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Wage Differentials between Immigrants and Native Workers in the United States

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Wage Differentials between Immigrants and Native Workers in the United States

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Abstract

The dissertation aims to analyse the wage gaps between native workers and immigrants in the United States in the period of 1994, 2000, 2004, 2007, 2010 and 2013. The methodology used are Ordinary Least Square (OLS) and Oaxaca-Blinder decomposition. The results found that immigrants earn less than the natives and there are wage gaps between immigrants and native workers of about 0.14 taken into account the similar human capital characteristics.

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Chapter 1

Introduction

The issue about the entry of immigrants is essential in implementing labour market policy because the opportunities of immigrants might be different from the natives, which the question is arised whether the differences occur due to skills, education, work experience or language factors, discrimination or the knowledges about the local market (Hum & Simpson, 2000). The research on the effects of immigrants on labour market is also vital in monetary policy maker, which the interest of central bank in implementing monetary policy focuses on the effect of supply shocks including the inflow of immigrant on the economy, and this is related to the growth of average wage and inflation target (Nickell and Saleheen,2015).

The research question of this paper focuses on the wage differential between native workers and immigrants in the United States overtime including 1994, 2000, 2004, 2010 and 2013. The analyses are related to the impact of immigrants on native workers′ wages in labour market. The hypothesis is accordance to the perfect substitution and complementary of workers in labour market. If the hypothesis of the perfect substitution in the labour market is true, the market wages would decrease when immigrants entry the labour market and otherwise if the workers are complementary. This indicates that wage gaps between native workers and immigrants would decrease overtime if the workers are perfect substitute and otherwise if they are complement. Moreover, the hypothesis relating to human capital theory and empirical research states that human capital charateristics such as educational attainment, work expereicne and skills are essential in determining earning of workers in labour market as well as can differentiate the earning and position of workers, essentially, the immigrants will gain more earning when the duration of living in the country increases (Chiswick, 1978;Friedberg,

2000). If this hypothesis is true, the wage differential between native workers and immigrants would also decrease overtime. Given the number of immigrants and their share of the total U.S. Population from 1850- 2015 (figure 1), the number and share of immigrants per citizens increase sharply from 1970 to 2015. The number of immigrants rise the most significantly during 1990-2000. If the increase of the share are unskilled immigrants, it is possible that they will displace native workers and the market wages would fall.

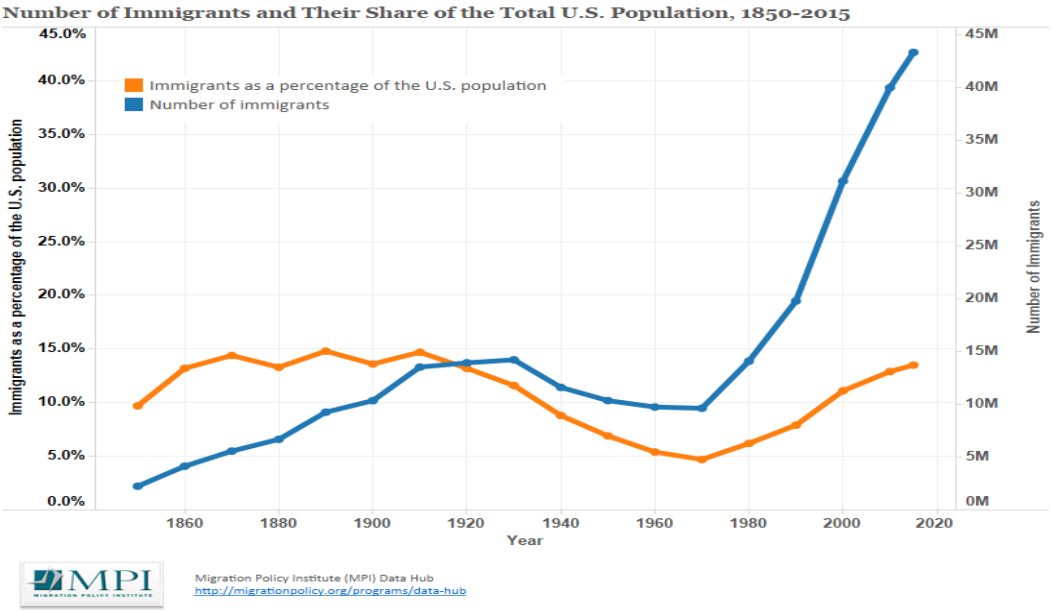

Figure 1 : Number of Immigrants and Their Share of the Total U.S. Population 1850-2015

To test the hypothesis, the methodology used to test the hypothesis is Ordinary Least Square and the Blinder-Oaxaca Decomposition.

By using Ordinary Least Square estimation to analyse the effect of unskilled immigrants in labour market, the results found that there is negative relationship between earning and immigrant status, which the immigrants earn less than native workers, and the wage gaps of immigrants and native workers do not decrease overtime. Also, the immigrants earn lower wages than natives and the wage gaps between them is 0.14 by using the Oaxaca-

Blinder decomposition. The result is accordance to the existing literatures using the Ordinary Least Square and Blinder-Oaxaca decomposition methodology in different countries namely Canada, Austria and Malaysia which the results demonstrate that immigrants earn less than native workers (Lyu, 2016, Anees at al, 2000 & Hofer at al, 2014).

