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THESIS

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Subject:

Earnings Differential Between Natives and Immigrants.

Differences due to personal characteristics and due to discrimination

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I ‘d like to thank my parents Mary and George for the exclusive charity and support all these years.

1. Introduction

Immigration for economic reasons is a frequent phenomenon in societies of modern and late capitalism. The immigrants waves have constituted, during the last decades of the nineteenth and the first decades of twenty century, just as the recent waves in the 1970's and the 1980's, the two most crowded cohorts of population mobility. Specifically for the U.S. economy the immigrant flow is estimated about 21,836.8 millions between years 1880-1920 and about 11,831.4 millions in 1970-1990 respectively (Borjas 1995, p.1668). In the mezzanine times immigration also was a prevalent choice for a great number of workers specially after the end of the Second World War. The immigrant flow settled at U.S. until 1970 was 8,520 millions (Greenwood & Mc Dowell 1986, p. 1740).

The immigration destination choice is far commonly a country that has more developing economy than the source country. In this case the force to migrate an individual or a household is when the returns to migration are greater than the sum of opportunity costs (Cobb-Clark 1993, p.986), i.e. the host country wages exceed the source country wages. The United States along with Canada and Australia are the primaries host countries of immigrants. Subsequently Great Britain, Germany and Holland are preferable destinations for the immigrants mainly after the end of the Second World War.

The composition of immigrant flow is rather heterogeneous than homogeneous. Heterogeneity is observed also comparing immigrants and natives. Characteristics such as education level, labor market experience, fluency to speak the

host's country language and the possession of perfect information on labor market conditions has variant distribution among the population of labor force. As a result different levels of earnings are observed in specific groups. The distribution of earnings is somehow relevant to the labor skills, but sometimes the abilities of workers are ignored by the employers.

One of the most important issues of Immigration literature is the research on earnings differentials between the native and the immigrant population of a country or a region. These two labor force groups introduce the total labor supply of a host country. Consequently different human capital qualities can be observed between the two upper groups. The literature tries to explain the reasons that create and maintain this wage gap. The research is based on two major concerns as determinants forces of human capital: the differences due to personal characteristics and the differences due to discrimination (Gwartney & Long 1978; Reimers 1983; Kee 1995). The influence of concrete variables on the earnings regression is being examined as concerns the differences due to personal characteristics (education level, labor market experience, fluency to speak the host language). On the other hand for the dimension of discrimination the influence of social characteristics on regression earnings is being examined as the origin and the color of the immigrant. The concept method that research is based is Oaxaca's (1973) decomposition of wages technique. Furthermore in a parallel point of view a basic part of earnings differential literature tries to explain the earnings gap by terms of different personal characteristics included the origin country or the color (Chiswick 1978; 1980 &1983; Long 1980; Shapiro 1984; Cobb-Clark 1993; Trejo 1997).

This paper tries to explore the basic variables that determine the wage gap between natives and immigrants. Especially is given particular gravity on the human capital ingredients that transformed into manual or mental labor during the production procedure and finally into salaries. In this way we attempt to explain the influence weight of each variable in the earnings regression as the potential correlation between two variables in the earnings regression. In Section 2 the existing theoretical models are presented in combination with the implementation of the main variables of these models in labor markets. The theoretical support aims to reveal the factors that compose the human capital. In that manner the role of education, labor market experience, fluency to speak the host language, family conditions and other elements are analyzed. The descriptive statistics of natives and immigrants are presented in the footnotes of this section. Diverse immigrants and natives groups are examined in different time instants. In Section 3 the empirical results of regressions are examined in terms of endogeneity in a perspective to interpret them without selection bias. The education and the language fluency variables are responsible for significant deviations in returns whilst labor market experience and family condition returns present higher density. Immigrants cohorts and the labor market conditions have changed through the passage of time. This result is shown by the opening of the negative entry effect for the latest cohorts in combination of the removal of immigration origin. The latest cohorts are from Asia or South and Central America and not from Europe. Thus the similarity between the home and host country is observed but inversely in compare to the past. Immigrants with European citizenship had usually higher earnings than the natives, now immigrants from South or East Hemisphere have lower earnings even more their education and experience accumulated exceeds the relative of the natives. In Section 4 finally the weight of

discrimination effect in the earnings gap size is tested among natives and immigrants. The earnings differentials are decomposed into the discrimination and personal characteristics part in order to reveal the racism effects on earnings. Finally in Section 5 we discuss our findings and results.

2. Theory

Earnings differential theory attempts to explain the dependable reasons for the wage gap among two or more special groups of labor force. The subsequent methodology is based on a hypotheses series that selects the influential variables of earnings. Technique is being composed by rule to a multiple linear or non-linear regression function in which every model is based on. Apart from the constant and the error term the regression function is constituted by these determining variables multiplied by their coefficients. The price that each coefficient takes after the regression expresses the size of each variable's effect respectively to the size of earnings. [1] The choice of independent variables is a matter of each survey. Moreover for the accurate measurement of specific characteristics effects on earnings, dummy variables are used.

Two kinds of earnings non linear regression functions are used: regression functions with decomposition transformation due to personal characteristics part and due to discrimination part and regression functions with decomposition transformation but no due to personal characteristics and due to discrimination. Starting from the latter function type Chiswick's (1978, p. 903) logarithmic regression earnings function for the native born population is

$$\ln Y_{n,i} = \ln Y_0 + rS_i + b_1 T_i + b_2 Ti^2 + U_i \quad (1)$$

[1] Methodology uses Ordinary Least Squares method in order to estimate the contribution of each variable to the increase of earnings. Differences in the β's values between natives and immigrants, mark dissimilar inputs of human capital .

where $Y_{n,I}$ denotes earnings, T years of labor market experience, measured as age minus years of schooling minus 5, S_i the years of schooling and U_i the error residual term. Respectively the earnings function for the foreign born population (p. 904) is

$$\ln Y_{,i} = \ln Y_0 + rS_i + C_1T_i + C_2Ti^2 + C_3(YSM_i) + C_4(YSM_i)^2 + U_i \quad (1a)$$

where S_i and T_i are the schooling and experience years respectively and YSMi is the Years Since Migration variable which represents the education and the experience years at the source country and finally U_i is the error residual.

Comparing (1) with (1a)it is becoming obvious that immigrants and natives have different levels of human capital acquired. Immigrants have accumulated human capital in their source country as in the host country. The kind of paternal human capital is being composed with the level of host human capital; so its contribution to immigrants earnings is a matter of labor market conditions. It is robust then that the coefficients of T_i and Ti^2 receipt different algebraic values. The dependent variable $\ln Y_{,I}$ express annual earnings. Apart from the variables referred above it is also examined the influence in earnings of these variables : RURALQ1 (dichotomous variable equal to unity if a person living in a rural area, zero otherwise); SOUTHQ1 (dichotomous variable equal to unity if a person living in Southern American States, zero otherwise); NOTMSP (marital status variable equal to zero if a person is married, spouse present and unit otherwise); ALIEN (dichotomous variable equal to unity if the foreign born person is an alien and zero if he is naturalized citizen and finally a set of dichotomous variable for country of origin (Chiswick 1978, p. 904). It is notable that all of these independent variables are exogenous.

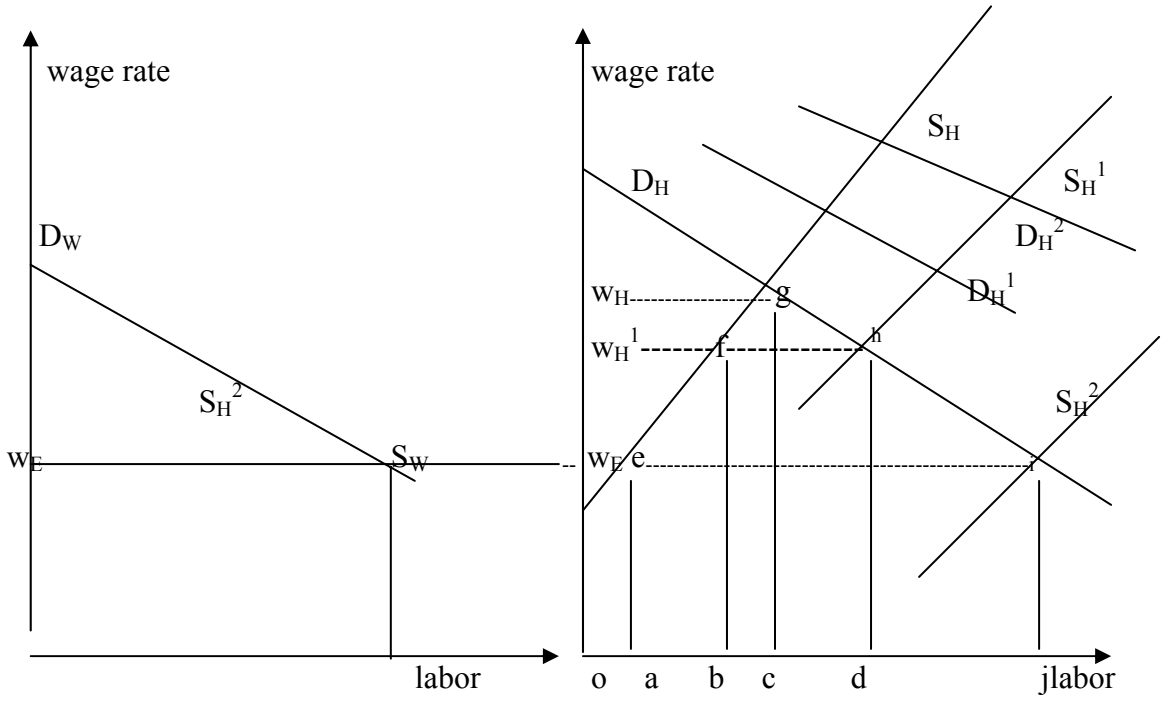
The concept is that earnings determination is a complicated proceeding and the human capital of a worker is constituted by lot of inputs. Every input has its own participation in the earnings and must be weighed in order to avoid bias arguments.[2] An individual or a family has to face a set of labor market conditions in order to assimilate in the economy. These conditions are the perfect competition in the labor market, freedom of movement through different productive sectors, perfect marshallian equilibrium in all markets. The labor suppliers in the economy constitute a heterogeneous population i.e. they are members of different socio-economic groups. For the sake of clarity .we distinct two different socio-economic groups in the economy the Native-born (N) and the Foreign Born Immigrants (I) . All the members of each group are economic active while the two groups sum is the host's economy labor supply.

$L_s=N_{i,j} + I_{i,j}$ (2) where i ,j are vectors of socio-economic characteristics

So, immigrants labor supply is confronted as a concrete kind of labor supply side with particular characteristics rival or similar to those of natives but in common however aim: the higher possible earnings through the employment procedure . Due to (2) immigrants pay an important role on the behavior of total labor supply curve. Potential alterations to the immigrants labor force can remove labor supply curve. The instrument is that the robustness of (2) lies after the immigrants entrance in the host economy. During the proceeding of labor market clearing the labor supply curve is subjected to variations as a consequence of the increase of total labor force. These variations are pictured at Figure1. Following Greenwood& Mc Dowell (1986 p.1743-

[2] In this point of view the distinction between the experience acquired in source or abroad labour market and experience acquired in the host labour market takes place. In a same way distinction can be developed for the education variable.

44) we note that the world supply of labor is perfectly elastic at wage rate W_E .This is depicted at the left panel of Figure 1while the right panel the labor market situation in the host country. Without the existence of immigrants the host's country equilibrium wage is w_H and the respective employment level is oc .



World Labor Market **Host's Country Labor Market**

Figure 1

If we suppose that there is a perfect freedom of labor force movement through the world the labor supply curve of host economy will move after the immigration from the position of S_H to the S_H^2 position. The wage level in the host country fall to w_H^2 and the employment increase to oj. But in real economic conditions it is more possible to be adapted from the host government a quota system in order for example to avoid the displeasure of local labor force or to avoid an enormous immigrant flow. We suppose an arbitrary proportion of legal immigrant flow in the host economy equal to fh. As a result the host wage level fall to w_H^1,total employment increase to od as the labor supply curve moves to S_H^1. The domestic employment decreases from oc to ob

workers and the displacement effect of local workers by immigrants is equal to bc. Simultaneously labor earnings after the entrance of immigrants fall from $ow_H gc$ to $ow_H^1 hd$ of which $ow_H^1 fb$ accrues to local workers and fbhd to foreign born workers, namely the earnings of local workers have decreased from $ow_H gc$ to $ow_H^1 fb$. The point h is equal to the L_S of equation (2).

