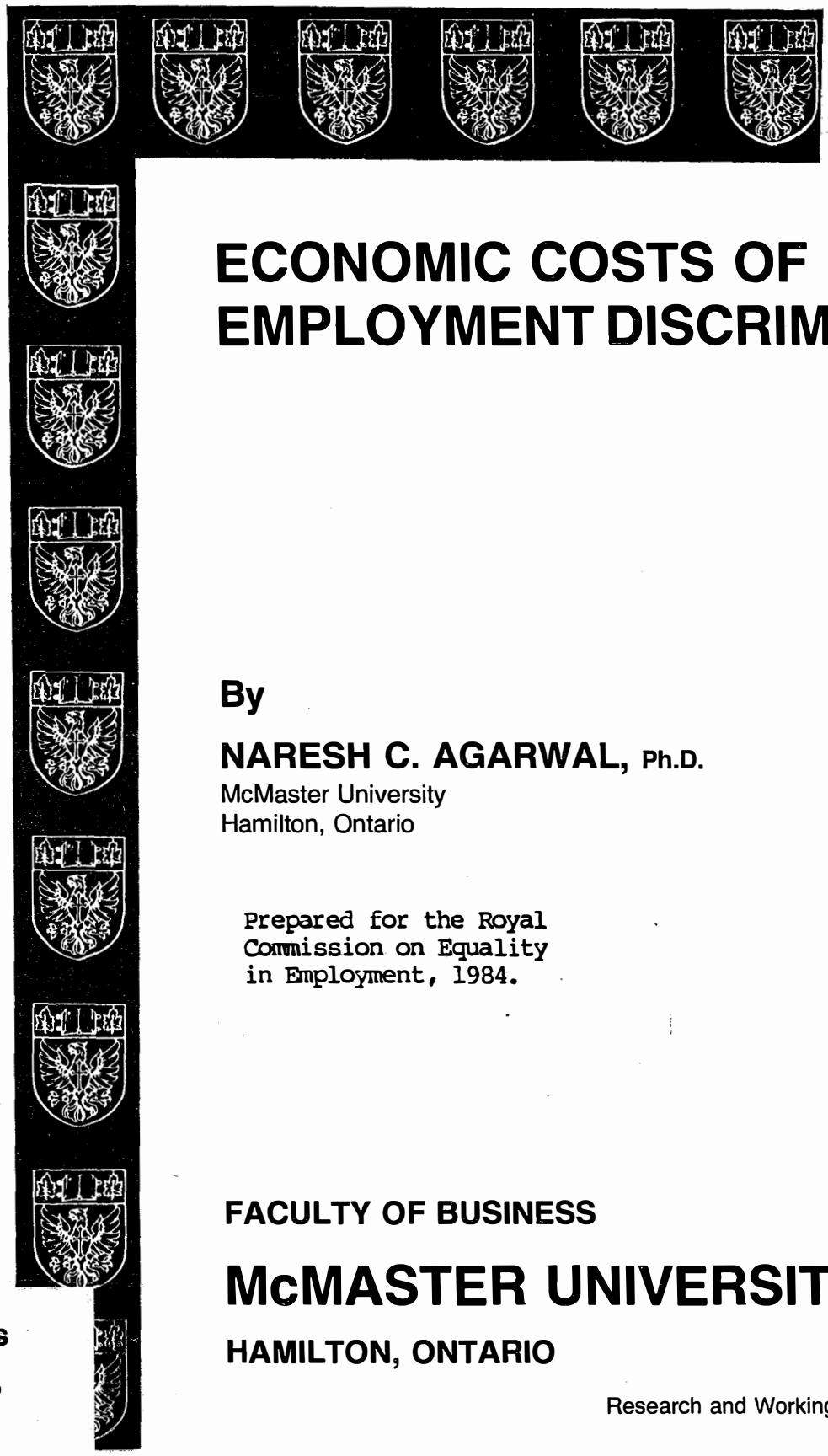

ECONOMIC COSTS OF EMPLOYMENT DISCRIMINATION

By

NARESH C. AGARWAL, Ph.D.
McMaster University
Hamilton, Ontario

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FACULTY OF BUSINESS

McMASTER UNIVERSITY

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Naresh C. Agarwal, Ph.D.
McMaster University
Hamilton, Ontario

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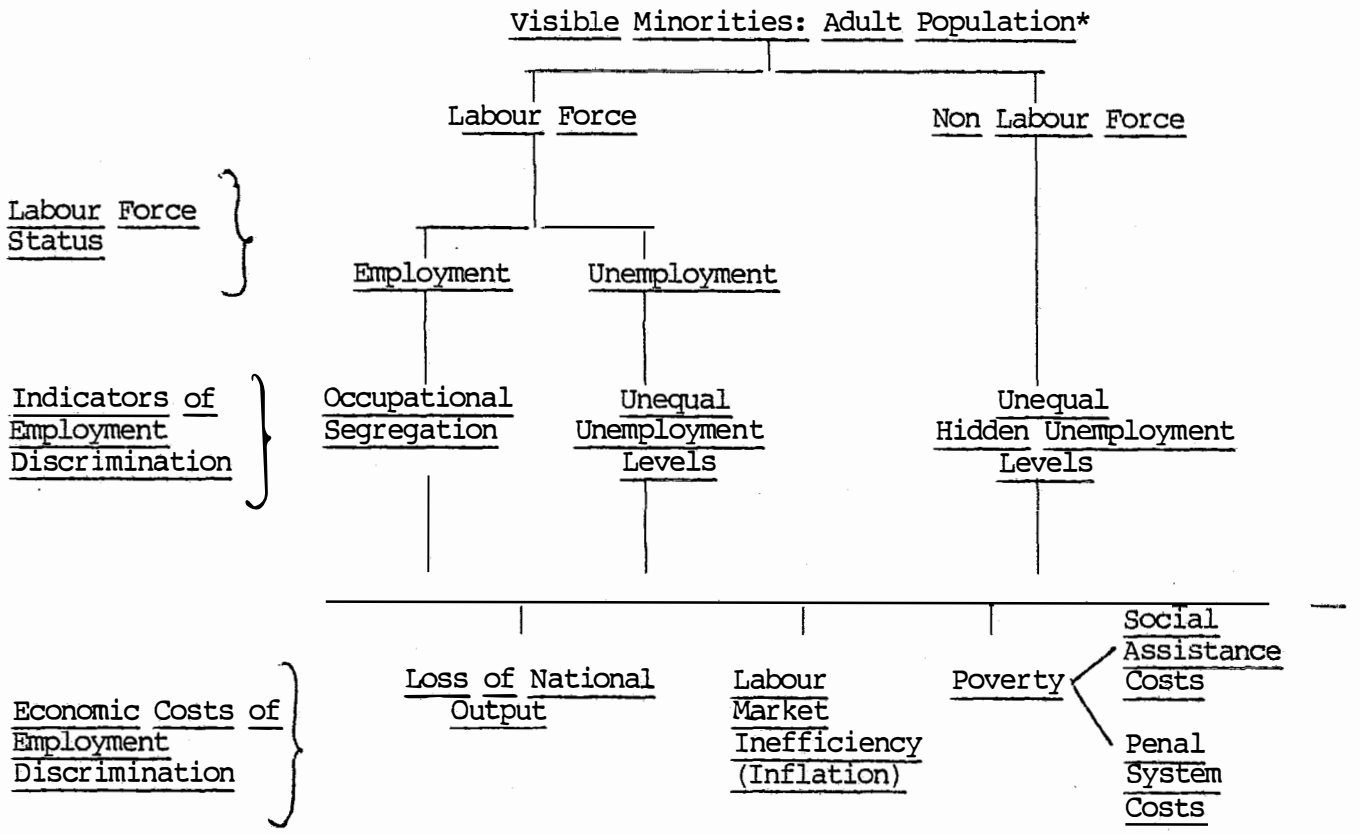
The rising labour force participation of women and other minority groups in the labour force has brought the issue of discrimination they face in the labour market to the forefront. An impressive volume of literature has emerged on this issue over the past several years. Calls for elimination of employment discrimination against minorities have been made largely on equity and social justice grounds. Thus it is argued that equally qualified workers should receive equal treatment in the labour market regardless of their sex, color or ethnic origins.

There is however another perspective - economic - which can justify elimination of employment discrimination against minority groups. The present study employs this perspective. It argues that employment discrimination entails significant economic costs to society. These costs appear to be already significant, and with rising minority share of labour force they will become even more so in the future. Figure I shows an overview of the economic costs involved. Employment discrimination can be reflected in occupational segregation and unequal unemployment and hidden unemployment levels. Such underutilization of minority labour force can cause a serious loss of potential national output. It can also prevent the labour market from effeciently correcting demand and supply imbalances in the "bottleneck" industries and occupations. This in turn can cause higher rates of inflation in the economy. Employment discrimination can also produce higher incidence of poverty among the minority workers necessitating higher social assistance costs. Finally, in so far as poverty may result in higher crime rates, penal system costs could rise too.

In what follows, each of the economic costs listed in Figure 1 is discussed in detail. Empirical evidence and research studies from Canada and other countries are reviewed.