Chapter 2

Literature Review : Wage Differential between Immigrants and Native Workers in the United States Labour Market

The United States is attractive destination for immigrants and has long history of immigration inflow from different countries around the world (Ehrenberg and Smith, 2016). The research question is that do immigrants earn less than natives? The numerous research regarding the impact of immigration focus on different countries including the United States, the United Kingdom including England and Wales, Canada, and Germany. The purpose of this literature review is to explore the existing relevant literatures regarding theoretical framework, empirical methodology and results of the wage differential between immigrants and immigrants taking into account the human capital characteristics.

The fundamental analysis to analyse the potential factors affecting the earning of workers in labour market. Chiswick (1978) used the 1970 U.S. Census data and found that immigrants earn less than the native workers especially the first few years in the U.S. Labour market due to the differences in education and marital status. The methodology used is Ordinary Least Square Regression, which the relationship of earning, labour market experiece, levels of education, maritual status, region, immigrant status and years of arrival is measured. However, their wages rise rapidly after 10-15 years when they gain more experience in the United States

Stewart and Hyclak (1984) implement Chiswick(1978)′s model to examine the factors affecting the earning of male immigrants between 14-65 years old. They use 5 percent sample of 1970 Census of the United States and use Ordinary Least Square estimation and the results indicate that the total work experience and years since migration are essential in determining

the earning. Also, Alien status or dummy variable of being immigrants have negative effect on earning, and the economic condition occurring at the time of migration including the average real gross national product annual rate of growth has positive effect on earning, and this has long run effects on immigrants as they can possibly gain skills and training when the economic condition is favorable.

Friedberg (2000) analyses the distincition of human capitals of native workers and immigrants relating to the earning disadvantages of immigrants compared to the natives in Israel. The data used is Israeli Censuses of Population and Housing in 1972 and 1983. The results indicate that immigrants earn less than natives with the comparable skills. Importantly, this is because the human capitals such as work experience and education acquired aboard are given less valued than gained domestically. Hence, the essential determinant of wage differential is the source of human capitals acquired.

Friedberg emphasizes that the data of U.S. Census as used in this dissertation may not be able to capture the sources of human capitals as the places where individuals attend schools are not identified as well as the lack of information on years of arrival, while the sources of educational background and work experience are composed in Israel data. However, the knowledges can be used to apply in this paper as regards to the hypothesis that immigrants′ earning would increase when the duration of staying in the countries rise as they acquire country specific skills and language skills.

Hum and Simpson (1999) analyse the wage gaps of visible minority groups taken into account the immigrant background in Canada during 1993 using the Survey of Labor and Income Dynamics (SLID). Importantly, the estimation also relates to the wage differential

between immigrants and native worker. The regression analysis is categorized into men and women. The variables indicating immigration status namely the dummy variable of being immigrant, years since migration and the square are included in the estimation model. The finding demonstrates that the immigration status variables are significant in determining wage disadvantages of about 20 percent for women. The immigration status variables are also significant for men, and the coefficient of immigration dummy variable indicates about 37 percent of the wage disadvantage of male immigrants. Also, the human capital variables such as educational levels, marital status and number of week worked are significant in determining the log wage rate.

Lyu (2016) estimates log weekly wage of immigrants and native workers in Canada using Canadian Census Use Microdata File (PUMF) in 2006 and 2010. The methodology are OLS estimation and Oaxaca blinder decomposition. The OLS estimation found that the wage gap of female immigrants is smaller than that of male immigrants. Also, there is difference of wages between immigrants and native workers regarding the area, which immigrants are found to earn less in large cities including Ontario and Quebec, but they earn more in smaller cities including Atlantic. Also, the result demonstrates that low income immigrants experience larger differences in wages and labour market discrimination than higher income immigrants.

Hofer at al. (2014) implements Oaxaca-Blinder decomposition technique to analyse the discrimination against immigrants in Austria. They determine the average wage gaps between the two groups. They found that 15 percent log point of wage gap of immigrants, which is able

to explained by human capital endowment. Also, occupation and job position control can reduce the discrimination component.

Anees at al. (2000) analyses the wage differential of native workers and immigrants in Malaysia in 2007 using Oaxaca Blinder decomposition. They find that the average hourly wages between native workers and immigrants are different, which even though the level of education of immigrants are higher than that of native workers. The result demonstrates that immigrants earn lower wage than native. Also, the level of earnings rises for both workers when the years of education increase, but the immigrants still earn less than natives.

Aldashev at al. (2008) studies determinants of wage differentials between immigrants and native workers in Germany using the German Socio-Economic Panel (GSOEP) in 2005. The methodology used is Blinder-Oaxaca decomposition. The model takes into account the log real gross hourly wages, gender, educational attainment and skills. The results indicate the significant wage gap between immigrants and natives for the similar charateristics. Moreover, education attainment is vital in determining the wage gaps as the education obtained in Germany is valued more and significantly explained the economic integration as the education obtained in different countries is possibly incomparable.