After the disturbances that immigrant flow imposed in the labor market, new labor conditions are established in host country. These conditions determine the size of wage level in each branch which may be not the same between natives and immigrants. The intuition is according to the theory that immigrants after their entrance in the host labor market cause changes against natives . As the role of firm-specific human capital plays an important part in several areas of labor demand (Hart & Moutos 1995, p. 21) is robust that earnings distribution is affected as Roy shown (1951). Do these changes exist in reality and at what size? If it is so is there a correlation between the negative supply effects and the unexplained portion of earnings gap between natives and immigrants? The first step is to understand the basic inputs of human capital.

A. Theoretical Estimating Models.

Education and experience (or tenure) in labor market are the most important inputs of the earnings function of workers. The human capital model developed by Mincer (1974) is used by Tandon (1978 p. 407) to estimate the natives and immigrants earnings which are residents of Toronto . The estimating equation is the following one

$$\text{Ln H.E.} = a_0 + a_1 Ed_i + a_2 Ex_i + a_3 Ex_i^2 + e_i \quad (3)$$

where Ln H.E. are the log of hourly earning of ith individuals, Ed_i the years of schooling of ith individuals and Ex_i the years of experience of ith individual. The upper equation can be modified in order to include the effect on immigrants earnings of the tenure years in the source labor market i.e.

$$\text{Ln H.E}^F. = c_0 + c_1 Ed_i + c_2 Ex_i + c_3 Ex_i^2 \; c_4 YSI^2_i + e_i \quad (3a)$$

where YSI_i are years since immigration of ith individual

Education or the experience input can be comprised by other variables in a vector which reconstructs a number of specific socio-economic characteristics.[3] Borjas survey for the measurement of race and gender wage differentials at the Federal Sector of United States (1983) estimates the size of earnings of immigrants and natives employees at the Federal Sector using this kind of variable. Specifically the estimating earnings function is :

$$\ln r_h = Y_h a + \beta R_h + \varepsilon_h \quad (4)$$

where r_h denotes the annual full-time earnings of individual h; Y_h is a vector of socio-economic characteristic as those referred above and R_h is a set equal to unity if the individual is a member of particular race-gender group and zero if he is a white man (p. 80). It is worth noting that the vector Y_h comprises not only the education or

[3] In this case all the independent variables of the earnings regression are contained in a vector. Complementarily the dummy variables are reconstructed in another vector.

the experience level of an individual but a plenty of others characteristics as the fluency in speaking the host language, the area of settlement, his marital status and the time of arrival at the host country as the country of origin in the case of immigrants.

The latest characteristic is of great importance as it is straight correlated to the kind of self-selection of immigrant flow. The kind of immigrants selection is a key factor for their assimilation in the host economy and can be an explanatory variable of a potential wage gap among them and natives. When immigrants are positively selected have above average earnings in both the source and host countries, the correlation between skills in the two countries is sufficiently high and when the host country has more dispersion in its earnings distribution Respectively when immigrants are negatively selected have below average earnings in both the source and host countries and it is a signal that the correlation between skills in the two countries is sufficiently high but the earnings distribution in the source country has a larger variable than the corresponding in the source country (Borjas 1994, p.1689).. The comparison of economic conditions of host and source countries takes place by the inclusion of macro level variables in the wage equation. In this way we can perceive the differences in the host and source economy and weight their contribution to earnings regression.[4] Another variable which contributes to the understanding of self-selection is the cost of immigration. As a priori negative is correlated to immigration rate, it is measured by the distance between the source and the host country. If the cost of immigration increases then the expected quality of individuals increase too, but only for those that are positively selected and respectively reduce

[4] The macro level variables of a source country possesses an interpretative role in the decision of immigration or not. They constitute an index of the living level as an evidence of the total socio-economic conditions

the expected quality of them for all the other cases. But the consequent wage equation controls the effects for selectivity in the United States economy both for positively and negatively selected women individuals and the estimated coefficient on immigration costs confounds both effects (Cobb-Clark 1993, p. 989):

$$W_S^W = \sum_{i=1}^{j} a_j X_j + I\left[\beta GDP + \left(a_S \Delta R + b_S P\right)\left(\sum_{k=1}^{j} \gamma_\kappa Y_k\right)^2\right] \quad (5)$$

X_j is a vector of demographic and human capital characteristics, I a dummy variable equals to 1 for immigrants, zero otherwise, ΔR the return to education, P the work preferences, GDP the Gross Domestic Product of each country and finally Y_K a vector contains variables as the distance, the possibility of fellow compatriots, the household situation of immigrant women and the level of income inequality of host and source country. Equation (5) is conceptual as its regression results can interpret the size of the macro variables effects on the distribution of earnings between the natives and the foreign born workers. So one can exclude conclusions about the correlation between the origin country and the size of immigrants natives wage gap.

Another characteristic which derives from the immigrant selectivity and contributes to the earnings determination is the time of arrival in the host country of specific immigrant cohorts. The introduction of the cohort variable to an earnings function takes place for sake of measurement the assimilation level of immigrants as to compare the earnings of different immigrant cohorts.[5] The earnings gap in this view is estimated in cohort terms, so to test the hypothesis that the time of arrival in

[5] The comparison of different immigrant cohorts aims to reveal the assimilation levels of each group. Furthermore the comparison takes place and with the respective cohorts of natives in arrange to check if the earnings gap is closed or opened as the time goes by.

combination to positive or negative selection has a strong effect in payments. Baker and Benjamin (1994 p. 378) create an earnings function which tries to estimate the cohort effects between natives and immigrants on regression for 1971, 1976 and 1981Canada Census. Specifically

$$Y_t=X_t^i \beta_t + \sum_j \delta_{\iota,\xi} + \varepsilon_{i,j} \quad (6)$$

where X_t^i and β_t are vectors of observable characteristics and parameters respectively and the $\delta_{i,j}$ is cohort specific intercepts. The different levels of assimilation for different cohort workers are measured concerning the properties of cohort specific effects in the error term. The authors following Lalonde and Topel (1992) use an error term for cohort i in the year j as

$$\varepsilon_{i,j}= \alpha_{i,j} + b_{i,j} + u_i \quad (6a)$$

where $\alpha_{i,j}$ represents the time-dependent cohort effect related to the assimilation process, $b_{i,j}$ measures unobserved time effects and the u_i refers to the quality level of an immigrant cohort.

The cohort effect is crucial to an effective perception of the earnings gap. Another vital variable for the same undertaking is the age of an individual who chooses to immigrate. The age of an immigrant plays a decisive role in his assimilation. Even though an older individual has a longer tenure in the source country labor market than a younger one, the latter has more possibilities to assimilate faster in the host labor market. As his human capital includes more physical wealth

and as he has more years to assimilate the proceedings of his earnings increase will be faster than the older one. The survey of Schaafsma and Sweetman (2001) for the Canadian labor market tries to estimate to which weight of immigrant earnings the age at immigration matters. To achieve this they estimate the next wage regression function for the Canadian born population:

$$\ln w^{cb} = b_0{}^{cb} + \sum_{j=1}^{4} Age^{j} b^{cb}{}_{j} \left(+ Xb_{X}{}^{cb}\right) + \varepsilon^{cb} \quad (7)$$

where Age measures the years since birth, X_S is a vector of characteristics and b_S are coefficient to be estimated. Respectively the wage regression function for immigrants:

$$\ln w^{I} - \left(\quad b_0{}^{cb} + \sum_{j=1}^{4} Age^{j} b^{cb}{}_{j} \left(+ Xb_{X}{}^{cb}\right) \quad \right) = b_0{}^{I} + \text{AgeImm}\ b_{\text{AgeImm}}{}^{I} +$$

$$\text{ImmCohort}\ b_{\text{ImmCohort}}{}^{I}\ (+Xb_{X}{}^{I}) + \varepsilon^{I} \quad (7a)$$

The equation (7a) estimates the differences in earnings between the Canadian born and the immigrant workers. The differences in earnings are a composition of the effects of the age at immigration, the immigrant cohorts and of socio-economic characteristics. As the age variable of Canadian natives is weighted by a number of characteristics the immigrant cohort is weighted by the respective influence of the same characteristics. Furthermore the immigrants earnings are also a matter of their age level at the entrance time in Canada which implies that a potential wage gap among natives and them is ought to this variable too.

Apart from the influence of cohort and age effects in the wage gap, remarkable importance has the ethnicity origin of immigrants. This variable is the theoretical basis of discrimination literature as it acts besides the upper variables in a determinative manner on the maintenance, the increase or the reduction of the wage gap. When the personal characteristics cannot explain totally the differences in earnings, and there exists a portion which captures a definite percentage of the break then discrimination against to the group with the lower earnings is observed. Discrimination has negative effect on the earnings as the members of the groups which are subjected to distinction have lower earnings than in the case they were members of a group which is not subjected to distinction.

The discrimination literature tries to measure this unexplained portion of earnings differential between natives and immigrants. The premature work of Oaxaca (1973) is fundamental as introduces the method to calculate the particular part of the earnings gap between two groups due to personal characteristics and due to discrimination separately. The addition of two portions is equal to unity. Using this method one can extract important findings on the role of discrimination in labor markets. Specifically this method is an essential tool of immigration literature on earnings differentials among different racial groups.

A crucial kind of survey is the process which tries to measure the relative earnings of blacks and other minorities. Gwartney and Long (1978) compare the earnings of Blacks, Indians, Filipinos, Chinese, Japanese, Mexican Americans, Puerto Ricans and Cubans to the earnings of Americans in order to explain if the earnings

differential is a matter of different personal characteristics and/ or discrimination. Using the mean earnings (Y_i) function form of X_i characteristics:

$$\ln \overline{Y_W} = f_W (\overline{X_W}) \text{ (8) for whites and } \ln \overline{Y_M} = f_M (\overline{X_M}) \text{ (8a) for minorities}$$

In the absence of discrimination in labor market $\ln \hat{Y}_M \approx f_W (\overline{X_W})$ (8c) must be valid (p. 338). The authors try to find as the regression takes place if the earnings gap refers to differences in personal characteristics i.e. $\ln \overline{Y_W}$ - $\ln \hat{Y}_M$ (8b) or refers to discrimination i.e. $\ln \hat{Y}_M$ - $\ln \overline{Y_W}$ (8c). It is becoming obvious in this way which origin groups have lower earnings and in which percentage the workers of each group are victims of discrimination.

The socio-economic and demographic conditions in the host country might be a key factor in the exclusion of inferences. As we note to introduction Great Britain is a major destination for immigrants. McNabb and Psacharopoulos (1981) examine the differences in average earnings between colored and white workers and undertake to explain if the differences are a result of personal characteristics and/ or discrimination behavior. Considering that earnings are a function of human capital characteristics they use the following function:

$$\ln (E_t) = \ln (E_0) + r_S S + r_P k_0 t + r_P \frac{k_0}{2T} t^2 \quad (9)$$

where S denotes the number of years of formal schooling, k_0 is the fraction of time invested on the job training at the beginning of individual's working life, T denotes

the length of working life and t the years of labor market experience. Rates of return to schooling and to job training are being differing (p. 414). Also have been included a number of independent variables to control the differences in earnings. The earnings function are given by $\hat{Y}_W = \overline{Z_W}\,\hat{b}_W$ (9a) for the whites and $\hat{Y}_C = \overline{Z_C}\,\hat{b}_C$ (9b) for the blacks, and the differences in earnings are given by two different components

$$(Y_W - Y_C) = (\overline{Z_W}\,\hat{b}_W - \overline{Z_C}\,\hat{b}_W) + (\overline{Z_C}\,\hat{b}_W - \overline{Z_C}\,\hat{b}_C) \quad (9b)$$

The first component of the Right Hand Side of (9b) represents the differences due to characteristics and the second component the differences due to discrimination against colored workers (p.417).