Figure 1

Economic Costs of Employment Discrimination: An Overview



* Civilian, non-institutionalized population

Occupational Segregation and Loss of National Output

A. Evidence of Occupational Segregation

In Canada, the last two decades have witnessed a dramatic increase in the employment of visible minorities, reflecting the large increase in their labour force participation rates. But such increased employment has tended to remain segregated in a limited number of occupational categories. This is most evident in the case of women. The employment - population ratio[1] for women has risen from .276 in 1961 to .460 in 1982 representing an increase of 66.7 percent. This means that the proportion of women in the working age population who actually have jobs has increased by nearly two-third since 1961. This is in contrast to men in whose case the employment - population ratio has declined from .731 in 1961 to .684 in 1982, that is, the ratio for males has decreased by 6.4 percent. While female employment has increased significantly in Canada, it continues to be segregated in a relatively few occupations. Table 1 shows occupational distribution by sex based on the monthly labour force survey conducted by Statistics Canada. In 1975, about 63 percent of employed women were concentrated in clerical, sales and service occupations. The percentage was practically the same in 1982. In contrast, only just over 10 percent of employed women in 1975 held jobs in the male dominated occupations such as processing, construction, transportation, material handling, and other crafts. About the same percentage was still true in 1982.

A similar picture of occupational segregation emerges from the census data as well. As Table 2 shows 55.2 percent of female employment in 1971 was concentrated in clerical, sales and service occupations. The percentage increased to 60.1 in 1981. If teaching and health occupations from the broad category "professional and technical" in Table 2 are also included, about 70 percent of employed women would be accounted for in 1971 and about 74 percent

Table 1

Occupational Distribution by Sex: Labour Force Survey Data

Occupations	% of Employment					
	Female			Male		
	1975	1980	1982	1975	1980	1982
Managerial, Professional Etc[1]	23.5	23.9	26.0	20.6	22.3	23.8
Clerical	36.1	34.6	34.0	6.9	6.3	6.4
Sales	10.4	10.4	10.1	11.5	10.4	10.8
Service	16.6	18.1	18.2	9.7	10.1	10.7
Primary Occupations[2]	3.1	2.9	2.8	8.8	8.5	8.0
Processing Etc[3]	8.1	7.5	6.4	20.2	20.6	19.8
Construction	0.1	0.2	0.2	10.9	10.0	9.3
Transportation	0.4	0.6	0.5	6.3	6.4	6.0
Material Handling & Other Crafts	1.8	1.8	1.8	5.2	5.3	5.1

1. Includes managerial and administrative, natural sciences, social sciences, religion, teaching, medicine and health, artistic and recreational occupations.

2. Includes farmers, farm workers, fisherman, trappers, hunters, loggers, quarrymen and related.

3. Includes processing, machining, product fabrication, assembly, repairing etc.

Source: Statistics Canada, The Labour Force, December 1980 and 1982 Cat. No. 71-001. 1975 data from Statistics Canada, Labour Force Annual Averages, 1975 - 1978, Catalogue No. 71-529.

Table 2

Occuaptional Distribution by Sex: Census Data, 1971 and 1981

Occupations	% of Employment			
	1971		1981	
	Male	Female	Male	Female
Managerial	5.5	2.0	8.5	4.2
Professional & Technical[1]	10.0	17.7	12.2	19.2
Clerical	7.6	31.7	6.8	35.1
Sales	10.0	8.4	9.4	9.6
Service	9.2	15.1	9.5	15.4
Primary Occupations	9.9	3.7	8.2	2.3
Processing, Machining & Product Fabricating	17.5	7.6	19.1	7.3
Construction	9.9	0.2	10.5	0.3
Transport	5.8	0.3	5.9	0.6
Material Handling	2.9	1.4	4.2	1.7
Other Crafts	1.7	0.5	1.6	0.6
Occupations not classified elsewhere	2.6	0.7	2.1	0.6
Occupations not stated	7.4	10.7	3.6	3.7

1. Includes natural sciences, social sciences, religion, teaching, medicine and health, artistic, and recreational occupations.

Source: Statistics Canada: 1981 Census of Canada, Cat. No. 92-920. (1971 Census figures are reproduced in this volume).

Table 3

Top Ten Jobs for Women in Canada, 1981

Jobs	Number of Females Employed	% of Total Female Employment	Female % of Job
1. Secretaries & Stenographers	368,025	7.6	98.9
2. Bookkeepers & Accounting Clerks	332,330	6.9	81.9
3. Salespersons/Clerks	292,915	6.0	59.4
4. Tellers & Cashiers	229,325	4.7	92.7
5. Waiteresses & Hostesses	200,710	4.1	85.7
6. Nurses	167,710	3.5	95.4
7. Elementary & Kindergarten Teachers	139,620	2.9	80.4
8. General Office Clerks	115,015	2.4	80.5
9. Typists and Clerk Typists	102,970	2.1	97.8
10. Janitors, Charworkers, and Cleaners	96,735	2.0	41.2
	2,045,355	42.2	79.1

Source: Statistics Canada, 1981 Census of Canada, Cat. No. 92-920.

in 1981. Occupational categories are also broken down to finer levels in the census data. Table 3 lists the top ten jobs for women as per the 1981 census. Even more clear picture of occupational segregation of women appears from these data. As is evident, 42.2 percent of the female employed labour force in 1981 was concentrated in just 10 jobs. What is more, most of these jobs are among those at the lower end of the occupational hierarchy. Comparing the list of top ten jobs between 1971 and 1981 censuses, one finds a striking stability. Nine of the top ten jobs are common between the two censuses.[2] The ten jobs listed in Table 3 accounted for 40.6 per cent of the total female employed labour force in 1971 compared to 42.2 percent in 1981. Thus the occupational segregation of women seems to have actually increased somewhat between 1971 and 1981.

The occupational segregation of women into relatively limited and generally low level jobs has persisted despite their rising education levels and their increasing economic need for work. Empirical studies show that education has played a significant factor in increasing female labour force participation. For example, over the period 1975-80, the largest increase in participation rates occurred among women with some post secondary education, followed by women with high school education (Swan, 1981). Enrollment statistics also point to a similar trend. For example, between 1971-81, full-time enrollment of women aged over 24 years increased by 70 percent and part-time enrollment by 146 percent. The corresponding figures for men were 35 percent and 55 percent respectively (Statistics Canada, 1983). Along with their rising education, women are under greater pressure than ever before to put this education to best economic use. "The economic necessity of work is obvious for the 40% of the female labour force that is single, separated, divorced or widowed. The contribution of the income of married women to families is also of major importance. The National Council of Welfare has

estimated that 51% more two-spouse families would be poor if wives did not work outside the home" (Swan, 1981, p. 22). Both the rising level of education and the increasing economic necessity for work imply that supply side factors may not be very powerful explanations of the occupational segregation of women. Instead demand side factors such as stereotyping of women with respect to their suitability for various occupations and discriminatory hiring policies may be more important explanations. For example, a recent survey of male and female post-secondary graduates shows that the largest occupation for female graduates with specialization in business/commerce/management fields was clerical; for comparable male graduates the largest occupations were managerial and sales (Statistics Canada, 1980).

Information on occupational distribution of other visible minority groups while limited points to similar conclusions. Friederes (1974) has examined data on occupational distribution of native Indians (males only) from 1931 to 1961. He found that native Indians were underrepresented in white coller jobs and overrepresented in primary and unskilled jobs. The same picture emerges when one examines data from the 1971 census. As shown in Table 4, compared to the national average, Native Indians are overrepresented in the primary and labouring occupations. In white collar jobs such as managerial, professional, and clerical, they are grossly underrepresented. Recently, the Native Council of Canada and Canada Employment and Immigration Commission (1977) conducted a national survey of Metis and Non-Status Indians. The survey found that native Indians were highly concentrated in low-skill, low-pay, low-entry level occupations. The same pattern of employment was found in another recent study of native Indians in the Winnipeg labour market (Clatworthy, 1981). Perhaps, a major explanation of occupational segregation of native Indians lies in their substantially lower education and occupational skills. But even when

Table 4

Occupational Distribution: Native Indians, and Nationwide, 1971

Occupations	% of Employment	
	Native Indians	Nationwide
1. Managerial, Administrative & Related	1.5	4.3
2. Professional & Technical	7.5	12.7
3. Clerical & Related	7.0	15.9
4. Sales	2.6	9.5
5. Service	12.2	11.2
6. Primary Occupations	16.1	7.7
7. Processing, Machining & & Product Fabricating	10.4	14.2
8. Construction Trades	9.8	6.6
9. Transport	3.5	3.9
10. Material Handling & Related	3.0	2.4
11. Other Crafts	0.7	1.3
12. Labourers	2.2	0.9
13. Other Occupations	1.1	1.0
14. Occupations not stated	22.4	8.5

Source: Statistics Canada, 1971 Census of Canada, Cat. Nos. 92-920 and 94-734.

they possess these characteristics, they may not be able to capitalize on them to the extent other groups in the labour market can. The evidence from the above mentioned Winnipeg study indicates that Status Indian women with higher education suffer greater employment barriers than those with less education. Recent surveys by the Canadian Civil Liberties Association also point to discrimination in hiring of native Indians in Kenora, Sault St. Marie, and Fort Frances, all with significant Indian populations. The Kenora survey conducted in 1978 found only 2 native people employed in 14 retail businesses employing a total of 350 persons. In addition, no native was employed in any of the 5 banks in Kenora which employed a total of 67 employees. Similar patterns were found in the other two surveys (Indian and Northern Affairs Canada, 1980).

