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**Wage Discrimination against Visible Minorities
In Canada**

**Major paper
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Chapter 1

Introduction

Discrimination as a sociological phenomenon is difficult to define, since it has mostly two opposite meanings (Boulding, 1976). The first is to distinguish among different tastes in the sense that a person who has a good ability of discrimination, has a good sense of taste, that is, a high ability to discriminate good things from bad things including food, music, art, literature and so forth. The other is to treat unequally different individuals or groups based on incorrect judgement as well as on an exclusive group of people interests.

The issue of discrimination has nothing to do with the first meaning, as it is entirely restricted to the second meaning. Accordingly, the issue of discrimination is due to one of the following: (i) a desire for monopoly or monopsony power; (ii) prejudice or nepotism. In the first case, people who enjoy the benefits of monopolised high paid jobs exclude others who belong to a different group of people or class from having an access to such occupations or high wage jobs. Hence, the monopolising workers enjoy financially higher wages while they psychologically enjoy being high-class workers. On the other hand, employers who enjoy the benefits of monopsony also exclude others from certain groups from having access to investment opportunity or to capital markets to enjoy higher profits. So in this case, discrimination has nothing to do with hate or dislike of the victims but instead it is restricted to an advantaged group or individuals' interest. In the second case, prejudice and nepotism are based on incorrect judgement relied

on false generalisation about certain groups reinforced by the lack of homogeneity: different gender, different colour, different race, different religion, and different language etc. Such a generalisation takes the form of a belief that all (A) group of individuals are good or that all (B) group of individuals are bad. While in the reality, not all (A) are good and not all (B) are bad. Consequently, the generalised judgement about the first group is kind of nepotism while the generalised judgement about the second group is a kind of prejudice. It is clear in this case that discrimination has to do with hatred and dislike in addition to interests. Although this sort of discrimination is based on invalid judgement, it is commonly practised and its persistence relies on both the advantaged group's interests and the high cost of hiring obtaining information.

There are two main views with respect to this issue in the economic literature (Cherry, 1989): (i) the main stream neoclassical economists, which politically could be classified as conservatives or liberals; (ii) the sub-stream economists which are politically called radicals and they could be classified as non-orthodox economists (Institutionalists, Marxists, Feminists, etc). The two parties of main stream economists believe that disadvantaged individual workers suffer from internal inadequacies, which takes the form of dysfunctional behaviour. However, they differ in their interpretation of the issue, as conservatives claim that such behaviour is inherited genetically. Some liberals believe that such behaviour is due to external pressures and they differ also about the extent of the productivity gap resulting from these differences. Conservatives

contend that they cause wide productivity differences, and liberals claim that the productivity gap is generally small. In contrast, the Marxists argue that employers (capitalists) are to be blamed and to be held responsible for discrimination. In particular, they use it to weaken the workers' class unity as well as their bargaining power to generate higher profits (Wachtel, 1992). Race segregation is an illusive tool, which owners and employers use to make advantaged workers imagine that the threat is coming from disadvantaged workers' competition rather than from owners in order to weaken labour as a movement. They are simply using a divide-and-conquer strategy to maximise their profit and reduce the labour share of GNP. Moreover, they argue that, according to the first group perspective, victims are being blamed for being disadvantaged in the labour market instead of capitalists (employers). Hence anti-discrimination policies have been focusing on how to change victim's values and behaviours rather than the discriminatory group's values and behaviours.

Both groups have opposing views about the gainers and losers from discrimination. The Neo-classical economists believe that advantaged workers are beneficiaries while employers and disadvantaged workers are the losers. The Non-Orthodox economists have different views, as traditional Marxists claim that employers are beneficiaries especially in the primary sector (according to Piore definition) while advantaged and disadvantaged workers are the losers since primary employers have the ability to employ secondary workers at lower wage. This ability strengthens their bargaining power against primary workers, so that, as

a result of this situation employers can dictate wages that are less than marginal productivity of the primary workers. Neo-Marxists would argue that small-scale employers and advantaged workers are the beneficiaries while large-scale employers and disadvantaged workers are losers.

Despite the Neo-classical view that competition has negative effects on discrimination, economists differ about the extent to which competition can reduce or eliminate discrimination. Conservatives claim that competition will eliminate discrimination in the long run, while liberals argue that competition alone can not do the job of eliminating discrimination without government aid. In contrast, the Non-orthodox claims that competition worsens discrimination, when it forces secondary employers to superexploit the disadvantaged workers.

The Neo-classical parties differ in their stand with respect to government policies as conservatives contend that market forces can do the job so that government policies are neither required nor effective, while liberals claim that market is ineffective and government policies are essential to reduce discrimination. In contrast, the Non-orthodox argue that those government current policies such as affirmative action and anti-discrimination laws are ineffective. Hence, in order to reduce discrimination, more restrictive policies such as quotas are needed and, even if current policies are mildly effective, they will have a weak impact on secondary workers.

Wage discrimination has gained labour economists' attention during the last three decades, particularly in North America. The wage gap between advantaged and disadvantaged groups has puzzled labour economists as well as care-givers and policy-makers, since it is difficult to explain such discrimination in a competitive market.

In Canada, according to the annual Canadian reports of Employment Equity Act, there are four economically disadvantaged groups: visible minorities, aboriginals, women, and persons with disabilities (De Silva, 1999). All of these groups earn, on average, lower wages and salaries than the white male, enabled majority of Canadians.

Canadian data also indicate that wage discrimination does exist. For instance, visible minorities hourly wage rate is less than the majority's by 15 per cent while their annual earnings rate is less than majority annual earnings by 13 per cent (Hum and Simpson, 1999). However, discrimination is prohibited by law in Canada and such a prohibition is based on equal rights legislation, such as Canadian human rights act (C-25), equal pay for equal work laws, employment equity programs and anti-discrimination initiatives. In these laws, discrimination is prohibited on the basis of age, sex, race, religion, marital status, colour, criminal conviction in which pardon was received, and national origin. (Block W. E. and M. A. Walker, 1982).

As the number of immigrants from developing countries has increased in the recent years, which has increased the portion of visible minorities in the

Canadian population, the issue of discrimination against them has become more important.

The economic literature concerning this issue reveals remarkable wage differences across workers. Although part of the problem is due to the human capital differences, a second part is due to unexplained sources. Therefore it could possibly be attributed to race, ethnicity, or gender discrimination.

Empirical literature on this issue could be classified, according to the empiricists' views, into two different approaches. The first approach gives more importance to the discrimination as a main reason for wage differences. The second gives more attention, with respect to this issue, to differences in the endowments of human capital.

The aim of this paper is to investigate the wage differences between whites and visible minorities in Canada as defined in the public use micro data files in Canadian 1996 census.

In this paper I propose that the wage gap between white majority and visible minorities does exist, in Canada, and can be explained by different treatment in the labour market more than endowment differences.

This paper is organised as follows: This chapter presents the introduction. A brief literature review is presented in the second chapter. Chapter three gives a brief description of the model and data. Chapter four gives the empirical results, as well as presenting the summary and conclusions.

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Chapter 2

(2-1) Theories of discrimination:

Theoretical contributions on this issue could be classified into two categories (Wachtel, 1992): Neo-classical contributions and Non-orthodox contributions.

(2.1.1) Neo-classical theories of discrimination:

The main stream theoretical contributions also could be classified into two categories with respect to the reason behind discrimination, theories relying on prejudice or nepotism and theories relying on monopoly or monopsony.

The first category

In the first category, theorists contend that discrimination is based on an advantaged group's dislike of physical or sociological association with a disadvantaged group of individuals or, in other words, they prefer to be associated with their own group of individuals for the seek of homogeneity. The earliest complete theoretical contribution belongs to this category is Becker's theory of discrimination.

Becker's theory:

Becker (1957) uses two different approaches in presenting his theory of discrimination: microeconomic and macroeconomic. In the first approach, he used the concept of discrimination coefficient as a definition

of a taste of discrimination. Which takes into account the non-pecuniary cost associated with dealing with disliked individual. For instance an employer will act as he is paying $w(1+d_i)$ when he is hiring a disliked worker. Where w is a net wage rate and d_i is the non-pecuniary cost associated with hiring disliked worker. While an advantaged employee acts as he is paid $w(1-d_j)$ when he is associated with disliked worker where w is defined as above and d_j is his/her discrimination coefficient against a disliked co-worker. A consumer also acts as he is paying $p(1+d_k)$ when he is associated with disliked seller or customer. Where p is the net price rate and d_k is his/her discrimination coefficient against a disliked individual. Hence he concludes that disadvantaged workers' wages would be less than those of advantaged workers would.