In an akin research Reimers (1983) investigates the perspective of labor market discrimination against Hispanic and Black men in U.S. labor market. The natural logarithm of the wage-offer function to individual i in ethnic group j is expressed as (p. 571)

$$\ln W_{i,j} = X_{i,j}\,\beta_j + c_j\,\lambda_{i,j} + u_{i,j} \quad (10)$$

where $X_{i,j}$ is a vector of observed characteristics that being examined, β_j is a vector of coefficients that are common to members of a group but may vary across groups, $\lambda_{i,j}$ is the inverse of Mill's ratio, c_j is the covariance between the errors in the probit and the wage estimated and $u_{i,j}$ is a stochastic error distributed N (o, σ^2) (p. 572). In order to examine whether or not discrimination against Black and Hispanic men the author decomposes the average differences in wage offers and creates the next equation

$$\overline{\ln W_j} - \overline{\ln W_k} =$$

$$\left(\overline{X_j} - \overline{X_k}\right)\left[D\hat{\beta}_j + \left(I - D\right)\hat{\beta}_\kappa\right] + \left[\overline{X_j}\left(I - D\right) + \overline{X_k}D\right]\times\left(\hat{\beta}_j - \hat{\beta}_k\right) + \hat{c}_j\,\overline{\lambda_\xi} - \hat{c}_\kappa\,\overline{\lambda_\kappa} \quad (10a)$$

where I is the identity matrix D is a diagonal matrix of weights, j refers to the majority group and k to the respective minority group. The first part of Right Hand Side of(10a) refers to differences in selectivity bias, the second part refers to differences in average characteristics of the groups and the third part refers to differences caused by labor market discrimination. By this method selectivity bias errors which can conduct to artificial results are avoided.

Subsequently the racial discrimination may be observed in particular sectors or to be alternated in levels from sector to sector. One could expect that discrimination occur in the lower status sectors as agriculture, manufacturing or construction where a serious percentage of immigrants are occupied. It is interesting however to check if discrimination against specific origin groups takes place in the upper status sectors. In this way we put the basis of a total examination of the discrimination experience. Haberfeld and Shenhav (1990) search for the existence of salary discrimination against women and immigrants in American Science during the 1970s and the 1980s. They use data from the academia, the private industry and the public sector. Earnings equations where estimated at t_1 using OLS as

$$Y_{t\,1} = X_{t1}^{'}\, B_{t1} + Z^{'}\, C_{t1} + d_{t1}\, G \quad (11)$$

where Y denotes the salary, X is a vector os individual characteristics, B is the vector of their coefficients, Z vector of dummy variables and C denotes their coefficients

and G finally denotes group membership (gender or race) and d is its coefficient (p. 70) . Moreover a longitudinal model was designed to examine changes over time in the salaries of majorities or minorities group between the two decades:

$$Y_{t\,2} - Y_{t\,1} = X_{t1}^{'} B + chg(X)^{'} B^{*} + Z^{'} C + dG \quad (11a)$$

Where chg is the difference between t_2 and t_1. The study of potential changes in the time passage is a sufficient indication of the improvement or aggravation of discrimination procedure.

Finally Kee's research on wage differentials in Dutch labor market among natives and specific immigrants groups (1995) make visible the discrimination problem. His model can be described as

$$I_{i,j}^{*} = Zij\ \alpha j + \varepsilon_{i,j}, \quad (12) \qquad \ln W_{ij}^{*} = X_{ij}\ \beta_j + \eta_{ij} \quad (12a)$$

Where $I_{i,j}^{*}$ is a variable which predicts selection of individuals into the wage and salary sector and $\ln W_{ij}^{*}$ is the natural logarithmic of after tax hourly earnings, Zij and indicate exogenous regressors X_{ij} , αj and β_j are vectors indicate sample selection rule while $\varepsilon_{i,j}$ and η_{ij} are independently and normally distributed errors (p.304). The author decomposes the wage differential in arrange to find the part resulted by personal characteristics and the part come from discrimination behavior. The log wage differential is written as

$$\overline{\ln W_N} - \overline{\ln W_I} = \left(\overline{X_n} - \overline{X_I}\right)\beta^{*} + \left\{\overline{X_N}(\beta_N - \beta^{*}) + \overline{X_I}(\beta^{*} - \beta_I\right\} \quad (12b)$$

where $\overline{X}$ is a vector which indicates the productivity determining characteristics, β indicates the result of Ordinary Least Squares and β^* denotes the unobserved non-discriminatory wage structure. The Right Hand Side of (12b) is constituted by two different components. The first indicates the difference in earnings in responsibility of different characteristics, and the second the difference in earnings in responsibility of discrimination. Specifically the second component can be subdivided into the overvaluation of native characteristics and the undervaluation of immigrant characteristics (p. 307).

Prevalent position on the regressions of the upper models have the variables which constitute the vectors of personal characteristics. Subsequently widespread arrangement in the salary definition have the variables which compose the discrimination vector. These are the essential inputs of the human capital function of employees as they settle on its return and finally their wage level. The dummy variables are also important elements of human capital but for specific groups of staff, so their influence is examined separately in order to discover if there is tangible giving for specific groups of labor force. However all the variables possess an important role on earnings determination. In the next unity we analyze further the role of each input variable dummy or not of human capital function. We arrange their weight in order to capture the total dynamics of earnings.

This influence however must be analyzed in a manner that can reveal their position in earnings function. To access that we investigate in the next sub unity each variable substance separately in terms of human capital. As these variables have

already presented as specific parts of different equations we can advance in theoretical implementation.

B. Theoretical Implementation

The major reason that an individual exercises his labor obligations is the monetary compensation he takes at a given time of work[6] . Labor wage is the primary incentive for the participation in work mechanism. In the case of an immigrant person this kind of payment is almost always the only income she has. For the natives also their wage is by rule the basic revenue. Therefore the level of wages earned is the output of earnings function. The instrument is the separate height of every input's influence on the output amount. Influence might be either isolated or correlated with the occurrence or the lack of other inputs. The sign and the extension of each effect to the wage received is the research interest point. Before we stand in this dimension we undertake a brief analysis of the character of apiece human capital input.

In recent years the occupation of intensive labor sectors became more complicated than the past. The impetuous technology progress, increase of the percentage of labor force population with a Bachelor or a Master Diploma and reformation of labor market institution have constitute a new landscape for the labor livelihood.[7] In economic terms labor markets are more competitive than past times, consequently it is hardest for an individual to access a well-paid job even more for an

[6] Our analysis excludes the case that an individual or a household receipt for a given work his reward in species

[7] The focus refers to the changes in Developing Countries of the First World as they are the most preferable destinations for the immigrants. In this countries the upper changes have determined the labor demand in a harmful way for enough workers.

immigrant. The key term for a high level wage is the qualifications that an employee has. The human capital character of an individual is being in mind of the employers during the agreement for the payment dimension while he appreciated qualifications reflects the labor market conditions and the direction of labor demand.

A lot of but quite different work has been made in the research on the determined factors of natives and immigrants earnings. Welch (1967) interprets income differences in rural American South, Chiswick (1978;1980 and 1983) analyses the effect of the host's country economy in the differential earnings between natives and foreign – born groups of population or groups with alien ancestry. Gwartney and Long estimates the relatives earnings of blacks and other minorities (1980) at the same time as Chiswick Long analyzes the effect of Americanization on women earnings while Carliner (1981) investigates for wage differentials among language and region groups.. Borjas (1983) measures race and gender wage differentials whereas (1994) using age-education and percentile deflators finds the size of wage differentials for given cohort and age-education immigrant groups; Shapiro (1984) investigates for wage differentials among black, Hispanic and white young men. Subsequently Cobb-Clarck (1993) tries to correlate immigrant selectivity and wages for women; Yengert (1994) analyses immigrants earnings whereas Trejo (1997) attempts to answer why Mexican Americans earn low wages and Schoeni (1998) evaluates assimilation level for women. Going a bit deeper Reimers (1983& 1984)) Kee (1995) and Anderson & Shapiro (1996) using regression results search for labor market discrimination against specific immigrants groups. All of these efforts explain the wage gap using terms like education level, labor market experience before and

after immigration and the region choice. All of these terms are substantially concrete inputs of human capital function which is transformed in the wage output.

The input with the most important influence in the wage output is education. All of the above authors use education as independent variable in the wage regression function.[8] The main issue is the effect of education on wages, while measure unit is the education years pre and after immigration. The data reveal that the gasp among natives and immigrants isn't one-sided. On the contrary to the main trend, are observed immigrant groups- but not all of them- in some countries with more education years in possession than the natives. [9] Except from the total schooling years number an individual worker has , of great significance is the quality of this formation i.e. the system scheme where took place the education attainment. Specially if the immigrants source country has low living level or/and no qualitative educational system it is more likely that the schooling years contribution to the wage earned to be small. On the other hand immigrants waves from wealthy countries with

[8] The use of education input is either direct or indirect i.e. enlisting education variable in a socioeconomic vector.

[9] At 1972 , in Britain the Foreign born White Men had 10.8 education years with the Natives White Men to have 10.3. while the Colored Men natives and Foreign born had 12.3 years. (Chiswick, 1980 p.82). Respectively on 1970 the American born Asians had 12.6 schooling years and the American Born Whites 11.9 (Chiswick, 1983 p. 198). In contrast on 1970 foreign born females leaving in America had 12.19 schooling years comparative to 13.7 years of Native born Women (Long, 1980 p.621) ; On 1971 in Canada male immigrants had 10.26 education years while females had 10.8 years; subsequently at 1981 and 1986 the descriptive education statistics where 11.48&11.97 for men and 11.76& 12.18 for women respectively (Bloom;Grenier and Gunderson 1995, p.1002).On in U.S. at 1975 the native born Anglo men had schooling years, native born Blacks 10.9, native born Hispanics 11.0 whereas immigrants of same ancestry 9.7 years (McManus;Gould;Welch 1983 p. 108); this trend is observed and in Trejo (1997 p.1242) as in America whites by generation had at 1989 13.4 schooling years and Mexicans 10.2 years. Nederland natives at 1985 had 12.9 years of schooling comparative to 11.0 of Antilleans, 8.7 of Surinamese, 5.6 of Turks and2.8 of Moroccans (Kee, 1995 p.306) and finally at 1996 Canada Census natives had 13.46 schooling years and Immigrants had 13.81 in that order.

qualitative educational systems have greater contributions on their wages.[10] For the case of natives as they have received host's system education, they confront faster assimilation in labor market than immigrants with education dissimilar to the traditional respective. Subsequently the flow of immigrants with education accomplishment parallel to the host relevant is expected to have higher earnings than the contradictory group. The argument is that every labor demand entrust explicit features derived from its social function.

Another key factor in the earnings determination is the ability of an immigrant to speak sufficiently the host's country language so to participate productively to the labor market. The talking fluency is the necessary condition for immigrants assimilation in the labor market . However this problem arises for precise immigrants streams; those whose source culture is quite different than the host corresponding. According to theory the more near a source's country culture to that of host country the greater the immigrants assimilation to the host economy Trejo (1997 p. 1252) address that Mexicans at U.S. 1979, who did not speak well the English language had a 9.6% penalty at their wage while whites and blacks had a 25.3% penalty level At 1989 the corresponding returns where -27% for the Mexicans and -29.3% for whites and blacks . Kee (1995, p.306) finds that the earnings of Antilleans in the Nederland are the highest among other immigrant races[11] ; Tainer (1988 p. 112) states that the annual earnings of U.S. immigrants are highly correlated with the

[10] Immigrants from Austria or France settled in the United States have relatively higher earnings than the Mexicans (Borjas, 1994 p.1685)

[11] Antilleans became Nederland citizens by birth, while the education received by them are at levels of Holland society

facility to speak English[12] that and Chiswick (1980, p. 85) discovers that the immigrants salaries in Britain are lower in the case where their source country isn't a English speaking country or of English Commonwealth. Also McManus; Gould and Welch (1983) try to conclude the crucial role of the English language in the income of Hispanic and foreign born men respectively. An individual or a household who migrates and speaks the host language has undoubtedly effective and rapid information for the clime and the opportunities of labor market. As a result he opportunity cost of searching a job is smaller for this labor force group than those who be short of tongue facility as they cannot easily distinct among jobs or even more quit when he know about a better job with higher salary.

Education is a principal variable on the determination of the wage level. Another one with parallel consequence is the labor skill capacity of an individual. Particularly apart from the physical or the mental wealth in labor skill level is included also the previous employment experience of an employee. These two characteristics are the basic ingredients of labor skill capacity and are taken in mind by the employers at the time of penetrating or hiring. The experience years variable can be "broken" for immigrants groups in two sides: the work experience years before and after immigration, where for native population this distinction lacks. This effect appears diverse weight of the experience variable contribution to the total wage earned between an immigrant and a native.