As indicated earlier, third world immigrants have come to constitute an important component of the visible minority group in the labour market. No comprehensive data are available on occupational distribution of this sub-group. Some information is however available through a longitudinal survey of immigrants conducted by Canada Employment and Immigration Commission (Saunders, 1975). The survey collected data from a random sample of immigrants entering Canada in each of these years 1969, 1970 and 1971. The data pertains to the labour market experience of immigrants during their first three years in Canada. Tables 5 and 6 present relevant data from this survey. The data in Table 5 show that compared to the immigrants from other countries, the third world immigrants are underrepresented in occupations such as managerial, professional/technical, and craftsmen. They seem to be overrepresented in clerical and service occupations. These occupational differences exist despite the higher educational qualifications of immigrants from third world countries compared to those from other countries. The percentage distribution of third world immigrants across the three educational

Table 5

Immigrants by Country of Origin and Occupation After 6 Months and 3 years

Occupation	Third World		All Others	
	After 6 Months	After 3 Years	After 6 Months	After 3 Years
	%	%	%	%
Managers	2.6	2.7	4.6	6.5
Professional & Technical	23.2	25.0	28.5	30.5
Clerical	11.7	13.2	4.6	4.7
Sales	3.6	3.6	2.9	3.2
Service & Recreation	15.6	12.1	10.3	6.2
Craftsmen	20.7	20.6	26.3	23.7
Other	22.6	22.8	22.8	25.2
Total	100.0	100.0	100.0	100.0
	(2,142)	(1,885)	(3,641)	(3,211)

Source: Reproduced from Saunders (1975)

Table 6

Immigrants by Country of Origin Not in Occupations Of Their Choice

	Third World	All Others
	%	%
After 6 months	47.1	36.6
After 3 years	34.3	24.7

Source: Reproduced from Saunders (1975)

categories 1-5 years, 6-10 years, and 11 years or more was 1.5, 36.8 and 61.7 respectively. The corresponding distribution for immigrants from other countries was 13.8, 38.4 and 47.8 respectively (Saunders, 1974, Table 1).[3] Table 6 shows the percentage of immigrants who were not in occupations of their choice. The figures are considerably higher for third world immigrants compared to other immigrants. While both groups of immigrants improved their position after three years, the improvement is somewhat smaller for those from the third world. The survey found that major reasons cited for not being in occupations of their choice were: lack of Canadian experience, qualifications not recognized, and qualificaions not accepted. About 50 percent of the respondents in the third world group cited these reasons after being in Canada for six months. Even after being in Canada for three years, 46 percent of the group still faced the same hinderances. In contrast, the percentage of immigrants from other countries who cited these reasons was much smaller - 29.7 after six months and 28.8 after three years. Similar results were found in a more recent survey of the immigrant population in Metropolitan Toronto (Sharma, 1980).

B. Loss of Potential National Output

Given that women and other minority workers face considerable occupational discrimination in the labour market, the question which arises next is: what is the impact of such discrimination on national output?

Conceputally, the answer to the above question is available from the so called "crowding" hypothesis. This hypothesis can be traced to Fawcett (1918) who argued that employers and unions denied women the access to high skilled, high paid occupations. Women were, thus, crowded into a few and generally low skilled, low paid occupations. A few years later, Edgeworth (1922) formalized the crowding hypothesis in neoclassical terms. According to this formulation,

the overcrowding of minorities into a limited number of jobs would tend to drive the marginal productivity of labour in such jobs to abnormally low levels. The reverse would be true in those jobs that are reserved for the majority group. Implicit in the crowding hypothesis is the notion of ineffecient allocation of resources. Due to occupational segregation, the low level jobs may exist in greater than optimum number and may employ many minority workers who otherwise may be qualified to hold higher level jobs. By the same logic, occupational segregation may also cause the high levewl jobs to exist in smaller than optimum number, and in some cases such jobs may employ less than qualified majority workers. If the occupations were desegregated, resources would be reallocated toward more productive uses. Labour would move from low productivity jobs to higher productivity jobs. Such reallocation of resources would result in higher national output.

Empirical studies have employed the above framework in assessing the economic cost of occupational segregation. Such studies attempt to estimate what the total output would have been if equally qualified majority and minority workers had equal occupational distributions. The estimated output is then compared to the actual output, and the excess of estimated over actual is taken as a measure of the economic costs of occupational discrimination. It should be noted here that these estimates should be treated as upper bounds because the observed differences in the occupational distributions between majority and minority workers may not entirely result from discriminatory access to occupations. These may partly reflect differences in occupational preferences between the two groups.

No empirical study has been published in Canada on this subject. Even in the United States and Britain, only a handful of studies have been undertaken. These studies are reviewed in detail below. The conclusions of these studies should be quite relevant for the Canadian situation. Many comparative studies

have indicated that the labour market experience and occupational status of minorities are largely similar across Canada, the United States, and Britain (Gunderson, 1982; Jain and Sloane, 1981).

Two empirical studies of economic costs of employment discrimination are available for the United States -- the first by the Council of Economic Advisors (Economic Report of the President, 1965) and the second by Bergman (1971). According to the first study "Discrimination against minorities -- Negroes, Puerto Ricans, Spanish-Americans, Indians, and others -- has significant costs. It is estimated that society loses up to $20 billion per year of potential production as a result of employment discrimination and poor educational opportunities for non-whites" (Economic Report of the President, 1965, p. 167). Assuming that the data in the study related to the year 1964, the estimated loss would constitute about 3.86% of the national income. It is difficult to analyze this estimate as the study does not provide any information on how the estimate was arrived at. Two points however should be noted:

a) The estimate of $20 billion includes the effects of both employment discrimination and poor educational opportunitites. The latter while important, occurs outside the labour market. It is generally referred to as pre-entry discrimination.

b) The study focusses on only non-white members of the minority workforce. It therefore excludes the most important component of such workforce — white female workers who in 1964 constituted about 30% of the U.S. labour force. If they too were included in the study, the estimated loss of output due to employment discrimination would have been much higher.

Bergman (1971) also investigated the adverse impact of employment discrimination on national income. Her study focusses on Negro workers in the

U.S. Its empirical analysis relates to the year 1967. According to Bergman, the adverse impact of employment discrimination against Negroes depends upon the size of the Negro labour force relative to the restrictions on hiring them. Let us suppose that Negroes are allowed to enter only one occupation i.e. janitors and that the number of Negroes were larger than the number of janitors demanded in a colour-blind economy. In order to clear the market for janitorial labour into which Negroes are forcibly crowded, the marginal productivity of labour would have to be pushed to an abnormally low level. By the same logic, the marginal productivity of labour in jobs reserved for whites would be abnormally high because of the exclusion of the Negro workers.

Implicit in the above example is the notion of ineffecient allocation of productive resources. Due to occupational segregation, the low level jobs ("Negro jobs") may exist in greater than optimum number and may employ many Negro workers who otherwise may be qualified to work in higher level jobs ("white jobs"). At the same time, occupational segregation may also cause the higher level jobs to exist in smaller than optimum number and in some cases even employ less than qualified white workers. Clearly if occupations were to be desegregated, the resources would be reallocated towards more productive uses. Labour would move from low productivity jobs to high productivity jobs. Such reallocation of resources should result in higher national income.

Bergman in her study carries out a simulation exercise to estimate what the national income would have been in 1967 if occupations were desegregated and workers employed according to their productive qualifications. The exercise is carried out holding constant the total number of jobs in the economy and the number of white and Negro workers employed. By doing so, the exercise can examine the unique effects of occupational desegregation and the resulting reallocation of resources. The exercise employs an involved mathematical procedure and a given value of the elasticity of substitution.[4]

It also makes the following assumptions: a) both white and Negro workers are paid wages equal to their marginal productivity of labour so that the former can be used to approximate the latter, and b) white and Negro workers with equal education are perfect substitutes for each other in the production process. Quality of education and other human capital factors are thus not taken into account. Given these assumptions, the results of the Bergman study are summarized in Tables and 7 and 8. The results shown relate to a range of values of the elasticity of substitution between different kinds of labour. Because, it is difficult, a priori, to justify any particular value for this elasticity, Bergman uses a range. However, Bergman appears to assume that the normal range of this parameter lies between 0.25 to 3.00 and thus provides results only for these values.

