both in benefits and costs and is becoming more so. The lowest quintile has received a consistently larger share of the total benefits and paid a declining proportion of the costs. At the same time the highest quintile has paid an increasing share of the costs while receiving a declining proportion of the total benefits. This has not been caused by any major changes in the program, although quarterly indexing during high inflation has helped, but rather by the greater concentration of families whose head is 65 years of age or older in the lowest quintiles.

A more detailed examination of the most recent year reveals the following effects of OAS pensions on economic families. In 1975, families whose head was aged 65 years or older comprised 17 per cent of all families and collected 91.9 per cent of the before-tax OAS pension benefits. The remaining 8.1 per cent of before-tax benefits were spread among the other 83 per cent of all families. Families whose head was 65 years or older earned 3.5 per cent of total earnings and 9.3 per cent of total income. The resulting family averages for this group in 1975 were: average before-tax earnings of $2,386; average before-tax income of $7,533; and, total before-tax OAS benefits of $1,861 per family. Thus, on average, OAS pensions contributed 25 per cent of the total before-tax income of a family, and without the pension benefits such a family would have had a before-tax income of only $5,672. This can hardly be considered a princely sum and does indicate the need of the OAS pension. The average family OAS benefit of $1,861 compared to the individual annual benefit of $1,496 indicates an average of more than one pensioner per family in families whose head was 65 years or older in 1975.

Due to the universal nature of Old Age Security, individuals who receive OAS pensions cannot be considered to be homogeneous with respect to income. Occasionally it is suggested that social security costs be reduced by eliminating OAS pensions for upper income families; in effect introducing a means test as exists in the Guaranteed Income Supplement. To provide a rough measure of how the benefits were split between upper and lower income families whose head was 65 years or older in 1975 such families were split into two groups; those whose family income after tax was less than $10,000, and those $10,000 and above. This provided a four-to-one split of lower-to-higher income families.

First, let us consider the lower income group of the two representing 13.6 per cent of all families. In total, these families received 0.7 per cent of all earnings before tax, 4.6 per cent of all income before tax, and 72.1 per cent of all OAS benefits before tax. The resulting family averages were $564 for earnings, $4,684 for income, and $1,827 for OAS benefits. In this group, the OAS benefit represents nearly 40 per cent of total income. The average OAS benefit received is lower than the average for both groups together reflecting the higher concentration of unattached Old Age Security pensioners in this group.

The upper income group represented 3.4 per cent of all families in 1975. In total, this group received 2.8 per cent of all earnings before tax, 4.7 of all income before tax, and 19.8 per cent of all OAS benefits before tax. The family averages were $9,672 for earnings, $18,926 for income, and $2,000 for OAS benefits. The higher OAS family benefit in this group reflects a higher than average number of pensioners per family, while the average earnings indicate substantial employment within the group. The OAS benefit represents approximately 10 per cent of total income and one can legitimately speculate upon how badly the OAS pension is needed by families within this group. It should be pointed out that a number of families are in all probability only temporarily in this group due to the head having reached age 65 and not having retired, or the spouse not having retired,[10] while others are in this group due to the presence of other earners in the family.

Table 7

DISTRIBUTIONS AND FAMILY AVERAGES OF EARNINGS, INCOME, AND OLD AGE SECURITY BENEFITS AMONG ECONOMIC FAMILIES WHOSE HEAD IS AGED 65 YEARS OR OLDER, CANADA, 1975

	Head Aged 65 Years Or Older And		Head Aged 65 Years Or Older Total
	Income After Tax Less Than $10,000	Income After Tax Equal To Or Greater Than $10,000	
		(per cent)	
Proportion of all Families	13.6	3.4	17.0
Proportion of Before-Tax Earnings	0.7	2.8	3.5
Proportion of Before-Tax Income	4.6	4.7	9.3
Proportion of OAS Before-Tax Benefits	72.1	19.8	91.9
		(dollars)	
Average Before-Tax Earnings	564	9,672	2,386
Average Before-Tax Income	4,684	18,926	7,533
Average Before-Tax OAS Benefits	1,827	2,000	1,861
Average OAS Net Benefits[1]	1,793	1,567	1,748

1. Net Benefits are given by total before-tax benefits less total costs.

Source: Statistics Canada (Survey of Consumer Finances) and estimates by the Economic Council of Canada.

While the benefits paid all pensioners are at the same rate, the average family benefit on a before-tax basis is higher for the upper income group than the lower income

10 The cost of the OAS program, however, is based on the size of the group and not the turnover of individual families. As the population ages we might expect the size of this particular group to increase.

group due strictly to the greater number of pensioners per family in the upper group. The costs paid by families in the upper income group are also larger, and on a net benefit basis it is families in the lower group that receive the highest average net benefits.

Although there are clear indications in Table 7 that it would be desirable to provide greater benefits to families at lower income levels, to do so without raising the net cost of the program requires either a reduction of benefits or an increase in costs to upper income families. Before examining any modifications to the current OAS program one other universal benefit available to persons aged 65 years or older should be examined -- the age exemption allowed in the calculation of taxable income. The age exemption was modified in the general revision of the Income Tax Act both in age qualification and in amount. In 1971 only persons aged 70 years or older were entitled to a $500 exemption. In 1973 the age qualification was 65 years or older and the exemption was raised to $1,000. In 1974 and 1975 the age qualification remained at 65 years but the exemption level was indexed so that in 1975 it was $1,174. More importantly, in 1975 the unused portion of the age exemption became transferable between spouses thus imparting value to some previously unusable exemptions. This exemption, as with other exemptions and deductions, tends to favour high income families relative to lower income families, and taken by itself is regressive.

One of the simplest ways of increasing benefits to low income pensioners would be to eliminate the age exemption for all persons receiving OAS pensions and to use the increased taxes to increase the level of OAS benefits. In 1975, for example, OAS benefits before tax could be increased by approximately 3.5 per cent without changing the overall net cost of the program by eliminating the age exemption. Pensioners taxed at a marginal rate below the average for all pensioners, for whom the exemption has little value, would benefit, while pensioners whose marginal tax rate was greater than the average would receive less on a net basis. That the results of such a change are less than spectacular is an indication that the program is reasonably effective as it stands. Other than an increase in the progressivity of the program, such a change would also mean a higher level of total transfers and higher taxes for OAS pensioners. To counteract this greater involvement of the government sector a tax credit that declined with increasing taxable income could be introduced in lieu of the OAS pension to encourage high income pensioners out of the program. Such a change would be mainly cosmetic, trading lower transfer payments for lower taxes on the part of government and individuals.

Further attempts to reduce the net benefits going to upper income families, to either increase benefits for lower income families or reduce net costs of the program, most likely would be more effective if concentrated directly on the benefits paid to families. Some methods of doing this that come to mind are to institute a family means test if this were considered acceptable, or through the means of the income tax system.[11] The most straight forward manner of accomplishing the same results, however, would be to de-emphasize the entire program relative to the companion Guaranteed Income Supplement by suspending the automatic indexing feature of OAS, and shifting a proportion of the resources thus saved to the Guaranteed Income Supplement, which is geared to family income, until a new balance was obtained.

When contemplating such changes it must be kept in mind that the immediate effects of such changes would be felt by individuals and families with little flexibility. The secondary effects on the behaviour of all families with respect to saving over the life-cycle and the retirement decision are, at present, matters of speculation rather than estimation. Yet, in the medium to long term, the secondary effects could be substantial.

3.2 Guaranteed Income Supplement

The Guaranteed Income Supplement program became operative in January 1967. It was established by an amendment to the Old Age Security Act and the two programs together are intended to guarantee that the income of pensioners from all sources will not fall below specified levels. The two programs are being

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11 The personal income tax system, used in this context, suffers from the deficiency of considering family relationships only when one of the spouses has very little income. The importance of this characteristic is underlined by the fact that one-half of the OAS transfers go to two-person families, most of whom are married couples with a wide spectrum of income splitting characteristics.

presented separately for two reasons: first, the benefits paid under GIS are non-taxable while those paid under OAS are taxable; second, GIS is a program applicable only to those below a certain income level, while OAS applies to all persons 65 years and over who meet the residency requirements.

In determining if a pensioner qualifies for GIS benefits, the government considers the income of both pensioner and spouse. If the income received exceeds the OAS pension, then the supplement is reduced by $1.00 for every full $2.00 of excess. Since 1971, the benefit rate has been slightly higher for single pensioners and pensioners in one-pension families than for husbands and wives both receiving OAS pensions. The benefit levels are indexed and have been since April 1971. At that time the indexation was tied to the Consumer Price Index with a 2 per cent ceiling. In April 1973 the indexing was changed to allow annual escalation by the full increase in the CPI, and in October 1973 the indexing was changed from annually to a quarterly basis. The monthly benefits paid have increased from $33.61 per pensioner at the full rate in 1971 to $84.21 per single pensioner or $149.58 for a two-pensioner family at the full rate in January of 1975. The total benefits paid under GIS have increased from $526 million in 1971-72 to $837 million in fiscal 1974-75.