Adsera and Chriswick (2007) analyse the comparison of earning between native workers and immigrants using the European Community Household Panel in 1994-2000 focusing on the differences by gender, country of origin and destination. The methodology used is pooled regression and fixed-effect estimation. The results demonstrate that the earning between two groups of the same genders are varied. For instance, the differential earning of male immigrants and natives is 19 percent, while it is 8 percent for female immigrants and

natives in Germany. It is found that the greatest wage differential are in the Nordic countries especially Sweden. The wage gaps between the two groups as regards to gender are wider in other countries including Luxemburg and Sweden especially individuals not born in European countries. Education is essential in explaining the earning of women, while the language skills are more essential to explain the earning of men. The immigrants in Western Europe earn less than native-born. Importantly, the wage gaps are narrow when the duration of staying in the countries increases.

Grand and Szulkin (2002) analyse the earning gap between immigrants and native workers in Sweden using the 1991 Swedish Establishment Survey.The methodology used is Ordinary Least Square (OLS) estimation and Oaxaca-Blinder decomposition. The results find that the average earning of individual born in the country is higher than those born outside the country. The wage gaps are smaller for female workers than males workers. Also, the wage gaps would be decrease if the male immigrants and native workers have the same human capital characteristics, which it is possible that the immigrants will earn more than Swedish-born. Also, the relative earning of immigrants increase when the duration of staying in the country increases. However, the finding suggests that the substantial wage gap still remain for the non-European immigrants even if the individual stays in the country for more than 20 years.

Kee (2014) uses the Quality of Life Surveys (QLS) to analyse the wage gaps between natives and immigration men related to discrimination in Netherland overtime including 1985-1988 using regression estimation and Oaxaca-Blinder Decomposition. The estimation model categories immigrants according to the country of origin including Surinamese, Antilleans, Turks and Moroccans. The results find that there are wage differentials between each group

of immigrant and native workers. However, if Turkish, Surinam and Moroccan have the same characteristics as natives, their earning would be more than natives by 2, 14 and 9 percentage points accordingly. Moreover, the discrimination is found against Turks and Antilleans, which are 6 percentage point and 11 percentage point respectively.

Lehmer and Ludsteck (2011) uses the Oaxaca-Blinder decomposition to analyse the immigrants and natives wage gaps focusing on those entering Germany between 1995 and 2000. The data used is derived from the German Federal Employment Agency of the employment register data (BEH) between the period of 1995-2006. The results show that immigrants from Poland has the largest differential of 44 percent compared to native workers, whereas the lowest gap of 6 percent is of the immigrants from Spaniards.

All in all, most of the literatures demonstrate the wage differentials between immigrants and native workers, it is interesting to analyse the impact of immigration in the labour market focusing on the wage differentials between foreign-born and native-born workers. The dissertation aims to use household level and individual level of rotating panel data from Bureau of Labour Statistics (BLS) and U.S. Census Bureau, which is harmonized by LIS Cross-National Data Center in Luxembourg. The objective of the dissertation is to contribute the analyses of the wage differentials between immigrants and native workers from available data including 1994, 2000, 2004, 2010 and 2013, which can possibly capture the relationship of being immigrants and the level of earnings as well as differences of earning between workers in the United States labour market and to analyse the potential factors involved such as gender, types of job, skills , levels of education, ages and years of experience.

Numerous studies analyse the effect of immigrant on labour market in the United States focusing on the impact of inflow of immigrants on native workers′ wages. However, this paper

focuses on the wage gaps overtime rather than the impact of immigrant inflow. The methodology used to determine the wage differential is standard OLS estimation and Oaxaca blinder decomposition. The research on the wage differentials are conducted for many countries including Germany (Lehmer, 2011), Netherland (Kee,2014), Sweden (Grand and Szulkin, 2002). However, there is lack of research on the data of the United States regarding wage gaps of immigration and native workers. This paper aims to contribute the analysis of wage gaps through the fundamental theory of labor market supply and demand as well as human capital theory.

Chapter 3

Methodology

Ordinary Least Square (OLS)

Regarding that the data is rotating panel, the equation is

$$Y_{it} = x'_{it}\,\beta + z'_i\alpha + \varepsilon_{it}$$

Y_{it} is the dependent variable for individual i and the time t**.** x'_{it} is the vector of regressor**.** $z'_i\alpha$ represents the observable effects and an estimate conditional mean is specified **(**Greene, 2010**).** As the metholodogy used is pooled OLS and yearly OLS estimation, the z' is assumed to be only constant term.

For simplicity, the initial analytical equation is derived from Mincer wage equation **(**1974**)** or Human Capital Earnings Function, which is expressed as

$$\ln W = \beta_0 + \gamma S + \beta_1 X + \beta_2 X^2 + u$$

- lnW is log hourly wage
- S is the years of schooling
- X is the years of experience or age
- γ is the return on schooling
- u is the error term

The fundamental equation for the analysis is linear regression

$$\ln W = \beta_0 + \gamma IM + \beta_1 X + \beta_2 X_1 + \beta_3 X_1^2 + \ldots + \beta_n X_n + u$$

lnW is log paid employment income

- IM is the dummy variable indicating immigration status

- X is the vector of human capital characteristics for instance,

  X is the ages in years

  X_1 is the years of schooling

  Also, X includes the interaction variables

- γ is the return on wages of being immigrants or native worker
- α is the return on education, which is the marginal increase in income for the additional year of schooling holding other independent variables constant
- u is the error term

Moreover, heteroskedasticity of the model is corrected by using robust command.