Table 7 shows that if occupations are desegregated, the increase in national income can be as high as 1.41 percent.[5] This translates to about 9 billion dollars for the year 1967. It should be noted that as a result of desegregation some white workers may move from their current high level jobs to low level jobs and consequently suffer losses in income. Bergman, however, estimates such income losses to be trivial. The income losses range from 0.4 to 8.9 percent for male workers and 0.6 to 14.0 percent for female workers. For majority of male and female workers, figures closer to the lower limit are applicable. The income gains for Negroes are, however, substantial ranging from 40.4 to 60.1 percent for males and 34.9 to 54.6 percent for females. Table 8 shows the occupational shifts that will occur as a result of occupational desegregation. Consistent with the "crowding" hypothesis, the number of low level jobs in which Negro workers were previously segregated will decline, and the number of high level jobs previously reserved for white workers will increase.

Table 7

Postintegration Changes in National Income

Elasticity of Substitution	Increase in National Income (%)
0.25	0.16
1.00	0.59
3.00	1.41

Source: Adapted from Bergman (1971)

Table 8

Postintegration Occupational Shifts

(In millions of jobs)

Type of jobs	Actual in 1967 (Preintegration)	Postintegration		
		Elasticity of Substitution		
		0.25	1.00	3.00
Previously Negro jobs	6.33	5.77	4.35	2.00
Previously White jobs	52.80	53.36	54.78	57.13
Total	59.13	59.13	59.13	59.13

Source: Adapted from Bergman (1971)

Bergman's estimate of the economic cost of employment discrimination appears to be significantly smaller than that provided by the President's Council of Economic Advisors (CEA) -- 1.41 percent (or less) of national income compared to 3.86 percent of national income. It should be noted the CEA focussed on all non-whites including Negroes, Puerto Ricans, Spanish-Americans, Indians and others. Bergman considered only Negroes. This, however, cannot account for the wide difference in the estimate of economic cost of discrimination between the two studies. Perhaps the CEA used a higher value of the elasticity of substitution in their computations than Bergman. But since the CEA study does not provide any details, this speculation cannot be ascertained.

Recently, Tzannatos (1983) has attempted to estimate the economic cost of employment discrimination in the British labour market. He focusses on female workers who constitute about one third of the employed labour force in Britain. In the non-manual sector, the majority of women are concentrated in clerical occupations while most men tend to be in managerial and professional occupations. In the manual sector, most women are in unskilled occupations while most men are in the more skilled jobs.[6] The conceptual framework, methodology, and the assumptions in Tzannatos are basically similar to those in Bergman. These were discussed above and need not be repeated here. The results of Tzannatos' study are provided in Table 9. It should be noted that these results are based on the elasticity of substitution being equal to six. The data base employed in the study relate to the year 1976.

Table 9 indicates, that the effect of occupational desegregation is to increase national income by 8.3 percent. Underlying this overall change are the following disaggregate changes. First, the losses of income to men caused by occupational desegregation are very small, ranging from 1.2 to 5.0 percent. The income gains to females are however substantial. They range from a low of

Table 9

Post-Integration Changes in Income and Employment

Highest qualification level attained	Percentage change in:			
	Annual incomes of full-time		Employment in previously	
	Men	Women	Male Occupations	Female Occupations
Degree or equivalent	-1.2	49.3	16.6	-90.2
Higher education (below degree)	-4.4	29.6	42.1	-77.1
GCE 'A' level or equivalent	-1.4	58.9	17.8	-93.3
GCE 'O' level CSE grade 1	-5.0	75.2	47.2	-96.3
CSE other grades	-3.9	65.1	37.3	-94.6
No qualifications	-3.9	64.9	37.5	-94.6
Change in output	8.3			

Source: General Household Survey, 1976.

The above table is reproduced from Tzannatos (1983).

29.6 percent to a high of 75.2 percent. Table 9 also shows that after desegregation, the total employment will decline in the previously female occupations and increase in the previously male occupations.

There is a remarkable similarity in the pattern of disaggregate results between Tzannatos' study for Britain and Bergman's study for the U.S. In both studies, occupational desegregation results in insignificant income losses to the majority workers (males in Tzannatos and whites in Bergman) but rather substantial income gains to the minority workers (females in Tzannatos and Negroes in Bergman). Again, consistent with the "crowding" hypothesis, occupational desegregation results in decline in employment in the previously minority group dominated jobs and increase in employment in the previously majority group dominated jobs. The two studies however differ significantly in terms of their overall result. The estimated gain in national income from occupational desegregation is 1.41 percent or less in Bergman while as high as 8.3 percent in Tzannatos. This difference may be explained by the following three factors:

a) Tzannatos' reference group is female workers who constitute 33 percent of the total labour force included in the study. Bergman's reference group, on the other hand, is Negroes who constitute only 10 percent of the labour force included in the study.

b) The extent of occupational segregation between sexes is greater than between racial groups. For example Fuchs (1971) shows that occupational segregation in the U.S. between white males and white females is much higher than between white males and black males.

c) Finally, Tzannatos uses a much higher value of the elasticity of substitution than Bergman -- 6 in the former compared to a maximum of 3 in the latter. While Tzannatos regards this high a value of the elasticity of substitution as being normal, he does provide results using

lower values of the elasticity. The estimated increases in national income with the elasticity of substitution equal to 1.0 and 3.0 are 2.4 percent and 5.7 percent respectively. In Bergman, the estimated gains in national income for these values of the elasticity of substitution are 0.59 and 1.41 respectively. Considering the factors discussed in a) and b) above, these results appear to be quite consistent.

The estimates of economic cost of occupational segregation Berman provides for the U.S. and Tzannatos for Britain should be treated as upper bounds. These estimates indicate the possible gains in national income that are foregone due to occupational segregation of minority workers. Even if the employer demand for labour was sex/colour blind, to what extent occupational distribution would be actually desegregated would depend upon supply decisions. Such decisions are constrained by preferences and rational household decisions. To the extent the observed occupational distribution of minorities reflects their rational occupational choices, the estimated gains in national income foregone will be smaller.

The question of the relative importance of taste versus discrimination in explaining the observed occupational distribution of minorities is a difficult one. Recently a U.S. study by Brown, Moon and Zoloth (1980) have attempted to examine occupational distribution of women controlling for the taste factor. The study starts out with the assumption that were it not for discrimination and differences in tasts, the occupational distribution would be the same for men and women with comparable personal characteristics. "Consequently, the ability to predict occupations for men accurately on the basis of their backgrounds and qualifications allows us to construct a hypothetical "discrimination-free" distribution of occupations for women, but only if we assume that women's tastes for different occupations are the same as men's. If we include in this new simulation of occupations only those women whose

tastes about work are likely to be most similar to men's then we can begin to identify the effects of discrimination on occupational attainment. The portion of the occupational distribution that we attribute to discrimination is a "residual" since it represents those differences in occupation between the original distribution and the distribution simulated for career oriented women that are not explained by their socio-economic characteristics" (Brown, Moon and Zoloth, 1980, p. 508).

Following the above approach, Brown, Moon and Zoloth first developed a model to predict the male occupational distribution. The model used the following socio-economic characteristics: schooling, vocational training, labour market experience prior to current job, number of children, father's occupation when the individual was age 15, and urban or rural residence at age 15. The coeffecients of this model were estimated using a sample of 2277 white males aged between 45 through 59.[7] The coeffecients were then applied to a sub sample of 829 career women selected from a total sample of 1968 women aged 35 through 49.[8] The career oriented women include all females who are heads of households or who earn more than their spouses and have spent one half or more of their potential working years in the labour force. The resulting simulated occupational distribution of women is shown in Table 10 along with the actual occupational distribution for women as well as men. Comparing the actual occupational distribution of men and women, the familiar pattern appears again. Over 50% of all males are in the managerial and crafts occupations compared to 6.8% of all females. On the other hand, 40% of all females are in the clerical occupations compared to only 5.1% of all males. Of greatest interest to us here are the differences between the actual and the simulated occupational distributions of women. The simulated distribution for the full sample of women (row C) shows much higher percentages in the managerial and crafts occupations and much lower percentages in the clerical

Table 10

Actual and Predicted Occupational Distributions
(in Percentages)

	Professional technical	Managerial	Clerical	Sales	Crafts	Operatives	Service	Laborers
Women								
A. Actual	12.1	5.3	40.0	7.5	1.2	16.4	14.8	2.7
B. Predicted for career women[1,2]	10.0	17.0	27.1	6.7	8.7	16.9	10.6	3.1
C. Predicted for all women[2]	8.6	37.8	6.9	3.4	18.2	19.5	1.7	3.9
Men								
D. Actual	9.1	25.5	5.1	4.7	25.6	18.5	5.0	6.4

1. Includes the total sample of 1968 women but only the 829 career oriented women were redistributed according to the model.

2. Two statistical procedures were use in prediction analysis -- Discriminant Analysis and the Multinomial Logit Analysis. The results using these two procedures were almost identical. Hence the results using only Discriminant Analysis are shown here.

Source: Adapted from Brown, Moon and Zoloth (1980).

and service occupations than the actual distributions of occupations (row A). Similar differences, though somewhat smaller, still exist when only the career women are included in the simulation exercise (row B compared to row A). These marked differences between the actual and simulated occupational distributions of women are "residual" i.e. these cannot be explained by socio-economic characteristics of women even including the taste factor. Brown, Moon and Zoloth attribute these differences to the employment discrimination that women face in the labour market. Similar conclusions are also reached in a more recent study by Meyer and Maes (1983). They compare the detailed occupational distributions of young[9] and old women workers and find a remarkable similarity between the two. Given that women's tastes and preferences have changed dramatically over the past decades, this similarity can only indicate occupatioonal segregation that women continue to face in the labour market.