In the second approach, Becker's theory or explanation of welfare effects of discrimination is adopted from international trade theory. Where the relation between advantaged and disadvantaged groups is expressed in terms of trade between two societies N and W, which societies mainly trade in production factors rather than goods. There are two homogeneous factors in each society, labour and capital. Capital and labour are assumed to be perfect substitutes. W society is assumed to be capital-abundant while N society is assumed to be labour-abundant. So W exports capital while N exports labour according to international trade theory. Becker distinguishes between two cases: the first one represents the situation in which

discrimination is absent (free trade). While second represents the presence of discrimination (restricted trade). In the first case an equilibrium output would be optimal so factor prices would be equal as well as the price of commodities and each factor price would equal its marginal value product. In the second case in which W society practices discrimination, and as a result, export of capital and import of labour would be restricted informally since W society is willing to bear certain loss in order to avoid association with the N group of individuals (society). This practice leads to a new equilibrium in which it generates less output and hence less income for both W and N societies as a result of disturbing the optimal allocation of resources by discrimination. So according to Becker's analysis not only does discrimination hurt N society but it also hurts W society.

Arrow's theory:

Arrow was concerned to develop Becker's theory of discrimination on the basis of neo-classical framework (Arrow, 1973). So he introduced two different models, the conventional model of discrimination and the alternative one.

i) The conventional model:

Basically, in his conventional model, Arrow assumes that employers seek to maximise utility rather than maximising profit. Assuming that there are two different groups B and W in a society, he distinguishes between

two cases. In the first case he assumes that employers have the same utility function,

$$U = u(\pi, B, W)$$

In which employer's utility depends on profit and the number of B and W workers. In the second case employers have different utility functions, and hence different tastes for discrimination. Their utility also depends on their profit and the B and W workers ratio,

$$U = u(\pi, B/W)$$

In the first case, employers neither gain nor lose by their discrimination behaviour while W workers gain and their gain is transferred from B workers.

In the second case, the more discriminatory employer loses compared with the less discriminatory one. Thus the gain and loss depends on the degree of discrimination since the act of discrimination shifts the employer's demand for labour to a more costly one and therefore it restricts his scale. W workers still gain in this case and their gain is also transferred from B workers.

In the long run conventional model, competition tends to eliminate discrimination in the labour market since capital will flow to more profitable enterprises, which in this case will be the least discriminatory ones. So the least discriminatory enterprise will force the more

discriminatory enterprise out of the market, under the purely competitive hypothesis.

ii) The alternative model:

Arrow admits that the conventional model has some limitations since it could not explain the persistence of discrimination. Hence he introduces an alternative model in which he interprets the persistence of discrimination to adjustment costs, which are caused by personnel investment, such as administration and training.

Arrow uses non-convexity property to conclude that perfect segregation between B workers and W workers would be the optimal utility solution rather than the bundle of both workers, the case in which the optimal solution is to fire all W workers and to hire all B workers. This solution will increase the expenses of the adjustment process, hiring, firing and training. Hence discrimination will persist because of the high cost of adjustment. Three situations will result from the process in this model: (i) firms with all W workers. (ii) Firms with all B workers (iii) firms with mixed workers. Arrow concludes that in either case there are still wage differences between B and W workers and which case will dominate will depend on the extent of discriminatory acts and feelings. Furthermore, adding imperfect information to the model confirms the result of the persistence of discrimination. As a result of uncertainty about applicants' information, the employer will use his subjective expectation to hire or not

to hire the applicant. So for instance, if the probability of white workers to be qualified exceeds the probability of black workers to be qualified, white workers' wages will exceed those of blacks. Generally, adding the personnel costs as well as imperfect information to the model is considered the building block of Arrow's contribution and by which the model could explain the persistence of discrimination.

The second category

In the second category, theorists argue that discrimination is based on monopoly or monopsony power that the advantaged group owns. The most distinguished economists in this category are Lester Thurow, Barbara Bergmann and Anne Krueger.

Thurow's theory

Thurow also distinguishes between two models: the existence model and the alternative one (Thurow, 1969). On the existence model, he discusses Becker's model, indicating its limitations and mentioning the role of elasticity of supply of B workers in the existence model to conclude that whether W workers gain or lose depends on the elasticity of supply of B workers. Thurow considers Becker's discrimination coefficient as a decrease in the demand for B workers. Assuming individual coefficients to be equal in all cases, he discriminates between three cases:

- (i) First case: in this case, the elasticity of B workers' supply is zero. The W group gains from discrimination where B workers' wages is less than those of W workers.
- (ii) Second case: in this case, the elasticity of B workers' supply is infinity. The W group loses from discrimination while B workers' wage is constant.
- (iii) Third case: in this case, the elasticity of B workers' supply is in between ($0 < \zeta < \infty$), and both loses and gains occur. The net gain and loss depends on the elasticity of W's demand for B's labour and the elasticity of B's supply of labour.

On the alternative model, Thurow contends that discrimination comes from the monopoly power of the discriminator rather than being distortion from free trade and perfect competition caused by some trade barriers. The dominant group is interested in dealing with the subjected group under their monopolist or monopsonist conditions rather than being segregated. The minority group has no choice but to trade with the dominant group. Hence he introduces the concept of social distance instead of Becker's physical distance concept as a factor of W group satisfaction not to associate with B workers. In other words, Thurow argues that discrimination is not simply demanding higher wage for being associated with B workers as Becker's theory stated but that the discriminator requires to be

served by B individuals either at work or at home. Thus the segregation is restricted only with regard to occupation rather than place. Finally, the most distinguished contribution of Thurow is his comprehensive classification of discrimination:

- (i) Employment discrimination, which indicates the differential incidence of unemployment. For instance, if incidences of unemployment among Blacks were more than those incidences among whites, the White employed number and their income would be higher.
- (ii) Wage discrimination, which indicates wage differentials. For instance, if in a discriminator society Blacks wage and employment can be controlled Whites income can be raised by distributing Blacks into certain occupations. Hence Whites' income can be maximised by increasing the differences between Blacks marginal product and their wages.
- (iii) Occupational discrimination, which indicates labour market entry differentials. Where Blacks are restricted to low-wage occupations while Whites enjoy the privilege of high wage occupations.
- (iv) Human capital discrimination, which indicates human capital investment differentials. This kind of discrimination arises

from limiting Blacks' human capital investment in both education and in on-the-job training.

- (v) Capital market discrimination, which indicates differential access to capital market. In which Blacks can be prevented from having an access to the capital market or they can be obstructed from making an efficient use of it.
- (vi) Monopoly discrimination, which indicates differential enjoyment of monopoly returns. This kind of discrimination that can happen when blacks are prevented from having an entry to trade union controlled jobs.
- (vii) Price discrimination, which indicates price differentials in the good market. This kind of discrimination can be applied according to Thurow only on goods on which price elasticity of demand is less than one. The perfect example of price discrimination can be taken from the housing market, in which Whites refuse to sell homes in suburbs to Blacks while they compensate their loss from raising ghetto homes prices.

Bergmann's theory:

Bergmann also attempted to solve Becker's model limitations, especially the persistence of discrimination. So she adapted Edgeworth's overcrowded hypothesis, in which Edgeworth argue that women lower wage was due to being crowded in small number of occupations, to assume

that there are two different types of occupations, the high status occupations and the low status occupations (Bergmann, 1971). In case of discrimination, there is no high status occupation demand for disadvantaged workers since they are restricted to advantaged workers, unless the disadvantaged worker's marginal productivity exceeds the wage differentials between the different types of occupations. Hence the low status occupations are characterised by oversupply of disadvantaged workers since they have no access to high status occupations. This oversupply of labour according to Bergmann is responsible for wage and marginal productivity differentials between the two types of occupations and therefore responsible for discrimination. In order to clear the labour market for low status occupations labour, the marginal productivity of workers in this type of occupation would diminish to its lowest level. So, even if workers in low status occupations were paid a wage equal to their marginal productivity, their wage would be less than those of high status occupation workers. Conversely, the high status occupation workers will enjoy high wage level as well as high marginal productivity because of the exclusion of disadvantaged workers. The extent of the effect on advantaged workers' productivity and wages would depend on the size of the supply of qualified Blacks' labour force which was being excluded.

