

au courant

Economic Council of Canada

Volume 4, No. 4, 1984

Francophone earnings catch up



Francophone
at marriage

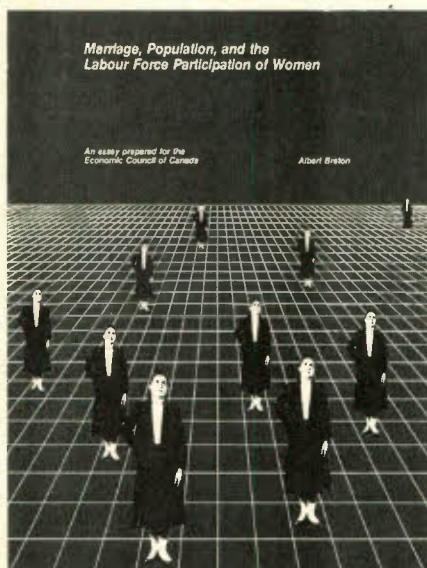
More on
Newfoundland

Pollution affects
brewing industry

PUBLICATIONS

Research Studies

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Marriage, Population, and the Labour Force Participation of Women, by A. Breton (EC22-117/1984E; \$4.95 in Canada, \$5.95 elsewhere).

This study takes a new slant on the issue of women's special difficulties in the job market. Economist Albert Breton says the basic characteristics of marriage itself are at the root of women's problems in that area. There will be no real change in the situation until a more modern form of marriage takes firm hold on society.

utes the findings and conclusions to the individual author or authors rather than to the Council (ordering information below). Two new titles have been published since the last issue of *Au Courant*:



Government Loan Subsidies, by S. Damus (EC22-116/1984E; \$5.95 in Canada, \$7.15 elsewhere).

This study analyses the economic impact of the proliferation of government loan subsidies to business people, farmers, exporters and prospective homeowners. These loans have something of a negative effect on Canadian wellbeing, says the Council economist, and their replacement by special subsidies would raise living standards.

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Volume 4, No. 4

1984

Earnings gap between French and English workers has closed	8
Women making some headway in bid to match male income	9
A changing trade picture helped Canadian industry improve performance	2
Marriage has repercussions for women in job market	3
New method of measuring productivity	4
Government aid to housing and mortgages should be reassessed	5
New findings in corporate taxation discussed at Council	6
Protecting environment lowers productivity in brewing industry	7
Corporations should report research and development spending	10
New subsidies would have positive impact on living standards	11
Council chairman speaks to Newfoundland audience	12
Chairman charts economic strategy for Macdonald Commission	13



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Specializing boosts productivity in Canadian manufacturing

Tariff reductions and changing trade patterns during the 1970s helped Canadian manufacturing industries become more specialized.

Economists John R. Baldwin of Queen's University and Paul K. Gorecki of the Economic Council (with J. McVey and J. Crysdale of Statistics Canada) have prepared another paper in a series on productivity problems in the Canadian manufacturing sector (*Au Courant*, Vol. 3, No. 4; Vol. 4, Nos. 2 & 3). Each study has addressed different factors affecting productivity in Canada. This latest paper assesses the impact of trade and tariff changes in the 1970s on product diversity and length of production runs.

Plant scale

Canada's scale and specialization problems (plants that are too small and production runs that are too short) are often seen as important factors accounting for Canada's lagging productivity, compared with the U.S.

Much previous research has concentrated on plant scale as a major factor in the problems affecting manufacturing. This is explained, in part, by a lack of data on product diversity and length of production runs. However, the authors, through a special arrangement with Statistics Canada, had access to confidential data on product diversity, measured at the commodity level, based on actual "census plant" data. Under the arrangement, the confidentiality provisions of *The Statistics Act* were respected.

Specialization

The authors find Canadian manufacturing industries became more specialized (produced fewer diverse products) between 1970 and 1979. At the same time, the length of production runs increased. As plant size increased, firms concentrated on their existing product lines.

The authors go a step further in their study of diversity at the plant level by considering the country of control of the plant: Canadian, U.S. or other foreign-owned.

In the early 1970s, Canadian-owned plants were more specialized than plants of similar size in the U.S. This finding is in keeping with previous research. However, by 1979, the difference was far less pronounced.

The results are different, however, when plant size *and* the maximum number of commodities that could be produced in a given industry are taken into consideration. In almost all cases, U.S.-owned plants are then found to be more specialized than Canadian ones. Therefore, on the basis of this evidence alone, foreign ownership cannot be said to deter Canadian companies from becoming more specialized.

Keys to change

Several variables are examined for the importance in determining product diversity and length of production runs. Particular attention is paid to the influence of trade and tariffs.

Trade barriers are thought to have the greatest impact in highly concentrated industries which are protected by high tariffs. The authors find shorter production runs and greater diversity in these industries than elsewhere in the manufacturing sector.

Exports and imports usually resulted in longer production runs and less product diversity, but only in the early 1970s was this impact significant. As the decade went on, production runs lengthened – as tariffs fell.

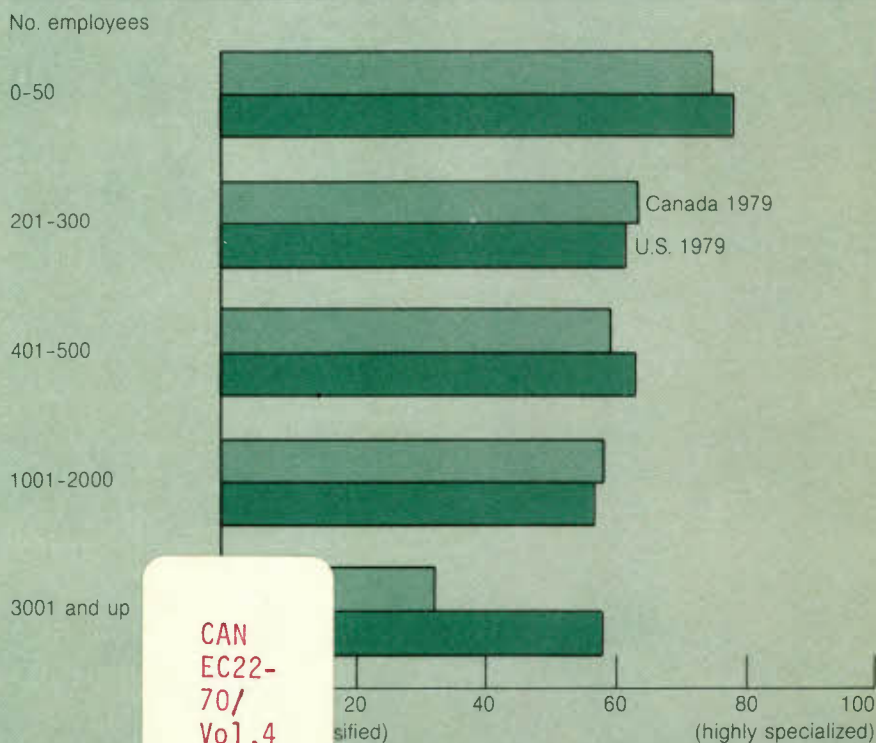
Implications

The authors conclude that the impact of foreign ownership in the areas mentioned above was minimal. The evidence suggests that lowering trade and tariff barriers would be more effective in improving productivity than reducing or confining foreign ownership in Canada.