To summarize, the empirical studies reviewed above show that female and other minority workers face considerable occupational segregation and that this segregation has significant economic costs measured in terms of the loss of potential national income.

C. Economic Cost of Occupational Segregation to Employers

So far we have reviewed only the macro studies of economic cost of employment discrimination. Two micro, employer level studies are also available on the subject; these are reviewed in this section. The first study relates to the American Telephone and Telegraph Company (AT&T). The study by Ashenfelter and Pencavel, (1976) is based on the theory of the economics of discrimination as advanced first by Gary Becker (Becker, 1971). According to this theory, a discriminatory firm has a distate for employing minority workers and as such perceives a cost associated with hiring them. This cost can be measured in terms of a coefficient called d. A discriminatory firm

acts as if w(1+d) were the net wages paid to the minority workers. Let us say that the market wage rate for female workers is $4.00 per hour and the discrimination coefficient for a firm is 20 percent. In this case, the firm would act as if the wage rate for female workers was 4(1+.20) = $4.80. This implies that the firm would be willing to hire male workers even if they were more expensive. In our example, the firm would rather hire male workers at wage rates of up to $4.80 than hire female workers at $4.00. Clearly, if the firm were to end its discriminatory policy, its costs of production would go down. The size of the cost reduction will depend, among other things, on a) the value of the firm's own discrimination coefficient d; the higher the coefficient, the higher the likely cost reduction and b) the behaviour of other discriminatory employers in the market; if they too end discrimination at the same time, the cost reduction will be lower.

The Ahsenfelter and Pencavel study employs the above framework to assess the impact of employment discrimination against women on AT&T's cost of production. Specifically, the study seeks to answer the question: "by what amount the firm's costs be lower in the absence of discriminatory employment decisions on the part of its management?" The study relates to the year 1970. As a first step, the study analyzes the extent of occupational seggregation in AT&T. It shows that in 1969, male constituted 99.9 percent of the job category titled "foreman of telephone craftsmen among construction installation and maintenance employees". In comparison, practically 100 percent of "experienced switchboard operators" were female workers. The study then goes on to estimate the effect on costs of production if occupational distributions were to become non-discriminatory. The estimation process necessitates the modeling of an approrpriate production function, that is, the technical factor input -- product output relationship for AT&T. Based on prior empirical research, Ashenfelter and Pencavel assumed a linear homogenous

production function to be a good approximation for AT&T. Such a production function indicates that if each factor input is increased by a given proportion, then output will increase in the very same proportion. Given this assumption, an econometric procedure was employed to estimate the change in costs of production that will result from substitutiong female workers for male.[10] The results of this exercise are shown in Table 11. They show that the end of discriminatory employment practices in entry level jobs will result in a reduction of 77 percent in AT&T's average costs. If such practices were to end in all non management jobs, the average costs would go down by additional 1.52 percent (to 2.29 percent). Finally, the average costs would go down by another 1.62 percent (to 3.91 percent) if employment discrimination were to end in all jobs, management and non-management. It should be noted here that these estimates are based on the assumption that other discriminatory employers in the market do not end employment discrimination at the same time as AT&T. As explained earlier, if this assumption does not hold, the cost reduction will be smaller. Hence the estimates in Table 11 should be treated as representing the higher limit.

In a more recent study, Dunnette and Motowidlo (1982) have attempted to estimate what discriminatory employment practices might cost the employer. Their study relates to a large U.S. organization;[11] it focusses only on the management and supervisory positions. Conceptually, the study starts out with the basic premise that discriminatory employment policies are not only unfair to the individuals affected but also represent costly ineffeciencies in the utilization of human resources. Costs of recruitment, training and career orientation are much greater when artificial constraints are imposed on the size of the population from which the job applicants may be drawn. Additionally, persons selected and placed in jobs are likely to include more unqualified persons when such constraints are imposed than when all

Table 11

Estimates of Percentage Decline in Average Costs

Type of job category in which females replace males	% Decline in Average Costs
Entry-level jobs	0.77
All non-management jobs	2.29
All jobs	3.91

Source: Ashenfelter and Pencavel (1976)

potentially qualified candidates are considered. Dunnette and Motowidlo then go on to estimate the likely magnitude of such costs of occupational sex discrimination in the management and supervisory positions in the organization in question. The estimate is based on the following assumptions concerning the company situation in 1981.

a) The company has 8500 supervisory and management jobs with the following distribution across five levels of management: 60%, 25%, 11%, 2.5%, and 0.5% in levels 1 through 5 respectively.

b) Each year, roughtly 750 vacancies arise at level 1.

c) The organization uses an assessment procedure costing 200 dollars per candidate for filling vacancies at level 1. The procedure has a validity of .40. Male applicants tend to score higher than female.[12]

d) 10 percent of those selected into level 1 ultimately advance to level 3 after spending an average of 3 years at level 1 and another 5 years at level 2. 25 percent of those selected into level 1 advance only to level 2 after spending an average of 6 years at level 1. Finally, 5 percent of those selected into level 1 fail and after an average of two years at level 1 leave the organization or are demoted.

e) An individual's net value per year to the organization at the first three levels of management is 35,000, 20,000, and 10,000 dollars repsectively.

Given the above assumptions, Dunnette and Motowidlo develop two alternative scenarios for filling the 750 vacancies at level 1 that arise in the reference year 1981: Scenario A where the company considers and assesses only male applicants -- 2250 in number, and Scenario B where an additional 2250 women are also included in the selection process. The resulting computations for the two scenarios for the ensuing ten years are shown in Table 12. As can be seen, when employment into level 1 is restricted to men only, a greater number of hirees fail, and also a smaller number are able to

Table 12

A Comparison of Discriminatory and Non Discriminatory Employment Policies in a large U.S. Organization

	Scenario A: Men Only		Scenario B: Both Men & Women	
	Number	Total Contribution ($)	Number	Total Contribution ($)
Position after 10 years				
Level 3	150	30,000,000	160	32,000,000
Level 2	270	37,800,000	380	53,200,000
Level 1	315	31,500,000	200	20,000,000
Failed	15	150,000	10	100,000
Total	750	99,450,000	750	105,300,000
Assessment Cost		450,000		900,000
Net Contribution		99,000,000		104,400,000
Mean Net Contribution/ person		132,000		139,200

1. Given their differential scores on the assessment test, 470 men and 280 women are hired.

Source: Adapted from Dunnette and Motowidlo (1982)

reach levels 2 and 3. When both men and women are included in the applicant pool, the situation is reversed. These differences are reflected in the estimated average net contribution figures for the two scenarios. Over a ten year period, the net loss to the organization due to excluding women is estimated to be 7,200 dollars for each person hired in 1981. Dunnette and Motowidlo believe "that the estimate is really an extremely conservative one since we did not even try to estimate any of the costs due to many other accompaniments of genralized policies of sex discrimination, such as lower job satisfaction, increased turnover, costs of litigation, or the possibility of back pay awards to hundreds of persons".[13]

Overall, Dunnette and Motowidlo's study can be criticized for being oversimplified. Perhaps the assumptions made in the study were derived from an indepth analysis of the organization in question. But since no background information on the organization is provided, it is difficult to say how generalizable the estimates are for other organizations. The study does serve to illustrate how the cost of employment discrimination can be estimated, and that in many cases, these costs can be quite substantial.

Unequal Unemployment and Loss of Potential National Output

A. Evidence of Unequal Unemployment

This section provides data on the unemployment experience of various minority groups relative to appropriate majority groups in the labour force. Female workers have traditionally experienced higher unemployment rates than male workers. The differential however appears to be narrowing. As is evident from Table 13, the female unemployment rate was consistently higher than the male rate over the 1976-1981 period. If one excludes the year 1979, the unemployment gap tended to reduce over this period. Thus, the female unemployment rate exceeded the male rate by 33 percent in 1976 but only by 17 percent in 1981. In fact in 1982, the female unemployment rate was marginally

Table 13

Unemployment Rates by Sex, 1976-82

Year	Unemployment Rate		Ratio of Female to Male Unemployment Rate
	Male	Female	
1976	6.3	8.4	1.33
1977	7.3	9.4	1.29
1978	7.6	9.6	1.26
1979	6.6	8.8	1.33
1980	6.9	8.4	1.22
1981	7.1	8.3	1.17
1982	11.1	10.8	0.97

Source: Statistics Canada, Labour Force Annual Averages, 1975-1982, Cat. No. 71-529.

Table 14

Persons Believing No Work Available (PBNWA) and Adjusted Unemployment Rates By Sex, 1976-1982

Year	PBNWA		Adjusted Unemployment Rate*		Ratio of Female to Male Adjusted Unemployment Rate
	Male ('000)	Female ('000)	Male	Female	
1976	17	16	6.6	8.8	1.33
1977	22	23	7.6	10.0	1.31
1978	27	25	7.9	10.2	1.29
1979	24	25	7.0	9.3	1.33
1980	26	27	7.3	8.9	1.22
1981	30	27	7.5	8.9	1.19
1982	59	51	11.8	11.8	1.00

* PBNWA were added to total unemployed and to total labour force and then calculating the unemployment rate.