Oaxaca blinder decomposition

Blinder **(**1973**)** and Oaxaca **(**1973**)** invented the decomposition technique to study the means outcomes between two groups**.** The technique is also implemented in labour market For instance, the wage gaps between gender or ethnicity are analysed by this technique **(**Jann, 2008**).**

The technique is also used to measure the gap of the wage difference between native workers and immigrants **(**Hofer at al**.** 2014 and Anees at al**.** 2000**).** The wage differentials can be captured by the endowment, which is the differences in characteristics and coefficient, which is the differences returns to characteristics of the two groups**.** Moreover, the technique can be explained by **'**explained**'** and **'**unexplained**'** parts **(**Jann, 2008**).**

By considering two groups including immigrants (i) and Native workers (n), the predicted outcome variable is Y (log paid employment income).

The mean of outcome (log paid employment income) is

$$R = E(Y_n) - E(Y_i) \quad (1)$$

$E(Y_n)$ is the expected value of log paid employment income of natives

$E(Y_i)$ is the expected value of log paid employment income of immigrants

$$Y_j = X'\beta_j + \epsilon_j, \quad E(\epsilon_j) = 0 \qquad j = \{i, n\} \quad (2)$$

X is the vector of human capital predictors and constant. B is the slope coefficient and intercept. ϵ is the error term

$$R = E(Y_n) - E(Y_i) = E(X_n)' \beta_n - E(X_i)'\beta_i \quad (3)$$

$E(Y_j) = E(X_j'\beta_j + \epsilon_j) = E(X_j'\beta_j) + E(\epsilon_j) = E(X_j)'\beta_j$, which $E(\beta_j) = \beta_j$ and $E(\epsilon_j) = 0$

From equation (3), therefore the ''three-fold'' decomposition is

$$R = [E(X_n) - E(X_i)]'\beta_i + E(X_i)'(\beta_n - \beta_i) + [E(X_n) - E(X_i)]'(\beta_n - \beta_i)$$

$[E(X_n) - E(X_i)]'\beta_i$ is the differential part that is due to the human capital preditors, this part is called ' endownment effect'

$E(X_i)'(\beta_n - \beta_i)$ is the measurement in differences of coefficient including the intercepts differential

$[E(X_n) - E(X_i)]'(\beta_n - \beta_i)$ is the differences between endowment effect and coefficients occurring simultaneously between two groups

By implementing the mean of log paid employment income between native workers and immigrants, which are denoted by $\overline{\square\square}$ - $\overline{\square\square}$

$$InW_n = X'\beta_n + \epsilon_n, \quad E(\epsilon_n) = 0 \qquad (4)$$

$$InW_i = X'\beta_i + \epsilon_i, \quad E(\epsilon_i) = 0 \qquad (5)$$

Hence, the decomposition equation is

$$\overline{\square\square} - \overline{\square\square} = (X_n - X_i)\,\beta_i + X_i(\beta_n - \beta_i) + (X_n - X_i)\,(\beta_n - \beta_i) \qquad (6)$$

$(X_n - X_i)\,\beta_i$ determines the effect of characteristics of both groups to the average wages (endowment)

$X_i(\beta_n - \beta_i)$ is the price effect, which is the different in the coefficient.

$(X^n - X^i)\,(\beta^n - \beta^i)$ is the interaction effect, which the positive of the term implies that native workers have greater return for those characteristics and they have higher means.

Theoretical Framework

The methodology used in this paper is aligned with theoretical framework of labour market theories. The wage differentials of workers in labour market is related to human capital theory. The differences of individual characteristics and labour market treatment are taken into account as they can determind the position of individuals in labour market (Grand and Szulkin, 2002). This means that human capitals have essential role in determining individuals wages and positions.

The empirical research of existing literature demonstrate that the earning of immigrants would increase accordingly to the increase in duration of living in the countries, which the

wage gaps between immigrants and natives would also decrease (Chiswick, 1978; Fridberg, 2000).

Regarding *human capital theory*, education attainment and on-the-job training are one of the essential factors in determining the level of wage earned in labour market. Individual receiving low wages indicates low productivity, and the theory suggests that in order for individuals to earn higher wages, one has to obtain skills to be able to increase the productivities.

On the other hand, *dual market theory* suggests that the wages depend on the types of jobs. There are two sectors in the market including primary and secondary sector. The primary sector provides high wages, favorable working conditions, stable employment and more opportunities to earn higher wages. On the contrary, the secondary sector offers low wages, unstable employment and unfavorable working conditions and less opportunities to earn higher wages. The theory states that characteristics of individual such as gender and ethnicity can effect on acquiring jobs in primary sector (Dickens and Lang, 2001). This theory can be applied to the variables indicating areas, which immigrants may prefer to locate in the area with higher job availability or wages or it is possibly that they relocate to where their families live.