[12] The top five in annual immigrants earnings countries or region of origin at U.S. (1975) where: Scandinavia, England, Germany, France and Korea whereas the top five countries or region of origin for immigrants with an English Proficiency: England, Germany, Scandinavia, Canada and France (Bartel p. 112)

The experience years in the host country has a primary contribution to the assimilation of immigrants. An individual immigrant or a household who works continually for a number of years gains knowledge of the labor market conditions and due to the intuition of freedom of movement for production factors has the chance to search for a better job. Experience years variable is responsible for the increase of the earnings of workers- natives and immigrants, specially in short term. Moreover immigrants and natives groups have different levels of experience accumulated[13]. In this view the precedent work has comprised the variable T an T^2 for the influence of short run and medium run respectively in the wage level (Chiswick, 1978;1980 and 1983; Long, 1980) or correspondingly the variable Exp(erience) and Exp^2 (Tandon 1978;McNabb and Psacharopoulos 1981;Reimers, 1983; Haberfeld and Shenhav 1990; Baker and Benjamin; Kee, 1995; Schaama and Sweetman 2001). This kind of influence is measured by the models regression results. For native employees this kind of contribution is ignored. The calculation purpose is the knowledge about the level that immigrants earnings are correlated with the labor years in the host and in the source country. In this way there is a division of T (Chiswick, 1978;1980 and 1983; DeLong, 1980; Cobb-Clark 1993) into T_a (after immigration) and T_b (before

[13] Schaama and Sweetman find (2001 p. 1074) that at 1996 Canada Census the Canadian born population had 20.34 years of experience where at the same time immigrant population had 24.18 years; Trejo estimates (1997 p. 1240) that at 1989 in U.S. whites had 17.4 tenure years in labor market whereas Hispanics 16.44. Kee's results (1995, p. 30 6) for the years of experience in the labor market of Holland at 1985 are'19.7 years for the natives, 11.7 for the Antilleans (4.7 in the home country), 16.0 for the Surinamese (7.1 in the home country) , 21.1 for the Turks (9.5 in the home country) and 22.0 for the Moroccans (8.3 in the home country. Reimers (1983 p. 571) assert that white non Hispanics had 20.77 experience years at U.S. economy 1976, Mexicans 19.51 years, Puerto Ricans 20.45, Cubans 24.12 and blacks 22.96 years whereas at England 1972 whites had 23.3 experience years in labor market and blacks 17 years (McNabb& Psacharopoulos (1981 p.425). Particular interest had the data for Canada for 1971:male immigrants had 21.9 experience years and females 19.45 years respectively (Bloom;Grenier and Gunderson 1995, p. 1002)

immigration) and finally the replacement of T_b by YSM (Years Since Migration- short run) and YSM^2(Years Since Migration- medium run). On the other hand (McNabb and Psacharopoulos 1981;Kee, 1995) "breaks' Exp into Exp_a (after immigration) Exp_b (before immigration).59

Of major interest is also the research progress about the kind of immigrants selection. Borjas (1987;1994& 1996) asserts that the immigrant flow isn't by definition the most capable labor force sample of the source's country population. As described in previous unity two distinct groups are defined: the positive and the negative selected cluster of immigrants. The result is that "immigrants with high skill levels are the most susceptible to improved opportunities in the source country or to adverse random shocks in the host's country labor market. Correspondingly immigrants with low skill levels have lower prospects to assimilate in the host labor market. (Borjas, 1994 p. 1691). The sample selection outcome to the salary break extension between natives and immigrants lies on its quality: a positive immigrant sample selection closes by its assimilation procedure and probably exceed the natives earnings while the pertinent negative expands it. However the correlation between the skill level of immigrant flow and their successful assimilation in the destination labor market depends on its structure. If local labor demand necessitates for high qualitative employers and if and only if the source's country labor market structure is similar to the respective of host's country then the positive selected immigrants would acquired a high level job. Correspondingly if the source's country labor market is different to that of target country the distribution of the immigrant to the labor market wouldn't be normal. In other words a hinting of any job kind will take place. The first immigrant crowd exercise pressure to high level occupation supply, and the second

train force pressure to low level occupation supply. Thus it is vigorous that the former are closing the gap whereas the latter are opening it.

The intuition is in general that the labor market circumstances fluctuate among host and origin countries. The main immigrants streams are directed from poor to wealth countries[14]. Poor or less developing countries have their own arrangement in production sectors. Usually the sovereign sector is the primitive one with occupations like farming, mining and forestry. The percentage contribution of alteration sector is relatively small in the Gross Domestic Product (GDP) , though the parallel tertiary is in some states developing in rapid rates (Indian or Taiwan). In contrary for some source countries like Italy, France or Japan the production configuration is in mush correspondence with the production structure of destination countries like U. S , Canada or Australia, i.e. an alteration sector with huge size of production, relatively small agriculture or forestry and a tertiary sector with high level technology. Therefore the opportunities for immigrants waves from those source countries to absorb are bigger than from immigrants from poor countries.[15]

[14] At 1980 the 33.6% immigrants U.S. stock came from Europe, 33.1% from North and Central America and 18% from Asia (Greenwood& McDowell 1986, p. 1740). Between 1980 and 1990 the 37.3% of immigrant flow in the economy of the United States came from Asia (7.5% from Philippines), 41.3% from America (only 2.2% from Canada, but 22.6 from Mexico) and 10.4 from Europe (Borjas, 1994 p. 1670). In Holland Turks and Moroccans represent the 53.0% of total immigrant population at 1985 (Kee, 1995 p.302) whereas the main source regions of Canadian immigrants at the 1980's was West Indies or Asia (Baker; Benjamin, 1994 p. 372); finally at 1990 in U.S. the women immigrant flow came at 19.7% from Mexico, at 6.3% from Central America, at 16.7% from Europe and at 17.8% from East Asia (Schoeni 1998 p. 487)

[15] The globalization effect determines this gap among the immigrants opportunities. Countries with similar labor markets, and relative homogeneous education systems generate corresponding homogeneous labor forces . Oppositely the poor countries production and education systems generate a labor force with a low level of capacities.

Although assimilation for immigrants in the host country with origin a wealth country is usually successive[16] , the motivating point is that the influence of T variable (or Exp) is expected to be greater for immigrants with origin a poor country. Chiswick (1978, p. 899) argues that the subsequent rise of earnings is greater, the smaller the similarity of origin and host country. The sign of T (or Exp) is anticipated to be positive for all the immigrants groups. This statement is robust as immigrants in the passage of time acquire more and more job specific training. Furthermore a deeper explanation is the "motivation effect" namely that immigrants have more innate ability or motivation to attain a successful assimilation in the labor market (p. 901). Due to this announcement the weight of T (or Exp) on the earnings regression must be greater for immigrants than the natives and most likely higher for immigrants originated from poor countries. Additionally the influence of T^2 (or Exp^2) is anticipated to have negative sign, explicitly that the immigrants and natives earnings increase with diminishing rates.

The participation in labor market years before immigration posses a crucial position in the earnings determination. The representative variables are YSM and YSM^2. They measure the effect of working years since migration in the source country. These variable has a quite interpretative importance in the explanation of variation of earnings.[17] The expected sign of YSM is expected to be positive because each experience kind of an employee always acts positively to the increase of his

[16] The percentage wage differential in 1990 between immigrants from France and natives Americans was 25.7% in favor of those from France and 16.1% in favor of Italians and in 49.3% in Favor for the Japans (Borjas, 1994 p. 1686)

[17] According to Chiswick (1978, p. 899) the number of years since migrating is more important for explaining earnings in immigrant groups with origin country with different level of innate labor market than the host country.

earnings, while the sign of YSM^2 depends on the similarity level between host and origin labor market. If the correlation is high enough then the sign must be positive and if the resemblance level is small or inexistent then the sign of YSM^2 is expected to be negative.

Sometimes in destination labor market the relative experience or education storage may not taken in option or even ignored . The result is a lower status job and consequently lower compensation for specific immigrant groups. Immigrants originated from poor countries exercise jobs which demand lower qualification than they have. In this case the labor market adjusts in a unexpected way. So, blue collar and white-collar workers are substitutes (Grossman, 1982 p. 596). If this is the prevalent trend in a labor market distinct explanations appear: or the competition level of labor market is quite enough or discrimination against immigrants occurs. The only clarification however is that or host country's employers have less information about the labor capacity of immigrants or they exploit immigrants labor supply in order to gain more. The distribution of immigrants in different occupations plays a significant role to the distribution of the earnings between them and natives specially when they exercise jobs irrelevant to their education or experience level.

The labor market competition emerges also in the number of weeks worked per year. This variable contributes firstly to the total wage level of an employee as long and in the increase of his qualitative experience level. Since be present groups of natives and immigrants who don't have a permanent occupation their employment level is partial in contrast to those who had permanent occupation. As a result the weeks worked variable has more positive results to the wage earned amount for those

with more weeks worked stock. A number of studies (Chiswick, 1978;1980 and 1983;DeLong, 1980; McNabb and Psacharopoulos 1981; Bloom; Grenier and Gunderson 1995) examine the effect of the variable weeks worked in the wage earned while Gwartney and Long (1978) use the variable hours worked . Meticulous importance has the data about the eventual gap for the number of weeks worked between the native and the immigrant population. The data makes known that the employment level isn't in favor of the native or the immigrant population.[18] This variable however can test if an individual work more and earns less.

Subsequently an important variable is workers settlement place. The selection distinction in this matter arises generally in two terms: urban and rural areas. Distinction takes place as an effect of subsequent jobs kind that rural and urban space presupposes. In rural areas the major occupations are farming, forestry, fishing as and precision production, craft and manual occupations. In urban areas the kind of occupations is quite different as managerial and professional specialty, technical sales and administrative support, services et.o. The difference is that each employment kind supplies different levels of earnings. Specially sectors of urban occupations usually furnish higher level of earnings to workers.

[18] Chiswick's (1978) result suggests that the American natives work 48.22 weeks per year at 1970 where the Immigrants work 47.16 weeks; Chiswick's (1983) research about the earnings of Asian-American men at U.S. 1970 states that Filipinos work 46.79 weeks per year, Chinese 47.51 per year, Japanese 49.30 per year and Whites 48.25 weeks per year; DeLong (1980) survey about the earnings of females in the U.S. finds that Foreign-born females work 40.44 weeks per year while the Native females work 40.59 weeks per year. McNabb& Psacharopoulos (1981 p. 425) find that in Britain 1972 white men worked 49 weeks in a year and colored 47.8 weeks.

Hence is more possible for an individual who migrates to settle in a region with relative high per capita income. The settlement choice plays an important role in the earnings distribution . Bartel (1989) analyzes the geographical allocation of male immigrants in 29 regions of the United States duo to their origin country and their education level. Butcher and Card (1991) examine the growth of the estimated population of 24 cities of United States respect to the percentiles of immigrant population. The concept is the correlation test between the wage gap and the bulk of immigrants across each city. Consequently the investigation concerns for the contribution part of a region employment choice to the earnings regression of natives and immigrants. Gwartney & Long (1978 p. 340) estimates the influence in immigrants wage of being a resident in American South, non Metropolitan areas, Washington D.C. or Hawaii, whereas Long (1980, p. 624) following discrete two different variables location-Rural and South. Kee (1995 p.306) estimates the option for immigrants in Holland to live in Amsterdam, Rotterdam or in the Hague and Anderson & Shapiro (1996 p.276) estimate the south residence influence in the estimation of wage gap black and white women. The total findings are of diverse direction. There are immigrants and native groups who preferred either the rural or the urban areas.[19] The engaged settlement choice varies across immigrants and natives. It is more likely that a native has more human capital in possession than an immigrant. It is possible then that the ultimate occupations for the former to be more attractive

[19] The Holland natives at 1985 chose the three great cities of their country by 11.3%. Respectively the results are 30.3% for the Antilleans, 46.3% for the Surinamese, 24.25 for the Turks and 30.7 for the Moroccans. Consequently the immigrants choose to cohort in the big urban centers even though if they are in the "poor" tail of earnings distribution (Kee 1995 p.306). In Britain at 1972 48% and 24% of blacks of whites were urban residents (McNabb& Psacharopoulos 1981 p. 425) whilst at 1969 in U.S. the native females lived by 25.06% in rural areas and by 29.49% is south. The respective numbers for the foreign born females were 8.52% and 14.62% (Long 1978, p. 621).

than those for the latter, and finally the earnings to be in different levels. On the other hand the "location " effect may act inversely . An immigrant at the arrival time in the host country tackles an unknown landscape. Moreover he has rather imperfect information about the local labor market. So, the choice location he makes may is not the effective and the gainful one. Setting choice might have negative or positive effect on her earnings.