Krueger's theory:

Krueger attempted to extend Becker's model and his interpretation of discrimination, especially the employer's discrimination. So she contends that there are other important causes, in addition to the Becker's taste of discrimination, which play a significant role in causing discrimination such as the advantaged group gain from discrimination (Krueger, 1963). Krueger asserts that, in the absence of discrimination, the total income of W and N societies would be maximised when marginal productivity of capital and labour are equal in both societies. While in the presence of discrimination W income only would be maximised, which implies that marginal productivity of capital in W society is lower than N society's counterpart.

Even though it is of W employers' interest to equalise marginal productivity of capital in both societies, Krueger mentions that W employers may sacrifice their optimal profit to increase W society's income. The question that must be raised here is what the employers' motives are for such a sacrifice? Krueger provides three most likely purposes:

- (i) Employers have tastes of discrimination;
- (ii) Employers prefer to increase their ethnic group income rather than increasing their own income;

- (iii) Public discrimination resulted from discriminatory allocation of publicly owned capital through public policy controlled by advantaged group.

(2.1.2) Non-Orthodox theories of discrimination:

The conventional Marxist theory of discrimination could be summarised by Reich's contribution.

Reich's theory:

Marx and Engels argued that capitalist industrialisation reduces heterogeneity among working class individuals. So the more developed the economy, the more homogeneity is going to be established among workers. (Marx and Engels, *The communist Manifesto*)

However modern Marxists contend that racism and hence discrimination are rooted deeply in capitalist system rather than being based on some individuals' taste, as Becker said (Reich, 1977). Historically, the colonial system was based on racist ideology against the invaded countries' population. For instance Reich argues that the American Empire was founded on the basis of racist practice against Indians, funded by acts of slavery, and extended by recourse to the white supremacist ideology. Thus the racial attitude according to traditional Marxists' beliefs is seen as a whole social system rather than individuals' actions. It is seen also as a tool by which capitalists can superexploit the working class, weakening its

bargaining power, its movement strength and solidarity, in order to increase the surplus value extracted from workers. The acts of discrimination not only lower the earnings of blacks but also the whole working class's earnings including whites to increase the employers' profit. Reich's empirical work confirms his hypothesis that discrimination reduces the middle-income white workers earnings (Reich, 1981). He then concludes that the white workers' fear of being substituted for by cheaper and underemployed black workers worsens the bargaining power of the middle-income white workers, and hence forces them to accept lower wages. Discrimination in public services such as education also aggravates the position of poor whites who live in a black neighbourhood. Racism as mentioned above plays a significant role to prevent solidarity of the poor and their ability to join a united political movement by which they may succeed to eliminate education inequality. As evidence of employers' racism to divide the working class, Reich indicates the frequent use of blacks as strike-breakers. As occurred in a well-known case of the steel strike of 1919, Reich concludes that racism can not be eliminated by moral suasion nor will it gradually disappear in the long run by market forces. Hence as empirical evidence suggests, discrimination is in capitalists' and high-income whites' interests, so it will persist under the capitalist

system unless there would be change in capitalist institutions and attitudes. It also provides, according to Reich's analysis, psychological benefits to poor whites since "the opportunity to participate in another's oppression may compensate for one's own misery." (Reich, 1977).

The Neo-Marxist contribution on discrimination could be summarised by Franklin and Resnik theory.

Franklin and Resnik's theory:

Franklin and Resnik (1973) argue that the concept of discrimination was marginalized to trivial problems faced frequently by each person according to Becker's definition that discrimination is based on individual's taste. Becker's definition ignores the distribution of power and the use of double standard judgements. So they contend that discrimination is a mainstream practice and is based on social rules rather than individuals' act or taste. In contrast with Becker, Franklin and Resnik argue that individuals incur some losses when they violate the social rules or mainstream view of judging Blacks. Hence individuals may practice discrimination in order to avoid some sort of social punishment associated with non-racist behaviour. Discrimination, according to Franklin and Resnik, emanates from several sources as follows:

- (i) Social preferences based on dominant group values, which controls individuals' behaviour.
- (ii) Covenants act backed by public institutions such as government.
- (iii) Market conditions that make discrimination acts economically profitable.
- (iv) Stereotypes based on the dominant group's generalised judgement about subordinate group.
- (v) White workers act in order to benefit by being protected from blacks' competition.

They conclude that discrimination is emanating from four types of agents: employers, foremen, workers, and consumers. Franklin and Resnik give some emphasis to employers' discrimination. So they distinguish between large-scale capital-intensive enterprises and small-scale labour-intensive enterprises to indicate that small-scale labour-intensive enterprises gain more from racist acts. Hence they cited a number of small businessmen acknowledging that small business gains mainly from a secondary labour market resulting from discrimination and racist acts. As a result, small businesses, including black capitalists, are more likely to resist uplifting policies aimed at improving black workers' skills. They also put some emphasis on the role of foremen as the management representatives on the lowest levels, who have the ability to control the employment

entry and workers' promotion. Based on the authors' observations gathered from a number of business executives, foremen tend to practice some sort of nepotism in favour of friends and relatives and hence are prejudiced against blacks to the point of excluding them from promotion or access to information.

The institutional theories of discrimination could be summarised by Doeringer-Piore contribution

Doeringer and Piore's theory:

Doeringer and Piore distinguish between two kinds of labour markets, primary and secondary markets (Doeringer, P. and Piore, M. 1971). The first one offers high wage jobs with favourable working conditions, job security, employment stability, fair and clear promotion rules, and equal chances for improvement. The secondary market has relatively lower wages with unfavourable working conditions, job insecurity, employment instability, unclear and sometimes unfair promotion rules, and unequal chances for improvement. Discrimination closes both the port of entry and the ability to shift from secondary market to the primary market for disadvantaged workers. In other words, discrimination enlarges the size of workers trapped in secondary market, and hence lowers their wages (Piore, M. 1970), while it reduces the labour force in primary market and therefore raises their wages. Even qualified workers who

share superficial characteristics with secondary workers, e.g. “same colour, same race or same gender,” would be trapped also in the secondary market. This occurs as a result of statistical discrimination as long as employment decisions are taken on the basis of race, accent, and education attainment and so on.

Once a worker is trapped in such a secondary market, he/she will be held captive in a chain of cyclical cause and effect processes. As soon as a worker is employed in a secondary market, he/she will take on the secondary workers’ bad traits, such as high job turnover, poor work habits, and lack of mobility. And hence he or she will never be accepted in the primary market because of a bad work history. So a black worker for instance when he or she gets a secondary job will add to his/her personal characteristics some other less desirable features in addition to his colour from a discriminatory perspective. And once the worker is attached to these cursed features, he/she will be excluded from on-the-job training programs and therefore will be prevented from either fair promotion or access to primary market.

(2-2) Empirical Literature:

It is not longer than a decade ago that the issue of wage discrimination based on race has gained economists' attention in Canada. In contrast, this issue has been investigated earlier and more often in the US. However, wage discrimination based on gender has been frequently researched in the modern world in general and especially in North America. In the US, the empirical literature on racial discrimination concentrates on discrimination against Blacks and Hispanics, while in Canada it focuses on discrimination against visible minorities rather than against one or two specific groups. This section will focus on reviewing the empirical literature of discrimination based on race rather than gender; however, empirical works focused on discrimination based on both race and gender will not be ignored.

There is a brief empirical literature in North America, which geographically could be classified into two main categories. The first category presents a brief Canadian empirical literature. A brief US empirical literature is presented in the second category.

The first category:

This category presents a brief review of Canadian empirical works, with respect to this issue, such as:

J. Howland, and C. Sakellariou,

Howland, J. and Sakellariou, C.(1993) examine the earnings differentials among whites, South Asians and blacks and their earnings differentials interacted with four occupational levels. They also take into account earnings differentials between immigrants and native-born as well as male-female earnings differentials. Using the 1986 Canadian Census Tape, “ The Individual File of The Public Use Sample”, and an OLS technique, with an occupational model of attainment, they conclude that:

- (i) Empirical results indicate a relatively wide wage gap between whites and visible minorities. For men, the wage gap ranges from 2 per cent for South Asians to 21 per cent for blacks. For women, the earnings gap was 4 per cent for both South Asian and Southeast Asians and was approximately 5 per cent for blacks.
- (ii) Occupational results indicate that, for men, occupational segregation played an important role in the reduced earnings of blacks and also it reduced the earnings gap for other visible minorities. For women, unlike the men, differences in the types of occupations played an augmenting role on the earnings gap of visible minority women, widening this earnings gap between whites and visible minorities. However, occupational segregation does not worsen the women’s earnings gap with regard to men.