Moreover, the labour market theory states that workers are attracted to higher wages and they would like to work when the wage is high, but the firms would like to hire workers when the wage is low. Due to these conflict of interests, the market equilibrium is the mechanism to balance these interests. The invisible hand theorem of Adam Smith can be applied as an illustration of labour market equilibrium. The market composes of labour supply (S) and labour demand (L) curves, which at the equilibrium the number of labour desire to

work equal to the number of labour that firms would like to hire**.** The mobility of immigrants creates more supply in the market, hence the labour supply curve shifts**.** The equilibrium theory states that when the shocks occur, the employment and wages level will adjust to the new equilibriums**.** This can be implied that labour including native workers and new entrants like immigrants would adjust to the new wages **(**Borjas, 2013**).**

Moreover, according to equilibrium theory in labour market**.** The entry of immigrants create supply shock in the economy**.** In the short run when the immigrants and native workers are perfect substitute in production, which they have the same skills and compete for the same jobs, this leads to fall in market wages and an increase in level of employment**.** Regarding graph 1, W_0 and W_1 represent market wages**.** N_0 and N_1 represent native worker employment level, E_1 represents the total employment and the capital is fixed**.** The supply curve shifts to the right**.** This leads to the fall of wages from W_0 to W_1, and the additional number of immigrants leads to an increase of employment from N_0 to E_1**.** However, as regards to lower wages, native workers are no longer interested in working, hence the level of native worker employment drops from N_0 to N_1**.**

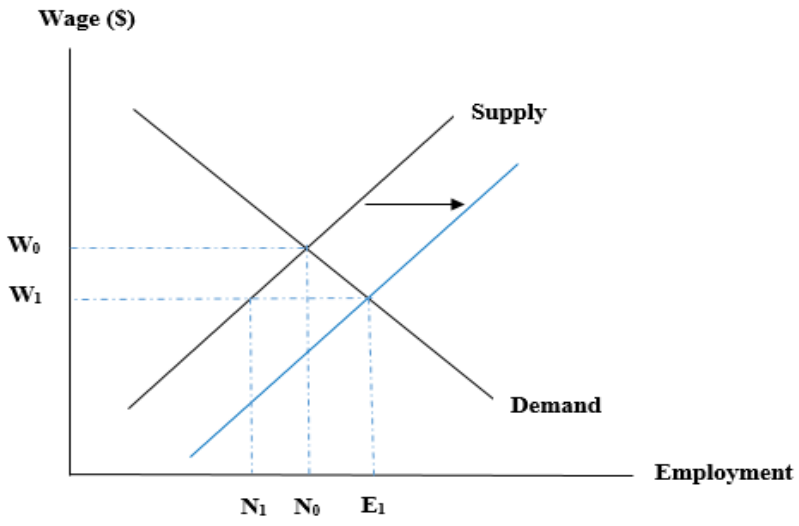

Figure 2 : Perfect Subsitution in Labour Market

The *hypothesis* of this theory when the workers are perfect substitute is that the immigrants replace native workers as native workers do not want to stay in labour market when the wages decrease**.**

On the other hand, when native workers and immigrants are complement as regards to production, which they do not compete for the same job or labour market, the movement of curves is different from the previous case**.** The curves represent native workers' demand and supply**.** The entry of immigrants, which is the complement workers, increase the productivity of the native workers because they can get the jobs are suitable for their skills**.** Therefore, the demand curve for native workers shifts right**.** This result in an increase of native workers' wages from W_0 to W_1**.** The rise in wages attracts native workers outside the market to enter the workforce**.** Hence, the level of employment rises from N_0 to N_1**.**

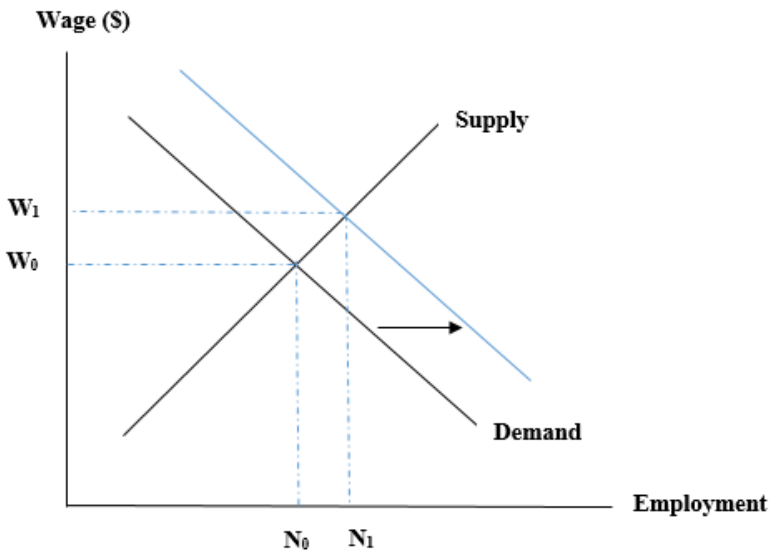

Figure 3 : Complementary Workers in Labour Market

The hypothesis of the theory of complement workers is that the productivity of native workers will increase and leads to the increase in native workers' wages and employment.