"Trade, Tariffs, Product Diversity and Length of Production Runs in Canadian Manufacturing Industries: 1970-1979," by John R. Baldwin and Paul K. Gorecki with J. McVey and J. Crysdale. Discussion Paper No. 247.

How plant size affects product diversity



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Marriage hinders women in job market

Those few short steps to the altar may have cost women giant strides in their march towards equality in the labour market.

A recent study, written as part of a modest Economic Council research program on the role of women in the economy, claims that the basic characteristics of marriage itself have prevented working women from doing as well as their male colleagues. That situation may be changing, though, with the emergence of a new kind of marriage structure, says the author, University of Toronto economist Albert Breton.

One method of determining why women have been at a disadvantage in the labour market – as indicated by their lower earnings, different occupation and training levels, and so on – is to resolve whether that situation is the outcome of “natural” forces, or the product of what economists call “market failure” (a breakdown in the functioning of an aspect of economic activity). So Breton selects the marriage market as the focus of his economic analysis, and designs a model to see whether failure there “would be of a type that could explain the differences in economic status between women and men.”

He takes the view that the marriage market has indeed failed, most notably in terms of its structure or basic organizational features. That breakdown, he contends, plays a key role in creating differences between men and women with regard to the amount of schooling acquired, type of subject studied, choice of occupation, and hence, subsequent experience in the labour force.

Men and women enter the marriage market, search for mates and establish families, Breton says, in the expectation of receiving certain benefits or services in return – primarily, in his view, sex, children and security, although the list could be longer. The basic constraints of the prevailing market will affect how these benefits are divided between the partners. Until very recently “technological and institutional constraints” (such as inadequate birth control) have meant that the typical marriage contract did not favour women who, the author argues, have

different preferences from their spouses with regard to such concerns as security, sex, and the number, timing and spacing of children. Further, the nature of that contract has adversely affected their “preparation for, mode of and rewards from labour market participation.”

The “old-fashioned” market

The first marriage market to emerge historically, which Breton labels the “old-fashioned” market, was one organized entirely by parents, who married off their children mainly to safeguard their own security. Offspring were raised to become attractive, salable mates in keeping with prevailing custom and attitudes. Hence, males were required to exhibit such virtues as courage, strength and cunning, whereas females were expected to be good household managers and childbearers. As long as this market dominated, inequality between the sexes was inevitable.

The “traditional” market

As security became available from sources other than marriage, the old-fashioned market was replaced by what Breton calls the “traditional” one, wherein men search for mates who can accept or reject offers, but not initiate them. With this kind of marriage structure, Breton says, women make a heavy investment in areas such as schooling, training, and health. Divorce costs are high (so that men can avoid the expense of a second marriage search), the nuclear family predominates, birth control is inadequate, and by and large, women are housewives who spend most of their time raising children.

The “modern” market

The development of more efficient contraception, allowing women to control family size to suit themselves, has made possible the tentative emergence of a new modern market in recent years – although, Breton cautions, it does not yet predominate over the traditional form. The distinguishing feature of this market is the equality of the sexes: both men and women can make or reject marriage offers at will. The major impact this new arrangement has upon women, says the author, is to make their investment in the acquisition of job-related skills more worthwhile, thus allowing them to function in the work force on the same basis and terms as men.

Certain aspects of the modern welfare state are hindering the development of this new market, Breton contends. He points to maternity leave as a good example on two counts: firstly, by raising the cost of employing women, it lowers the demand for their labour; and secondly, by lowering the cost of childbearing, it encourages women to have more children. Instead, Breton suggests providing part-time job opportunities to men as well – enabling them to help out at home – and instituting paternity leave, so that parents can make their own child-care arrangements. In the short-term, though, he stresses, adequate daycare is essential. He concludes that it is the responsibility of the state to subsidize policies of this nature in order to promote the emergence of the modern marriage market.



Andrews-Newton



Marriage, Population, and the Labour Force Participation of Women, by Albert Breton (EC22-117 / 1984; \$4.95 in Canada, \$5.95 elsewhere).

Measuring productivity: a new approach

The idea of what productivity measurement is all about is undergoing a change. The traditional approach is based on output per person-hour. Those investigating this approach claim that it is misleading and may conceal the true picture by failing to take into account factors (inputs) other than labour which influence output.

Changes in labour productivity not only reflect improvements in technology, but also could represent the substitution of other inputs for labour in response to changing market conditions.

Total factor productivity (TFP) is gaining acceptance as a more valid measurement of productivity growth. It is based on more than output per person-hour, and measures the productivity of all inputs taken together: capital, labour, materials and energy.

Council economists P. S. Rao and R. S. Preston have researched this subject and have written a paper which first determines the interrelationship between input substitutions and TFP at the level of individual industries. These sectoral results are then averaged in order to give the overall picture.

Total factor productivity

TFP measures the efficiency of all four inputs taken together (labour, capital, materials and energy). By adding a production function (which accounts for returns to scale, and the substitutability and complementarity of inputs in production technology and technical progress), a more comprehensive analytical framework can be constructed. A cost function (prices) is a mirror image of a production function (output), yields the same results, and is more analytically appealing since it assumes that changes in input prices result more from noneconomic causes.

Substitution of factors

The authors use cost function in TFP to explore the extent of substitution among the four factors and the movement of TFP at the industry level for the Canadian economy. Their purpose is to find an explanation for the dramatic decline in productivity growth since the oil price shocks of the early 1970s.

In Canada, the rate increase in total output per person-hour declined from an annual average rate of 3.40 per cent between 1967 and 1973 to 1.05 per cent between 1974 and 1979. As measured by TFP, the decline was more dramatic: the increase in output fell from an average annual rate of 2.23 per cent during the 1967-73 period to -0.03 per cent from 1974 to 1979, implying that about 95 per cent of the slowdown in labour productivity is caused by the slowdown in TFP, while the remaining 5 per cent can be attributed to a reduction in the growth rate of the capital-to-labour ratio.

The drop in total output and increases in energy and raw material prices, traced through TFP, are found to be the main reasons for the decline in the rate of output growth per person-hour. The authors find that 15 per cent of the productivity slowdown since 1973 was due to a shift of labour, capital and materials away from goods-producing industries – that is, from high-productivity to low-productivity sectors.

Returns to scale, contrary to the popular view, are found to be constant or slightly diminishing in the manufacturing industries. If demand collapses (as during a recession), the degree of scale economies will decline.

Energy and raw material prices are found to have a definite impact on technological progress, indicating such

progress depends heavily on use of energy and material. The implication is that the dramatic increases in energy and raw material prices since 1973 have slowed down technical advance in almost every industry.

From goods to services

If the move from the goods to service industries results from market distortions, the authors believe that tax changes, deregulation, subsidies and other regional, industrial and trade policies would help overcome them. If, on the other hand, the shift is the result of changing individual tastes or demographic changes, the remedies are less clear, although fiscal and monetary policy might have some effect.