Finally another one key variable on earnings determination is the family condition. Either for natives or immigrant employees the contingency of being married or not train influence in their wage level. The conscientious differential factor here is the salary conventions which arrangements include higher compensation for the married labor force. Likewise the salary of married employees who have children is higher that those who haven't. At the same time married men tend to have higher participation in labor force rates, invest more in human capital and have better health than men who are not married (Chiswick, 1978 p.902). In this case a steady life cycle causes higher job productivity. Thus, the gravity of this variable must be calculated in the earnings regression. Gwartney& Long (1978); Long (1980); McNabb& Psacharopoulos (1981) are some of them who examine the 'family" effect on wages. [20]

In all of the upper surveys his effect is represented by a variable Notmsp (Not Married), while Long use an extra variable which measure the influence of kid's presence (Kids) and Cobb-Clark (1993 p. 991) uses two distinct variables: i) Presence

[20] In Canada at 1971 the immigrant married population was 75.8% for men and 64% for women (Bloom;Grenier and Gunderson 1995 p. 1002) whereas at 1970 in U.S. natives females where married at 70.04% and immigrant females at 70.01% (Long 1980 p. 621)

of children aged 5+ , ii) presence of children aged <5. The adding up of these two variables does not by definition purpose to measure the extra earnings. As women have the care for the breeding of children, this liability may impose negative effects on earnings. If a mother who works, decides to lessen her employment hours because of children bringing up, probably her earnings will decrease. The reduction size depends from the kind of her work, and the age of her children. If the children are less than five years old then she had to work a few or no hours at all, so her earnings will decrease a lot. Conversely if the children age is more than five years old then probably the employee mother will work fewer hours but not so much to decrease her earnings impressively. The employees married women with children confront a reverse effect: even though their salary is higher by rule than a single employee woman or mother, the presence of their children necessitates them to work fewer hours and consequently earn less income. In the case of immigrants women this effect might be lower than in the natives as ceteris paribus their earnings are higher.[21] We note that neither of the upper survey takes in mind this effect for the men, foreign or native born.

Each of these variables has great contribution to the earnings definition. The gravity of each variable might be isolated, or correlated with some other. If the upper variables are not sufficient to explain the earnings differential between immigrants and natives, then remains for examination an unexplained portion. This portion constitutes the discrimination side. The wage discrimination is against of immigrants.[22] The reason for this discrimination kind must be seek out in the color

[21] In 1970 the mean earnings of a foreign born female in United States were 2,208.85$, while for the native born women the earnings were 4,079.05$

[22] Following Kee (1995) we define wage discrimination as lower pay for given productivity.

and generally the immigrants race . A lot of papers seek out to estimate the portion of earnings gap which is ought to discrimination. Marshall (1974) introduces the economics of racial discrimination. Furthermore Gwartney & Long (1978) McNabb & Psacharopoulos (1981) , Reimers (1983), Haberfeld & Shenhav (1990) Anderson & Shapiro (1996) evaluate the racial differences and Trejo (1997) evaluate the discrimination size in the wage gap among natives and immigrants. Their findings are of great importance as they explain if there is or not a racism phenomena in labor markets. Before we test for discrimination against immigrants we analyze in the next unity the influence of each variable in earnings determinations for natives and foreign born.

The quantitative results make known how much a human capital input acts upon earnings of special groups of labor force. As is referred in some sub notes the quality of each human capital input diverges between natives and immigrants the anticipation of different levels in earnings efflux must be valid. The point is then how the same variable input performs in a dissimilar way in each labor market.

3. Empirical Framework

Empirical results are the essential tool to understand the different quality of human capital occupied between immigrants and native workers. They define the possession size of each human capital input for a particular social labor force group in a given time. As diverse social groups have various quantities of specific capital inputs in their possession it is consistent to enjoy different returns on earnings. Earnings differential is the primary source to construe labor market attitude in explicit human resources participation in its function. So the diversification level of this sharing can be a crucial tribune in order to recognize if immigrants are confronted due their abilities or due to discrimination. The first step is to check the explained portion of income discrepancy.

A. Empirical Results

Education input as referred above is a principal human capital contribution in earnings determination. Its payment however diverges between native and immigrant population. Education possession of specific levels prepares workers for explicit jobs. In addition as different education qualities observed among social groups dissimilar earnings returns are taken place.

At 1969 and 1970 American native men earnings grow about 7% in a potential 1.0 increase degree level of their education. The relative mean amount for all immigrants at the same time were 0.057, but Asians had 0.063 (only Filipinos were

at 0.04 but the rest near to the mean), Mexicans 0.035 but foreign born in English Speaking Countries 0.092 (Chiswick 1978 p. 908& 915; 1983 p. 206). The comparative results for native women were 0.08 and 0.04 for immigrants (Long 1980 p. 622). Two years later and for the highest education level (Ph D.) the returns were 0.319 for white scientist and 0.34 for the blacks (Haberfeld & Shenhav 1990, p.76 &77) but equal among women and men: 0.316. It is impressive that immigrants form English speaking developed countries had the higher retribution whereas Mexicans and Filipinos had the lower one. These results match with the hypothesis of the high positive degree correlation between similarity of host and origin country and immigrants earnings the same as inversely. Besides scientists had the highest return, specially blacks. This trend appears and at 1976: natives had 0.06 education output against 0.0537 for Mexicans, 0.035 for Puerto Ricans, 0.033 for Cubans 0.033 for Negro and 0.049 for American Indians (Reimers 1983 p. 575). Mexicans seems to improve their education level as they assimilate in U.S. economy. At 1979 third generation Mexicans had 0.061 return in contrast to 0.027 to third generation whites at the same time as third generation blacks had 0.059 (Trejo 1997, p. 1250). In Britain at 1972 results are in the same direction. Education input for whites had 0.073 participation in their earnings increase but 0.045 for the blacks and 0.052 for the foreign born (Chiswick 1980, p.83) as 0.084 for whites and 0.064 for the colored (McNabb & Psacharopoulos 1981, p. 416). The gap widens more in Canada. At 1971 native population had 0.071namely double return of 0.035 for immigrant population (Tandon 1978, p. 407) when natives had 0.073 and immigrants 0.048 (Baker & Benjamin 1994, p. 402); specifically immigrants education participate in 0.051 for men and 0.064 for women (Bloom; Grenier and Gunderson 1995, p. 1005). The break narrows at 1981 at 0.022 (0.066 to 0.044) but opens at 1986 to 0.027 (0.076 to 0.049

p. 402) whilst immigrants education returns are stable at 1981 (0.048 for men and 0.067 for women) and increase a bit (0.052 for men and 0.077 for women p. 1005). Finally in Nederland at 1985, Turks immigrants had the lowest receipt for their origin education (-0.0015) and Antilleans the highest (0.051) whereas natives had 0.04 home schooling participation, Antilleans 0.0439, Surinamese 0.0317, Turks 0.0125 and Moroccans 0.0018 (Kee 1995, p. 310). The upper findings verify theory's approach of the educational systems diversification and its determination on earnings return. Immigrants educational attainment is recognized in host labor markets in comparative terms i.e. the ones with the host educational attainment is almost always native labor force rather than immigrant labor force. The labor force groups with dissimilar education level to the relative host face a serious handicap. The educational systems diversification in combination with their potential similarity or not are two basic responsible causes for earnings differential resulted from education.

In this dimension is becoming decisive the immigrants fluency to speak the host language. A lot of papers examine the language matter as Carliner (1981) McManus; Gould; Finis (1983) and Tainer (1988), The more qualitative language adequacy for an immigrant the higher returns on their earnings. At 1969 in America white men (women) with non English language lose 0.0409% (0.0753) in a potential one unit increase of their tongue ability, Japanese lose 0.1126 (0.161), Chinese 0.1332 (0.3580), Filipinos 0.0639, Mexican Americans 0.1526 (0.1411), and Negro 0.0631(0.1504) while American Indian men earn 0.0207 but women lose 0.1912 (Gwartney & Long 1978, p.340-41). Again immigrants with Mexican ancestry misplace more returns but at this spot individuals with Asian origin are in low position. Furthermore it is noteworthy that women have highest opportunity cost of a

difficulty to speak host language.[23] In the same country at 1976 analogous results are emerged. White non Hispanics mislay 0.0684, Mexicans 0.04801, Puerto Ricans 0.203, Cubans 0.159 but blacks win 0.487 more (Reimers 1983 p. 575) where on the other hand those who had the sufficiency to speak well English earn 0.12714 if they were Europeans, 0.17364 if Hispanics and 0.17181 if Asians (Tainer 1988, p. 118). Even though specific origin groups lose a lot from the language matter[24] is certificate that groups with unlike culture than the U.S. respective have higher returns when their human capital posses this input . In that order (Trejo 1997 p. 1252) states that Mexicans who speak English well at 1979 lose 0.032 but Whites and Blacks lose 0.043. Contrary Mexicans who speak not well English lose 0.096 when Whites and blacks lose 0.253. Nevertheless at 1989 results have changed but they have same gravity: Mexicans who peak English very well lose 0.088 whereas blacks and natives 0.081 and the outcomes for those who speak not well are 0.27 and 0.293 respectively. So either there are exact jobs for specific immigrants crowds as some of them are absorbed in a manner which ignores language fluency maybe these are ghettos or black market occupations or even labor market itself "punish" more immigrant groups who are not correspond to its expectations.

The donation of education and language fluency in earnings gap is extremely vital as elevated differences in the human capital output between immigrants and natives are monitored. This gap becomes interpretative when education input is not

[23] This result may fit with the labor market trend that the job reservoir is grater for men than for women, so a language handicap matters more for women as their labor demand is relatively small.

[24] Mexico is bordered with U.S. so it is easier to take place words movement; furthermore Mexicans work in ghetto jobs. But Cubans and Puerto Ricans lose a lot as there is no connection of their tongue with the U.S. relative.

diversify among groups. Consequently different appreciation is observed in labor market for various education inputs regardless of their height.

However the space in experience results is not so wide as for education. In Britain, 1972 whites had 0.03432 return due to one year possible more tenure in labor market, colored 0.03719 and foreign born 0.02476 (Chiswick 1983, p. 83) when whites had 0.0435 and colored 0.03765 (McNabb & Psacharopoulos 1981 p. 416). In Canada, 1971 the native born had 0.05392 experience compensation and immigrants 0.04097 (Tandon 1978, p. 407) when natives had 0.046 and immigrants 0.033) but at 1981 the results were 0.052 and 0.037 and at 1986 0.059 and 0.043 correspondingly (Baker & Benjamin 1994, p.398). Males experience had higher experience return than women: 0.037 to 0.017 at 1971, 0.043 to 0.027 at 1981 and 0.043 to 0.039 at 1986 (Bloom; Grenier and Gunderson 1995, p.1004-5). Subsequently results are of same signal for women in America. Tenure contribution at 1969 was 0.00319 for native born and -.00691 for foreign born (Long 1980 p. 624) and 19 years later 0.043 for white and 0.039 for black women (Anderson & Shapiro 1996, p. 276). In addition for the scientific sector at 1972 the returns were 0.036 for whites, 0.012 for blacks at the same time as men had 0.035 output and women 0.028 and at 1982 the comparative yields were 27.260 for men, 0.037 for women, 28.895 for whites and 0.031 for blacks[25] (Haberfeld & Yehouda 1990, p. 76-77). Finally in Nederland, 1985 Antilleans and Surinamese had the greater return for host country experience (0.0482) Natives (0.032), Turks (0.0253) while the contribution of home country experience of all immigrants groups was almost zero (Kee 1995, p.310) . In general experience variable determines in high level the quality of human capital – native and

[25] These results even though are statistically significant at 0.05 or 0.01 level show that men and whites can be favored from labor market conditions.

immigrant- which is proved by the results. The influence of experience variable however may acts endogenously with the earnings progress but this is a matter that examined in next unity.