The number of pensioners receiving partial or full supplementation has increased from 860,000 in 1971 to 1,082,000 in 1975. This represents an increase in the number of pensioners receiving supplementation from roughly 50 per cent in 1971 to over 56 per cent in 1975. The number of pensioners receiving full supplementation has dropped but has been more than offset by the increase in the number receiving partial supplementation.

The analysis of GIS is relatively simple since the only cost item involved is an allocation of federal income tax. Table 8 gives the quintile distribution of benefits and costs to families ordered on an income after-tax basis. The distribution of benefits is progressive in all years, which is what should be expected of an income-tested program, and increasingly progressive from 1971 to 1974 with a reversal from 1974 to 1975. The distribution of costs is progressive in all years, and increasingly progressive throughout the entire period 1971 to 1975 with the exception of 1974. An interesting feature of this table is the quintile distribution of total costs which, in this case, is the distribution of federal income tax since the only cost is an income tax allocation. These distributions give an indication of the progressive redistributive strength of the personal income tax system with respect to allocations of tax to the different social security programs. It can also be noted that GIS is more progressively redistributive than OAS in both costs and benefits.

Table 8

DISTRIBUTION OF TOTAL BENEFITS AND TOTAL COSTS OF
THE GUARANTEED INCOME SUPPLEMENT ACROSS ALL ECONOMIC FAMILIES
ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, CANADA

	1971		1973		1974		1975	
Quintile	Total Benefits	Total Costs	Total Benefits	Total Costs	Total Benefits	Total Costs	Total Benefits	Total Costs
				(per cent)				
First	43.6	0.5	46.5	0.4	49.7	0.3	47.4	0.2
Second	34.4	5.9	31.2	5.1	32.0	5.4	33.1	4.8
Third	8.2	14.4	8.8	13.8	5.9	14.4	7.1	13.9
Fourth	6.6	24.0	6.6	24.8	7.4	24.1	5.6	24.8
Fifth	7.2	55.2	6.9	55.9	5.0	55.8	6.8	56.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

There are a number of factors underlying the changes in the progressivity of GIS benefits as given in Table 8. From 1971 to 1975 an increasing proportion of total benefits have gone to unattached individuals, the change being from 31.9 per cent in 1971 to 39.0 per cent in 1975. The proportion of benefits paid to unattached individuals in the lowest quintile has increased from 30.6 per cent in 1971 to 37.2 per cent in 1975. Two-person families, consisting mainly of married couples, have received slightly above 40.0 per cent of all GIS benefits in all years. There is no apparent trend for this group to receive more or fewer benefits, however, there is a declining percentage of benefits being paid to the lowest quintile, from 11.6 per cent in 1971 to 9.4 per cent in 1975. This has been the result of having indexed GIS and OAS benefits increasing more rapidly than other income of lower income families. The remainder of the GIS benefits have gone to families with three or more persons. In this group are pensioners living with married sons or daughters, or unmarried sons or daughters living with a retired couple, and so on. The benefits paid to this group have declined from 25.9 per cent in 1971 to 20.4 per cent in 1974, before increasing slightly to 20.6 per cent in 1975. Since GIS benefits are determined by the income of husband and wife, and not by family income, there are very few families in this group in the lowest quintile. Only 1.4 per cent of GIS benefits paid to families of three or more persons in 1971 went to the lowest quintile, and 0.8 per cent in 1975. The GIS benefits paid to the upper quintiles, however, went almost exclusively to this type of family.

3.3 Family And Youth Allowances

The Family and Youth Allowances program underwent significant changes in 1973 when a new Act was proclaimed and became effective in January 1974. Under the old Act the age of eligibility for Family Allowances was less than 16 years of age. A Youth Allowances program paid benefits for dependent children 16 and 17 years of age, except in Quebec which had its own Schooling Allowances program. The benefits paid were not taxed, nor indexed, and increased only occasionally. The rate structure depended on the age of the child and initially, prior to 1949, on the number of children in the family. In October 1973 the rate was changed to a flat rate for all children until the termination of the old Act in December 1973.

Under the new Act of 1973 allowances are paid on behalf of all dependent children less than 18 years of age. The benefits increased substantially and became taxable.

At the same time they were indexed to increase annually by the full increment in the Consumer Price Index. The taxation of benefits was implemented by making them taxable benefits for the parent who claimed the tax exemption for the child, thus ensuring that in all but a few cases they would be taxed at the highest individual marginal rate within the family. The rate structure remained a flat amount to all children, however, provinces were allowed to vary payments to their requirements, based upon age and number of children, with prior agreement of the federal government, and provided the average payment remained the same as the uniform federal rate. Alberta varied its allowance payments by age of child, while Quebec varied its payments by age of child and number of children.

Under the new Act provinces were also allowed to pay supplements to the new Family Allowances. Supplements, which are non-taxable, were paid by Prince Edward Island, and Quebec, commencing in 1974.

In 1971 the number of families receiving Family and Youth Allowances was approximately 3.5 million on behalf of slightly more than 7.5 million children, while in 1975, 3.4 million families received benefits on behalf of 7.3 million children, a slight decline. The total benefits paid in 1971-72 fiscal year amounted to $639.2 million and increased to $1,798.7 million in the 1974-75 fiscal year, reflecting the substantial increase in benefit rates over the period. The percentage of costs to total benefits received is given in Table 9.

Table 9

SIZE DISTRIBUTION OF BENEFITS AND COSTS AS A PER CENT OF TOTAL BEFORE-TAX BENEFITS PAID FOR FAMILY AND YOUTH ALLOWANCES, CANADA

	(per cent)			
	1971	1973	1974	1975
Total Before-Tax Benefits Paid to Families	100.00	100.00	100.00	100.00
Total After-Tax Benefits Paid to Families	100.00	100.00	71.28	71.65
Income Tax Paid on Benefits[1]	0	0	28.72	28.35
Income Tax Allocation	37.07[3]	50.61[3]	39.91	35.02
Total Costs Paid by Families[2]	37.07[3]	50.61[3]	68.63	63.37

1. Benefits were not taxable in 1971 and 1973. In 1974 and 1975 the rate represents the marginal income tax rate averaged across all individuals who declared benefits as taxable income. The change in the level of the income tax exemption for dependent children under 16 years to those 16 years and over exists in every year and is not considered part of the FYA program.

2. Total costs includes the income tax paid on benefits and the tax allocation.

3. The discrepancy between the income tax allocation in 1971 and 1973 appears rather large. This discrepancy has not been reconciled. Only a small proportion might be attributable to the change in the reporting level of benefits as given in Table C1.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

In Table 9 we see that the income tax paid on benefits in 1974 and 1975 is quite high, in fact, it is the highest benefits tax rate for any of the social security programs evaluated. This is the result of two characteristics of the program: first, benefits are paid to families with children irrespective of income and excludes all those without children such as low income pensioner families; second, income taxes on benefits are paid, generally, at the highest marginal rate in the family. The taxability of benefits commencing in 1974 has increased the total costs paid by families relative to before-tax benefits received, and has shifted the incidence of total costs since only families receiving benefits pay tax on benefits, while every family who pays taxes contributes via the income tax allocation. This shift in incidence of total cost can be seen in Table 10 where the total before-tax benefits and total costs of Family and Youth Allowances is given, by quintile, on a total income after-tax ordering.

Table 10

DISTRIBUTION OF TOTAL BEFORE-TAX BENEFITS AND TOTAL COSTS OF FAMILY AND YOUTH ALLOWANCES ACROSS ALL ECONOMIC FAMILIES ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, CANADA

Quintile	1971 Total Before-Tax Benefits	1971 Total Costs	1973 Total Before-Tax Benefits	1973 Total Costs	1974 Total Before-Tax Benefits	1974 Total Costs	1975 Total Before-Tax Benefits	1975 Total Costs
	(per cent)							
First	6.8	0.5	5.7	0.4	5.5	0.2	5.7	0.1
Second	15.0	5.9	14.1	5.1	12.0	5.6	12.6	5.1
Third	23.7	14.4	23.3	13.8	22.1	16.9	21.9	17.0
Fourth	26.4	24.0	27.5	24.8	28.8	27.2	27.6	27.6
Fifth	28.1	55.2	29.4	55.9	31.6	50.1	32.2	50.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

The benefits before tax are distributed regressively in all four years, and are more regressive in the last two years under the new Act than they were in the first two years under the old Act. Total costs are progressively distributed in all years; however, in 1974 and 1975 costs borne by the middle quintiles have increased and those of the lower and upper quintiles have decreased making the total cost distributions in these years less progressive than in 1971 and 1973. This has been the direct result of including the income tax paid on benefits in total costs. The income tax paid on benefits is less progressively distributed than the income tax allocation.