There are unlikely to be any real improvements in TFP if capital and other resources continue to move to low-productivity sectors.

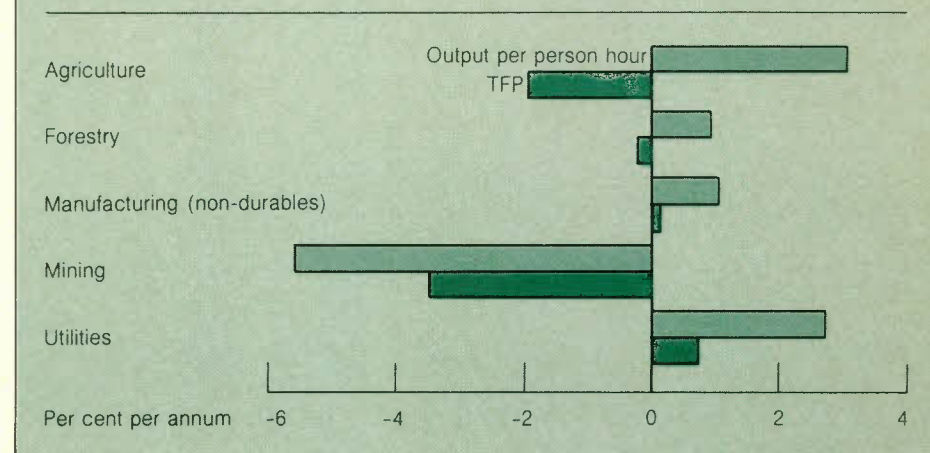
Implications

The results suggest there is a fair degree of substitutability among labour, capital, materials, and energy in the production process and that the post-1973 productivity slowdown in Canada can be attributed to two closely interrelated developments – increasing energy and raw material prices and depressed output conditions.

The authors conclude that the outlook for productivity growth is not very bright unless trends in total demand and inflation are reversed.

"Inter-factor Substitution and Total Factor Productivity Growth: Evidence from Canadian Industries," by P. S. Rao and R. S. Preston. Discussion Paper No. 242.

Productivity growth by industry using two measurements, 1974-1980



Governments should keep lower profile in housing

Federal and provincial governments have been involved extensively in housing finance in Canada. Some questions about the effectiveness of such assistance are raised in two papers written for the Economic Council's report on government loans and loan guarantees (*Au Courant*, Vol. 3, No. 3) by economist George Fallis. He looks at the extent of government involvement in the residential mortgage and housing markets, assesses its impact using a theoretical model, and then makes recommendations concerning the government's role.

Fallis says past and present housing programs have often provided the wrong kind of help to the wrong people, and he recommends that government take on a more limited role in residential mortgage markets.

Federal housing policies

Federal housing assistance has gone through three periods. From 1954 to 1964, the emphasis was on construction of single-family, detached homes.

From 1965 to 1977, the emphasis was put on social housing, and the government used housing policy as a means of redistributing incomes.

The final period, from 1978 to the present, has been one of significant restraint.

Nevertheless, throughout these stages, a couple of themes have remained constant: providing affordable housing through a combination of loans and/or grants and providing insurance on mortgage loans.

Provincial programs

Provincial involvement in housing started later but has picked up steam, with the provinces now bearing responsibility for a large part of housing programs, although many projects are still joint ventures with the federal government. As the chart shows, some provinces — Alberta and Saskatchewan in particular — have been more successful than others in launching independent programs.

Originally, the provinces were concerned almost entirely with land regulation and servicing. However, since the mid-1960s, the provinces have taken the initiative on home ownership plans,

renovation assistance, and help for special groups, small communities and rural areas. The provinces have also used rent controls as part of housing policy.

Results

The author's research reveals that governments believe in adequate, affordable housing as a right, and that they are functioning on the assumption that more housing (and housing assistance) is better housing (and assistance). There are some researchers who believe the government's involvement in residential mortgage markets has created too large a stock of housing in Canada and that housing programs often have not helped those who need it most.

By comparing stated objectives of housing policies with those of his theoretical model, Fallis finds that mortgage involvement and housing assistance are not good ways to redistribute income, even out fluctuations in the construction of housing, or influence consumption. That means, in the

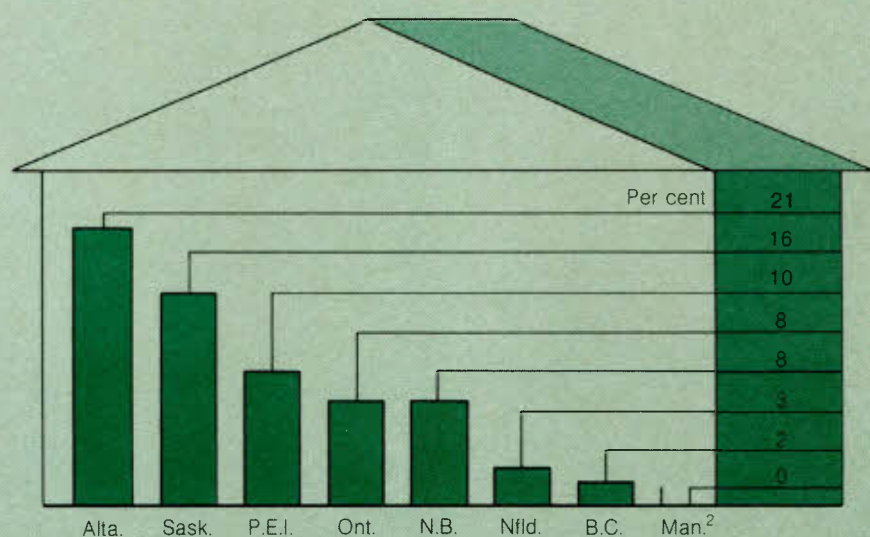
long run, such policies are highly unlikely to result in any reduction in the average cost of housing.

The conclusion reached is that some government presence is called for, albeit limited to specific circumstances, and that government should not act as a major financial intermediary. Public mortgage insurance should be continued (or public reinsurance should be instituted), but the structure of premiums should be changed so that costs of operations and claims are adequately covered. Public mortgage lending is warranted when there are unserved borrowers because some private financial institutions underinvest in high-risk mortgage loans or have incorrect information on the credit worthiness of some people. Fallis suggests further study in this area. He also concludes that shelter allowances and renovation assistance are better ways of increasing consumption and that, if income redistribution is a priority, direct cash payments are likely more efficient and effective.

"Governments and the Residential Mortgage Market I: A Normative Analysis," Discussion Paper No. 239 and "Governments and the Residential Mortgage Market II: Programs and Evaluation," Discussion Paper No. 240, by George Fallis.

How provincial housing programs stack up

Provincially assisted housing starts as a percentage of total starts in each province, 1971-81¹.



¹ Data unavailable for Quebec and Nova Scotia

² Manitoba average = 0

New look at corporate taxation

Recent developments in the field of corporate taxation should make taxpayers sit up and take notice.

According to one American tax expert, companies are shifting as much of their tax burden as possible onto the shoulders of their employees; and according to another, corporate income tax in the United States is having a negative economic impact out of all proportion to the dwindling revenues it now provides the federal government.