Source: Statistics Canada, Labour Force Annual Averages, 1975-1982, Cat. No. 71-529.

lower than the male rate. Table 14 recomputes the unemployment rates by taking into account the discouraged workers who stop looking for work because they believe no work is available in the market. If a job offer is made to such a worker, it will be accepted. The official definition of the unemployed includes only those workers who are actively looking for work. Thus the official unemployment statistics exclude discouraged workers. Table 14 shows the number of such workers by sex and the resulting adjusted unemployment rates if these workers were counted as unemployed. As is clear, in 4 of the 7 years, the differentials between the female and the male unemployment rates are wider in Table 14 compared to Table 13. This implies that, in general, the discouraged worker effect is more pronounced in the case of women than men.

Disaggregated analysis of unemployment rates reveals a more striking conrast between sexes. Table 15 shows unemployment rates for men and women by educational levels from 1979 to 1982. The general effect of education on unemployment rate is the same between the sexes; the higher the educational level, the lower the unemployment rates. But two important dissimilarities should be noted here. First, women have higher unemployment rate than men at each level of education, and second, this differential betwen the two is markedly higher at higher educational levels. For example in 1979, the excess of female over male unemployment rate was about 20 percent in the 0 to 8 years educational category. But the excess was as high as 117 percent in the university level educational category. The same pattern of results also holds true for the other three years in Table 15.

Table 16 provides disaggregated picture of male and female unemployment rates by occupations for 1981 and 1982. It is evident that the unemployment rate is higher for women compared to men in practically each occupation. In 1981, 10 of the 20 occupations listed in Table 16 were such in which men and

Table 15

Male and Female Unemployment Rates By Educational Levels 1979-82

Year	Educatonal Level	Unemployment Rate		Ratio of Female to Male Unemployment Rate
		Male	Female	
1979	0-8 Years	8.3	10.0	1.20
	High School	7.5	9.8	1.31
	Some Post-Secondary	5.7	8.3	1.46
	Post-Secondary Certificate	4.3	6.0	1.40
	University	2.3	5.0	2.17
1980	0-8 Years	8.6	10.0	1.16
	High School	8.1	9.4	1.16
	Some Post-Secondary	5.6	7.9	1.41
	Post-Secondary Certificate	4.4	5.7	1.30
	University	2.1	4.9	2.33
1981	0-8 Years	8.9	9.9	1.11
	High School	8.3	9.4	1.13
	Some Post-Secondary	6.2	7.6	1.23
	Post-Secondary Certificate	4.3	5.7	1.33
	University	2.4	4.7	1.96
1982	0-8 Years	13.5	13.1	0.97
	High School	13.0	12.2	0.93
	Some Post-Secondary	9.7	10.4	1.07
	Post-Secondary Certificate	7.5	7.5	1.00
	University	4.0	6.5	1.60

Source: Statistics Canada, The Labour Force, Cat. No. 71-001, 1979-1983.

Table 16

Occupational Unemployment Rates by Sex

Occupations	1981			1982		
	Male	Female	Total	Male	Female	Total
Managerial	1.7	3.5	2.2	3.0	5.1	3.7
Natural Science	2.9	-	3.2	5.9	9.6	6.4
Social Science	-	6.3	4.8	4.6	8.0	6.2
Teaching	2.0	4.2	3.3	2.8	5.1	4.2
Medicine/Health	-	3.1	2.8	-	4.2	3.8
Artistic/Recreation	8.0	9.3	8.5	9.5	10.8	10.0
Clerical	6.0	6.3	6.3	8.8	9.0	9.0
Sales	4.2	6.9	5.3	6.7	9.6	7.9
Service	8.9	10.6	9.8	12.0	13.1	12.6
Agriculture	5.4	6.1	5.5	7.7	7.6	7.7
Fishing	11.0	-	11.6	10.7	-	11.0
Mining	-	-	8.0	18.5	-	18.7
Forestry	23.2	-	23.6	32.0	-	32.3
Processing	8.3	15.7	9.8	15.1	20.7	16.3
Machining	7.3	-	7.5	16.3	22.6	16.6
Product Fabricating	6.6	12.1	8.0	11.7	18.1	13.1
Construction	12.3	-	12.3	19.1	-	19.1
Transport	8.0	-	8.3	12.3	-	12.3
Material Handling	11.2	14.0	11.7	18.0	18.9	18.2
Other Crafts	4.2	-	5.5	6.4	-	7.4
Total	7.1	8.3	7.6	11.1	10.8	11.0

Source: Statistics Canada, The Labour Force, Cat. No. 71-001, 1981-1982.

women each participated in large enough numbers for their respective unemployment rates to be computed in a statistically reliable fashion. In all these cases, female unemployment rates were higher than male rates including in the traditionally female dominated clerical and service occupations. In 7 other occupations,[15] due to small number of female participants, only the male and the total unemployment rates could be reliably estimated. In 6 of these 7 occupations, the male unemployment rate was lower than the total unemployment rate. It implies that the female unemployment rate must have been higher than the male rate. In two other occupations - social sciences and medicine/health, only the female and the total unemployment rates could be reliably computed. In both these occupations, the unemployment rate for women was higher than the total rate. This implies that the female unemployment rate must have been higher than the male rate in these two cases as well. It is thus clear that unemployment rates for women exceeded those for men in almost all occupations in 1981. The same finding also holds true for 1982.

Data on unemployment of minority workers other than women is rather sparse. The Department of Indian and Northern Affairs has attempted to estimate the unemployment rate for native Indians in Canada. According to these estimates, the unemployment rate for native Indians was 12.3 percent in 1961 and about 18 percent in 1978-79 compared to the national rate of 3.9 percent and 8 perccent respectively (Department of Indian and Northern Affairs, 1970 and 1980). In 1977, the Native Council of Canada and Canada Employment and Immigration Commission (1977) jointly undertook a national survey of demographic and labour force characteristics of Metis and Non-Status Indians. The survey found that the unemployment rate in this subgroup of Native population averaged around 33 percent. More recently, Clatworthy (1981) completed a study of Native employment and unemployment patterns in the Winnipeg labour market. Table 17 provides relevant data from this study. As

Table 17

Male and Female Unemployment Rates by Age, Winnipeg, 1980

	Unemployment Rate			
	15-24 Years		25+ Years	
	Male	Female	Male	Female
Status Indians	59.2	52.6	33.9	35.7
Metis/Non-Status Indians	31.8	46.7	14.7	30.5
Total City	8.3	7.9	2.3	4.7

Source: Adapted from S.J. Clatworthy (1981).

is evident, the Native unemployment rates are markedly higher than the rates for the total city. In part, these wide disparities in unemployment levels between the Native and general populations can be explained by differentials in their respective education levels. In the Winnipeg study, both subgroups of Indians were found to have distributions which in comparison with the general population were markedly biased towards the lower educational categories (Clatworthy, 1981, p. 46). Thirteen percent of the Native population in Winnipeg had 5 years or less education compared to 4.8 percent of the general population. In contrast, only 7.3 percent of the Native population had post-secondary education compared to 32.5 percent of the general population. But a previous study of native Indians in an urban society (Stanbury, 1975) argued that variables such as education and length of time in the city did not have much impact on native employment.

The information on unemployment of workers with third world origins is even more limited. A three year longitudinal study of the labour market experience of immigrants (Saunders, 1975) was cited earlier in this paper. According to this study, the average unemployment rate for third world immigrants six months after their arrival in Canada was 15.2 percent over the 1969-71 period. The rate for non-third world immigrants over the same period, was considerably lower, 9.1 percent. The marked initial inequality in the unemployment rate between the two groups tended to decline over the three year period of the study. By the end of the third year, the unemployment rate for third world immigrants was even slightly lower than for other immigrants. The duration of unemployment, however, continued to be higher for third world immigrants than their counterparts from other countries. More recent unemployment data are available for Metropolitan Toronto. According to a report prepared by the City of Toronto, the unemployment rate among the population whose mother tongue was Indo-Pakistani was 12 percent in 1976.

This was twice the rate observed for all language groups taken together (City of Toronto, 1981).

Unequal Unemployment and Loss of Potential Output

Economists have attempted to estimate potential gross national product (GNP) for over two decades now. Potential GNP measures the output the economy would produce if the aggregate unemployment rate were at a full-employment level. The difference between potential and actual GNP at any point in time is known as the GNP gap. Some twenty years ago, Arthur Okun (1962) published an analysis on this subject and in the process enunciated what has come to be known as Okun's law. By relating the aggregate unemployment rate to the percentage GNP gap, the law provides a simple approach to measuring total economic cost of unemployment.[16] According to Okun's law, the percentage GNP gap is about 3 times the excess of the current unemployment rate over its full employment level. If the unemployment rate was 1 percentage point above its full employment level, the GNP gap would be about 3 percentage points.