The resulting impact on economic families of the increasing regressivity of total benefits and decreasing progressivity of total costs can be summarized by net benefits. In 1971 the net benefits were mildly regressive. In 1973, although benefits were more regressive, costs were slightly more progressive and net benefits had become mildly progressive due principally to the increase in total costs relative to total benefits as indicated in Table 9. In 1974 and 1975 net benefits were clearly progressive, even though both components were moving perversely, due to the substantial relative increase of total costs as a result of benefits becoming taxable. Despite the increased progressiveness of this program it remains the least progressive of the five programs evaluated in this section.

The Family and Youth Allowances program prior to the new Act was criticized principally because of its regressive nature. Under the new Act total transfers have increased dramatically and remained regressive, however, the net benefits are now progressive. The criticism directed at the size of the program is somewhat specious in that a good proportion of the benefits are now recovered through taxation of benefits. The alternative of increasing progressivity of the program by tying the size of benefit to family income would have had the advantage of lower total transfers under the program, but would have been an administrative nightmare given the monthly payments and frequency of adjustment of family income. Given the desire to provide support for low income families with children, and the concentration of families with children in the middle and upper income groups, the alternative chosen was not unreasonable although it gives an inflated impression of the increase in government spending.

A criticism that does merit more attention is that the Family and Youth Allowances program has not been considered as only a part of a total package dealing with support for families with children; the other part of the package being the personal income tax exemptions claimed by taxpayers on behalf of dependent children. In fact, the governing legislation does consider both components together by making the individual who claims the deduction also declare the FYA benefit. That it is the higher income parent who does both is not a requirement of the legislation but rather a reflection of the financial incentive to the family to do so. The redistributive effect of the Family and Youth Allowances program and the income tax exemption for dependent children together is regressive.[12]

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[12] Consider the effect of both together in 1975. The income tax exemption is $352 per child up to age 16 and $646 for children aged 16 and 17 provided the income of the child does not exceed stipulated amounts. In 1975 the before-tax FYA benefit was $265 per child (calculated at the uniform federal rate). Thus, we may consider the income tax exemption as sheltering the entire FYA benefit from tax, and providing a shelter for some additional income. Assuming that 16 and 17-year-old children are distributed among families in the same proportion as all children allows us to infer the distribution of the additional income sheltered from tax (additional to the FYA benefit) among economic families as being identical to the distribution of the before-tax FYA benefits. The value to a family of this additional sheltered income, in the form of income tax savings, is proportional to the marginal income tax rate and is therefore distributed identically to the income tax paid on benefits as discussed earlier. This additional benefit to families is distributed more regressively than total before-tax benefits because of the dependence upon the marginal income tax rate. To summarize: in considering both the FYA program and the tax exemption for dependent children together we have added a small but regressive element to total benefits (as given in Table 10); and, removed a large and progressive element from total costs. The resulting net benefits are then regressively distributed.

One remedy for the problem of having the combined Family and Youth Allowances program and income tax exemption being regressive is to drop the income tax exemption for dependent children on whose behalf Family and Youth Allowances are received. This in itself is not sufficient; it would also be necessary to amend the governing legislation to ensure that the FYA benefits were declared as income by the parent with the higher income. The net effect would be much the same as initially analysed for the FYA program itself except that families receiving benefits would be paying higher income taxes because of the loss of the exemption. To compensate those families in the lowest income tax bracket[13] fully would have required an increase in before-tax FYA benefits of slightly less than 15 per cent in 1975. The increase in tax revenue as a percentage of total before-tax benefits would have been approximately 40 per cent leaving higher government net tax revenue. The distributional impact across all economic families would be affected by the increase in regressively distributed benefits, and by an increase in the progressively distributed income tax allocation. In addition, the progressivity of the income tax allocation would increase owing to the increased taxes paid by families in the middle and upper income groups where the concentration of children occurs. The net result is not unambiguous. The increased involvement of the government sector through higher transfer payments and higher taxes could be reversed by offering an income tax credit that

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[13] The marginal income tax rate used was 9 per cent. All those who paid no tax would have been better off.

declined with increasing taxable income to middle and upper income families in lieu of FYA benefits. To summarize, under such a system the after-tax benefits paid to a family would decline with increasing income, and the families, with children, in the lowest income groups would remain in essentially the same after-tax position.

Despite the benefits realized by dropping the income tax exemption for dependent children covered under the Family and Youth Allowances program, the overall system leaves the uncomfortable impression of swatting flies with a sledge hammer. It is effective in providing some support for low income families with children but too massive for the results.

3.4 Canada and Quebec Pension Plans

The Canada and Quebec Pension Plans together constitute a social insurance program providing retirement, survivors' and disability pensions. Contributions and benefits are both subject to annual adjustments, the former for changes in wage levels, and the latter for increases in consumer prices, initially with a 2 per cent ceiling but unrestricted as of January 1974.

The plans were established in 1965, and since then have covered almost the entire labour force on a compulsory basis. Contributions began in January 1966. Retirement pensions were first paid in January 1967, survivors' pensions and benefits in February 1968, and disability benefits in February 1970.

Contributors are those between the ages of 18 and 70 who earn more than the basic exemption. Contributions are based on earnings from employment and self-employment up to an annual maximum pensionable earnings level, adjusted annually to reflect changes in average earnings levels. The rate of contribution for employees, 1.8 per cent, is matched by their employers, while the self-employed contribute at 3.6 per cent of their annual pensionable earnings.

Retirement pensions are payable on application to all eligible contributors. The amount is based on the contributor's average monthly pensionable earnings and the number of years over which contributions were made. The full pension has been payable only from January 1976. The two plans have provided a transition period since January 1967, when retirement pensions were first paid at a level of 2.5 per cent of adjusted pensionable earnings;[14] after that, the entitlement was raised by 2.5 percentage points each year and reached 25.0 per cent of adjusted pensionable earnings in 1976. The minimum age at which pensions were payable was reduced from 68 in 1967 to 65 by 1970.

In 1971, 331,486 persons received pensions or benefits from one of the two plans. This represented an equivalent of about 3.8 per cent of the labour force. In 1975, 821,572

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[14] The pensionable earnings for each year are adjusted so that they bear the same relationship to the average of the pensionable earning ceiling in force when the pension is paid and those of the preceding two years, as they bore to the upper limit in force when the income was actually received.

persons, or an equivalent of 8.2 per cent of the labour force, received benefits. The total benefits paid in the 1971-72 fiscal year amounted to $189.6 million, while in fiscal 1974-75 the amount was $530.0 million. On the contributions side, in 1971, there were 8,808,000 contributors and a total of $1,112 million in employee and employer contributions. By 1974 the contributions were approximately $1,642 million for both plans.

As can be seen from the above figures, contributions, at present, exceed benefits paid and there is a significant contribution to the pension plans funds. This is true for both plans. While much of the current controversy about these pension plans centers on questions of indexing and funding, this presentation shall be concerned mainly with the effects of the plans on income distribution across families in the four years studied. The existence of funds to support these programs means that no money is transferred from government general revenues to cover any of the costs of the program, and hence no income tax allocation is made in respect of this program. The distribution of costs and benefits is given in Table 11.

It can be seen from Table 11 that the marginal tax rate on benefits paid is substantially higher than the equivalent rate for OAS, which indicates that benefits under these two programs go more to higher income pensioners. The rate, however, appears to be declining as the plans come nearer to maturity and become more universal with respect to benefit

Table 11

SIZE DISTRIBUTION OF BENEFITS AND COSTS AS A PER CENT OF TOTAL BEFORE-TAX BENEFITS PAID FOR THE CANADA AND QUEBEC PENSION PLANS, CANADA

	(per cent)			
	1971	1973	1974	1975
Total Before-Tax Benefits Paid to Families	100.00	100.00	100.00	100.00
Total After-Tax Benefits Paid to Families	85.47	87.86	87.14	90.82
Income Tax Paid on Benefits[1]	14.53	12.14	12.86	9.18
Total Before-Tax Contributions Paid by Individuals[2]	350.98	189.84	187.46	144.61
Income Tax Savings on Contributions Paid[3]	95.65	56.36	58.15	44.93
Costs to Employees of Employer Contributions[4]	231.05	118.47	113.90	90.18
Total Costs Paid by Families[5]	500.91	264.09	256.07	199.04
Net Benefits Received by Families[6]	-400.91	-164.09	-156.07	-99.04

1. This represents the marginal tax rate on benefits averaged over all recipients.

2. This includes only employees' own contributions (at 1.8%) and all the self-employed contributions (at 3.6%).

3. The marginal tax rate on contributions may be calculated by dividing this percentage by the percentage given for Total Before-Tax Contributions Paid by Individuals since both percentages on the same base. For 1971 the marginal tax rate for contributions is (95.65/3.5098) = 27.25%. The other years are: 29.69% for 1973; 31.02% for 1974; 31.07% for 1975.