These views were expressed at two recent seminars on corporate income tax held at the Economic Council. At the first, Arnold Harberger, professor of economics at the University of Chicago, took a fresh look at "the incidence of the corporation income tax in an open economy," and presented his theory on how corporations resolve their tax burden.

A new theory

Put very simply, Harberger's theory holds that manufacturing industries and privately owned utilities, in an inevitable attempt to pass on corporate income tax, have recourse to one of three options. Firstly, they can raise prices, thereby passing the buck forward to the consumer. But that has its limitations, since industries have to keep their prices competitive in order to survive in both export and domestic markets.

Secondly, they can attempt to shift the tax burden backward so that it falls on the capital of lenders and shareholders. But that approach is generally ineffective as well, since capital is mobile and in adverse conditions can leave the country.

Finally, industries can pass the tax burden over to labour, by paying lower wages – and this is the most likely choice, Harberger said. Further, he concluded, since the labour market is roughly competitive, wage reductions in manufacturing industries that use the corporate form of organization ultimately spread to other largely unincorporated economic sectors.

Another look at the tax

A second Council seminar featured Professor Alan Auerbach of the University of Pennsylvania and the

National Bureau of Economic Research, who also discussed some recent findings in the corporate tax field. He pointed out that the share of U.S. federal revenues derived from corporation income tax has been falling steadily over the past three decades – unlike personal income tax, which has remained remarkably stable in proportion to total tax revenues (see chart).

As a consequence of that decline, "the corporate tax will provide revenue in 1983 equal to only a small fraction of the concurrent annual federal deficit," Auerbach commented.

Economic impact

At the same time, not much information about the economic impact of the corporate tax has been forthcoming. Auerbach's recent research in this area has led him to the conclusion that underlying the statistics are some serious economic problems, or "distortions" created by the tax, which have not diminished along with shrinking revenues. In fact, the reverse appears to be the case, he said, in that

the amount of capital wasted "has exceeded 1.5 per cent since 1972, whereas it was never as high before."

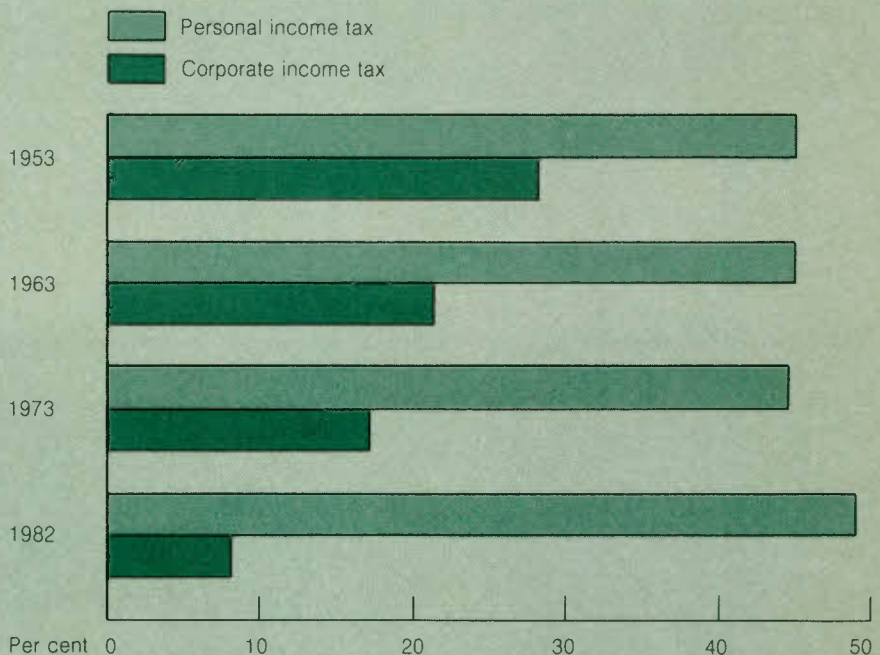
Examples of distortions

One example lies in the different ways in which assets are treated by the tax system. While the tax on machinery is often "negative" – meaning it becomes a form of subsidy – the tax on buildings remains heavy. So investing in new machinery results in a tax break for manufacturers, but investing in new buildings increases their tax burden.

Another distortion results from the fact that companies don't get any tax refund for losses they incur. That means firms without substantial existing sources of taxable income are at a major disadvantage, Auerbach contended, and are discouraged from investing.

Given the low level of corporate revenues at present, Auerbach concluded, abolition of the corporate tax has its appeal. Such a move would certainly alleviate some current problems. At the same time though, it would be a very ineffective way of stimulating investment, as it would provide a greater reduction in average tax rates than in marginal rates. Any alternative proposal would have to take that problem into account.

U.S. federal revenues from corporate income tax and personal income tax, 1953-1982



Pollution controls cut productivity in brewing industry

Environmental regulations have an effect on productivity levels. In a paper written for the Economic Council, economists W. A. Sims and J. B. Smith examine the relationship between environmental regulation and productivity growth by studying the Canadian brewing industry.

Regulations

There are two approaches to environmental protection in Canada. On a federal level, regulations set certain quality standards. Fines and/or imprisonment may be imposed for non-compliance. Often, financial assistance is made available to help defray the cost of complying. However, such regulation is very difficult to monitor, and there are seldom prosecutions. It appears there is little incentive for companies to stop polluting or to research technical innovations which could help achieve the set standards.

Economic incentives

A second approach, using economic incentives, is found at the municipal level. It involves effluent charges or a charge levied per unit of a particular kind of pollution as a means to achieve environmental standards. The theory is that firms will control or reduce pollution levels if they have to pay a price. That is realistic so long as the cost of abating pollution is less than the penalty imposed.

Breweries

The authors examine the effect of effluent charges on productivity growth in the brewing industry. The effluent charge is administered by municipalities or regional governments on their sewer systems. There is a sewer service charge, usually paid by all users whether industrial or not, to cover the costs of treating "normal" strength wastes. This is paid for as part of a regular water bill or through property tax rates. Then, there is a sewer surcharge which is levied on "extra strength" industrial emissions which exceed set limits.

It is the sewer surcharge which the

authors examine in detail. There are six cities across Canada which use this approach, and the levy is imposed on emissions of various kinds, although the municipalities vary in the amount charged and the allowable levels.

The authors' study involved two breweries in municipalities with surcharge schemes and two breweries in municipalities without surcharges. Data were obtained from Statistics Canada, the breweries and municipalities.

The major inputs into brewing beer are labour, capital, energy and raw materials. The main pollutants resulting from brewing include: biochemical oxygen demand (BOD), which comes from the yeast left after fermentation, from liquor left from mashing the malt and straining liquid protein, and from spills; suspended solids (SS), which come from grain husks after mashing and straining and from a particular kind of earth used for filtering and polishing; and caustic materials, which are the result of cleansing agents in bottle washing. (These latter show up as high pH readings in the water and interfere with the working of treatment plants. Most surcharge schemes do not charge

for caustic materials but instead set emission standards for them.)