Okun's law relates to the loss of GNP due to excessive aggregate unemployment. Our concern in the present paper is not with such unemployment per se. All groups in the labour force -- minority or otherwise -- are affected by such factors as lack of effective demand in the economy, seasonality of unemployment, lack of skills and the like. Unemployment caused by such factors can be considered equal or non-discriminatory. But the minority groups in addition are also affected discriminatory employment practices in the labour market. As was discussed in the preceding section, minority groups, specially women, suffer consistently higher unemployment levels than men in practically each and every broad occupational group. Our concern in the present paper is with the economic cost of such unequal or discriminatory unemployment. Following an approach similar to that underlying Okun's law, Lester Thurow (1969) estimated the impact on potential GNP of

equalizing white and nonwhite unemployment rates in the U.S. economy for 1966. The unemployment rates for whites and nonwhites were 3.40 percent and 7.53 percent respectively in that year. According to his estimate, if the two rates were equalized the GNP would increase by about 1 percent. The estimate did take into account the differences in the educational levels between the white and nonwhite labour force.

Using Okun's framework, a rough estimate can be made of the loss of potential GNP due to discriminatory unemployment that women face in the Canadian economy. Women are the most significant component of the minority labouur force; besides, reliable labour force statistics are available only for women. The estimate provided here relates to the year 1977. Denton, Robb and Spencer (1980) tested Okun's model on Canadian data for a 24 year period ending in 1977. Their results were virtually identical to the predictions of Okun's law. Specifically, the study estimated that if the overall unemployment rate was lower by 1 percentage point, GNP would have been higher by 3.3 percent in 1977.[17] The male and female unemployment rates were 7.3 percent and 9.4 percent respectively. Let us assume that if women did not face labour market discrimination, their unemployment rate would have been lower by 1 percentage point to 8.4 percent. Keeping in mind the evidence presented earlier, this assumption does not appear unreasonable. The female proportions of total labour force and total unemployed were .38 and .44 in 1977. Given these proportions, a 1 percentage decline in the female unemployment rate would mean a reduction of .4 percentage point in the 1977 overall unemployment rate, from 8.1 percent to 7.7 percent. Using as the basis the estimates provided by the Denton, Robb and Spencer study cited above, a .4 percentage point reduction in the overall unemployment rate would have meant about 1.3 percent higher GNP in 1977. One important qualification should be noted while assessing the loss of potential GNP due to unequal or

discriminatory unemployment levels that minority groups face in the labour market. To the extent there is surplus of labour of all types and skills, eliminating such discriminatory unemployment would result in a redistribution of income but in no real gain in GNP. Thus estimates of GNP gains from eliminating discriminatory unemployment assume that aggregate economic policies can be implemented which are specific enough to provide markets for the extra output gained by increased employment of minority labour force groups.

Employment Discrimination and Labour Market Ineffeciency (Inflation)[18]

Full employment and price stability are two important goals of the federal economic and labour market policies. But these goals may not always be mutually compatible. Conceputally, one might expect high rates of inflation to accompany high levels of employment. "The strong demand positions which are required to attain high levels of output and employment also tend to exert upward pressures on prices. In such circumstances, therefore, there are dangers of a broadening range of price increases as the economy reaches higher levels of activity. Bottlenecks tend to develop in the supplies of skilled manpower and particular items of machinery and investment goods, and prices and costs begin to creep up" (Economic Council of Canada, 1964, p. 104). What this implies is that attempts to reduce unemployment below a certain level would generate inflationary pressures in the economy. The level of unemployment at which such pressures are likely to appear is called the natural or full-employment unemployment rate.

Surveying the unemployment-inflation experience of the Canadian economy from 1952 to 1980, the Task Force on Labour Market Development in the 1980's (Canada Employment and Immigration Commission, 1981) found that since the mid 1960's "there has been a tendency for the unemployment rate to drift upward and for the rate associated with each successive peak in economic activity to

be higher than that achieved at the preceding peak. In addition, the rate of inflation measured by the most commonly used indicator, the Consumer Price Index, has tended to increase since the mid-1960's" (p. 10). Thus it appears that since the mid 1960's, the natural rate of unemployment has tended to go up. In other words, inflationary pressures are beginning to be felt sooner, that is, at higher levels of unemployment today than in the mid 1960's.

A number of factors may have contributed to the apparent upward drift in the natural unemployment rate.[19] An important factor relevant to our purposes in the present paper is the changing composition of labour force in the Canadian economy. As Table 18 shows, women especially adult women are forming an increasing part of the total labour force. The adult women accounted for 20.8 percent of the labour force in 1965; the percentage rose to 29.5 by 1982. With the female youth included, the total female percentage of labour force rose from 31.3 in 1966 to 41.1 in 1982. Concomitantly, the share of men, especially adult men, steadily declined over the same period.

While the proportion of women in the labour force increased over the 1966-1980 period, their integration into the labour market had been rather poor. As discussed earlier in this report, the unemployment rate for women has been systemetically higher than men over this period. Also, women continued to be employed in the traditional female occupations in the service, sales and clerical sectors. They did not make much headway in entering non-traditional, male dominated occupations even though in many such occupations labour shortages were experienced (Betcherman, 1980). Lack of appropriate training/ skills and discriminatory hiring practices and procedures may provide significant explanations for this limited progress.

In short, women have formed an increasing proportion of the labour force in recent years. Their lack of integration in the labour market therefore must have contributed to the worsening of the trade-off between unemployment

Table 18

Percentage Composition of Labour Force For Selected Age/Sex Groups

Year	Women			Men			Total
	Youth	Adult	Total	Youth	Adult	Total	
1966	10.5	20.8	31.3	13.7	55.0	68.7	100.0
1976	11.2	22.4	33.6	14.2	52.2	66.4	100.0
1974	12.1	24.0	36.1	15.0	48.9	63.9	100.0
1978	12.2	26.7	38.9	14.6	46.5	61.1	100.0
1982	11.6	29.5	41.1	13.4	45.5	58.9	100.0

Source: Statistics Canada, Historical Labour Force Statistics 1966-82, Cat. No. 71-2001.

and inflation.

A number of labour market projections have been made by various bodies in recent years.[20] According to these projections, while the labour force growth will slow down, the female participation will continue growing. Table 19 shows the projections made by the Department of Finance (Ciuriak and Sims, 1980) for the next two decades. These indicate that the labour force participation rate of women aged 20 and over could increase to as high as 61.1 by 1990 and to 70.6 by 2000. The projected participation rate of men shows a downward trend; it declines to 80.8 by 1990 and to 79.2 by 2000.

A few demand side projections are also available. According to the Economic Council of Canada's nationwide Human Resources Survey (Betcherman, 1980), employers experienced widespread shortages in the 1977-79 period in the high skill level blue collar and white collar jobs. Such shortages are expected to continue in the coming years. The Task Force on Labour Market Development in the 1980s (Canada Employment and Immigration Commission 1981) also developed projections of occupational imbalances for the 1980-90 period. Based on these projections, the Task Force concluded that "There is concern, therefore, that the continued high concentration of women in service sector occupations, combined with high labour force growth, will result in a growing problem of unemployment among women, while simultaneously labour markets in occupations and industries which primarily employ men will become increasingly tight" (p. 60). Given these projections, the need for fuller integration of women into the labour force is obvious. Unless this occurs, the Canadian society will likely to have to tolerate even higher rates of natural unemployment and inflation in the future than in the past.

Table 19

Past and Projected Participation Rates, Female and Male, Aged 20 and Over, Canada

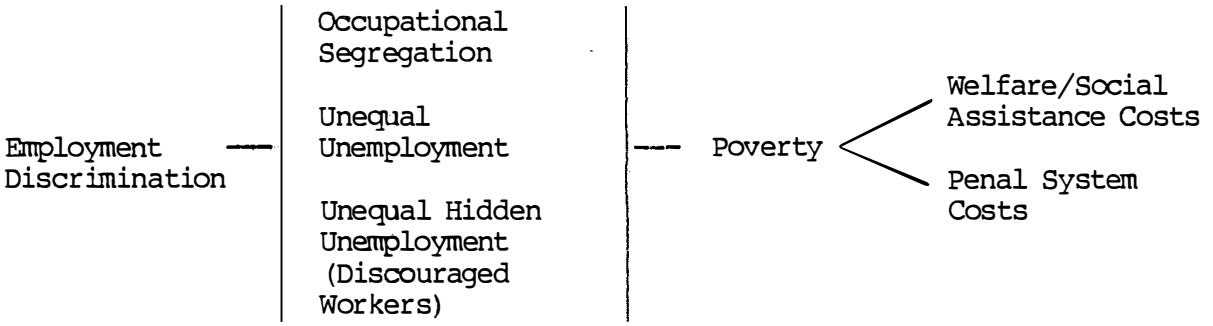
Participation Rate*	Women		Men
	Low	High	
1953	23.0		86.4
1960	28.4		86.0
1965	33.1		84.7
1970	38.2		83.2
1975	43.9		82.4
1979	48.6		81.7
1985	55.6		81.5
1990	59.4	61.1	80.8
1995	62.6	66.0	80.0
2000	65.3	70.6	79.2

*Estimates for years prior to 1975 have been adjusted to correspond to new Labour Force Survey definitions.