4. The contributions paid by employers on behalf of their employees have been shifted to the wages and salaries of employees. Income taxes on these shifted contributions have then been calculated at the individuals marginal tax rate and deducted from the contributions leaving the after-tax cost of employer contributions to employees. Employees and the self-employed are thus treated similarly with respect to contributions.

5. The Total Costs Paid by Families is given by the sum of Income Tax Paid on Benefits, Total Before-Tax Contributions Paid by Individuals, Cost to Employees of Employer Contributions, less the Income Tax Savings on Contributions Paid.

6. Net Benefits Received by Families is given by Total Before Tax Benefits Paid to Families less Total Costs Paid by Families. Negative Net Benefits indicate that the Total Costs to Families exceed the Total Before-Tax Benefits received by those families who benefit from pensions.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

payment. Also, as the plans near maturity, we can see a dramatic drop in the negative net benefits caused by the rapid rise in benefits paid. Two factors will continue to influence this rise: an aging population; and the indexation of benefits. As both these trends continue we can expect to see the negative net benefits continue to decline towards zero, and eventually become positive at some point. At that time the current year contributions would be entirely paid out in benefits and not contribute to the fund whatsoever. Continuing increases in benefits relative to direct contributions beyond that point would require using interest and principal of the fund until it became depleted. As these issues are the subject of other studies they will not be elaborated on here, except to say that the costs, as presented, reflect no contingent liability.

The distribution of total benefits paid to families, and total costs paid by families on a total income after tax basis is given in Table 12.

Table 12

DISTRIBUTION OF TOTAL BEFORE-TAX BENEFITS AND TOTAL COSTS OF THE CANADA AND QUEBEC PENSION PLANS ACROSS ALL ECONOMIC FAMILIES ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, CANADA

	1971		1973		1974		1975	
Quintile	Total Benefits	Total Costs	Total Benefits	Total Costs	Total Benefits	Total Costs	Total Benefits	Total Costs
				(per cent)				
First	20.2	2.5	25.6	2.9	26.9	2.9	26.8	2.4
Second	30.2	13.9	32.5	14.9	32.7	15.2	30.8	13.6
Third	18.8	22.3	17.7	21.7	17.6	21.7	18.4	21.6
Fourth	11.7	27.1	11.0	26.3	11.1	26.6	12.7	27.2
Fifth	19.1	34.2	13.2	34.2	11.7	33.6	11.3	35.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

In Table 12 we see that the total before-tax benefits paid are progressive in all years with an increase in progressivity from 1971 to 1975. Total costs are also progressive in all years with an increase in progressivity from 1971 to 1975. In this case it must be noted that the progressive nature of total costs is not due to an income tax allocation but rather to the progressivity of all the elements of total costs on an after-tax basis as well as on a before-tax basis. Net benefits are highly progressive in all years studied. They have become substantially more progressive over the course of the years studied both because of the increase in progressivity of benefits and costs, and because of the more rapid increase of benefits with respect to costs. It is precisely this second reason, however, that is causing the major controversy.

3.5 Unemployment Insurance

The last program to be discussed is the Unemployment Insurance program. The first year evaluated, 1971, comes under the old Act, while the last three years evaluated come under the new Act which became effective in 1972.

Coverage under the old Act protected mainly middle and low income workers, who constituted approximately 80 per cent of paid workers in the labour force. Just before the new plan came into effect, unemployment insurance was available to employees earning less than $7,800 a year, or whose wages were calculated hourly or on a piece rate, regardless of their annual income, except for specified groups such as teachers, the armed forces, professional athletes, domestics, most hospital workers, and public servants, who were excluded. The new Act made coverage almost universal. Regular members of the civilian labour force for whom there exists an employer-employee relationship and the armed forces are included irrespective of their annual earnings. Coverage, contributions, and benefit entitlements cease at age 70, or when the Canada or Quebec Pension Plan retirement pension becomes payable.

In order to claim Unemployment Insurance benefits an individual must be unemployed, capable and available for work, and be unable to find suitable employment. Additionally, under the old Act it was necessary to have made 30 weekly contributions in the previous two years, and eight in the previous year. The new Act considerably reduced the base qualification period to a minimum of eight weeks of insurable employment in the previous 52 weeks. This has just recently been changed again to 12 weeks from eight. Under the old Act benefits were related to the claimant's labour force attachment in the two years before the claim, with the basic formula being one week of benefits for every two weeks of insurable employment. Under the new Act a system of an initial period, a re-established initial benefit period, and an extended benefit period with three phases has been introduced. Benefits are determined depending upon whether a claimant has a major or minor labour force attachment, on what the national unemployment rate is, and on what the appropriate regional unemployment rate is. The rate of benefits is a function of average weekly insurable earnings, normally two-thirds, with a maximum coverage. The new Act also provides for sickness and maternity benefits, and retirement benefits.

Until 1972, employees and employers paid equal shares in contributions based upon weekly earnings up to a maximum level. In 1971, a maximum contribution of $1.40 was payable by both employees and employers on a maximum of $100 weekly earnings. The new Act raised the maximum insurable earnings to $150 a week and indexed the level by an annual Earnings Index. The contribution rate for employees is adjusted annually taking into account benefits paid and changes in average income. The rate for employers is 1.4 times the employee rate. To phase in the new plan, a system of preferential rates was used for contributors under the new plan who would not have been covered under the old. In 1973 the preferential rate was 60 per cent of the regular contribution rate, and in 1974 it was 80 per cent. In 1975 the preferential rate vanished and all contributions were at the same rate up to the maximum level.

The final major change between the two Acts was to regard benefits paid as income subject to tax under the new Act, while the contributions became tax deductible.

In the fiscal year 1971-72, the total benefits paid under the Unemployment Insurance program amounted to $1,147.4 million, while the contributions from employees and employers amounted to $569.3 million. By fiscal 1974-75 benefits had increased to $2,317.1 million, and contributions to $1,670.2 million, substantial increases in both benefits and contributions.

The analysis of Unemployment Insurance involves the most components of any of the programs considered here since there are benefits, contributions, employer contributions, taxes, and an income tax allocation all to be considered. The percentage distribution of these items is given in Table 13.

The marginal income tax rate of Unemployment Insurance benefits recipients, as given in Table 13, can be seen to be substantially less than the similar rate on Family Allowances which should not be too surprising considering the circumstance under which benefits are paid. It is, however, higher than the rate calculated on C/QPP benefits indicating that *on average* the unemployed are not in deep poverty. The marginal rate on tax savings on employee contributions for Unemployment Insurance is just slightly lower than the comparable rate on C/QPP. This difference is due to the self-employed not being covered by Unemployment Insurance, and hence not making tax deductible contributions (except for self-employed fishermen).

Let us now consider the distribution of total benefits and total costs across all economic families. Table 14 gives the distributions on a total income after tax basis, while Table 15 is on an employment income after tax basis.

Table 13

SIZE DISTRIBUTION OF BENEFITS AND COSTS AS A PER CENT OF TOTAL BEFORE-TAX BENEFITS PAID FOR UNEMPLOYMENT INSURANCE, CANADA

	(per cent)			
	1971[1]	1973	1974	1975
Total Before-Tax Benefits Paid to Families	100.00	100.00	100.00	100.00
Total After-Tax Benefits Paid to Families	100.00	82.65	82.02	83.47
Income Tax Paid on Benefits[2]	0	17.35	17.98	16.53
Total Before-Tax Contributions Paid by Employees	24.81	21.55[7]	30.03[7]	27.40
Income Tax Savings on Employee Contributions Paid[3]	0	6.27	9.06	8.34
Cost to Employee of Employer Contributions[4]	18.27	21.26[7]	29.15[7]	26.50
Income Tax Allocation[5]	27.42	21.66	12.70	13.32
Total Costs Paid by Families[6]	70.50	75.55	80.80	75.41

1. 1971 as reported here was entirely under the old Act. As such, benefits were not taxable, nor were contributions tax deductible.

2. Income Tax Paid on Benefits as a per cent is the marginal income tax rate averaged across all benefit recipients.

3. By dividing the Income Tax Savings on Employee Contributions Paid by Total Before-Tax Contributions Paid by Employees we obtain the marginal income tax rate averaged across all contributors. In 1973 this rate was (6.27/.2155) = 29.10%; in 1974 the marginal tax rate was 30.17%; and, in 1975 it was 30.44%.

4. In 1971 although contributions were not tax deductible, employer contributions were assumed shifted to the wages and salaries of contributors and as such were taxed. For all years the employee cost was calculated as the employer contribution less the income tax the employee would have paid had he received the contribution as wages or salary.

5. For Unemployment Insurance, the income tax allocation is calculated by applying the ratio of the net Unemployment Insurance deficit to total federal government expenditure to the federal income tax paid by all taxpayers (not just UI participants).