As mentioned, the degree of substitutability is essential in determining the level of wages and employment in labour market. Importantly, as immigrants and natives are different as regards to skills. The level of substitution is likely to be easier in low skilled job due to less training and educational level requirement. However, the substitution in high skill job levels as the wage growth is faster for high skill jobs regardless of the entry of immigration. Also, the highly skilled workers are likely to be prepared to adapt for competition effectively, and they have positive spillover effect, for instance, the natives can learn and acquire the distinctive skills of immigrants. Hence, the effect of immigrants on labour market is assumed to be greater in low-skilled levels.

Moreover, the new jobs are created when the number of immigrants increase due to labor supply adjustment (Somerville and Sumption, 2009).

Data and Descriptive Statistics

The data used to analyse the wage gaps is accordingly to the methodology and theoretical framework. The data is derived from Luxemburg Income Study (LIS), which is the data center that has harmonized microdata collected from many countries including the United States, the United Kingdom, Germany, Luxemburg and many more. The data composed of household and individual levels. The focus of the dissertation is the United States data. The sources of the United States data are Bureau of Labor Statistics (BLS) and U.S. Census Bureau. The data that used in this empirical research includes 1994, 2000, 2004, 2007, 2010, and 2013.

The number of observations regarding immigrant status in 1994, 2000, 2004, 2007,2010 and 2013 are 338,268 observations before the data is cleaned and restricted as regards to range of earning and ages. The characteristics of immigrants and native workers are presented as follows: which the population is focused on the age between 25-54, which is the working ages. Regardless of the years of entering the United States, all of the immigrants are included in the model. Also, the income variable, which is paid employment income (pile) focuses within the range of $12,000 and $200,000 annually.

Regarding the areas that attracts immigrants (table 9), the highest percentages of immigrants reside in 1994 is California followed by New York, Florida and Texas, which is similar with the rest of the years. The share of immigrants increases to 29 percent in 2000 and reach 38 percent in 2013 in Florida.

Regarding gender, the proportion of female immigrants is more than the male immigrants for all years. This is due to 1965 immigrant act[1] that high number of female immigrants move to the United States overall.

The highest percentage of share of native workers is high school graduate or those who have achieved a high school diploma. This marks up to an average of 31.48 percent. However, the share declines slightly from 2007 to 2013. The second highest share is bachelor′s degree attainment, which has the average of 21.24 percent, and the share increases from 18.14 percent in 1994 to 23.43 percent in 2013.

[1] 1965 Immigrant act is implemented to abolish the origin quotas for immigrants especially for Western and Northern European countries, which was enacted in 1921. The act focuses on family reunification, which is for family or relatives of U.S. citizens or legal permanent residents living in the United States. This act results in having 59 million of immigrants to entry the country (Chishti et al, 2015).

In terms of ethicity, white-Hispanic is the ethnicity that makes up to the largest propotion of immigrants in 1994, 2000, 2004, 2007, 2010, 2013. In 2013, the level of white Hispanic immigrants has increased sharply from 2010. The second largest ethnicity of immigrants is white non-Hispanic, but their number dropped in 2013. Also, in 2014, the number of American Indian/Alaskan native non-Hispanic increased compared to that in 2000. The number of black non-Hispanic is stable, but the level increase slightly in 2007 and 2010. Also, the number of Asian non-Hispanic increase in 2004 compared to 2000.

From table 3, private sector has the highest level of immigrant employment, whereas the second sector is local government followed by state government and central government.

The occupation of immigrants varies. In 2004, 2007 and 2010 and 2013, maids and housemen rank as the most occupations of the participants. Janitors and building cleaners also appear as one of the most frequent answers.

From the table 4, the highest number of native workers and immigrants is within service sector followed by industry sector and agriculture sectors. Regarding native workers and immigrants in service sector, the highest education attainment is high school graduate. High school diploma are also acquired by native workers and immigrants in Industry sector. While native workers achieve high school diploma in agriculture sector, immigrants only achieve 5^{th} or 6^{th} grade. The services sector has the highest number of immigrants and native workers followed by Industry sector and agriculture sector. The highest education attainment level of immigrants in service sector is high school graduate or diploma, whereas the highest education of native workers in service sector is bachelor's degree. Moreover, the highest level of

education of immigrants in industry sector and agriculture sector is also high school graduate or diploma, which is similar to native workers in industry sector and agriculture sector

In all industrial sectors, the highest number of education attainment of native workers is high school graduates. The highest number of educational attainment of immigrants is also high school graduate within service and industry sectors, whereas the educational attainment within agriculture sector of immigrants is 5^{th} or 6^{th} grade.

The share of employed native workers and employed immigrants are more than those of unemployed (Table 5). From 1994-2007, the share of employed workers has the average of 79.45 percent, while the share drops in 2010 to 75.71 – 76.53 percent. The share of immigrants appears stable for all years, at the average of 74.52 percent.

The majority of native workers and immigrants are married, which the average of 60.03 percent of native workers (Table 6), and the average of 67.92 percent of immigrants are married.

Also, the majority of native workers and immigrants work full-time. 87.53 percent is the average of native workers working full-time and 88.18 percent average of native workers working full-time (Table 7).

The paid employment income is restricted to the minimum of $12,000 annually and the maximum of $200,000 annually (Table 8) because the majority of immigrants work as maid and housemen, cooks, janitors and cleaners, Supervisors and proprietors and sales, drivers and cooks. In 2016, The annual wages of maids and housekeeping cleaners are $17,370 - $34,430 annually. Janitors and cleaners earn $18,000- $40,760 annually. Supervisors earn $24,530 -

$66,480 annually. Driver earn $26,920-$63,140 annually. Chefs and head cooks earn $23,150 - $74,170 annually (Bureau of Labor Statistics, 2016).