For the breweries subject to a sewer surcharge, payments range from 1 to 3 per cent of total costs, enough to lead to improvements which, in turn, means a diversion of labour to procedures which reduce emission levels. The authors feel that firms would respond to economic incentives much faster and in a more pronounced way than to enforcement of direct regulations. In testing for this, they looked for a greater effect on productivity growth.

Findings

The results show sewer surcharges do, in fact, lead to significant reductions in sewerage emissions by brewing plants. Consequently, the rate of productivity growth in surcharged (i.e., regulated) breweries is significantly lower than in non-surcharged (i.e., unregulated) breweries, as human and financial resources are diverted to pollution abatement. Productivity growth rates in the regulated plants were -.008 per cent a year, compared with 1.6 per cent in unregulated plants.

The authors say their findings suggest that lower productivity growth is a "cost" of environmental protection. They conclude that it is up to policy makers to weigh this and other costs, as well as benefits, in formulating environmental protection regulations.

"The Impact of Environmental Regulation on Productivity Growth," by W. A. Sims and J. B. Smith. Discussion Paper No. 241.

National Film Board of Canada



In 1970, the average French-speaking worker earned 10 to 11 per cent less nationally than his or her English-speaking counterpart.

By 1980, the difference had virtually vanished. In that year, a Francophone worker made only 3 per cent less than the average Anglophone employee on an annual basis and actually earned 2 per cent more on an hourly base.

This striking change is only one of several significant shifts in earning power within major language groups in this country during the 1970s. They are documented in a new paper by Economic Council researchers Jac-André Boulet and Laval Lavallée.

Boulet and Lavallée use information from the 1971 and 1981 censuses to compare changes in earnings among Francophones, Anglophones and Allophones (Canadians whose mother tongue is neither English nor French). Their paper is the first to look at earnings differences between language groups at the national level since the Laurendeau-Dunton Royal Commission of the mid-1960s.

They look at income differences in Montreal, in the rest of Quebec, in the other provinces, and in Canada as a whole. They also separate each language group into male and female workers and bilingual and unilingual workers to examine differences in even greater detail.

An interesting picture emerges from the Boulet-Lavallée research.

At the national level

Perhaps the most significant finding is that Anglophone workers no longer hold their once commanding lead over other language groups in average income. Francophones and Allophones both picked up a lot of ground in the last decade or so.

Male French-speaking workers improved their earnings position almost everywhere. They continued to catch up with English-speaking workers during the 1970s, but they still fell short nationally. By 1980, they had almost halved the 15 per cent lead the Anglophone workers had in 1970. On an hourly basis, the gap had narrowed from 15 per cent to 2.8 per cent.

Another major finding is that bilingualism pays growing dividends. In all groups, bilingual workers, both male and female, earn more than unilingual workers. Bilingual male workers had the highest salaries in 1980. Among Francophones, for example, they made an average of \$18,561 in 1980, well

Earnings gap between French a

Average annual earnings by language group for men and women combined



above \$14,006 for unilingual workers. There was a smaller difference among Anglophones – \$19,836 to \$17,474.

Looking at the Allophone group, Boulet and Lavallée find that bilingual workers sharply increased their lead over French-speaking Allophones – but their advantage over English-speaking Allophones narrowed. The authors say this suggests the earnings position of workers who didn't speak English actually worsened over the decade.

Converting annual income into hourly earnings helps Francophones gain even more ground on the other two language groups. That's because Francophones worked fewer hours, on average, in 1980. So their average hourly earnings rose higher than might have been expected. French-speaking workers earned 2 per cent more per hour than Anglophones in Canada as a whole in 1980. The gains made by Francophone women were largely responsible for this reversal of the situation ten years earlier.

Taken as a group, Francophones certainly have bettered their lot economically in relation to other language groups since 1970. The authors attribute this to circumstances within Quebec, where they are concentrated – for example, greater unionization there, improvements in its educational system, a relatively higher minimum wage, a weekly wage now higher than

Ontario's and the fact that public sector and construction industry bargaining is carried out at the provincial level.

In Montreal

The regional breakdown for male workers reveals some startling changes.

For example, although Montreal's male Anglophones continued to earn the highest salaries in the country, Francophone men have considerably narrowed the gap over the years – from 51 per cent in 1961 to 33 per cent in 1970 and 14 per cent in 1980. In the same period, the Anglophone advantage over Allophones narrowed from 53 per cent in 1961 to 41 per cent in 1970 and to 23 per cent in 1980.

The income differences between the vast majority of English-speaking workers and their French-speaking counterparts (especially if they were bilingual) in Montreal were negligible in 1980, say Boulet and Lavallée. It was only in the upper income bracket – about 15 per cent of the work force – where Francophones were noticeably behind.

Francophone workers, as a group, might have sliced the Anglophone lead even more in Montreal if there had not been a change in the makeup of the English-speaking work force during the decade. The Anglophone work force shrank by 22,000 over the 1970s. The effect was to maintain average salaries

nd English has closed

in 1980 at a higher level than they might have been, because Anglophones leaving Montreal were apparently in the middle- to lower-income groups.

Elsewhere in the country

French-speaking men also drew closer to Anglophones in income in the rest of Quebec and in other provinces. But the highest gainers outside Quebec were bilingual Allophones who moved ahead of bilingual Anglophones and Francophones in 1980.

Bilingual workers in all language groups earned substantially more than their unilingual colleagues in provinces outside Quebec in 1980. For example, the average income of bilingual Francophone males was 52 per cent higher than earnings of unilingual French-speaking workers, up from 43 per cent in 1970.

Unilingual workers

There was a drop in hours worked for unilingual Francophones inside Quebec over the decade, but far less severe than in other provinces. However, Boulet and Lavallée say unilingual

French-speaking workers in Quebec and elsewhere are finding it harder to find or to keep jobs where they match other employees in hours worked.

They point out that the income situation of unilingual Francophones outside Quebec deteriorated. While unilingual male Francophones reduced the gap in hourly earnings over the decade, they fell further behind in annual income – 59 per cent in 1980 compared with 51 per cent a decade earlier. The big reason for this decline was the growing difference in hours worked between them and other workers outside Quebec. Unilingual French-speaking women were in much the same situation.

Progress of bilingualism

The authors say the Francophone proportion of Quebec's population is increasing while the rest of the country is becoming more Anglophone. At the same time, bilingualism is growing among Anglophones and Allophones in Quebec and among all three language groups outside that province.

Bilingual workers accounted for only a slightly larger share of the labour market in Canada in 1980 than they did in 1970. But this fractional increase masked interesting changes within the different language groups.

Bilingualism grew substantially among both male Anglophones and Allophones while declining among Francophones. More than half of Francophone workers were bilingual in 1980, several times greater than the proportion of bilingual Anglophones and Allophones. However, the bilingual portion of French workers dipped 3 percentage points over the decade, limiting the overall increase in bilingualism in all language groups to less than 1 percentage point. The picture was somewhat similar among women.

In summing up, the authors say that earnings disparities between different language groups are narrowing and are less important than income gaps between men and women or natives and non-natives.