6. Total Costs Paid by Families is the sum of Income Tax Paid on Benefits, Total Before-Tax Contributions Paid by Employees, Cost to Employees of Employer Contributions, the Income Tax Allocation, less the Income Tax Savings on Employee Contributions Paid.

7. Preferential rates of contribution existed in these years.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

Table 14

DISTRIBUTION OF TOTAL BEFORE-TAX BENEFITS AND TOTAL COSTS OF
UNEMPLOYMENT INSURANCE ACROSS ALL ECONOMIC FAMILIES
ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, CANADA

	1971		1973		1974		1975	
Quintile	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs
				(per cent)				
First	9.8	1.6	7.7	2.0	8.7	2.5	8.1	2.1
Second	24.5	11.3	21.5	10.7	24.6	12.6	22.0	11.4
Third	27.8	20.3	23.4	20.0	22.7	21.0	25.0	20.8
Fourth	22.0	26.9	24.7	26.7	23.1	26.8	22.6	27.0
Fifth	15.9	39.9	22.7	40.6	20.9	37.1	22.3	38.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

Table 15

DISTRIBUTION OF TOTAL BEFORE-TAX BENEFITS AND TOTAL COSTS OF
UNEMPLOYMENT INSURANCE ACROSS ALL ECONOMIC FAMILIES
ORDERED BY EMPLOYMENT INCOME AFTER TAX, BY QUINTILE, CANADA

	1971		1973		1974		1975	
Quintile	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs	Total Before-Tax Benefits	Total Costs
				(per cent)				
First	8.1	1.8	9.0	2.2	9.5	1.4	6.4	0.8
Second	37.7	10.3	33.4	12.6	37.5	14.5	39.1	13.6
Third	24.8	21.3	23.8	20.6	22.8	21.8	21.7	21.4
Fourth	18.9	26.7	18.7	25.9	16.1	25.9	18.8	26.6
Fifth	10.5	39.9	15.1	38.7	14.1	36.4	14.0	37.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

The distribution of total benefits across economic families ordered by total income after tax, as given in Table 14, is regressive in all years, with 1973 and 1975 being the most regressively redistributive. Total benefits in 1971, which came under the old Act, were the least regressively distributed of all four years. All the cost elements are progressive on a total income after tax ordering with the most progressive cost element in all years being the income tax allocation. In 1975, for example, families with an after-tax income of at least $25,000, constituting 5.3 per cent of all families contributed over 26.5 per cent of federal personal income taxes, and hence the income tax allocation. Total costs showed minor distributional variation from year-to-year with 1974 being the least progressive. Net benefits were progressive in all years on an income after tax basis, and followed much the same pattern as the year-to-year pattern of total benefits.

The distribution of total benefits across economic families ordered by employment income after tax, as given in Table 15, is progressive in all years, despite the small percentage going to the lowest quintile. Once again, 1973 and 1975 are the least progressive with 1971 being the most progressive. Total costs and net benefits are progressive in all years, with the net benefits following much the same pattern as total benefits year-to-year. Once again the role of the income tax allocation is substantial. In 1975, families with an employment income after-tax of at least $25,000, comprising 3.6 per cent of all families, paid over 20 per cent of the federal personal income taxes and the income tax allocation.

There appears to have been a definite change in the distribution of total before-tax benefits from 1971 to the subsequent years, corresponding to the break between the old

Act and the new Act. Under the new Act a consistently larger percentage of benefits goes to the upper quintile. This is partly the result of having higher income individuals covered by the new Act, and partly due to the increased number of families with more than one earner. The former is a direct result of the extended coverage under the new Act, while the latter is at least partially the result of the greater financial incentive for secondary earners joining the labour force under the new Act.

A clear distinction between the old Act and the new Act in terms of the distribution of net benefits cannot be made. The distributions for the three years under the new Act overlap the 1971 distribution of net benefits both on a total income after tax basis and on an employment income after tax basis. Since on a net basis Unemployment Insurance is progressive, one might be tempted to conclude that no further analysis is necessary. However, we shall now present tables giving the breakdown of family benefits by family members to present a different perspective for analysis.

From Table 16 we can observe that the lion's share of earnings went to heads of families, since all families have heads and the majority are earners, but not all have other earning family members. The incomes of heads is also generally higher than for other family members and the unemployment rate is lower. The total Unemployment Insurance benefits paid heads are lower than their proportional share based upon earnings because of their lower unemployment rate. The lion's share of net benefits, however, went to earners other than heads since by and large they are the lowest income earners in families, they are also the ones that make the smallest income tax allocation. The higher net benefits of heads in 1971 probably reflect the limited coverage of the old Act, while those of 1975 reflect the effects of the recession.

Table 16

DISTRIBUTION OF FAMILY EARNINGS, UNEMPLOYMENT INSURANCE BEFORE-TAX BENEFITS, AND NET BENEFITS AMONG FAMILY MEMBERS

	(per cent)			
	1971	1973	1974	1975
Earnings[1]				
Family	100.00	100.00	100.00	100.00
Head	79.48	78.22	77.71	77.42
Wife	12.06	12.27	13.46	14.00
Others	8.46	9.51	8.83	8.58
Total Before-Tax Benefits				
Family	100.00	100.00	100.00	100.00
Head	64.07	55.70	57.50	57.11
Wife	21.19	28.31	28.05	26.68
Others	14.74	15.99	14.45	16.21
Net Benefits[2]				
Family	100.00	100.00	100.00	100.00
Head	33.23	3.76	2.50	13.79
Wife	41.88	68.36	72.96	55.43
Others	24.89	27.88	24.54	30.78

1. Earnings are on a before-tax basis.

2. Net Benefits are calculated from the Total Before-Tax Benefits less Total Costs as defined in Table 12.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

It is also interesting to see if there is a difference in split among family members at lower income levels than at higher income levels. To do this an arbitrary split of families was made at an employment income after tax level of $8,000. The results of this split are presented in Table 17.

Table 17

DISTRIBUTION OF FAMILY EARNINGS AND UNEMPLOYMENT INSURANCE NET BENEFITS AMONG FAMILY MEMBERS FOR FAMILIES WHOSE EMPLOYMENT INCOME AFTER TAX IS LESS THAN $8,000, AND FOR FAMILIES WHOSE EMPLOYMENT INCOME AFTER TAX IS GREATER THAN OR EQUAL TO $8,000 AS A PER CENT OF THE TOTAL FOR ALL FAMILIES, CANADA

	1971	1973	1974	1975
		(per cent)		
Proportion of Families				
Family Income After Tax < $8,000	66.18	55.73	49.01	45.12
Family Income After Tax ≥ $8,000	33.82	44.27	50.99	54.88
Total	100.00	100.00	100.00	100.00
Earnings[1]				
Family:				
Family Income After Tax < $8,000	34.29	22.24	16.05	11.74
Family Income After Tax ≥ $8,000	65.71	77.76	83.95	88.26
Total[2]	100.00	100.00	100.00	100.00
(1) Head:				
Family Income After Tax < $8,000	29.49	19.01	13.80	10.00
Family Income After Tax ≥ $8,000	49.99	59.21	63.91	67.42
Total[2]	79.48	78.22	77.71	77.42
(2) Wife:				
Family Income After Tax < $8,000	2.45	1.48	1.09	0.79
Family Income After Tax ≥ $8,000	9.61	10.79	12.37	13.21
Total[2]	12.06	12.27	13.46	14.00
(3) Other Earners:				
Family Income After Tax < $8,000	2.35	1.75	1.16	0.95
Family Income After Tax ≥ $8,000	6.11	7.76	7.67	7.63
Total[2]	8.46	9.51	8.83	8.58
Net Unemployment Insurance Benefits				
Family:				
Family Income After Tax < $8,000	166.55	153.87	186.05	145.89
Family Income After Tax ≥ $8,000	-66.55	-53.87	-86.05	-45.89
Total[2]	100.00	100.00	100.00	100.00
(1) Head:				
Family Income After Tax < $8,000	109.44	99.24	126.92	105.37
Family Income After Tax ≥ $8,000	-76.21	-95.48	-124.42	-91.58
Total[2]	33.23	3.76	2.50	13.79
(2) Wife:				
Family Income After Tax < $8,000	36.75	36.66	38.62	22.96
Family Income After Tax ≥ $8,000	5.13	31.70	34.34	32.47
Total[2]	41.88	68.36	72.96	55.43
(3) Other Earners:				
Family Income After Tax < $8,000	20.36	17.97	20.51	17.56
Family Income After Tax ≥ $8,000	4.53	9.91	4.03	13.22
Total[2]	24.89	27.88	24.54	30.78

1. Earnings are on a before-tax basis.

2. The totals are those presented in Table 16.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

From these two tables we get the clear picture of who the net contributors to Unemployment Insurance are, and who are the net beneficiaries. The heads of families (both male and female) whose family employment income after tax is $8,000 or greater are the only contributors on a net basis, all others, including those in higher income families are net beneficiaries.