K. Pendakur and R. Pendakur:

K. Pendakur and R. Pendakur (1998) include in their work three main parts: first, they examine wage differentials among whites, aboriginal and visible minorities at the aggregate level. Second, they examine wage differentials among subgroups of each category. Third, they examine earning differentials among those categories across different metropolitan areas. In addition, they also evaluate wage differentials between males and females as well as between immigrants and Canadian-born within aggregate groups.

They use Canadian data from the 1991 census Public Use Micro-data files (PUMF), with an OLS technique, Mincer's human capital model, and the Oaxaca decomposition to conclude that:

- (i) There are wage differentials between whites and visible minorities as well as between whites and aboriginals on the aggregate level.
- (ii) The wage gap between whites and immigrant visible minorities remains after controlling for the place of schooling.
- (iii) The wage gaps are not completely explained by personal characteristic differences.
- (iv) Earnings vary across metropolitan areas.

In summary, there are considerable earnings differentials both between and within whites and visible minorities as well as between whites and Aboriginals and between males and females.

L. N. Christofides and R. Swidinsky:

L. N. Christofides and R. Swidinsky (1994) examine the wage differentials between whites and visible minorities (white males, white females, visible minority males, and visible minority females). using the Canadian Labour Market Activity survey (LMAS), an OLS technique, the human capital model, and the Oaxaca decomposition, they conclude that:

(a) White women, minority men, and minority women are disadvantaged in the Canadian labour market.

(b) White men, minority men, white women and minority women earn on average hourly wage of \$14.73, \$12.48, \$11.33 and \$10.97 respectively.

(c) Members of visible minorities who are not engaged in paid employment face lower wage offer.

(d) The Oaxaca decomposition shows that productivity-related characteristics account for less than 30 per cent of the wage gap.

(e) The wage offers to white women are 33.3 per cent less than wage offers to white men and only 25 per cent of this gap can be explained by productivity-related factors.

(f) The position of minority female is the worst since their average wage offer is 45.4 per cent less than minority males and 9.4 per cent less than white females. About 30 per cent of the offered wage gap between white males and minority females is explained by productivity-related characteristics. The unexplained proportions are even higher in

comparisons between minority males and minority females and between white females and minority females.

(g) There is a 28.5 per cent differences in wage offers between white males and minority males, and only 23.8 per cent of this could be attributed to productivity-related characteristics. And generally, minority males are in similar positions to white females.

M. Baker and B. Dwayne Benjamin:

M. Baker and B. Dwayne Benjamin (1997) examine earnings differentials between Whites and other ethnic groups, such as Blacks, South Asians, Southeast Asians, Chinese, and Aboriginals in Canada and the US also. Native-born and immigrants are investigated to see whether the ethnic minorities are better off in Canada than in the US or not.

They use 1990 US census and 1991 Canadian census, the OLS technique, the human capital model, and the Oaxaca decomposition to conclude:

- (a) Foreign-born, in the US and Canada, have similar relative positions.
- (b) For native-born, in the US and Canada, except for Aboriginals, all ethnic groups fare better in the US than in Canada in the sense that their earnings differentials compared with Whites are less than those in Canada.
- (c) In both countries, Chinese and Southeast Asians have the highest earnings relative to Whites.
- (d) Blacks and South Asians have the lowest earnings relative to Whites.

(e) The importance of the unexplained earnings differentials of these groups lines up with schooling differences. Blacks and South Asians (especially in Canada) have lower levels of schooling than native-born Whites. __

D. Hum, and W. Simpson,

Hum, D. and Simpson, W. (1999), investigate wage opportunities for visible minorities in Canada (Blacks, Indo-Pakistanis, Chinese, Non-Chinese Orientals, Arabs, and Latinos). They use the 1993 Canadian Survey of Labour and Income Dynamics (SLID), a traditional human capital model, and the OLS technique, corrected for sample selection bias, to conclude that:

- (a) For Canadian-born workers, with the exception of Black workers, there are no significant wage differentials between visible minority and non-visible minority workers.
- (b) For immigrants, there are considerable wage differentials between immigrant visible minority workers and non-visible minority workers.
- (c) There are differentials between immigrant visible minority women and non-visible minority women. However, there are no wage differentials between visible minority women and non-visible minority women in general.

The Second Category:

This category presents a brief review of the US empirical literature, with respect to this issue, which includes the following studies:

L. Carlson, and C. Swartz,

Carlson, L. and Swartz, C., (1988) examine earnings differentials among several ethnic and racial groups and compare their results with an earlier study's findings for 1959 and 1969. They use the 1980 US census, the traditional human capital model, the OLS technique, and the Oaxaca decomposition to conclude that:

- (a) All minority men and women except Asian Indian and Japanese men earn less than white men do.
- (b) All groups of women earn less than both white men and minority men; even after controlling for hours worked, there are still considerable earnings differentials for women.
- (c) The earnings gap as well as the unexplained portion of the gap declined over time. However, a notable exception is that the earnings gap between White women and White men.

Eric Eide:

Eric Eide (1997) examines how the major-specific premium changes and major distribution changes account for college wage premium changes between 1978-1986, for different race/gender groups such as white males, white females, non-white males, and non-white females. Using pooled data from two longitudinal surveys: The National Longitudinal Survey of High School Class of 1972 (NLS72), and The High School and Beyond (HSB) survey, and GLS technique, he concludes:

- (a) The distribution of changes in the graduates' majors account for a significant portion of college wage premium change for White and non-White men.
- (b) The specific premium changes for graduates' majors account for a significant part of the aggregate premium change for White men and White women.
- (c) These premium changes played no role in the college wage premium change among non-White men and women.

Cordelia W. Reimers:

Cordelia W. Reimers (1983) examined earnings differentials among white Non-Hispanics, Hispanics, and Blacks. Reimers uses micro-data from the 1976 Survey of Income and Education and an OLS technique corrected for selectivity bias to conclude that:

- (a) Discrimination is an important factor in lowering the earnings of Puerto Rican, Black, Central and South American, and other Hispanic men.
- (b) Productivity-related characteristics are the important factors for shortfall in earnings for Mexican-American and Cuban men. However, discrimination outside the labour market may affect the acquisition of human capital by minority individuals and lead to differences in observed characteristics.

R. Kamalich, and S. Polachek

Kamalich, R. and Polachek S. (1982) examine the earnings differentials between Whites and Blacks (White males, White females, Black males and Black females). They used the Ninth Wave (1976) of the University Michigan's Panel Study of Income and Dynamics, and the controversial reverse regression framework, which

looks at qualification differences of workers earning the same wage rather than looking at wage differentials of the same qualified workers, to conclude that:

- (a) The results of reverse regression approach indicate that, for the whole economy, clear-cut discrimination does not exist. In other words, no qualification differences exist by race or gender for workers earning the same wage.
- (c) For ethnic/gender groups, presented in their paper, workers have quite similar qualifications. Hence, some groups' qualification weaknesses are compensated by other strengths.

G. Durden, and P. E. Gaynor:

Durden, G. and P. E. Gaynor (1998) investigate the costs of being other than White in the reduced earnings of Blacks, Hispanics (Mexican-American, Puerto Rican), being female, or being both female and Black or Hispanic. Using traditional human capital model, the OLS technique, and the Cotton decomposition, with 1990-CPS data, they conclude that:

- (a) There are significant differences in yearly earnings between White males and all other groups. However, when the earnings of Black and Hispanic males are adjusted for differences in labour market characteristics, most of the gap disappears. The wage gap still exists though.
- (b) The cost of being Black or Hispanic is far less than the cost of being female.