Afterward human capital experience of an employee is reflected as well as in the amount weeks worked. Remaining continually in a job or working without interruption is an advantage as earnings increase in chorus with experience. Labor market conditions and penances appreciate long tenure workers. Thus is more possible the weeks worked sharing in earnings augment to be high correlated with long tenure. According to the results in Britain 1972 the β's weeks worked coefficient valued 1.05227 for whites, 1.10408 for colored and 1.13858 for foreign born males (Chiswick 1980, p. 83) as 1.0969 for white and 1.107 for colored (McNabb & Psacharopoulos 1981, p. 416). Two years before at U.S. the results revealed about the same weight of this variable: natives had 1.10335 return, foreign born 1.07151, Mexican born 1.16436, born in English speaking developed countries 1.06921, born in other developed countries 1.0587 ((Chiswick 1978, p. 908), whites had 1.05227 but Asians 0.92592, Filipino 0.888, Chinese 1.05 and Japanese 0.8507 (1983 p. 206). For the case of women measures are also in favor of native born. At U.S. 1969 native born women enjoyed 1.0969 weeks worked return and foreign born 1.0653 (Long 1980, p. 624). As no distinction exists in the research between host and home country experience is difficult to correlate the different returns with explicit experience quality. Moreover as the results are in favor either for immigrants and colored worker and either for native and white population it cannot be shown that specific cohorts are unjust, especially when it is not clear what kind of work they exercise.

Opposite to the influence of weeks worked variable settlement choice power cause ambiguous results. Gwartney & Long (1978 p.340) find for males at 1969 that whites had high returns if they were living in Hawai (0.1983), Japanese lose more if they were South residents (- 0.1735), Chinese earned enough only in Hawai (0.1457) as Filipinos (0.2252), but Mexican Americans lose in South (-0.21362) and in non Metropolitan Areas (-0.3983) when Cubans enjoyed 0.3553 compensation for living in non Metropolitan Areas. White women had great benefit from living in Washington D.C. (0.4243), Japanese females lose from South also (-0.1999), Chinese earned again in Hawaii (0.4407), but Filipino Females lose from this state (-0.3197), Mexican American lose from non Metropolitan and South residence (0.3698 & 0.3892) and Cubans earned if they were living in non Metropolitan areas (0.2939) (p. 341). South in general operates against of women immigrants as at 1969 had -0.14401 return comparative to -0.00798 of natives (Long 1980 p. 624). At 1983 its negative payment to immigrants women income has dramatically increased to -0.3604 (Cobb-Clark 1993, p. 991) while at 1988 the gap living in South was 10 per cent more not in favor of immigrant women (Anderson & Shapiro 1996, p.278). Living in urban Dutch areas at 1985 has zero contribution for natives, negative for Surinamese(-0.1118), Turks (-0.03380 and Moroccans (-0.0248) and positive for Antilleans (0.0410) (Kee 1995 p. 310). In this dimension is becoming crucial the eventuality if and how much immigrants loose payments respect to their settlement choice in comparison with every residence's opportunity in host country. It is interesting also that a cohort can earn or loose less if there are "immigrants area" in host countries.[26]

[26] The results (Butcher & Card, 1991 p. 293) reveal no straight -positive or negative- correlation between immigrants settlement and local growth rates. The common trend however is that the more

As a final point the family condition variable emerges the same sign results but in different however influence. Workers who are not married have always negative effects on their wages. The negative size due to the research results fluctuates among nearly 0.15 and 0.40. The highest defeat is observed for single immigrants and the lowest for single natives. For women consequences have the same sign with men nevertheless are of higher distribution. Explicitly if an immigrant woman is married facts lower return in her wage than a married man, but if she is not married confronts higher loss. Additionally if she has children older than five years old she has also negatives earnings effects[27]. It is worth note that native born females are favored from the empirical results comparative with immigrants females.

The influence size of the variable inputs is the basic instrument to understand the labor markets behavior to the human capital quality. This pressure is essential as discloses the definite earnings returns due to human capital. But for the sake of clarity and in order to state if results are independent among them or not the endogeneity issue must be tested. This research step contributes to the precise declaration about each input variable real level influence in earnings determination.

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immigrants in a region the higher the wage gap between them and natives. Furthermore Bartel (1989 p. 385) finds that immigrants with high level education are those who change locations more often.

[27] Not married native women had a return of 0.16369 at U.S 1969 while the respective number for foreign born was 0.07959 (Long 1980, p. 621); while at 1983 at the same country the presence of children younger than 5 years old created positive effects for immigrant females equal to 0.0974, but the presence of children older than five years old created negative effects equal to -0.1735 (Cobb-Clark 1993, p. 991)

B. Empirical Results and Endogeneity

The empirical results cannot be considered independent respect to their roots. Oppositely, surviving correlation among them can be observed. The causes that provoke explicit findings are nourished sometimes from the action of the latter in the operation ground. In that way a result can feed the movement energy of its (or their) reason(s) whereas this renewing influence determining it again. When this kind of association exists then endogeneity between the effect and the motive is observed.

In immigration literature the research about endogeneity of empirical results estimates in the potential correlation between the influence of the input variable action and the size of the output result. The instrument is if and how much an independent human capital variable is influenced by the action of the output that challenged by its participation in production. By definition the output action accepts new feedbacks from its object. So a circular motion takes place. The participants are specific inputs and outputs of human capital and the floor of this motion is labor markets and their conditions.

Endogeneity issue in immigration literature takes two different options. The first option investigates the positive correlation between years since immigration and immigrants earnings that is how cohort quality and immigrant self selection are related. Through endogeneity is investigated the influence size of aging and cohort effects at immigrants earnings .[28] Borjas (1985& 1994), Jasso & Rosenweig (1990),

[28] Cohort effect is the result in immigrants earnings that becomes generally from the quality of their human capital. This quality is compared with the respective of previous immigrant cohorts and the current of natives. Entry effect is the result that immigrants confront at the time of their arrival and it is

Bloom; Grenier and Anderson (1995), Schoeni (1998) and Schaafsma & Sweetman (2001) have contributed a lot to the research. Besides plenty of the studies mentioned in previous unities examine the second endogeneity issue. In this measurement are examined the effects either for specific variables or for the simultaneous influence in earnings of two otherwise more inputs. Also it can be examined the question if and how an input's influence acts endogenously with the output force.

Borjas work (1987) is the primitive one as defines the immigrants categories in terms of national income distribution and earnings mutually for origin and host country. In that manner one can understand the sort of immigrant quality that settles in destination country. Apart however from economic variables influence to the decision to migrate political conditions of source country are tested as endogenous factor of immigrants human capital. Thus different political conventions determine diverse immigrant cohorts.

If residents of home country have income $\ln w_0 = \mu_0 + \varepsilon_0$ (13) and residents of host country have income $\ln w_1 = \mu_1 + \varepsilon_1$ (13a) then ρ denotes the correlation coefficient between ε_0 and ε_1 (p.532) where $\varepsilon_0 \sim N(0,\sigma^2)$. Let Q_0 and Q_1 indicate the income differential between an immigrant and the average person in country 0 and 1 respectively, and $\kappa = \frac{\sigma_1}{\sigma_0}$ (14). Then three different cases for immigrant quality are emerged:

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schemed as earnings differential; finally aging effect is the result of age at immigration in immigrants earnings.

1. Positive selection. It is the best quality cohort. In this case is valid that $Q_0>0$ $Q_1>0$ and $\rho> \min(\frac{1}{\kappa},\kappa)$ (14a), $\kappa>1$. If ρ is sufficiently high and if income distribution is more depressed in destination country then immigrants are selected from the upper tail of income distribution of origin country . The best persons are living their country in favor of immigration and they outperform the natives in the destination country.

2. Negative Selection. It is not a good quality cohort. In this case is valid that $Q_0<0$ $Q_1<0$, $\rho> \min(\frac{1}{\kappa},\kappa)$ (14b), $\kappa<1$. If ρ is sufficiently high and if income distribution is more unequal in source country then the immigrants are selected from the lower tail of its income distribution . So they do not perform well in the host country.

3. Refugee Sorting. It is a mezzanine quality cohort. In this case is valid that $Q_0<0$ $Q_1>0$, $\rho< \min(\frac{1}{\kappa},\kappa)$ (14c). The destination country hosts immigrants of below average in terms of origin country but they outperform natives after their arrival.

The purpose of this distinction is to counter the question about endogeneity role in earnings differential at the time of arrival. Immigrants who come from developed countries of West hemisphere is expected to enjoy a positive effect. Conversely immigrants come from countries of East& South Asia, Africa and Ex Communist countries is expected to have a handicap at the same time. Specifically income is more unequally distributed in a large number of Third World Countries (Mexico, India etc) which from the current bulk of immigrants in the United States (p.

534). But the interesting point is that the earnings of the latter are growing faster than of the former' s.

Due to the regression results (p. 542-3) an immigrant from Denmark at 1970 (1980) earn about 8% (20%) more than a native worker and an immigrant from U.K. about 6% (12%) more. At the same time a Romanian earn 30% (31%) less, a Russian 35% (42%) less, a Chinese 45% (53%) less, a Filipino 43% (39%) less, a Mexican 33% (40%)less, a Colombian 22% (40%)less and an Egyptian 43% (46%) less. Consequently different levels of income distribution and correlation of ε_0 and ε_1 create various levels of human capital. Immigrants from Europe have different opportunities in U.S. than immigrants from the South Hemisphere. The economy of the European Countries (specially those are members of E.U.) is directly related with the relative of U.S. Furthermore ρ is sufficiently high and income is more dispersed in Europe than U.S. On the other hand for the South Hemisphere countries ρ is also high but they confront much more income inequality. However their assimilation rate[29] exceeds the relative of immigrants with European origin. Egyptians after ten years in U.S. labor market had 2.6 assimilation rate, Chinese 1.1, Filipino 2.3, Mexicans 0.7, Colombians -0.7, Russians 1.01, Romanians 1.3 while immigrants from U.K. 0.3 and from Denmark 0.06. At Canada subsequently Bloom; Grenier and Anderson (1995p.994-6), at 1971 the entry effect was for men (women) -5.35 (-0.33)while at 1981 was -13.84 (-10.37) and at 1986 – 22.21 (-10.63). Although the cohorts from Europe had approximately around 1.5% less earnings than the native population the

[29] Assimilation rate is defined by Borjas (1985 p. 544) as the slope of the earnings assimilation at 10 years or by Bloom; Grenier and Guunderson (1995 p.991) as assimilation effect, namely the average percentage change in immigrants earnings for each year spend in Canada. The immigrants assimilation procedure is investigated and by Kossoudji (1989).

same time as cohorts from Asia, Africa and Latin America earn around 22% less (p. 998) and the assimilation rate of the latter (0.54) exceeds the one of the former (0.19).

But except from specific economic variables the political conventions also determine the human capital quality of an immigrant. These political factors in combination with economic variables exercise clear influence in immigrants cohort quality, rate of assimilation and at the entry effect. Borjas (1985 p. 545) defines the most influential variables in the determination of endogeneity levels. Some of them are the political competitive system, the recent loss of freedom, the number of political assassinations, the lnGDP and its rate of change. It is remarkable that in this list are included also the size of income inequality, the immigrant ability to speak fluently English. The political competitive system has the largest positive result to the entry effect (0.1101-0.2743) but when the English Proficiency variable is examined is take the first position (0.2596 against 0.1306) whereas per capita lnGDP gives an important supply on determination of entry effect. This variable has also the largest contribution to the height of assimilation rate (0.0122-0.0138). Subsequently the rate of lnGDP change appears the largest compensation to the rate of cohort quality change (1.15-4.7)[30], where also a political competitive system have high influence (0.0712-1.76) as and the recent loss of freedom (0.1256-0.1472).