The dividing line of $8,000 after-tax family earnings concentrates the heads of family who are beneficiaries of Unemployment Insurance in the lower group and those who are contributors in the upper group. There appears to be some dilution within the upper income group in 1975 when the recession has caused more heads of families to be unemployed but increases in wages and salaries of other employed family members have tended to keep family after-tax earnings above $8,000. If one tries to find a family after-tax employment income that concentrates wives into two groups, beneficiaries and contributors, a much less distinct line seems to exist somewhere between $18,000 and $20,000.

The encouraging aspect of the above results is that Unemployment Insurance is providing protection to those families with low incomes caused by unemployment. The troubling feature is that within any income group there are also transfers among families due to the number of earners within families. That is, within any income group, there are transfers from families with only heads in the labour force to families with more than one earner in the labour force. It is this type of redistribution that makes a plan that takes into account family earnings, number earners, and unemployment more compelling.

The critics of family unemployment insurance plans base their case on three major points. First, it is argued, Unemployment Insurance is, after all, an insurance plan whereby individuals should, as with any other type of insurance, be entitled to collect. It is social insurance because the contribution rates are not adjusted to reflect group risk, but rather are averaged across the entire labour force. However, when one considers that a substantial amount of program funding comes from federal income taxes, and that this funding is so strongly redistributive in exactly the opposite direction that one would use to reflect risk, the insurance analogy must lose most of its validity.

Second, it is said that Unemployment Insurance, being an income-maintenance program, should be used to maintain the income of the individual from drastic changes. This is only partially true, for if this is what is really intended then insurable earnings should not have a maximum limit. What is intended by income maintenance is that income should not fall below some specified level in line with economic need. This being the case, family income is more relevant than individual income since many of the benefits and costs are shared across family members, for example, shelter costs.

Finally, when all else fails, critics settle on prohibitive administrative costs as the millstone of family plans. It is true that administrative costs could be greater, but that does not necessarily mean they need be substantially, so. Consider, for example, the following very simple type of family plan. Let all aspects of the program except benefits, be the same as the current program. Let family insurable earnings be the sum of insurable earnings, as currently instituted, across all family members, and family income be the sum of income across all employed family members. For an unemployed individual, benefits would be paid on the difference between family insurable earnings and family income. The administrative costs of such a program would certainly be higher, but only when claims were submitted by multiple earner families, to determine a base from which to calculate benefits. The cost increase could easily be held down by proper program design.[15] Benefits would still be paid to the unemployed individual as is presently the case, only the level of benefits would be determined on a family basis.

The advantages of a family plan are rather attractive. First, it would introduce greater equity into the payment of Unemployment Insurance benefits by recognizing that individuals can gain economic benefits by belonging to a family. This aspect becomes more important as the number of multiple earner families increases to significant proportions. High-income earners within families, and hence the family itself, would receive relatively high levels of protection against a substantial loss of income, while earners with a minor labour force attachment would receive less protection than at present and

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[15] There is also the question of initially determining an operational definition of a family. The analysis has been based upon the broad economic family. An operational definition would most likely be a restricted form of the much narrower census family.

in the case of high-income families, might receive no protection unless the whole family became unemployed.

Second, a family plan should be less expensive than the current plan through the reduction of benefits to low-income earners in high-income families who become unemployed. It is not possible at this time to give a precise estimate of the costs savings; however, an examination of Table 17 indicates that earners other than heads in the higher income group of families have received an increasing percentage of the net benefits paid in Unemployment Insurance, reaching over 45 per cent in 1975. A large proportion of these individuals, but by no means all of them, are secondary earners within families. There is also a smaller number of heads that would be classified as secondary earners. The appealing feature of this type of cost reduction in the program is that it achieves reductions with no negative impact on the progressively redistributive properties between higher income and lower income families, which is more than can be said for some other methods of cost reduction.

It is for these reasons that a more serious consideration of family plans is warranted.

4.0 Conclusion

The operation of the social security system over the years 1971 to 1975 has appeared to become less progressive in terms of total benefits paid. When individual programs are evaluated, only two have become systematically less progressive with respect to total benefits; the Family and Youth Allowances program with the introduction of the new Act in

1974, and the Unemployment Insurance program with 1973 to 1975 being under the new Act. The remaining three programs evaluated have become more progressive with respect to total benefits over the period. The major reason for the decline in progressivity of total benefits for the entire social security system is to be found in the changing proportion of resources allocated to the different programs. While all social security programs grew over the period studied, the most progressively redistributive ones did so at a much lower rate than either the Family and Youth Allowances program or the Unemployment Insurance program, both of which display regressive total benefits on a total income after tax ordering. In 1971, the Family and Youth Allowances program took 11.8 per cent of the total social security budget, while in 1975 it accounted for 16.3 per cent. The Unemployment Insurance program grew from 17.0 per cent of the social security budget in 1971 to 26.1 per cent in 1975.

On a net benefits basis all programs were found to be progressive in all years except for Family and Youth Allowances in 1971, which was slightly regressive. The progressivity of Family and Youth Allowances with respect to net benefits increased substantially after the revision of the Act, which was not the case for the 1971 revision of the Unemployment Insurance Act. Despite this, Family and Youth Allowances remain less progressive than Unemployment Insurance, and both are less progressive than any of the other three pension and supplement programs. This reflects the concentration of retired persons in the lower income quintiles. The decline in progressivity of net benefits of the entire social security system, as seen in Chart 1, is due to the more rapid growth of Family and Youth Allowances and Unemployment Insurance.

Although, under the new Act, Family and Youth Allowances have become progressive with respect to net benefits, the total support package for families with children is seen to be regressive, in net terms, due to the regressive nature of the income tax deduction for dependent children. If the deduction were eliminated for families receiving Family and Youth Allowances then the total support package would again become progressive for these families. The increased tax revenue would be more than sufficient to cover the cost of increasing total benefits such that the lowest income families would be in no worse a position than before.

While, on a net benefits basis, the Unemployment Insurance program was effective in redistributing income from higher to lower income families a sizeable proportion of net benefits paid under the new Act went to unemployed individuals in higher income families. The result has been an inequity of treatment of families within income groups caused by differences in the structure of earners from family to family and one of the reasons for the high costs of Unemployment Insurance. During periods of rapid economic growth with low unemployment rates such problems tend not to surface; however, Canada is unfortunately not in such a position and the problems of inequities, high costs and rising deficits are in constant debate.

During such periods there is substantial pressure to reduce costs of social security programs. The problem, then, is how to reduce the rate of growth of social security without destroying the desirable features of the programs.

The examples given in this discussion paper are meant to be suggestive, rather than definitive, as to the possibility of restructuring programs to increase benefits to low income families while reducing costs. The examples have relied heavily upon a greater integration of direct benefits of social security programs with benefits received through the personal income tax system. Certain problems that are encountered in using the income tax system for redistributional purposes arise because the system is oriented to the individual and not the family. The income tax allocation, and hence the income tax system, is a very strong progressive element in most of the program evaluations, however, it is decreasing in relative size due to the indexing of the tax system for inflation.

The final conclusion that should be drawn in the case of social security programs is that they cannot be carved in stone. Changing socio-demographic characteristics of the population will cause changes in the effectiveness and costs of social security. To the extent that family decisions based upon economic behaviour are influenced by social security programs we have feedback effects which we would do well not to ignore.

This document has not explored alternative social security systems such as a guaranteed annual income scheme. While much research is currently being conducted along these lines we have preferred to conduct a more detailed examination of the current system. This paper represents the initial findings in this effort. In future work we will look at the distribution of the benefits and costs of these programs across family units ordered by characteristics such as age of head, region of residence, number of male and female earners, and so on. We will also try to separate changes in program operation due strictly to demographic change from those changes which have been induced by the program itself. In doing so we hope to probe any deficiencies in the system which could be modified in the short to medium term without major restructuring. In the longer term, no matter what form the social security system takes, behavioural effects will be important in the redistributional impact of the system but, more importantly, they will influence income distribution through the market system.

APPENDIX A

In this appendix some of the characteristics of the quintiles are presented to supplement the information given in the body of the discussion paper.

These tables are based upon the Surveys of Consumer Finances for the calendar years 1971, 1973, 1974, and 1975. All the tabulated values are based on data taken directly[1] from the surveys. The variable used to order the economic family units, total income after tax, was based upon total income from the survey and a calculated value of income tax. The sample sizes for the different years appearing in the discussion paper are as follows: 23,723 economic family units in 1971; 25,964

Table A1

FAMILY TOTAL INCOME AFTER TAX[1]
THAT SEPARATES QUINTILES, CANADA

Separation Between Quintiles	Family Total Income After Tax 1971	1973	1974	1975
	(Dollars)			
1 and 2	3,032	3,804	4,494	4,919
2 and 3	5,566	6,796	7,896	8,784
3 and 4	7,971	9,661	11,137	12,521
4 and 5	10,828	13,234	15,003	17,226

1. The income tax was a calculated value. Linear interpolation was used on the income after tax group that separated adjacent quintiles. The largest range for an income after tax group is $1,000.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

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1 While some adjustments have been made to transfer payments, these have not been carried through to the total income, nor to the ranking variable. For more detail on the adjustments see Appendix C.

units in 1973; 12,521 units in 1974; and 26,593 units in 1975. As can be seen, the 1974 results are based on a small sample survey.