Greg J. Duncan and S. Hoffman:

Greg J. Duncan and Saul Hoffman (1978) analyse the determinants of training and its effects on earnings and earning differences among White males, White females, visible minority males, and visible minority females. They used the ninth wave data from Panel Study of Income Dynamics (PSID), with an OLS technique and traditional human capital model to conclude that:

- (a) There are large differences in the amounts of training received on the current jobs. Hence White men receive more training than the other workers.
- (b) There is no evidence that minority workers have received a smaller return to training than White men have. In other words, training is rewarded equally in the labour market.
- (c) Training differences account for up to 20 per cent of the earning differences between White male and other groups.
- (d) Both personal choices and institutional policies affect training decisions. For women, training decisions are affected mostly by institutional policies.

Robert L. Boyd:

Robert L. Boyd (1993) examined whether the US public sector plays the niche to Black workers or not. He used 1980 decennial census and Public Use Micro-data Sample (PUMS) B-file, contextual model, with the OLS technique, to conclude that:

- (a) The Black-White segregation negatively affected the earnings of Blacks in the private sector.
- (b) The public sector does play the role of a shelter for Black workers. In other words, Blacks can avoid the negative effects of segregation in the public sector and earn greater returns to their human capital than they do in private sector.
- (c) Any cutbacks in public sector funds will harm Black workers.

Susanne S. Williams, D. R. and Paul E. Gabriel:

Susanne Schmitz, Williams, D. R. and Paul E. Gabriel (1994) analyse the relative earnings distributions of Black males, Black females and White females relative to white males. Using data from 1987 National Longitudinal Survey of Youth, with an ordered-response logit model, they conclude that:

- (a) If the characteristics of disadvantaged groups are valued according to White male structure, then the wage distribution for those groups would converge with White male.
- (b) If not, between 50 per cent to 75 per cent of the earning distribution differences are attributable to different valuation of personal characteristics.

A. Sakamoto, Huei-Hsia Wu, and Jessie M. Tzeng:

Arthur Sakamoto Huei-Hsia Wu, and Jessie M. Tzeng (2000) extend Wilson's hypothesis of declining racial discrimination against African-Americans, in which Wilson argued that it has been declining since 1960s (Wilson, 1980) , to other

minority groups. So that they examine wage inequality between non-Hispanic White men and African-American men, Chinese-American men, Hispanic White men, and Japanese-American men. They use the US 1950 and 1990 PUMS data, with an OLS technique to conclude that:

- (a) For four of the five minority groups, the results are consistent with the hypothesis of the declining significance of race.
- (b) The decline of racial discrimination between 1950 and 1990 is more than 50 per cent.
- (c) They interpret the results as an indication of a general improvement of labour market opportunities during that period.

J. P. Smith, and F. R. Welch:

J. P. Smith and F. R. Welch (1989) analyse economic achievement of Blacks compared with Whites during 1940-80. Using data from the US censuses during that period, OLS technique whenever needed and simple statistical procedures, they conclude that:

- (a) The largest improvement of Black income had occurred during 1940s, a decade that witnessed 24 per cent expansion in the relative wages of black men. These advances slowed considerably during the 1950s, while the speed of growth advanced again to be 10 per cent or more, higher than for whites in 1960s and 1970s. However, Black income still lagged behind those of Whites.

- (b) The Blacks' progress led to Black community division into two societies, a Black underclass and the emerging Black middle class, where 29 per cent of Black men had income greater than average White income.
- (c) The Black income improvement is mainly due to three factors: Black educational attainment, black migration, and affirmative action policies.
- (d) The timing pattern resembles a wage bubble, with a sharp increase in Black men' incomes from 1967 to 1972 followed by the bursting of bubble during the next five years, when the racial gap had almost returned to its normal levels.

Richard B. Freeman:

Richard B. Freeman (1981) examined the nature and the cause of Black economic progress in post World War II years focusing on years after 1964. Using data from National Longitudinal Survey (NLS), simple statistics, with OLS technique whenever needed, he concludes that:

- (a) Gains have been concentrated in the post 1964 period, and had not been dissipated in 1970s despite high rates of unemployment and had been largest among more educated or skilled workers, younger workers, and female workers.
- (b) Young Blacks from more advantaged family background have made a large gains in the market to such an extent that family background has become a much more important determinant of Black socio-economic position than in the past.
- (c) There has been evidence to support the proposition that governmental anti-discrimination activities played a major role in the change in the job market.

(d) However, the improvement of economic position of Blacks does not mean that Black-White economic differences are likely to disappear for several reasons:

First, the relative economic position of Black family did not improve as rapidly as that of individual earners. *Second*, the enormous pre-labour market disadvantage of Blacks and its negative effects remain. *Third*, large groups of Black workers, notably experienced men, have benefited only modestly from the decline in job market discrimination. Furthermore, the labour force participation rate of experienced Black men has declined sharply. *Fourth*, the initial gains for young Blacks in the period may dissipate over time, if discrimination in promotions reduces their advancement in corporate hierarchies. *Fifth*, unemployment remains a much more serious problem for Blacks than Whites, particularly among younger persons.

In general, equal employment opportunities have not been achieved between Blacks and Whites. Hence, other programs and activities are needed in his view.

Summary of the empirical literature:

The Canadian literature in this topic could be summarised into two main points:

1. The wage gap between Whites and visible minorities does exist in Canada.
2. Except for Baker and Benjamin (1997), the Canadian literature mentioned in this paper confirms the importance of the treatment differences for interpreting the wage gap rather than the endowment differences. In addition, Hum and Simpson (1999) do not apply any of discrimination decompositions, in order to decide which factor is more important in explaining the gap.

The American literature could be also summarised into two points:

1. Except for Kamalich (1982), the American empirical literature confirms that the wage gap does exist.
2. American empirical works have different interpretations for the wage gap. Whereas Schmitz, Williams, and Gabriel (1994) as well as Eide (1997) stress the importance of endowment differences for interpreting the wage gap, Carlson and Swartz (1988), Boyed (1993), Durden and Gaynor (1998) give more importance to treatment differences.
3. The rest of the American empirical literature presented in this paper gives more attention to the declining wage gap hypothesis. Smith and Welch (1989), Freeman (1981), and Sakamoto, Wu and Tzeng (2000) emphasize that the wage gap between Whites and Blacks has been declining. Yet, the Black earnings are still lagging behind.

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Chapter 3

Data and Methodology:

(3-1) Data used:

The data used in this paper are based on Public Use Micro data Files (PUMDF) of the Canadian census 1996 (sample size = 5%). The only restriction imposed on the data, in addition to PUMDF restrictions, is that concerning the age, which ranges from 24 to 65. Despite some limitations of the data used, they offer a fair amount of information needed to achieve the empirical goals. Here are some of the limitations:

- (a) Visible minority classification is highly generalised, so that there is some missing information about certain minority groups.
- (b) In the 1996 (PUMDF), There are no data concerning labour market experience. So that experience in this paper is calculated as age minus total years of schooling minus six.

The sample size includes 9411 individuals, 7995 of whom are whites, while 1416 of whom are visible minorities.

(3-2) Variables used:

The dependent variable is the natural log of earnings (wages and salaries). While the following explanatory variables are used to investigate their effects on earnings; hours worked, total years of schooling, experience, experience squared, marital status, having a college or university degree, occupation, immigrant status,

mother tongue, and whether working full-time or part-time. Here is some explanation of the variables:

(a) Hours worked: hours worked variable gives the weekly number of hours worked.

So it measures in principle hours of non-work.

(b) Total years of schooling: this variable measures total years of schooling, so it reflects the human capital investment.

(c) Experience: this measures labour market experience and, since it is not available in PUMDF, it is calculated as age minus total years of schooling minus six.

(d) Marital status: this is a dummy variable which takes value one when the individual is married and the value zero when the individual is not married. Its importance is based on the fact that the married individual may be more committed to the labour market, at least for males, while married women are often burdened by duties in the home.

(e) Degree: this is a dummy variable which takes the value of one when an individual has a trade certificate or diploma or a university degree and zero when an individual has no such degree or certificate.

(f) Occupation*: this is a dummy variable, which takes the value one when an individual's occupation belongs to one of the following: senior managers, other middle managers, professionals, semi-professional technician, super clerical sales service, super crafts trades, administration senior clerical, skilled sales service,

* Occupation is classified in similar fashion to internal labour market theory of Doeringer, P. and Piore, M (1971) mentioned in the last chapter.

skilled craft trades, clerical personnel, intermediate sales service, semi-skilled manual work. Otherwise, it takes the value zero.

(g) Immigration status: this is a dummy variable, which takes the value one when the Individual is immigrant and zero otherwise.