Immigrant cohorts are depended beyond the origin country by the time that the entrance in destination country took place. From this correlation appears the level of cohort quality change. The cohort quality change is measured by the earnings differential between two different cohorts. Borjas (1985 p. 544) tries to compare the

[30] Cobb-Clark's result (1993 p. 991) suggests that a GDP increase by 1 unit grow the earnings of immigrants women by 18.1% to 31.67%.

earnings of two different immigrants cohorts entered in U.S. at 1955 and 1979 subsequently. His findings are not one sided. From the twenty European countries examined immigrants originated in eleven of them had improve their earnings match up to the previous fellow country men. Respectively the twenty one countries of South Hemisphere eleven cohorts had improved their earnings position. In this issue endogeneity takes two options: the entrance time effect in combination to origin kind effect. In that point of view Schoeni (1998) measures the time of entrance effect for women of different origin. Due to the results the more recent the entrance time in U.S. for immigrant women the more negative effect. A monotonically increase of negative effects in women's earnings as the time goes by. Mexican women had 0.018 return if they have entered between 1950-1959, and -0.152 if they have went through 1985-1990 (p.491). Central Americans confront a negative effect of -0.065 if belonged to cohort 1975-1979 and -0.157 for the cohort1985-1990. European women loose -0.018 if they have settled among 1960-1964 and -0.09 among 1980-1984. Japanese, Korean and Asians misplaced -0.147 for 1985-1989 cohorts and -0.025 for 1960-1964. Only immigrants waves from U.K. or Canada had relatively low negative cohort effects: -0.017 for 1970-1974 and -0.033 for 1985-1989 (p. 491-2). Finally significant interest appears from Reimers (1983 p. 575) regression results. The contingency for a worker to be foreign born has negative effects for all immigrants groups but the larger for Central and South Americans (-0.411) and Mexicans (-0258)) except from other Hispanics (0.277) and Blacks non Hispanics (0.411). The foreign born immigrants spread settled in U.S. between 1970-1972 confronted the strongest negative endogeneity entry effect respect to their nationality (-0.307 Hispanics to 0.229 for Mexicans), the immigrants spread of 1965-1969 enjoyed positive effects except from Hispanics (-0.364) and Blacks (-0.124). Finally cohorts of 1960-1964 and 1950-1959

had positive entry effect for all nationality classes. The conclusion is that as time goes by immigrants face more competitive conditions in U.S. labor market. This result might be a matter of new institution arrangement or business cycles in a way that the total labor demand curve is shifted to the left through years or even this change affects a majority of specific jobs that immigrants exercise at the time of their arrival.[31] This might be the case and for Canada in addition however with the quota system that government have engaged: at the 1981-86 men (women) had -16.54 (-7.72) if came from Europe and U.S. and -21.78 (-7.22) if came from Asia, Africa and Latin America (Bloom; Grenier and Gunderson (1995 p.991); the relative numbers for 1961-65 cohort was -0.18 (1.85) for Europeans and U.S. citizens and 10.82 (12.34) for Asians, Africans and Latin Americans.

The origin variable is an endogenous characteristic of human capital and can be examined in an interpretative mode in order to estimate its role to earnings determination. So citizenship together with years since immigration in host labor market can be considered as an endogenous human capital feature . Due to the results British nationality (McNabb & Psacharopoulos 1981 p.416) acquires higher returns to blacks than to whites (0.0788 against -0.0037) but to be a foreign born worker costs more to blacks than whites (-0.17862 against -0.00030- Chiswick 1980 p. 83) as and for Mexicans or other labor force categories with Spanish surname (-0.1868 to -0.33633- 1978 p. 915). Consequently the foreign nationality of an immigrant worker

[31] As immigrant at the time of their arrival do not posses perfect information about labor market opportunities they may be forced for living reasons to occupied in jobs with low earnings status; the labor demand curve of these jobs might be shifted to the left through times as immigrant flow to U.S. was over doubled between 1960 and 1990 (Borjas 1993 p. 1670)

might be an obstacle to assimilation procedure as when it is not exist acts positively for him.

Another factor that matters quite a lot and introduces an endogeneity among earnings and immigrants human capital is the age at immigration time. Schaafsma and Sweetman (2001) use regression results in order to explore the role of age at the immigrants earnings determination for three different cohorts: 1986, 1991, 1996. Results obtain different dimension (p.1078). When the dependent variable is the difference observed immigrant earnings and those predicted from the Canadian born earnings profile for 1996 Census the persons who entered in Canada at the age of 20-24 confront the shortest loss (-0.009) but those who entered at the age of 45-64 loose the more earnings (-0.300). Persons earnings who migrate at age 5-9 exceed slightly those of Canadian born (0.025) but persons who migrate at 15-19 have significant defeat (-0.047). But the ability to collect returns over more years would give young persons a much greater incentive to invest even if the internal rate of return did not decline much with age (Becker 1964, p. 50). Results are similar for the Censuses of 1991 and 1986. Again the oldest immigrants have high negative age endogeneity effects (-0.134 and -0.176 respectively), teens 15-19 loose from their age (-0.057 and -0.050) while children 5-9 years old exceed the Canadian born (0.035 and 0.027). When the depended variable becomes the difference between each immigrant's observed earnings and that predicted with an expanded earnings function for Canadian born that includes all the variables unrelated to immigration relative earnings now decline close to monotonically as age at immigration rises (p.1082). In this case the high the age at immigration the lower the earnings returns. Of great importance is the extensive negative effect for the teenagers immigrants in a manner that proves the fact

that this age is unsuitable for immigration. This immigrant groups interrupt its education procedure so its human capital can distinguish as inadequate in host labor markets.[32] Negative endogenous age effects may capture the real value of immigrants human capital at labor market compensations. Gwartney & Long (1978 p.340) examine different age levels for natives and immigrants with different origin. The age levels do not refer to the age at the time of arrival but at the immigrants age at 1969. For this case the older an individual is the more possible to have positive age effects but until an exact age level. Crucial role in the age effect possess the immigrant origin. Thus endogeneity creates origin-age effect.[33] Men workers aged 18-24 had the more negative age-origin effect if they were American-Indians (-0.9453), Whites (-0.6826) and Japanese (-0.6743) while the less negative effect touched Puerto Ricans (-0.3552). Cubans had the less negative returns in the group aged 25-34 (-0.0065) and Puerto Ricans were second (-0.0522) whereas the worst position belonged to Filipinos (-0.2178) and Japanese (-0.1876); but American Indians had the only positive effect for this category (0.1263). Group aged 45-54 produced bipartite results: American Indians again had the largest positive effect (0.1078), Puerto Ricans (0.0678) and Mexican Americans (0.0365) also; Cubans and Japanese faced the more negative returns (-0.0859 and -0.0745 respectively) whilst the trend for ages 55-64 is to give negative effects by rule. For women workers (p.341) the positive correlation between age increase and greater returns is valid also but white women were the most favored (0.0448 for 25-34 and 0.1575 for 55-64), American Indians the most negatively effected (-0.7835 for 18-24 and -0.1645 for 55-64) whereas Filipinos and Puerto

[32] It is worth note that at the control for education influence in combination with age at immigration the age 15-19 has the most negative β's values:-0.921 (1996), -1.288(1991), -1.288(1986) (Scaafsma& Sweetman 2001 p.1084).

[33] Origin-age effect is defined as the consequence in immigrants earnings that comes from the combinative action of the nationality and age of an immigrant worker in his work procedure.

Ricans had relatively good returns (45-54:0.1576 and 0.1653; 55-64: 0.1120 and 0.0973 respectively).

Endogeneity of empirical results can be also an interaction result between the object and the subject or a correlation matter of two input variables. One discrete instance is the relationship between the experience level and the monetary compensation of a worker. A worker who has in his human capital a lot of years of experience is more possible to enjoy high earnings returns (especially as the results shown if the experience acquired in the host labor market). Subsequently a worker who enjoys high earnings returns has a very certain reason to remain in this specific job, a choice which will increase his experience and lastly will again increase his earnings and so on. Therefore this circular movement acts endogenously and in favor of the experience owners. Another distinct instance is the race or the color of a worker. This characteristic is endogenous as it is not engaged by anyone. The race feature acts endogenously but rather against to his owner. As always exists so may offer circular negative returns on immigrants earnings. But this is a matter of discrimination which will be examined below.

At last endogeneity can appear as the correlation scheme between two input variables. The correlated variables however must belong to the same human capital space i.e. when the former determines the latter and inversely. It is remarkable that the correlation result acts endogenously with earnings. Two distinct variables with high positive correlation are the Weeks Worked and Tenure (or Experience) in work. As at the previous paragraph was presented the endogenous relationship between earnings and experience years it is necessary to show how weeks worked and

experience are correlated. The experience is a major human capital input. The more time an individual spends in work the greater experience he has. One of the ingredients of experience is the number of weeks worked. The more weeks worked the higher experience for a worker and the higher experience the more absorbed he would be from labor market. This hypothesis is verified from Chiswick's regression result (1983 p. 208) with dependent variable the weeks worked. The effect of a potential increase of one year experience of a worker in the number of weeks he 'd worked is 33.4% for whites, 37.1% for Asians and specifically 25.8% for Filipinos, 58.0% for Chinese and 30.3% for Japanese. The increase of weeks worked will their experience level and their earnings will add.

Endogeneity is a conceptual issue on earnings efflux as often determines the correlation procedure between an output and an input variable or among different inputs variables. In that way important findings are excluded such as origin, cohort and age effect. But the question if labor markets clearing adjusts respect to the hypotheses of perfect competition can be answered only after the investigation about discrimination effects takes place.

4. Discrimination Effects

Discrimination in labor markets is a fact that can be developed against specific groups of labor force. Discrimination takes place either by terms of gender either by terms of race. Our interest in this paper is specified in racial discrimination. This size can be defined as that the situation where two different racial labor force groups are not paid by the same criteria (Oaxaca 1973 p. 694) or as lower pay for given productivity (Kee 1995 p.302). The instrument is that labor market conditions observed to appear distortions as perfect competition validity in inputs operation pauses . The race of a worker becomes a reason his human capital to be under-evaluated. As a result his payment is lower than that would have prevailed in the absence of discrimination. So his race can be a negative input in his earnings function.

A lot of papers try to investigate discrimination issue in labor markets. Krueger (1963) demonstrates that as the marginal product of capital in the white sector is lower than the marginal product of capital in the Negro sector white income will maximize, Welch (1967) finds that the average salary per member of Instructional staff is quite higher for whites while Marshall introduces the economics of racial discrimination (1974). Furthermore Gordon; Morton and Braden (1974) locate that a black would earn 13% more in the absence of discrimination, whereas Smith &Welch (1977) estimate the Blacks-Whites earnings ratio, Phelps (1977) determine the statistical theory of racism and sexism, while Firth search for racial discrimination in british labor market and Butler (1982) tries to estimate wage discrimination in the labor market . All these papers approach discrimination without the influence weight of each input variable in the final results. Particularly there is no

reference about the percentage of earnings differential owned to personal characteristics and about the percentage of earnings differential owned to discrimination. Consequently it is difficult to understand the real contribution of each input to earnings determination as its size of undervaluation in labor market procedure. [34] If we add the discrimination trend in labor markets to spread more among immigrants than to natives is becoming necessary the perception of which input factor are those who confront more discrimination and in what size. This knowledge acquires the researcher with the basic tool in his attempt to define clearly the earnings differential.

This vacuum is captured by Oaxaca's innovative work (1973) while Cotton (1983) and Oaxaca and Ranson (1999) continue the decomposition procedure. Oaxaca (1973) setsup the discrimination coefficient D[35] (p. 694) that is equal to

$$D=\frac{W_N / W_I - \left(W_N / W_I\right)^O}{\left(W_N / W_I\right)^O} \quad (15)$$

where $\left(W_N / W_I\right)$ is the observed natives-immigrants wage ratio

and $\left(W_N / W_I\right)^O$ is the natives-immigrants wage ratio that would have prevailed in the absence of discrimination. Subsequently the natural logarithmic expression of (15)

[34] We define the undervaluation of a worker's input in the labor market procedure as a matter of discrimination.