Specifically, according to the data the average earning of immigrant is $36,885 annually, whereas the average earning of native workers is $41,197 annually. The average earning of female is $33,305 annually, while the average earning of male is $46,476 annually.

The average earning of individuals acquires low level of education is $25,580 annually, the average earning of individuals having medium education is $34,176 annually, and the average earning of individuals attains high level of education is $49,848 annually.

Moreover, the average earning of high school graduate individuals, which is taken account as the majority, is $32,516 annually. While the average earning of Bachelor′s graduates is $49,756 annually, the average earning of Master′s degree graduates is $56,637 annually. The average earning of doctorate degree′s graduates is $71,115 annually.

The average earning of individuals working as managers or other professionals having high skills are $50,912 annually, while the average earning of individuals working in other skilled workers are $34,957 annually, and the average earning of individuals working as laborers having elementary skill is $26,273 annually.

The average earning of individuals working in industry sector is $42,139 annually. The average earning of individuals working in agricultural sector is $30,357 annually, and the average earning of individuals working in service sector is $40,154 annually.

The average earning of females and males in the states with high number of immigrants are as follows. The average earning of males in California is $46,986 annually, while females earn $37,158 annually. In Texas, the average earning of males is $42,560 annually and females

earn $31,694 annually. The average earning of males in New York is $47,844, while females earn $35,797 annually.

Regarding the highest income, Connecticut ranks as the state with the highest income, which males earn $57,583 annually, and females earn $38,571 annually. The second highest income earned by males and females is in New Jersey, which males earn $54,875 annually, and females earn $37,127 annually. The third highest income earned by males and females is found in Maryland, which males earn $54,370 annually, while females earn $40,108 annually.

According to the lowest income, the lowest income is found in Montana, which males earn $37,197 annually, and females earn $26,534 annually. The second lowest income is in North Dakota, which males earn $38,788 annually, and females earn $27,357 annually. The third lowest income is in South Dakota, which males earn $39,913 annually, and females earn $27,747 annually.

Econometric Model

The variables included in econometric models is in accordance with existing literatures**.** The empirical models of existing literature include some common variables including immigrant status and human capital characteristics including age, education levels, experiences, marital status**.** For instance, Chiswick**(**1978**)** analyses 1990 census data for immigrations and the variables used are earning, education, year of experience **(**age**-**schooling**-**5**)**, marital status, region, years of schooling, and the weeks worked**.** Card **(**2001**)** uses observed characteristics including education, age, ethnicity, country of origin and occupation groups**.**

Dependent Variable

Wages

Paid employment income (pile) is the earning variable that include monetary and non-monetary income earned by the individual.

Independent Variable

Immigration Status

Immigration is the dummy variable between being an immigrant (1) or not (0).

Skills

Skill variable used in this paper is categorized according to the level of occupation, which is divided into three catagories including manager and professionals, other skilled workers and labourers/elementary, which the first two catagories are skilled workers and the third category is unskilled workers. Hence, occupation is divided into dummy variables including high skills, medium skilsl and low skills. High skills include individuals working as manager and professionals. Medium skills compose of individuals categorized as other skills workers and low skills are individuals working as laboureres and having elelmentary skills.

Region

Region is dummy variable of the data equal to 1 if the respondents live in the states having low number of immigrants, which have data of 47 states including District of Columbia,Virginia and Montana, and equal to 0 if the respondents live in the states with high

number of immigrants includingCalifornia, New York, Florida and Texas**.** The variable is constructed according to Kposowa (1990).

Region is grouped into the states that have large number of immigrants including California, New York, Florida and Texas according to the data and other states that have less number of immigrants**.** The region variable is chosen according to *the dual market theory*, which implies that immigrants attract to work in primary sector or the areas that provide good wages, favorable working conditions and stable employment**.**

Education attainment

As regards to the human capital theory, in the labour market, level of education attainment can determine the returns for individuals, which individuals that have higher level of education is likely to earn higher returns Moreover, empirical research found that the most essential determinants of human capital are experience, education, skills and training**.**

There are two education variables used in the data set including educ and educ_c**.** Educ is the education categorized as low, medium and high levels**.** Educ_c is highest education level categorized into more details categories such as 5^{th} or 6^{th} grades, high school, bachelor's degree, master's degree and doctorate degree (Anees et al,2000).

Age

The empirical analysis focuses on the age of 25**-**54 years old for all workers because this range of age is considered as the working ages**.**

Gender

The model includes male and female workers**.** When the 1965 immigration act was implemented, the number of females immigrants throughout 20th century increased as regards to the highlight on the reunification of family ushered in**.** Gender impacts on occupation status and wages**.** For instance, females are concentrated on working in particular types of jobs including nursing, service and domestic workers (Ruiz,2015)**.**

Part-time and full-time

The variables indicate type of jobs individuals having, which are part-time and full-time jobs**.**

Annual weeks worked

The total number of weeks individuals work per year**.**

Industrial sectors

Industrial sectors are involved in the analysis of wage earning**.** Bibb and Form (1977) analyse the earning of workers in blue-collar market as regards to structural theory, which industrial sector is taken into account the economic stratification of industrial sectors, gender and occupations in society**.** Historically, Bonacich **(**1972**)**, Cayton and Drake **(**1945**)** stated that labor market is subdivided by racial and ethnicity, which the subordinate groups are restricted to acquire jobs with better income (cited in Bibb and Form, 2017)**.** Bibb and Form (1977) stated that some enterprises in specific industrial sectors may earn less benefit, therefore hiring females can prolong the sectors to survive.