Table A2

AVERAGE FAMILY[1] TOTAL INCOME BEFORE TAX FOR ALL ECONOMIC FAMILIES ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, CANADA

	Average Family Total Income			
Quintile	1971	1973	1974	1975
	(Dollars)			
1	1,623	2,079	2,493	2,752
2	4,706	5,762	6,811	7,381
3	7,799	9,463	11,061	12,222
4	11,015	13,454	15,455	17,322
5	19,081	22,714	26,367	29,350
Total	8,845	10,694	12,437	13,805

1. Economic families and unattached individuals.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

Table A3

AVERAGE FAMILY[1] EARNINGS BEFORE TAX FOR ALL ECONOMIC FAMILIES ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, CANADA

	Average Family Earnings[2]			
Quintile	1971	1973	1974	1975
	(Dollars)			
1	630	726	867	826
2	3,346	4,042	4,766	4,933
3	6,855	8,147	9,513	10,280
4	10,120	12,222	13,831	15,530
5	17,216	20,630	23,607	26,560
Total	7,633	9,153	10,517	11,626

1. Economic families and unattached individuals.

2. Employment income.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

Table A4

AVERAGE EARNINGS BEFORE TAX OF HEAD OF FAMILY[1] FOR ALL ECONOMIC FAMILIES ORDERED BY TOTAL FAMILY INCOME AFTER TAX, BY QUINTILE, CANADA

Quintile	Average Head's Earnings			
	1971	1973	1974	1975
	(Dollars)			
1	575	667	812	768
2	3,023	3,696	4,339	4,497
3	5,950	7,043	8,207	8,882
4	8,232	9,764	10,877	12,235
5	12,555	14,628	16,627	18,620
Total	6,067	7,159	8,172	9,000

1. Economic families and unattached individuals.

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

APPENDIX B

In this appendix we present an outline of how the cost of social security programs were calculated from the Surveys of Consumer Finances. The outline is general and applies to all years. The specifics of particular calculations are not presented in detail, nor are details on the structuring of decision rules based on characteristics taken from the survey given, since these change from year to year as both the social security programs and the data available change. For example, the calculation of UI premiums paid by individuals required a set of rules for 1971 under the old Act; in 1973 and 1974 two sets of rules were required, one to determine participation under the new Act, and the other to determine whether preferential or regular rates would be assessed.

The calculations were all done using the Survey of Consumer Finances work file for each year. In cases where it was not possible to calculate the cost variables (due, for example, to individuals refusing to report income, or some other essential characteristic) the records for all individuals in that economic family unit were discarded. The calculated variables were appended to each individual's record on the work file and subsequently aggregated across all individuals in the economic family unit and appended to the family records on the economic family summary file. All computing was done by the Consumer Income and Expenditure Division of Statistics Canada, and all data files remain with Statistics Canada under the same confidential classification as the original data files.

The general flow outline is given by the following steps.

1. Using the Survey of Consumer Finances work file calculate the individual's taxable income, both federal and Quebec where applicable.

2. Calculate the federal, provincial, and total tax payable.

3. Consider the i^{th} ($i = 1, 2, ..., 5$) social security program.

4. Check the Survey of Consumer Finances to see if benefits have been paid under that program.

   (i) If yes, go to Step 5.

   (ii) If no, set benefits before tax, benefits after tax, and the tax-back equal to zero and go to Step 10.

5. Set the before-tax benefits equal to the amount reported on the SCF file.

6. Are the benefits taxable?

   (i) If yes, go to Step 7.

   (ii) If no, set the after-tax benefits equal to the before-tax benefits, and set the tax-back equal to zero. Go to Step 10.

7. Reduce the taxable income of Step 1 by the amount of taxable benefits to produce a new taxable income, both federal and Quebec where applicable.

8. Recalculate the federal, provincial, and total tax payable based upon the adjusted taxable income.

9. Calculate the federal, provincial, and total tax-back on benefits, and calculate the benefits after tax received by the individual.

10. Are premiums or contributions required on the part of the individual in support of the program?

    (i) If yes, go to Step 11.

    (ii) If no, set premiums before tax, premiums after tax, and tax savings equal to zero and go to Step 16.

11. Calculate the required premiums according to the social security program rules using the available SCF data.

12. Are the premiums tax deductible?

    (i) If yes, go to Step 13.

    (ii) If no, set the after-tax premiums equal to the before-tax premiums, and set the tax-savings equal to zero. Go to Step 16.

13. Increase the taxable income of Step 7 by the amount of tax deductible premiums to produce a new taxable income, both federal and Quebec where applicable.

14. Recalculate the federal, provincial, and total tax payable based upon the adjusted taxable income.

15. Calculate the federal, provincial, and total tax-savings on premiums by comparing the tax payable in Step 14 with that of Step 8, and calculate the premiums after tax paid by the individual.

16. Is there an employer contribution required?

    (i) If yes, go to Step 17.

    (ii) If no, set the cost to the employee of the employer contribution equal to zero and go the Step 24.

17. Calculate the employer contribution using the program rules, SCF data, and the calculations previously done on employee premiums.

18. It is assumed that the cost of the employer contribution is reflected entirely in the wages or salary of employees. Thus, increase the earnings subject to tax by the amount of employer contribution.

19. Calculate the increase in earnings-related reductions (e.g. the employment deduction, deductions for premiums to other programs) caused by the increased earnings.

20. Calculate the incremental taxable income as the increase in earnings less the increase in earnings related deductions.

21. Increase the taxable income of Step 13 by the amount of the incremental taxable income calculated in Step 20 to produce a new taxable income, both federal and Quebec where applicable.

22. Recalculate the federal, provincial, and total tax payable based upon the adjusted taxable income and calculate the incremental tax.

23. Calculate the employee cost of the employer contribution as: the employer contribution, less the incremental tax calculated in Step 22, and less the increase in premiums paid to other programs calculated in Step 19.

24. Is the program supported by funds from government general revenue?

    (i) If yes, go to Step 25.

    (ii) If no, set income tax allocation from general revenue equal to zero and go to Step 26.

25. Calculate the income tax allocation.

    Income tax allocation = $\alpha_{if} \cdot$ (adjusted federal income tax) + $\alpha_{ip} \cdot$ (adjusted provincial income tax)

    where the adjusted income tax is the tax payable last calculated (in Step 22, or in Step 14, or in Step 8, depending upon the features of the program). The α's are the proportion of each individual's adjusted income tax that is paid to program support (these are calculated from Federal and Provincial Government Finance). All taxes resulting directly from the existence of the program are allocated in their entirety to the program and only the balance of tax that would have been paid by an individual in the absence of the program is used in this proportional allocation.

26. Calculate the net benefits for the social security program.

$$\text{Net Benefits} = \text{After-tax Benefits less} \left\{ \begin{array}{l} \text{After-tax Premiums} \\ \text{Employee Cost of} \\ \quad \text{Employer Contribution} \\ \text{Income Tax Allocation} \end{array} \right.$$

27. Consider the next social security program and go to Step 3. When complete, go to Step 28.

28. Once the individual social security programs have been considered, calculate summary variables for the total social security system. The total before-tax benefits are taken directly from the SCF;[2] total before-tax premiums are calculated by summing the UI and C/QPP premiums before tax calculated above; the income tax allocation is calculated in a similar fashion to Step 25, however, the income tax base used for the allocation is the original income tax paid as calculated in Step 1. We thus treat all income tax paid as homogeneous and independent of source.

    This completes the flow outline of calculations.

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[2] The total transfer for OAS and GIS together is taken from the surveys. The split between OAS and GIS was calculated. The total transfers have been adjusted as explained in Appendix C.

The income tax calculations were done by a program developed at Statistics Canada that essentially followed the income tax form step by step. All income items used in the income tax calculations were taken directly from the Surveys of Consumer Finances. The deductions used were averages taken from special tabulations provided to Statistics Canada by Revenue Canada on an income-age-sex breakdown. Exemptions were calculated directly using income and family characteristics on the SCF. It was not possible to take separate account of capital gains or loses, nor was it possible to take account of the spreading or general averaging features of the personal income tax system. As a result the calculated income taxes were, on average, too high.