[35] We formalize a bit Oaxaca's coefficient for the purpose for our research: in the place of male wage (W_M) we put natives wage (W_N) and in the place of female wage (W_F) we put immigrants wage (W_I). This formalization takes place in order to present clearly the decomposition method of wage differential between immigrant and natives.

is $\ln(D+1)= \ln\left(W_N \,/\, W_I\right) - \ln\left(W_N / W_I\right)^O$ (15a). Oaxaca's assumes (p. 695) that in a non-discriminatory market employers adhere to the principle of cost maximization i.e.

$$\left(W_N / W_I\right)^O = \frac{MP_N}{MP_I} \quad (15b)$$

We have to note that in the absence of discrimination: 1) the wage currently faced by immigrants would also apply to natives and 2) the wage currently faced by natives would apply also to immigrants. Assumption one (two) says that immigrants (natives) would on average receive in the absence of discrimination the same wages as they presently received but that takes the form of natives (immigrants) receiving more (less)than a non-discriminatory labor market would award them (p. 695). Due to the upper equations and remarks the wage differential between natives and immigrants can be decomposed into two different parts: the effects of discrimination and the effects of differences in individual characteristics. In this point of view a new discrimination coefficient appears:

$$G=\frac{W_N^{-} - W_I^{-}}{W_I^{I}} \quad (16)$$

$$\text{and } \ln(G+1) = \ln\left(W_N^{-}\right) + \ln\left(W_I^{-}\right) \quad (16a)$$

where $\left(W_N^{-}\right)$ denotes the average hourly wages for natives and $\left(W_I^{-}\right)$ the average hourly wages for immigrants. Furthermore if the wage equation is estimated as

$$\ln(W_i)= Z'_i \beta + u_i \,, \quad (16b)$$

where W_i the hourly wage of the i-th worker, Z'_I a vector of individual characteristics, β a vector of coefficients and u_i the disturbance term, then from the properties of ordinary least squares we can get

$$\ln \left(\bar{W_N}\right) = \bar{Z}'_N \bar{\beta}_N \quad (16c) \text{ and } \ln \left(\bar{W_I}\right) = \bar{Z}'_I \bar{\beta}_I \quad (16d)$$

where $\bar{Z}'_N$ and $\bar{Z}'_I$ are the vectors of mean values of the regressors for males and females respectively as $\bar{\beta}_N$ and $\bar{\beta}_I$ are the corresponding vectors have estimated coefficients. If we substitute (16b) and (16c) into (16a) we obtain

$$\ln (G+1) = \bar{Z}'_N \bar{\beta}_N - \bar{Z}'_I \bar{\beta}_I \quad (16e)$$

$$\text{while } \Delta Z'_i = \bar{Z}'_N - \bar{Z}'_I \quad (16f) \text{ and } \Delta\bar{\beta} = \bar{\beta}_I - \bar{\beta}_N \quad (16g).$$

After substitutions one can get

$$\ln (G+1) = \Delta Z' \bar{\beta}_I - \bar{Z}'_N \Delta\bar{\beta} \quad (17)$$

Due to equation (15) and the crucial assumption that the current immigrants wage structure would apply to both males and females in a non-discriminating labor market we take:

$$\ln \left(\frac{\hat{W}_N}{\hat{W}_I} \right)^O = \Delta Z' \bar{\beta}_I \quad (17a)$$

which denotes the estimated effects of differences in individual characteristics

and $$\ln(\hat{D}+1) = -\Delta Z_i' \Delta\beta \quad (17b)$$

which denotes the effects of discrimination.

In a same kind of Oaxaca's way Reimers (1983) uses (10a) in order to find the discrimination weight in the wage differential between non Hispanic Anglo men and Hispanics and Blacks at 1976 in the U.S. and Neumark (1988) investigates the employer's discriminatory behavior and the estimation of wage discrimination at U.S. 1984. On average Reimer's estimation discrimination has the larger weight for the case of Central and South American men. The 86% of the total wage offer differential between them and white non-Hispanic men is ought to discrimination. Puerto Ricans confront a 54.5% discrimination result in their wage gap with whites non Hispanics, Other Hispanics minorities a 52.8%, Blacks around 58.7% while Mexicans had a 17.6 % discrimination effect (p. 576).

The particular impact of specific characteristics has significant interest. When the price level adjustment takes place the wage offer differential between Mexicans and white non-Hispanic men reduces from 34% to 30%. Mexicans education is responsible for the half of wage offer differential of Mexicans to whites as if they had the same education level (12.4 years) their wages would increase by 17.1%. Furthermore the difference in speaking the host language. accounts for a wage differential around 3%. The rest percentage which is due to discrimination is at the most 8%. The wage offer gap for Puerto Ricans is approximately 33% but the price level adjustment increases it to 43% as Puerto Ricans tend to live in high-priced northeastern cities. For this immigrant group discrimination accounts for 18% of this

break as the rest 25% is due to personal characteristics. Education variable has the larger contribution as contributes to 13%, and the lack of fluency in speaking English contributes 6% (p. 576-7). For the Cubans if their characteristics were the same the wage differential could be at 6% for Cubans favor. Fluency improvement in English would eliminate the gap at 6% and if their education level increased by 1.1 grades the wage differential would close at 5%. The Central and South American population have on average 42% lower wage offers than non Hispanic Men, a number which increase to 50% after the price level adjustment. The wage differential respect to different characteristics is 14% so the discrimination effect is the rest 36%. As they are the most recent spread in U.S. economy they are the less assimilated. Their education level accounts for 3% of the gap, their difficulty to speak fluent English 4% and their experience lack of U.S. Armed Forces 4%. Finally men of other Hispanic Origin have on average wage offers 22% below the white non-Hispanics of which 12% is ought to discrimination while the respective results for Blacks are a 23% a wage difference so that as much as a 14% can be due to discrimination (p. 577-8).

Subsequently Kee's results (1995) for the case of immigrants in Nederland at 1985 evaluate the discrimination cause in the earnings differential between them and natives at significant level. The difference in mean log offered wages between Antilleans and natives is 31.28%, between Surinamese and natives 34.8%, between Turks and natives 41.73% and between Moroccans and natives is 35.59%. The percentage of the upper gaps due to discrimination is 35% for Antilleans and 15% for the Turks, only 1% for the Surinamese while for Moroccans the discrimination weight to earnings differentials negative suggesting that for the same characteristics wage offers would exceeds those of natives In addition the discrimination against Turks and

Antilleans is almost attributable to the undervaluation of their characteristics (p. 313). The same results reveal that the education acquired in Nederland is very important. The influence of this variable is around 40% for Antilleans and Surinamese and around 50% for Turks and Moroccans. Only the Antilleans counterbalance the effect of their educational acquisition in home county. Surinamese tackle an unfavorable endowment effect of total education equal to 14%, Turks 36% and Moroccans 47% respectively. If immigrants had the same education years with natives then earnings differential would be reduced by 7.6% for Antilleans, 16.7% for Surinamese, 29.1 for Turks and 40.3% for Moroccans. The immigrants trend to accumulate less experience in Nederland than in their host country can also explain the size of earnings differential. Thus 64% of the Antillean gap, 42% of Surinam gap, 19% of the Turkish gap and 12% of the Moroccan gap is ought to this factor. But the interaction of the variable "experience in the home country" and "experience in the Nederland" is higher for Antilleans (2.13) and Surinamese (11.13) than for Turks (0.11) and Moroccans (0.61) (p. 313-4). The latter result reveals the influence of the high degree similarity between the human capital of Caribbean and Dutch workers.

Finally the color variable posses a significant input role on earnings function. In Britain at 1972 the negative effect in earnings for the foreign born if were colored men was -0.24688, and -0.17862 for the colored population if were foreign born (Chiswick 1980, p. 83). So as the combination of a nationality different to British and the colored skin emerges negative influence on immigrants earnings the discrimination phenomenon appears.

As a result the principles of perfect competition in labor markets are circumvented and a lack of equilibrium is observed. Definite immigrants groups are not paid totally due to their personal characteristics that create their human capital but and due to discrimination. Discrimination acts against them and prevents the normal distribution of their human capital quality on earnings determination. This effect accounts a lot for the earnings differential between natives and immigrants.

5. Summary and Conclusions

The human capital appreciation of different social labor force groups is a matter that has central position in function terms of contemporary labor markets. As diverse payments for heterogeneous human capital levels take place, the research necessity about the particular return of each special human capital level emerges. The different human capital qualities reflects diverse earnings level as every input has its own participation in production. These differences in inputs separate labor force in specific groups. One important dimension about the separation of labor force groups is between native born and foreign born workers. The two groups recommend together the total labor demand of the host country's economy. Each group takes a monetary compensation as payment to its work.

The question is if the labor market conditions about perfect competition, freedom of movement among production sectors and the marshallian equilibrium exists after the immigrants entrance. Consequently the research exercises to interpret the human capital differences as sources of wage differential between natives and immigrants and as potential causes of labor markets distortions. The construal takes place in terms of human capital returns, of endogeneity and of discrimination.

Every conception has its own gravity on earnings determination. As human capital is composed by a lot of different inputs each of those contributes on wage differentials. So education returns are higher by rule for natives than immigrants . Due to results the gap depends inversely to the similarity of educational systems and culture among host and source countries. The more similar the upper variables the

more narrow the wage differentials between natives and immigrants. Women immigrants however are in better place than men. It is worth noting that the results hold in all host labor markets even for the cases that immigrants have higher education level than natives. Education appears high strength in the assimilation procedure. It is robust then that immigrants fluency to speak the host language contributes a lot to his faster assimilation. Immigrants from countries where the mother language of host economy is not spoken and women have the higher opportunity cost. The unlike culture factors widens the wage differentials between natives and immigrants. But the experience and weeks worked variables, especially if acquired in destination country supply also to the assimilation procedure as they give positive and higher returns to immigrants, lower however comparative to those of natives for the experience case but higher for the weeks worked. As these two inputs are connected endogenously and as labor market conditions appreciate long tenure workers their possession is positively correlated with earnings increase. Thus as the experience in destination country rises, the gap closes while home country experience accounts only for immigrants who come from a labor market similar to the host one. Settlement choice variable maintains the wage differential but not a lot whereas the earnings of married immigrants are close the natives respective.

Endogeneity posses an important role to the earnings differential scheme. Immigrants with West Hemisphere origin earn more at the entry time than immigrants from East or South Hemisphere in host country. This effect proves high and positive correlation of socio-economic conditions among host and home countries and increase of immigrants earnings. Therefore cohorts from countries with political competitive system and significant GDP growth rates are the ones with the higher

earnings. But as consequence of motivation effect cohorts with East and Central/ South American origin are assimilated faster Furthermore the more young a person migrates the faster the assimilation rate except for the teens case. In particular as the immigrants entrance takes place when their age increases, they have lower qualifications, so they earn less. After all it is remarkable that as times goes the persons who migrate face more and more difficult economic conditions in the host country.

Finally discrimination accounts significantly to the determination of earnings differentials. The most unjust cohorts are immigrants from South and East Hemisphere as their wages formation takes place apart not only due to their personal characteristics but and in a significant percentage due to discrimination. Consequently the real participation of human capital inputs in labour procedure is ignored for specific immigrants cohorts. These labour force groups are paid in the same terms if they would had the same personal characteristics with natives or whites. On the contrary their earnings are effected by a racism disposal and are in a low level. This is a distortion of perfect competition conditions in labour markets as specific labour force groups are not paid due to the marginal product they have contributed. As a result labour markets are not adjusted in equilibrium terms.

As the markets that constitute an economic system had to be in equilibrium so the aggregate demand to absorb the aggregate supply disturbances in the labour market can challenge a serious crisis to its operation. In order to avoid these phenomena the labour market process has to foresee their effects and to develop adequate instruments to tackle them.

The problem with the earnings differential between natives and immigrants begins from the diverse human capital evaluation that takes place. As the job must done employers engage workers without to know all their qualifications or their shortcomings. On the other hand immigrants workers- specially those who recently arrived- have by rule imperfect information about labour market opportunities respect their human capital. So confusion exists and the earnings assessment departures from human capital quality. Since among employees a diversification of capabilities and experience is observed it is not difficult in working day terms for the misunderstandings to occur.

When distortions in labour market operation take place the necessity the public intervention can create a renovating field. This interference must intend to establish sufficient terms in labour market conditions so its process result to be the equilibrium. For the case of immigrants the public intervention points can be the supply probability of such education level that is appreciated in the host economy, instructive communication programs of the host language- especially for teenagers immigrants- and the application of the perspective that immigrants must choose their settlement region due to the current occupation opportunities. Furthermore the employers must have perfect information about immigrants human capital. Each national Department of Employment, or similar federal organization must advise the companies about the particular capabilities of different immigrants cohorts.

In this perspective phenomena of racism can be avoided and host labour markets can be in equilibrium position. As participation in labour procedure provides

workers with purchasable power which reinforces aggregate demand the successful assimilation modus operandi of the high possible number of employees becomes crucial. Thus public intervention must targets to the realization of labour market equilibrium.

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