"L'évolution des disparités linguistiques de revenus de travail au Canada de 1970 à 1980," by Jac-André Boulet and Laval Lavallée. Discussion Paper No. 245.

Women's wages catching up

Women are making some headway in their bid to match male income in the work force.

The paper featured on these two pages shows that women workers earned 72 per cent as much as men on an hourly basis in 1980, up from 66.8 per cent ten years before.

The paper written by Council economists Jac-André Boulet and Laval Lavallée is the very first to examine income gaps between women of different language groups. Using census information, the authors found that French-speaking women managed to do better, on average, than Anglophone women or Allophones – those whose mother tongue is neither French nor English.

In fact, Francophone women – particularly those who are bilingual – contributed more than men to bridging the gulf in earnings between French- and English-speak-

ing workers.

Francophone women earned 79 per cent as much as men on an hourly basis in 1980, an increase from 72 per cent in 1970. Anglophone and Allophone women both rose to 70 per cent in 1980 from 65 per cent a decade earlier.

Women made a lot less than that if you look at their annual income – Francophone females were paid about 60 per cent as much as men in 1980, for example. Evidently, other factors such as the number of hours of work had a bearing on the outcome.

Quebec women of all language groups topped all female workers. Women in Montreal were paid 77 per cent as much hourly as men, while women in the rest of the province did even better – 81 per cent.

On an hourly level, income differences between female Francophone and Anglophone workers effectively

disappeared in Montreal and they were reduced in the rest of Quebec. In provinces outside Quebec, Francophone women actually slipped ahead of Anglophones.

One reason why Quebec women did so much better is that the minimum wage is higher in Quebec than elsewhere. As well, a greater proportion of working women are unionized in Quebec than in other provinces – 32 per cent compared with 23 per cent. Also, unionized women in Quebec earn 7 per cent more, on average, than unionized women outside the province.

On the other hand, the authors note that a smaller proportion of women are employed in Quebec than women in the rest of the country. As more Quebec women enter the work force, their edge in earnings may diminish, say Boulet and Lavallée.

Companies should disclose R & D spending

Changes are needed in the way information about research and development spending is collected and used. Economist Harry H. Postner, in a paper written for the Economic Council, recommends that all large Canadian corporations, whether public or private, be required to disclose what they spend on R&D.

Under existing legislation, companies are not required to disclose such information, although they do supply it on a confidential basis to Statistics Canada. Availability of such data would help researchers in their studies of productivity. Postner says there is a relationship between spending on research and development and productivity growth, but it is very difficult, at present, to try to study the relationship because of confidentiality restrictions and differing methods of collecting data.

Simulating productivity

Increasing attention is being paid to improving productivity. Research and development is often mentioned as a way of achieving better productivity because of technological advances it can bring to industry. Recent budgets have promoted more spending in this area. Spending on R&D has increased significantly in recent years and the trend is expected to continue through the 1980s. Statistical comparisons are very difficult because of how the information is gathered and because most of it remains confidential.

Data collection

Basically, information on productivity is gathered at the plant level. Spending on R&D, on the other hand, is generally reported by the company itself because such efforts are usually centralized. The trouble arises because all of a company's R&D spending is lumped together in the industry where the firm has most of its operations. In the case of large multi-industry corporations, the picture becomes more distorted because of diverse operations. The challenge, then, is to find a way of gathering the needed information so it is compatible with productivity data, in order to study the relationship between the two.

In Canada, research and develop-

ment activities are concentrated in a very small number of companies. For 1982, ten firms accounted for half of the money spent on R&D. Postner finds the trend is towards greater concentration. The author turns to corporate annual reports, looking for R&D spending levels. However, some of the largest companies do not disclose their spending in this area except to Statistics Canada, which does not reveal the data. As a result, such corporate giants as CP Ltd., Texaco Canada, Ford of Canada and Chrysler Canada are not included.

Possible solutions

According to Postner, collection and

availability are the issues which need to be addressed. He favours legislation requiring all large companies to reveal their spending on R&D. He considers various options and then recommends an approach similar to that in the United States, called Line of Business reporting, whereby companies provide the R&D data for each of their industrial operations.

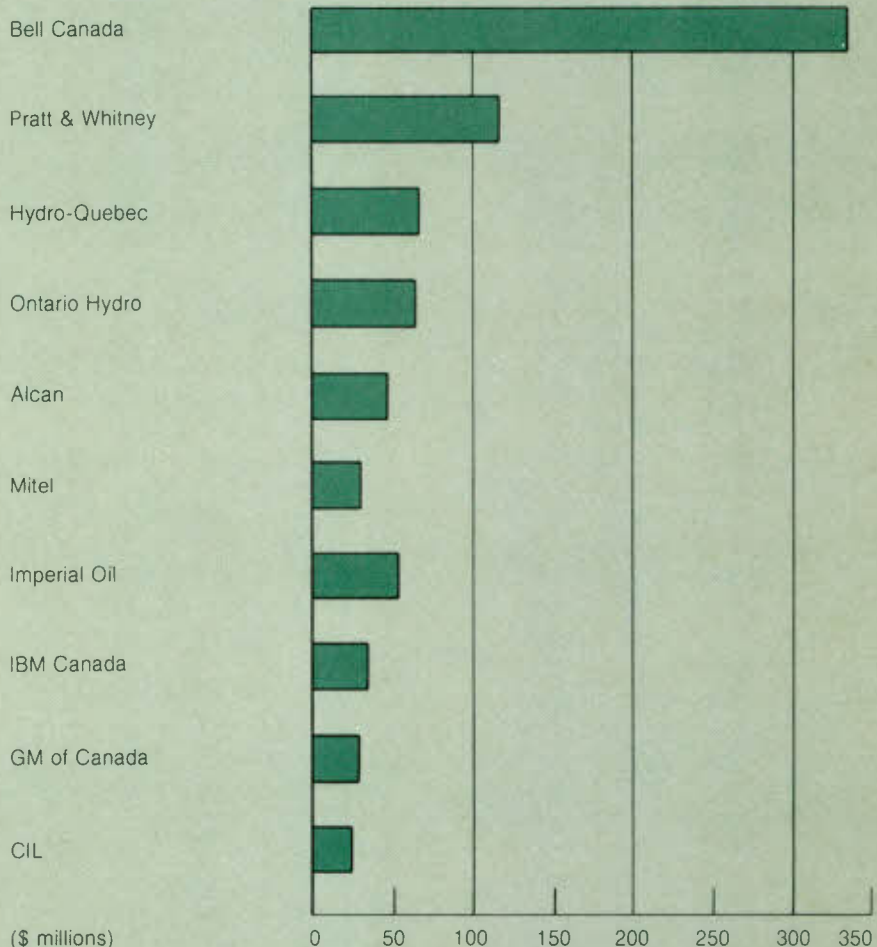
This method is compatible, statistically, with the way productivity data are collected. A drawback to this approach for Canada is the high amount of foreign ownership. However, this and other potential drawbacks could be eliminated, he suggests, by setting guidelines and categories for assigning the R&D expenditures.



"Statistical Problems of Relating Research and Development Data to Productivity Data," by Harry H. Postner. Discussion Paper No. 244.