(h) Full-time: this is a dummy variable which takes the value one when an individual works full time and the value of zero when he/she works part-time.

Table (I) List of variables,

<i>Variable</i>	<i>Description</i>
HRwork	Hours worked
Educ	Total years of schooling.
Exp	Exp = age-Total years of schooling-6.
SQExp	Experience squared.
Marit*	Married or non-married, where non-married includes divorced, separated, never married and widowed.
Degree*	Having a trade certificate or diploma or a university degree or not.
Occup*	Having one of the following occupations: senior manager, middle other managers, professionals, semi-professional technician, super clerical sales service, super crafts trades, administration senior clerical, skill sales service, skill crafts trades, clerical personnel, semi-skilled manual work, or not.
Immig	Immigrant or non-immigrant, where non-immigrant includes non-immigrant and non-permanent residence.
M-tongue*	Having English as a mother tongue or other than English.
F-time*	Full time or part time weeks worked in 1995.

*Dummy variables

(3-3) Measurement of discrimination:

The measurement of discrimination is based on Mincer's human capital model (Mincer, 1974) as well as Oaxaca's decomposition (Oaxaca, 1973), in which the wage gap is determined by using the ordinary least square method (OLS). The

dependent variables are presented in natural logs. Mincer's human capital model can be expressed by:

$$\ln w^j = x^j b^j + e^j \quad j = 1, 2, 3, 4, 5. \text{ For visible minority and non-minority groups.}$$

Where,

$\ln w^j$ = natural log of earnings.

x^j = vector of variables reflecting productivity, personal characteristics and labour market structure.

b^j = vector of regression coefficients to be estimated.

e^j = stochastic error term.

(3-4) Oaxaca decomposition:

The earning difference decomposition is presented by Oaxaca formula as:

$$\ln \bar{w}^a - \ln \bar{w}^i = (\bar{x}^a - \bar{x}^i) b^a + \bar{x}^i (b^a - b^i),$$

where

$\ln \bar{w}^a$ = Mean of Natural log of earnings of whites.

$\ln \bar{w}^i$ = Mean natural log of earnings of visible minority groups.

\bar{x}^a = Mean values of vector of variables reflecting productivity, personal characteristics and labour market structure for whites.

\bar{x}^i = Mean values of vector of variables reflecting productivity, personal characteristics and labour market structure for visible minorities.

b^a = vector of regression estimated coefficients for whites.

b^i = vector of regression estimated coefficients for visible minorities.

The first part of the right hand side of the formula presents the endowment differences between whites and visible minorities while the second part presents the treatment differences.

(3-5) Cotton's decomposition:

Cotton argued that, in the absence of discrimination, the earnings of both advantaged and disadvantaged workers would fall somewhere in between the earnings of the two groups (Cotton, 1988), since the elimination of discrimination would increase the demand of disadvantaged workers. Changes in demand for disadvantaged workers will continue until reaching a new discrimination free equilibrium. The new equilibrium wage would be less than the advantaged workers' wage and more than disadvantaged workers' wage. Cotton's

decomposition takes this form:

$$\ln w^{-a} - \ln w^{-i} = (x^{-a} - x^{-i}) b^* + x^{-a} (b^a - b^*) + x^{-i} (b^* - b^i),$$

where

$$b^* = p^a b^a + p^i b^i$$

and,

b^* = vector of non-discriminatory coefficients.

p^a = shares of total sample population that are whites.

p^i = shares of total sample population that are visible minorities.

b^i , b^a , x^{-a} and x^{-1} are the same as above.

The right hand expression contains three terms, the first term represents the different endowment among groups. The second and the third represent different treatment in the labour market.

(3-6) Methodology:

The regressions and the decompositions are performed first for aggregate level, then for each visible minority group for both male and female. Comparison is based on White male in those decompositions and the dependent variable is the natural log of earnings. The decomposition used in this paper is Oaxaca's decomposition rather than Cotton's technique, since the visible minorities are considered too small to effect the labour market equilibrium and hence the labour market wages.

(3-7) Selectivity bias:

Since the mean of the wage rate estimated by regression is based on being included in the sample, the true mean may not equal the estimated one. This distortion is believed to bias the results of the OLS technique. In other words, restricting the sample to workers who are paid could significantly underestimate the degree of wage discrimination. (Gordon, 1996).

Heckman (1979) developed a technique to solve the selectivity bias issue. However, recent evidence has shown that this technique has some limitations. (Gordon, 1996).

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Chapter 4

The empirical results

(4-1) Regression Results

The empirical results are presented in the appendix, tables 1 and 2 present regression results, tables (3-7) present Oaxaca decomposition results.

(i) Disaggregated visible minorities level:

The empirical results are presented in the appendix; table (1) presents the regression results as follows:

- (a) The hours-worked variable has a significant effect on all groups' earnings except for Blacks and South Asian males. And there are no significant differences of the effects of hours worked among ethnic groups.
- (b) The schooling variable has significant effects on all groups' earnings except for Blacks, South Asian males and females and other visible minorities. In addition, schooling reaches its highest effects for Chinese females and its lowest effects for South Asian females.
- (c) The experience variable has significant effects on earnings of all groups except for Blacks, South Asians, Chinese females and other visible minority females. And it reaches its highest level of effects for Chinese males and its lowest level for South Asian females.
- (d) The marital status variable (being married) has insignificant effects on earnings of all groups except for White males and Black males and females. The effect of being married on earnings reaches its highest level for Black

females and is insignificant and at the lowest level for White females, where the small size of the t ratio is dramatic.

- (e) Degree: Having a certificate or degree variable has an insignificant effect for all groups except for White males and Black females. The effect of having a degree or certificate reaches its highest level for Black females, while it has negative effects for Black males, which however are not statistically significant.
- (f) The occupation variable has insignificant effects on earnings of all groups except for White males and females and Chinese males. It reaches its highest level for Chinese males while it reaches its lowest level for Black females.
- (g) Immigration status: the immigrant variable has an insignificant negative effect on earnings for all groups except for White males and females, Chinese females and other visible minority males.
- (h) Mother tongue being another language rather than English has a insignificant effect on earnings of all groups except for White males, Black males, and South Asian males and other visible minority females.
- (i) Working full-time variable has a significant effect on earnings of all groups except for South Asian females. It reaches its highest level for White males and it's insignificant at the lowest level for South Asian females.

(ii) Aggregate visible minorities level:

The aggregate regression results where all the visible minorities are put together are presented in table (2); the results are as follows:

- (a) The hours-worked variable has a significant effect on both groups' earnings. And its effects on White males earnings are higher than visible minorities male. Its effects on White females are lower than visible minority females, though higher than the male effects.
- (b) The schooling variable has significant effects on both groups' earnings. Its effects on White females are higher than on visible minority females, while its effects on visible minority males are comparable to White males.
- (c) The experience variable has significant effects on earnings of both groups except for visible minority females. Its effects on White female earnings are higher than visible minority females, which is as mentioned not only lower but also statistically insignificant, while its effects on visible minority male earnings are similar to White males.
- (d) Marital status variable (being married) has significant effects on earnings of White males only. The effects of being married on earnings of White males are, not surprisingly, higher than visible minority male.
- (e) Degree: Having a certificate or degree variable has significant effect for both groups except for visible minority males. Its effects on visible minority female are higher than White males and White females, where the statistically

significant is a borderline. Its effects on White male earnings are significant and higher than its insignificant effects on visible minority male.

- (f) Occupation variable has significant effects on earnings of all groups except for visible minority female. Its highest effects on earnings are those of visible minority males.
- (g) Immigration status: the immigrant variable has a significant negative effect on earnings for both groups. It reaches the highest level for visible minority females, while it reaches the lowest levels for White males. Note that this variable is borderline statistically significant for visible minority males.
- (h) Mother tongue being another language rather than English has significant negative effects on the earnings of both groups, except for White females, where its effects are both positive and quite insignificant. It reaches its negative and highest level for visible minority males and its lowest negative level for White males.
- (i) Working full-time variable has a significant effect on earnings of both groups. It reaches its highest level of effects on earnings for White males and its lowest level of effects on earnings for visible minority female, where it is still highly statistically significant.

Finally, in both levels the small size of the sample could be responsible for some insignificant results.