Source: Ciuriak and Sims (1980). Table reproduced from Swan (1981).

Some Other Economic Costs of Employment Discrimination

In this section, we briefly discuss two other possible economic costs of employment discrimination. As a background, the relevant part of Figure 1 is reproduced below with minor modifications. Thus employment discrimination can



affect minorities in three ways: segregation into low level, low pay jobs, disproportionately high unemployment rates, and high levels of hidden unemployment. These labour market experiences can increase the incidence of poverty among minorities which in turn can lead to higher welfare and penal system costs. The linkages proposed here should be interpreted with caution. Thus, it is not implied here that employment discrimination is the sole cause of poverty or that poverty is the only factor influencing social assistance and penal system costs. It is beyond the scope of the present paper to attempt to test these linkages empirically. Even if it were, any such attempt would be severely hampered by lack of data. In what follows we provide some general observations based on available data and empirical studies.

Albin and Stein (1977) have examined the impact of unemployment on welfare expenditures for the 1959-71 period for the U.S. economy. The study found a significant positive relationship between the two variables. The relationship found was however lagged in nature. The impact of unemployment on welfare expenditures tended to appear only after a quarter's dealy; but once the impact appeared, it tended to remain significant over the next four years. Thus the study points to the possible long run effects of unemployment

on welfare expenditures. The study did include a number of other factors including benefit levels and demographic characteristics of labour force as control variables.

A recent report of the National Council of Welfare (1981) provides similar findings for the Canadian economy for the four year period 1973-77. During this period, in Canada as a whole the percentage increse in those classified as other poor families[21] (42%) parallelled the rise in the jobless rate (45%). In many provinces too including Ontario, Nova Scotia, New Brunswick, and Quebec, the same relationship was found between the two variables. The majority of those classed as other poor depend on provincial social assistance programmes for a large part of their income. The number of welfare recipients rose from 1.2 million in 1973 to more than 1.3 million in 1977. On the one hand, rising unemployment in the economy makes it harder for employable welfare recipients to find jobs and get off welfare. On the other, it can add to the welfare rolls jobless workers who have exhausted or about to exhaust their unemployment insurance benefits. According to the Report of Interprovincial Task Force on Social Security (1980), 28 percent of Canada's 636,000 welfare cases fell in the "unemployed employable" category.

The preceding analysis implies that since minority workers face more unfavourable labour market conditions, they would also suffer a higher risk of poverty. From the limited information that is available, it appears to be true. In its 1979 study on Women and Poverty, the National Council of Welfare (1979) found that three out of five poor Canadians are women and that 16 percent of Canadian women live in poverty. Women heading single-parent families run an extremely high risk of poverty. According to a 1977 Health & Welfare Canada study (Maclead, 1977), about two thirds of single-parents who were women had incomes below Statistics Canada's poverty line. Occupational profile of working poor women is also quite revealing. Thirty two percent of

women heading working poor families in 1978 held clerical jobs and another 27 percent held service occupations (National Council of Welfare, 1981).

Some information on poverty of Natives is also available. In 1964, about 36 percent of the Native population was supported by social assistance compared to 3.5 percent of the national population. In 1974, 55 percent of the total Indian population on reserves was receiving social assistance and that a majority of these recipients were employable (Indian and Northern Affairs Canada, 1980). A recent study of Natives in the Winnipeg labour market (Clatworthy, 1981) found that over 70 percent of Native households in 1980 experienced incomes below the Statistics Canada's poverty line, and that a vast majority of these households were receiving social assistance.

There is also some evidence that poor economic conditions that minorities suffer and the nature and magnitude of crimes they commit may be interrelated. A recent U.S. study (Chapman, 1980) found that over the 1960-78 period, the percentage increase in crimes committed was much higher for women than men. Also, "the majority offenses committed by women are in the category of economic crime. ... The crimes of these women are in most cases directly related to their failure to support themselves adequately ..." (p. 3). Similar trends appear to be true for the Canadian scene also. Between 1965 and 1975, the number of women charged with property offenses rose from 7,096 to 26,411 while violent crimes rose from 249 to 818 (Adams 1978). Indications are these trends have continued in more recent years as well.

The linkage between poverty and economic crimes is somewhat less clear cut in the case of Native Indians. They are certainly over-represented in the prison population. For example about 9 percent of the prison population is Indian compared to an estimated 3 to 3.5 percent share of the national population. But in their case both property and violent crimes are equally high (Indian and Northern Affairs Canada, 1980).

Summary and Conclusions

The visible minority groups occupy a very critical position in the labour market. Today, women alone comprise over 40 percent of the total labour force. In the next twenty years, this share is expected to rise to 50 percent. From 1973 to 1982, women accounted for about 60 percent of labour force growth in Canada. Over the 1980s, they are expected to contribute over 65 percent. Labour force participation of Natives too has shown significant increases. Only 30 percent of the working-age Natives were in labour force in 1961 but the percentage rose to about 54 percent in 1977-78. The Native "baby boom" of the 1950 and 1960s will increase the working age population by about 200,000 in the 1980s. In the Western provinces, Native people will account for 20 percent of labour force growth (Canada Employment and Immigration Commission, 1981, p. 95). While systematic data on other minority groups (such as people with third world origins, disabled) are not available, it is believed that they too form a sizeable number.

Thus it is clear that minority group workers represent a vast productive pool and that this pool will grow even larger in the future. At present, these resources are underutilized. This is reflected in the occupational segregation of minority workers into a narrow range of low skill, low productivity occupations and higher levels of unemployment. Equity considerations require that these individuals receive a fair deal in the labour market. Economic considerations too require the same. Underutilization of minority workers can entail significant economic costs in terms of lowsr national output, labour market inefficiency and higher inflation, and excessive welfare and penal system costs. Unless policies are developed to integrate minority workers more fully into the labour market, these costs are likely to escalate in the future. In short, development of such policies is justified both on equity as well as economic grounds.

Footnotes

1. The employment-population ratio measures employment as a percentage of the working-age population.

2. From the list in Table 3 of top ten jobs in 1981, only the job "Janitors, charworkers and cleaners" did not make the list in 1971.

3. The data from 1971 Census of Canada also supports this finding. Third world immigrants who entered Canada between 1961 and 1971 tended to have higher educational levels than immigrants from the developed world. This difference was especially noticeable among males. For more details see Lanphier (1979).

4. The procedure involves the use of a variant of the constant elasticity of substitution (CES) production function. For details see Bergman (1971).

5. In Table 1, as the elasticity of substitution increases, the gain in national income goes up. It is so because the higher the elasticity of substitution, the more slowly the marginal productivity of a given occupation changes, and hence the greater the gain from reallocating the Negro workers.

6. The pattern of occupational segregation of women has been remarkably stable since 1901. For details see Hakim (1980).

7. The model was found to predict men's occupational distribution very accurately.

8. The female sample is younger than the male sample. The authors argue that although some bias problem does arise from age difference between the samples, it should understate the effects of discrimination on occupational assignment of women since age tends to be positively correlated to occupational advancement.

9. Young workers were defined as those who finished their schooling within nine years of the date of the survey (1979) from which data were obtained for the present study.

10. The following equation was used:

$\Delta \ln(C/q) = w_1 \Delta \ln p_2 + \cdots + w_n \ln p_n$ where $\Delta \ln(c/q)$ is the proportionate change in average costs, $\Delta \ln p_2$ is the proportionate difference between male and female market wage rates in each job category, w_2 is the fraction of total costs that are paid to workers in each job category, and the subscripts 1 to n relate to n different job classifications.

11. The study does not provide any other detail concerning the organization.

12. Male applicants have a mean score of 3.00 and the standard deviation of 1.15, and female applicants a mean score of 2.70 and standard deviation of 1.08.

13. Krzystofiak (1982) has attempted to estimate back-pay liability for discriminatory employment practices. A simulation model is developed

which estimates these costs based on the decisions handed down by the courts in the U.S.

14. Managerial, teaching, artistic, recreation, clerical, sales, service, agriculture, processing, product fabricating, and material handling.

15. Natural science, fishing, forestry, machining, construction, transportation, and other crafts.

16. Total economic costs includes output effects of unutilized labour force, changes in hours of work, changes in the effeciency of use of plant and equipment etc.

17. This translates to about a 3 percentage point reduction in the percentage GNP gap which is computed as:

$$\frac{\text{Potential GNP - Actual GNP}}{\text{Potential GNP}} \times 100$$

18. Analysis in this section is limited to only women due to lack of information on other minority groups.

19. A discussion of these factors is beyond the scope of the present paper. For a recent discussion on the subject see Canada Employment and Immigration Commission (1981).

20. The following labour force projections are available: Canada Employment and Employment Commission (1980, and 1981), Ciuriak and Sims (1980), and Denton, Feaver, and Spencer (1980).

21. The report distinguishes between working poor and other poor. Working poor are those who obtain more than half of their income from employment. Other poor are those who obtain more than half of their income from nonwork sources.

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