What large corporations spend on R&D

Top ten spenders, 1982



New subsidies would raise living standards

A change in the kind of financial assistance governments give to farmers, business people, exporters, and prospective homeowners would lead to some improvement in Canadian living standards, says a Council economist.

Every day, people from these four sectors turn to a variety of government institutions for financial help. Governments respond through such financial "instruments" as loans and credit insurance or loan guarantees, to the tune of billions of dollars. On March 31, 1980, for example, federal and provincial loans outstanding as well as investments in agriculture, housing, exports, manufacturing and other business sectors, totaled \$17.5 billion – with an additional \$27.5 billion tied up in guarantees and loan insurance already in force.

A new study, written as background for the Economic Council's report on government intervention in Canada's financial markets (*Au Courant*, Vol. 3, No. 3) estimates the impact government-subsidized loans have on real economic resources – output, prices, and the use of labour and capital – in an effort to gauge the effectiveness of official financial assistance.

The main conclusion about these loan subsidies "is that their financial effects are uncertain," comments the report's author, Council economist Sylvester Damus. But it would appear that they have little effect on the economy, which only loses a fairly modest sum annually – somewhere between \$15 million and \$25 million (at 1977 prices) – as a result of their implementation. However, "their replacement by alternative subsidies of an equal amount could have increased economic welfare by between \$72 million and \$92 million, which would indicate that subsidies may not have to be removed, but redesigned."

Damus begins his analysis by constructing an economic model of the financial system in order to discover how financial assistance can change financial flows and yields or the allocation of financial resources. Both subsidized and unsubsidized loans, he observes, have more impact on liabilities and interest expenses than on "stimulating investment and produc-

tion, as was perhaps originally intended." This comes about, he explains, because the private sector has a multitude of financial choices, and the government's financial activity has ambiguous effects on most of them.

Better method

A better method of transferring resources in some sectors lies in the use of production subsidies (and shelter allowances in the case of housing), Damus finds. A production subsidy is essentially a form of monetary assistance making it easier for producers to market their products – by giving farmers a penny per bushel of wheat produced, for example, instead of a low-interest loan, or by helping homeowners with their monthly expenses rather than subsidizing their mortgages.

The author then develops an economic model of the 1977 Canadian economy to test the effects of 32 alternative policies – including eliminating financial subsidies in the four sectors, and substituting production subsidies – on sectoral output, employment, prices, exports and imports, the exchange rate, the rate of return, nominal income, a price index, and a welfare index. Subsequently, he compares his findings for the housing and export sectors with simulations on the effects of federal financial assistance from the Council's economic model CANDIDE, and finds that the results are similar in direction in both cases.

Effect on living standards

The chart shows how some of the policy changes would affect what economists call the "economic welfare index" – which measures our standard of living. Loan subsidies, for example, have a welfare cost of \$15 million, meaning that the standard of living would be higher by that amount without this form of assistance. Their replacement by production subsidies, with no change in government spending or in the level of support given each sector, would raise the standard of living by \$92 million, "showing that subsidies cannot be flatly condemned but can be improved." Similarly, replacing mortgage subsidies by shelter allowances would raise living standards by \$75 million. While these gains may appear large to the layman, Damus notes, they are in fact quite small compared with the total loan volume involved and show that the Canadian economy is well adjusted to a number of tax and subsidy interventions.

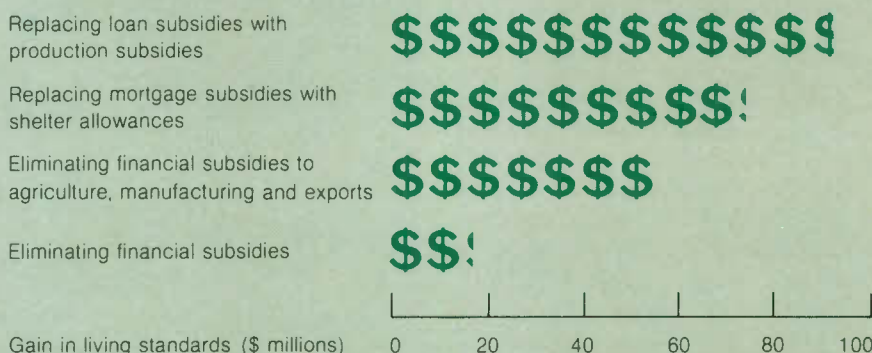
The chart also shows that elimination of financial subsidies to agriculture, manufacturing, and exports boosts the welfare index by \$53 million. This result masks some differences in detail within each sector, however. For example, in agriculture, where the tax burden is low and the financial risk high, loan subsidies are potentially less effective in stimulating farm output but are also less costly than production subsidies.



Government Loan Subsidies, by Sylvester Damus (EC22-116/1984E; \$5.95 in Canada, \$7.15 elsewhere).

How living standards can be raised

The effects of alternative assistance policies on economic welfare, 1977



Newfoundland revisited

The chairman of the Economic Council, Dr. David Slater, recently updated the Newfoundland Reference in a speech for Memorial University's Business Day in St. John's. The study of the provincial economy, *From Dependency to Self-Reliance*, was released in 1980 (*Au Courant*, Vol. 1, No. 2).

Newfoundland asked for the study to be done after the Council released a report on regional economic disparities (*Au Courant*, Vol. 1, No. 2). Among other recommendations, the Council had suggested that all provinces, except Newfoundland, use fiscal policy to help reduce unemployment levels above the national average. It was felt that Newfoundland's provincial debt – the highest in Canada – precluded such an approach.

In its study of Newfoundland, the Council examined unemployment, productivity, low earned income and the province's heavy dependence on transfer payments.

The final report contained two main messages: major opportunities existed in the resource industries and productivity increases throughout the entire provincial economy would bring economic improvements.

In his speech, Dr. Slater traced economic developments in Newfoundland in the nearly three and a half years since the release of *From Dependency to Self-Reliance*. He pointed to a series of disappointments that have affected the provincial economy in the intervening years.

Current difficulties

The fishery, he said, has not reached the level anticipated in the study. Uncertainty about the timing, scale and economics of offshore oil and gas development has delayed expected gains. While major growth in mining and forestry was not expected, it was thought the two industries would make a solid contribution to jobs and income. For the short run, at least, there has been a deterioration. There have been delays in major improvements in education, training, and productivity. And, finally, Newfoundland, along with the rest of Canada, has suffered through the worst recession in 50 years. Dr. Slater said this does not mean it will be impossible to pursue resource opportunities; it does, however, make it more difficult.

He noted that the key natural resources – the fishery and offshore petroleum – are at a crossroads, because of the 200-mile limit and offshore petroleum discoveries.

The fishery

When Canada declared jurisdiction over a 200-mile offshore economic zone, expectations rose to great heights. However, nearly everyone, said Dr. Slater, "overestimated the speed with which large returns would come out of the fishery, the ease with which this would be accomplished, and the breadth of participation in the development. In the rush to realize some of the fisheries' potential – or all of it at once – the fishery ended up in deeper trouble than it had been in for some time."

Little attention was paid to developing markets for fish and fish products. Fishing equipment was expanded. Plant and processing capacities were increased. Fish stocks, which were badly depleted when the limit was imposed, still have a long way to go.