(4-2) Decomposition results:

The decomposition results are presented on tables from (3-7). These results take into account only the double effect of being a visible minority member and female at the same time. So the comparison between visible minority females and Whites is based on White males. The results indicate:

- (a) For South Asian male, the endowment differentials account for about one per cent per cent of the total earnings differential, while the treatment differentials account for 99 per cent.
- (b) For South Asian females, the endowment differentials account for about 16 per cent per cent of the total earnings differentials, while the treatment differentials account for 84 per cent.
- (c) For Black males: the endowment differentials account for about 72 per cent per cent of the total earnings differential, while the treatment differentials account for 28 per cent.
- (d) For Black females: the endowment differentials account for about 30 per cent per cent of the total earnings differential, while the treatment differentials account for 70 per cent.
- (e) For Chinese males: the endowment differentials account for about 10 per cent per cent of the total earnings differential, while the treatment differentials account for 90 per cent.
- (f) For Chinese females: the endowment differentials account for about 134 per cent per cent of the total earnings differential, over explaining the gap. The

treatment differentials account for -34 per cent, indicating even more favourable returns to Chinese females.

(g) For other visible minority males: the endowment differentials account for about 12 per cent per cent of the total earnings differential, while the treatment differentials account for 88 per cent.

(h) For other visible minority females: the endowment differentials account for about 20 per cent per cent of the total earnings differential, while the treatment differentials account for 80 per cent of the total earning differentials.

(i) For aggregate visible minority males: the endowment differentials account for about 23 per cent per cent of the total earnings differential, while the treatment differentials account for 77 per cent.

(j) For aggregate visible minority females: the endowment differentials account for about 27 per cent of the gap, while the treatment differentials account for 73 per cent of the total earnings differential.

(4-3) Summary and Conclusions:

This paper has examined earning differentials between whites and visible minority groups. OLS technique and Oaxaca's decomposition are applied on PUMDF 1996 census to investigate whether the wage gap between whites and visible minorities does exist or not and what are the causes behind the gap if it does exist. The empirical results indicate that the wage gap does exist and hence it confirms that visible minorities are disadvantaged in Canadian labour market. They also confirm

that treatment differences are more important than endowment differences to interpret the wage gap between whites and visible minority groups for most groups.

Descriptive statistics indicate that, at disaggregate level, white males earn more than black males by about 0.50, South Asian males by 0.25, Chinese males by 0.44 and other visible minority males by 0.43. In addition, they earn more than white females by 0.49, black females by 0.68, South Asian females by 0.87, Chinese females by 0.65 and other visible minority females by 0.80. At the aggregate level, white males earn more than white females by 0.49, visible minority males by 0.40 and visible minority females by 0.75. Hence the South Asian males have the highest earnings among other visible minority groups, while other visible minority females have the relatively lowest earnings among the reference groups.

Regression results indicate that the differences in returns from human capital investment such as schooling, experience, and the acquisition of a certificate or degree does not account for much of the earning differentials. In other words, with the exception of mother tongue personal characteristics do not offer a reliable explanation of the earning gap between white males and the reference groups. However, work characteristics such as occupation, immigrant status and working full time are more likely to account for such earning differentials. In other words, with the exception of hours worked, work characteristics do not offer a reliable explanation of the earning gap between white males and the reference groups.

Decomposition results indicate that endowment differences are more important in interpreting the earning differentials between white males, black males and Chinese females, while treatment differences are more important in interpreting the differentials between white males and other groups. In general, endowment differences are less important than treatment differences in interpreting the earnings gap between whites and visible minority groups in Canada.

These results are consistent with those of Krishna and Ravi Pendakur (1998), those of L. N. Christoides, and R. Swidinsky (1994), and those of Hum and Simpson (1999), especially for non-Canadian born.

For policy purposes the results indicate that policies should aim at reducing treatment differences for all visible minority groups except for black males and Chinese females, for which policies should aim to reduce human capital differences.

For further research, one may suggest that investigating the earning differences over a long period of time to figure out whether the wage gap is declining or increasing is of major importance.

For data, detailed data are required for each visible minority group in order to compare the earning differences among them as well as between them and white males.

Appendix:

Table(1) Coefficients estimates of wage equations by visible minorities*

Variable	Whites		Blacks		South Asian		Chinese		Other Visible Minorities	
	Male	female	male	Female	male	Female	Male	female	Male	female
Constant	6.9173 (58.28)	7.0256 (54.12)	6.7342 (6.78)	7.5657 (10.18)	8.4075 (9.66)	8.7170 (6.19)	6.2468 (8.77)	6.4631 (7.20)	7.8006 (11.93)	7.8241 (10.34)
Hrwork	0.0101 (12.76)	0.0117 (12.22)	0.0072 (1.16)	0.0054 (1.06)	0.0054 (1.06)	0.0122 (1.86)	0.0138 (3.04)	0.0124 (2.40)	0.0077 (2.34)	0.0204 (4.58)
Educ	0.0705 (7.75)	0.1132 (10.02)	0.1275 (1.72)	0.0490 (0.94)	0.0537 (0.87)	0.0307 (0.41)	0.0843 (1.60)	0.2250 (3.89)	0.0345 (0.87)	0.0707 (1.29)
Exp	0.0589 (8.67)	0.0375 (5.03)	0.0671 (1.15)	0.0438 (0.97)	-0.028 (-0.60)	-0.0124 (-0.17)	0.1056 (2.49)	0.0594 (1.08)	0.0770 (2.09)	0.0047 (0.11)
SQExp	-0.0008 (-6.83)	-0.0004 (-3.43)	-0.0007 (-0.75)	-0.0005 (-0.70)	0.0007 (0.95)	0.0005 (0.41)	-0.002 (-2.44)	-0.0005 (-0.59)	-0.0011 (-1.75)	0.0002 (0.22)
Marital Status	0.31096 (10.75)	0.0274 (0.92)	0.4550 (2.11)	0.3581 (2.15)	0.3132 (1.36)	0.2069 (0.79)	-0.221 (-0.99)	0.0476 (0.22)	0.0696 (0.53)	-0.2394 (-1.53)
Degree	0.0917 (2.78)	0.0580 (1.54)	-0.4552 (-1.61)	0.4323 (2.31)	0.1624 (0.69)	0.3259 (1.20)	0.1999 (0.87)	-0.0473 (-0.19)	0.1371 (0.85)	0.2255 (1.14)
Occup	0.2981 (6.53)	0.3313 (6.15)	0.2001 (0.56)	0.0143 (0.06)	0.4253 (1.63)	0.4563 (1.43)	0.6209 (2.05)	-0.1259 (-0.40)	0.2329 (1.43)	0.1868 (0.91)
Immigrant status	-0.0754 (-1.73)	-0.1077 (-2.25)	-0.2441 (-0.86)	-0.2311 (-0.93)	-0.2451 (-0.52)	-0.6829 (-0.79)	0.0671 (0.18)	-0.6498 (-2.08)	-0.5437 (-2.28)	-0.1897 (-0.54)
m-tunge	-0.0923 (-2.00)	0.0251 (0.49)	-0.6937 (-2.49)	-0.1041 (-0.44)	-0.3374 (-1.64)	-0.3042 (-1.14)	-0.2264 (-0.65)	-0.0011 (-0.004)	-0.1717 (-1.03)	-0.4912 (-2.44)
F-time	1.1342 (20.21)	0.8572 (23.30)	1.0227 (3.04)	0.7734 (3.44)	0.9962 (2.20)	0.39511 (1.47)	0.7633 (2.58)	1.0238 (3.95)	0.7326 (2.76)	0.9510 (4.92)
N	4205	3790	118	156	157	121	199	184	250	231
R ²	0.2734	0.2910	0.2838	0.2270	0.17	0.1762	0.2646	0.2812	0.1530	0.2973
F	157.81	155.141	4.241	4.257	2.918	2.35	6.763	6.769	4.318	9.307

* numbers in parentheses are t-statistics

Table(2) Coefficients estimates of wage equations by aggregate visible minorities*