A comparison with the total taxes paid, reported by the surveys, reveals the following over-calculation in the different years: +6.79 per cent in 1971; +6.56 per cent in 1973; +10.28 per cent in 1974;[3] and +5.72 per cent in 1975. The over-calculation is not uniform over the entire range of calculated income tax. For calculated income taxes below $10,000 in all years, the calculation error is smaller than for the total population, and the percentage error appears to vary only randomly with increasing calculated income tax. For calculated income taxes of $10,000 or greater, in all years, the calculation error is greater than for the total population. To put this division in perspective, income taxes of $10,000 or greater are paid by fewer than 2 per cent of the population, or less than 9 per cent of the upper quintile in all years.

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3 1974 was a small sample year. See Appendix A for sample sizes.

While these errors are not substantial we should point out some implications they bear with respect to the analysis. First, the use of calculated income tax in the calculation of total income after tax, or total earnings after tax, has had a negligible impact on the results using these variables for ranking of families.

Second, since the marginal tax function is a step function whose step width is very wide at high tax levels, and since the largest errors in calculated taxes were found at high tax levels, the errors made in marginal tax rates should be well below the errors found in average rates, although they probably remain biased upwards.

Third, since the income tax allocation is based upon total taxes paid (ignoring the marginal adjustments), it will be too large in the same proportion as the calculated tax error. Also, since the largest over-calculation occurred at higher tax levels, the income tax allocation is slightly too progressive.

All these factors taken together might be sufficient to change the conclusion that the Family and Youth Allowances program in 1973 was slightly progressive, in terms of net benefits, to being slightly regressive. Even that amount of change is doubtful.

In retrospect, some of the problems can be overcome rather simply. While it will still be necessary to use the tax calculation procedure to obtain taxable incomes, marginal taxes, and the split between federal and provincial income taxes paid, the calculation of the income tax allocation can be based upon reported income tax split by the calculated federal/provincial tax ratio. All the calculated values necessary to do this remain on the created work files.

APPENDIX C

In this appendix we present the reconciliations calculated by the Consumer Income and Expenditure Division of Statistics Canada between the benefits reported in the Surveys of Consumer Finances and the corresponding totals from the National Accounts. We also present all adjustments we have made to the SCF reported benefits for this discussion paper.

Table C1

NATIONAL ACCOUNTS RECONCILIATIONS

TOTAL BENEFITS REPORTED IN THE SURVEYS OF CONSUMER FINANCES AS A PER CENT OF NATIONAL ACCOUNTS TOTALS ADJUSTED TO THE SAME BASE, BY PROGRAM, CANADA

Program	1971	1973	1974	1975
		(per	cent)	
OAS/GIS	87.6	99.6	96.1	102.4
Family and Youth Allowances	96.5	91.2	95.8	94.9
CPP/QPP	98.2	95.7	88.9	90.7
Unemployment Insurance	39.6	66.1	71.3	70.6
Total Government Transfers	70.0	75.2	76.4	78.4

Source: Statistics Canada (Surveys of Consumer Finances and the National Accounts worksheets).

The Old Age Security pension and the Guaranteed Income Supplement are reported together in the SCF. For our purposes it was felt desirable to analyze the two separately. The division of the total into its two components was accomplished by a very simple decision rule. If an individual received a total amount for these two programs which was less than or equal to the maximum OAS benefit for the year, the total was assigned to OAS. Any excess above the individual maximum OAS benefit for the year was assigned to GIS. This rule, of course, neglects the problem of individuals who might be collecting both types of benefits for a part of the year. As a result we expected that the split we made would overstate OAS and understate GIS. We were not disappointed. For the four years we calculated the ratio of GIS to OAS benefits, as a per cent, both for the amounts we calculated from the SCF total, and for the amounts reported in the National Accounts. Both ratios moved in the same fashion year to year, and the ratio based upon the amounts calculated by splitting the SCF total was two to four percentage points lower than the corresponding ratio from the National Accounts, except in the small sample year, 1974, which was 10 percentage points lower. It is quite possible that the splitting procedure used has introduced some distributional anomalies. What these are we cannot say.

The next adjustment concerned the Unemployment Insurance program and Total Government Transfers. The problem that we adjusted for in both cases was that of non-reporting (as distinct from under-reporting) of Unemployment Insurance benefits. While, at the individual level, the non-reporters are similar in characteristics, with some exception, to the individuals reporting benefits, knowledgeable persons suspect a weakening of this relationship on a family basis. To the extent that these suspicions hold our adjustments become less appropriate.

The UI adjustments were carried out after economic family units had been grouped by ranking variable classes. The adjustment consisted of inflating the group benefits by a constant so that the distributions reported in the SCF would not be affected. The level to which benefits were adjusted was not based upon reaching a reconciliation with the National Accounts of 100 per cent, but rather that the adjusted benefits bear the same relationship to calculated total premiums as that given in the National Accounts. The underlying assumption was that both the benefit and the premium universes were equally represented in the survey.

The adjustment made to Total Government Transfers consisted of taking the total UI adjustment for each classification of the ranking variable and adding it to the total reported SCF value for Total Government Transfers in the corresponding classification. While the adjustments were distribution preserving in UI, they are not so in the case of Total Government Transfers since the distribution of UI benefits is regressive while that for Total Government Transfers is progressive.

Table C2 presents the adjusted reconciliation of Unemployment Insurance and Total Government Transfers with the National Accounts, while Table C3 presents the quintile distributions of Total Government Transfers before and after adjustment ordered on a total income after tax ranking of families.

Table C2

ADJUSTED NATIONAL ACCOUNTS RECONCILIATIONS

ADJUSTED TOTAL UNEMPLOYMENT INSURANCE BENEFITS AND ADJUSTED TOTAL GOVERNMENT TRANSFERS AS A PER CENT OF NATIONAL ACCOUNTS TOTALS ADJUSTED TO THE SAME BASE, CANADA

	1971	1973	1974	1975
		(per cent)		
Adjusted Unemployment Insurance	98.8	97.1	114.2	102.8
Adjusted Total Government Transfers	79.7	83.0	85.4	86.5

Source: Statistics Canada (Surveys of Consumer Finances and National Accounts worksheets) and estimates by the Economic Council of Canada.

The adjustment procedure for UI judged by the results of the adjusted National Accounts reconciliations appears reasonable, and confirms the quality, on an aggregate basis, of the premium calculations, except for the small sample year, 1974. A similar reconciliation on the premiums calculated for C/QPP with the National Accounts produced roughly similar results. The large over-calculation of income taxes, and the over-calculations of both UI and C/QPP premiums in the small sample year, 1974, lead us to suspect the validity of the assumption made that benefit and premium universes were equally represented in the sample. The over-adjustment of UI benefits in 1974 presents few problems in the analysis of UI since they are in correct proportion to premiums. They remain over-adjusted in Total Government Transfers in 1974.

Table C3

DISTRIBUTION OF TOTAL GOVERNMENT TRANSFERS BEFORE AND AFTER ADJUSTMENT FOR NON-REPORTING OF UNEMPLOYMENT INSURANCE BENEFITS ACROSS ALL ECONOMIC FAMILIES ORDERED BY TOTAL INCOME AFTER TAX, BY QUINTILE, CANADA

	1971		1973		1974		1975	
Quintile	Before	After	Before	After	Before	After	Before	After
	(per cent)							
First	27.2	25.1	26.3	24.4	25.8	24.0	25.1	23.4
Second	29.5	28.9	26.8	26.4	25.1	25.1	25.5	25.2
Third	16.1	17.5	16.7	17.4	16.5	17.1	17.4	18.2
Fourth	13.1	14.2	14.9	15.8	16.3	17.1	15.6	16.2
Fifth	14.1	14.3	15.3	16.0	16.3	16.7	16.4	17.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistics Canada (Surveys of Consumer Finances) and estimates by the Economic Council of Canada.

Table C3 confirms what we already know, that an increase in Unemployment Insurance benefits makes Total Government Transfers less progressive. The adjusted transfers were used in the discussion paper.

This concludes a description of the adjustments made to the SCF data in the discussion paper. It should be noted that we have not carried through the adjustments to total family income as reported in Table A1 or Table A2. Also, there is no feasible method of adjusting the ranking variable given that the problem is one of non-reporting. To adjust the ranking variable requires that we adjust individual family incomes, which in turn requires a knowledge of which families did not report UI benefits. If we knew that we could avoid the entire adjustment problem.

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2. Statistics Canada; *National Income and Expenditure Accounts*, Volume 1, The Annual Estimates 1926-1974, Catalogue 130531 (Occasional).

3. Statistics Canada; *Federal Government Finance*, Catalogue 68-211 (Annual).

4. Statistics Canada; *Provincial Government Finance, Revenue and Expenditure (Estimates)*, Catalogue 68-205 (Annual).

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6. Statistics Canada; *Income Distributions by Size in Canada 1965*, Catalogue 13-528.

7. Statistics Canada; *Income Distributions by Size in Canada 1969*, Catalogue 13-544.

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