Dr. Slater said development of the fishery needs to be carefully paced. The Council still advocates the elimination of subsidies for the fishery. As the basis of its regulatory organization, there should be a system of transferable landing rights.

Offshore oil

Dr. Slater said the initial expectations of a big bonanza from offshore development have been somewhat

dampened. Oil prices have not gone up as high or as fast as expected. The federal and Newfoundland governments have not reached agreement over offshore ownership and the sharing of resource revenues. And recent exploration has found a more complex geological formation offshore, which will likely complicate recovery. Nevertheless, the Hibernia oil field appears to be safely within the margin of commercial viability.

The development of hydro-electricity, especially in the Churchill Falls area, is still a disputed issue between Quebec and Newfoundland. While Newfoundland is bound by long-term contracts to provide cheap hydro, it should consider linking future development issues to the contracts, Dr. Slater said.

Research on productivity (a key part of the study) indicated that many of the causes of low levels could be corrected. Increased plant and equipment utilization rates, more and better training, better education and the development of more efficient services were among the suggestions made. Dr. Slater repeated another Council recommendation: creating a system of on-the-job training, apprenticeship and certification.

He said such action, plus carefully planned development would lead to economic improvements and less dependence on transfer payments, later if not sooner. He concluded that the best hope lay with the people of Newfoundland, because there is no single miracle cure to the province's economic problems. However, a series of smaller steps could lead to a definite improvement.

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Chairman speaks to Macdonald Commission

Three Economic Council chairmen – past and present – drew on their experience to chart future economic strategies for the Macdonald Royal Commission in Toronto recently.

David Slater, current Council chairman, and former chairmen Arthur Smith and André Raynauld, gave the Macdonald Commission insight into how consistent Economic Council thinking has been over the years on such issues as freer trade with the United States and the value of a package of economic goals.

But the three men, whose years at the Council span almost its entire 20-year history, also outlined their own personal views as to the big questions facing Canada's economy and how to deal with them. For instance, Slater said a central issue is how smoothly and effectively Canadians are able to make decisions on problems ranging from regional development to inflation and unemployment.

They were joined by Columbia University professor Robert Mundell at the hearing of the Royal Commission on the Economic Union and Development Prospects at Toronto's Harbour Castle Hotel. Mundell, a Canadian, was asked to discuss international monetary issues.

Leading off, Slater told the commissioners and about 50 onlookers that Canada has the human and natural resource wealth to cope with the vast changes that are certain to confront this country in the coming years.

How these human and natural resources are used will help determine how effectively Canada performs economically, he suggested. Ultimately, that depends on whether Canadians are making informed, intelligent and well co-ordinated decisions.

Barriers to decision-making

For example, he indicated poor information often leads to poor private and public sector decisions. "Could we not have dealt better with such problems as inflation, unemployment, energy and world debt had we reached an understanding of these issues sooner?"

There may be other barriers to good decisions, Slater said, pointing to the need for co-ordinated action between

the private and public sectors and between governments.

Slater selected several economic themes to illustrate the problems which Canadian decision makers will have to solve in coming years.

On inflation and unemployment, he stressed the importance of setting targets for economic performance nationally. Inflation, unemployment, productivity and growth targets should be treated as a package – "it is not very helpful to single out a target for inflation and remain silent on other concerns."

The Council returned recently to target-setting in the Twentieth Annual Review of the economy (*Au Courant*, Vol. 3, No. 3). The aim is to encourage Canadians to do better than expected in the next five years. The goals were designed to be realistic and balanced so the economy wouldn't be thrown out of whack by too much concentration on one problem at the expense of others.

Raynauld, who also advocated target-setting during his regime, told the Commission that "you can't obtain something in one area without looking at the others." For instance, poor performance in productivity might undermine other targets.

Slater also warned against turning to protectionism rather than facing the challenges and opportunities of changing trends in world trade. In fact, he urged Canada to pursue the idea of a North American free trade zone.

He touched as well on such issues as Canada's vulnerability to international and domestic economic shocks; the productivity slowdown; regionalism and federalism; and management of costly

social programs.

Raynauld called for a "thorough re-examination of the demand management approach to economic policy." Two-thirds to three-quarters of unemployment can't be solved by stimulating demand because it isn't caused by a lack of overall demand, he said.

Glancing back at the gloomy economic conditions of the 1940s, Smith said the government then adopted policies that encouraged growth. But these have been thrust into the shadows since the mid-1960s. Among other policies, he said, the government in the early postwar period removed controls and encouraged risk-taking, promoted investment in housing stock, and took steps to boost productivity.

Similar strategies are worth trying in the 1980s, Smith argued, although they would have to be adjusted for changed circumstances.

Free trade with Japan?

Mundell recommended fixing exchange rates to restore stability to the international monetary system, and he also proposed a single income tax rate. But it was his proposal for a free trade pact between Canada and Japan which caught Macdonald's attention.

When Macdonald asked the other panelists what they thought about free trade with Japan, Slater said: "It takes two to tango." The Japanese would not want to undermine their trade relations with the United States by setting up an accord with Canada alone.

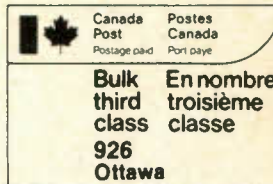
Raynauld said 70 per cent of Canada's trade is with the United States and there would be substantial transition costs if this country were to switch business to Japan. Mundell agreed with Raynauld that a free trade deal would make better sense if the United States were included in a three-way agreement with Canada and Japan.



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MRS M LEVITT SR POLICY ADVISOR
ECONOMIC ANALYSIS BRANCH
MIN OF TREASURY & ECONOMICS
FROST BLDG N 5TH FL
TORONTO ONT
T515304

M7A 123



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Francoophone Earnings Catch up

IMPROVE PERFORMANCE

ance has never been a national interest as in the 1980s. Each and every Canadian is affected in some way by our energy policy options, by the relationship between our industrial and market structure, or by business income taxation – to name but a few of our concerns.

The Economic Council of Canada knows this, and since the time of its establishment by Act of Parliament in 1963, it has endeavoured to keep this national interest at the forefront of its work.

We are an independent advisory body seeking to improve Canada's economic performance, not through policy making but through the following important roles:

Consultation

The Council consists of economists, specialists, and citizens from a variety of disciplines, activities, regions, and socio-economic groups. Together, we consult and advise – interacting with various governments and groups, studying, analysing, and making recommendations on significant Canadian economic issues and policies.

, assisted by technical and support services, provides original research and background information on many specific topics, focusing mainly on the medium- and longer-term problems of the Canadian economy.

Information

The Council also endeavours to educate and inform the Canadian public with respect to economic problems and possible solutions by making its findings and recommendations known to the media and to the individuals and groups involved in discussions of public policy.

Whether the issues we address are as regional as the development of Western Canada or as national in scope as the problems that face women in the marketplace, the Council continually seeks to improve economic policy and its impact on Canadians.



Economic Council
of Canada

P.O. Box 527
Ottawa, Ontario
K1P 5V6