Variable	Whites		Visible minority	
	Male	Female	male	female
Constant	6.9173 (58.28)	7.0256 (54.12)	7.1831 (19.39)	7.5011 (18.46)
Hrwork	0.0101 (12.76)	0.0117 (12.22)	0.0098 (4.40)	0.0137 (5.34)
Educ	0.0705 (7.75)	0.1132 (10.02)	0.0747 (2.84)	0.0925 (3.29)
Exp	0.0589 (8.67)	0.0375 (5.03)	0.0589 (2.78)	0.0263 (1.06)
SQExp	-0.0008 (-6.83)	-0.0004 (-3.43)	-0.0008 (-2.27)	-0.0002 (-0.41)
Marital status	0.31096 (10.75)	0.0274 (0.92)	0.1297 (1.44)	0.0497 (0.54)
Degree	0.0917 (2.78)	0.0580 (1.54)	0.0625 (0.59)	0.2251 (2.06)
Occup	0.2981 (6.53)	0.3313 (6.15)	0.3341 (2.79)	0.1833 (1.48)
Immigrant status	-0.0754 (-1.73)	-0.1077 (-2.25)	-0.1989 (-1.38)	-0.3981 (-2.45)
m-tunge	-0.0923 (-2.00)	0.0251 (0.49)	-0.2481 (-2.60)	-0.1883 (-1.94)
F-time	1.1342 (20.21)	0.8572 (23.30)	0.9276 (6.02)	0.7845 (6.96)
N	4205	3790	724	692
R ²	0.2734	0.2910	0.1740	0.2206
F	157.81	155.141	15.021	19.272

* numbers in parentheses are t-statistics

Table(3)Oaxaca decomposition; earning differences between Whites and Blacks* .Canada 1996

Variable	Male			Female		
	Endowment differences	treatment differences	Total	Endowment differences	treatment differences	Total
Hrwork	0.0514	0.0966	0.1480	0.0710	0.1464	0.2174
Educ	0.0025	-0.3803	-0.3777	0.0079	0.1420	0.1498
Exp	0.0498	-0.2239	-0.1741	-0.0108	0.4269	0.4161
SQExp	-0.0427	-0.0220	-0.0647	0.0170	-0.2199	-0.203
Marital status	0.0299	-0.0757	-0.0457	0.0657	-0.0194	0.0464
Degree	0.0098	0.2549	0.2648	0.0003	-0.1943	-0.1941
Occup	0.0064	0.0864	0.0927	0.0264	0.2311	0.2575
Immigrant status	0.0471	0.1343	0.1814	0.0508	0.1318	0.1826
m-tunge	0.0051	0.1223	0.1275	0.0012	0.0019	0.0031
F-time	0.0748	0.0973	0.1721	0.16330	0.2868	0.4501
Sums	0.2342	0.0901	0.3243	0.3927	0.9333	1.3261
Percent	72.227	27.772	100	29.617	70.383	100

* comparison is based on White male.

Table(4)Oaxaca decomposition; earning differences between Whites and South Asians* .Canada 1996

Variable	Male-visible minorities			Female-visible minorities		
	Endowment differences	treatment differences	Total	Endowment differences	treatment differences	Total
<i>Hrwork</i>	-0.0084	0.1835	0.1750	0.1030	-0.0603	0.0427
<i>Educ</i>	-0.0278	0.1196	0.0918	0.0125	0.2604	0.2728
<i>Exp</i>	0.1235	2.2575	2.3810	0.0832	1.9008	1.9840
<i>SQExp</i>	-0.1004	-1.1209	-1.2213	-0.0795	-1.0122	-1.0917
<i>Marital status</i>	-0.0602	-0.0018	-0.0620	-0.0483	0.0808	0.0326
<i>Degree</i>	-0.0064	-0.0455	-0.0519	0.0094	-0.1103	-0.1009
<i>Occup</i>	0.0090	-0.1110	-0.1020	0.0178	-0.1333	-0.1155
<i>Immigrant status</i>	0.0596	0.1632	0.2227	0.0612	0.5974	0.6586
<i>m-tunge</i>	0.0516	0.1733	0.2249	0.0550	0.1576	0.2126
<i>F-time</i>	-0.0187	0.1318	0.1131	0.2213	0.5497	0.7710
<i>Sums</i>	0.0216	1.7497	1.7713	0.4355	2.2306	2.6661
<i>Percent</i>	1.2226	98.777	100	16.3361	83.664	100

- comparison is based on White male.

Table(5)Oaxaca decomposition; earning differences between Whites and Chinese* .Canada 1996

Variable	Male			Female		
	Endowment differences	treatment differences	Total	Endowment differences	treatment differences	Total
<i>Hrwork</i>	0.0354	0.1631	0.19854	0.0681	-0.0743	-0.0061
<i>Educ</i>	-0.0124	0.1159	0.103548	0.0320	-0.9674	-0.9354
<i>Exp</i>	0.0714	2.3345	2.405839	0.0214	-0.0153	0.0061
<i>SQExp</i>	-0.0480	-1.2217	-1.26971	-0.0422	-0.1751	-0.2172
<i>Marital status</i>	-0.0223	-0.0016	-0.0239	-0.0332	0.1918	0.1587
<i>Degree</i>	-0.0009	-0.0412	-0.04206	0.0082	0.0672	0.0755
<i>Occup</i>	-0.0035	-0.1163	-0.11983	0.0018	0.3802	0.3820
<i>Immigrant status</i>	0.0537	0.1500	0.203755	0.0538	0.5088	0.5626
<i>m-tunge</i>	0.0661	0.2118	0.277981	0.0666	-0.0793	-0.0126
<i>F-time</i>	0.0503	0.1234	0.173742	0.0909	0.0948	0.1857
<i>Sums</i>	0.1898	1.71810	1.907905	0.2676	-0.0684	0.1992
<i>Percent</i>	9.9485	90.0516	100	134.35	-34.354	100

- comparison is based on White male.

*Table(6)Oaxaca decomposition; earning differences between Whites and other visible minority .Canada 1996**

Variable	Male			Female		
	Endowment differences	treatment differences	Total	Endowment differences	treatment differences	Total
<i>Hrwork</i>	0.0148	0.0886	0.1033	0.0983	-0.2954	-0.1971
<i>Educ</i>	-0.0078	0.2461	0.2383	-0.0229	-0.0014	-0.0243
<i>Exp</i>	0.1146	-0.4757	-0.3611	0.0961	1.4319	1.52796
<i>SQExp</i>	-0.100	0.2616	0.1616	-0.0885	-0.7273	-0.8158
<i>Marital status</i>	-0.0007	0.1506	0.1499	-0.0086	0.3574	0.3487
<i>Degree</i>	0.0012	-0.0254	-0.0242	-0.003	-0.0811	-0.0841
<i>Occup</i>	0.0211	0.0543	0.0753	0.01747	0.0940	0.1114
<i>Immigrant status</i>	0.0552	0.4233	0.4785	0.0585	0.1083	0.1668
<i>m-tunge</i>	0.0576	0.0613	0.11889	0.0619	0.3264	0.3883
<i>F-time</i>	-0.0013	0.3775	0.3762	0.1418	0.1491	0.2908
<i>Sums</i>	0.1548	1.1621	1.3169	0.3511	1.3617	1.71282
<i>Percent</i>	11.7571	88.2429	100	20.4989	79.501	100

- comparison is based on White male.

*Table(7)Oaxaca decomposition; earning differences between Whites and aggregate visible minority .Canada 1996**

Variable	Male			Female		
	Endowment differences	treatment differences	Total	Endowment differences	treatment differences	Total
<i>Hrwork</i>	0.0215	0.0125	0.0339	0.0852	-0.1075	-0.0222
<i>Educ</i>	-0.0117	-0.0291	-0.0408	0.0048	-0.1463	-0.1415
<i>Exp</i>	0.0942	0.0006	0.0947	0.0499	0.8870	0.9370
<i>SQExp</i>	-0.0807	-0.0032	-0.0839	-0.0536	-0.5231	-0.5767
<i>Marital status</i>	-0.0146	0.1212	0.1066	-0.0053	0.1668	0.1615
<i>Degree</i>	0.0004	0.0166	0.0170	0.00289	-0.0723	-0.0694
<i>occup</i>	0.0093	-0.0314	-0.0221	0.0154	0.0977	0.1131
<i>Immigrant status</i>	0.0544	0.1103	0.1647	0.0560	0.2952	0.3511
<i>m-tunge</i>	0.0501	0.1076	0.1577	0.0483	0.0643	0.1126
<i>F-time</i>	0.0215	0.1901	0.2116	0.1470	0.2830	0.4300
<i>Sums</i>	0.1444	0.4952	0.6395	0.3505	0.9449	1.2955
<i>Percent</i>	22.575	77.4247	100	27.059	72.941	100

- comparison is based on White male.