Experience

Human capital investment including tenure relating to years of work experience**.** Empirical research on the effect of tenure on wages found that the wage rises from an increase in tenure and general labour market experience (Shakotko&Altonji,1987) Altuğ and Miller (1998) found that previous job experience is the essential factor to determine the wages

Experience is the variable constructed by measuring Age **-** Schooling – 5, which 5 is the former years before entering the school and schooling is the number of years spent in schools until achieving the highest education**.** The results can be the estimated time individuals work in labor market (Lord and Falk, 1980)**.**

Chapter 4

Analysis of yearly OLS regression and pooled OLS regression

Discussion and Result

The effect of immigrants on working are presented, which the methodology used is OLS estimation of pool regression analysis for all years and individual levels including yearly estimations. Results demonstrated are in 1994,2000,2004,2007,2010 and 2013. As regards to the hypothesis of the perfect substitute assumption that the entry of immigrants decrease the wages of labour market. Human capital predictors includes educational levels, skills and age.

The effects of immigrants status on log paid employment income are statistically significant and has negative effects for all years at all conventional levels ceteris paribus. The effect is strongest in 2007, which the individual with immigrant status earn 10.2 percent of the average employment income less than the individual without immigrant status, which are the natives.

Moreover, the age variable is focused on 25-54 year old, which are the working ages. The result of all years and pooled data demonstrated that one year increases in age of workers statistically significant at all conventional levels leads to an increase of average of log paid employment income holding other variable constant. Also, the female dummy variable indicates the average earning of log paid employment income between female and male workers holding other variable constants. The variable is statistically significant at all conventional levels for all years including pooled data. Hence, female workers earn less of average log paid employment income than male workers at all conventional levels ceteris paribus.

It is important to note that the skilled and unskilled variables are both dummy variables. However, the skilled variable is constructed from two levels of occupations including manager and professionals and other skilled workers, whereas the unskilled workers is constructed from labourers and elementary occupations. The skilled variable is also catagoried into two levels including high skilled workers and medium skilled workers, which the high skilled workers include the manager and professionals, while the medium skilled workers include other skilled workers. The model demonstrates that both variables are statistically significant at all conventional levels, ceteris paribus. The high skilled workers including manager and professionals earn average log paid employment income more that the unskilled workers including labourers, ceteris paribus. Medium skilled workers for all years also earn the average of log paid employment income more than that of unskilled workers holding other variables constant. Hence, it is logical to conclude that unskilled workers earn average log paid employment income less than high skilled and medium skilled workers ceteris paribus.

Education levels are categorized into high education and medium education. The base group of high education and medium education level are low level of education. The result demonstrates that average log paid employment income of the individual attaining high educational level are statistically significant and is higher than the average log paid employment income of those do not attain high educational level at all conventional levels ceteris paribus. Also, the average log paid employment income of individual acquiring medium educational level are higher than that of those having low educational level. Regarding the interaction terms, the base group of immigrants with medium education level are the native workers who do not have medium educational level. Also, the base group of immigrants with high educational level are the native workers who do not have high educational level. The

interaction term of immigrants with medium educational level are not statistically significant at all conventional levels for some years including 1994, 2000, 2004, 2010, 2013 and pooled data.

The industrial sectors including agriculture, industry and service sector. Agriculture sector is the referece group. All of the variables are statistically significant at all conventional levels ceteris paribus. The positive coefficients of individual working in industry and service sector indicate that the workers work in industry and service sector earn more than workers working in agricultural sector holding other variable constant. The individuals working in industry sector earn average of log paid employment income more than the individual working in agriculture sector at all conventional levels ceteris paribus. Also, the individuals working in service sector earn average of log paid employment income more than the individual working in agriculture sector at all conventional levels ceteris paribus.

In some states including Texas, California, New York and Florida, the number of immigrants are more than the others**.** Hence, it is essential to analyse the general effect of earning in the states with high and less number of them, which dummy variable is used**.** The results of each year demonstrate that the states that have less number of immigrants have less average log paid employment income than the states that have high number of immigrants centeris paribus**.** The effects does not indicates the effect of immigrants on labour market in the states directly, but it can be drawn that the higher of earning in some areas can attract the immigrants to relocate**.**

Limitation of Ordinary Least Square Estimation

Regarding the nature of data, which is the rotating panel data, ordinary least square is efficient if the only the constant term is contained in z´(equation 1 below). However, if z´ has

unobserved variables such as individual preference or skills, which are assumed to be constant over time and they are correlated with x´, the pooled Ordinary Least Square is inconsistent (Greene, 2010).

$$Y_{it} = x'_{it}\,\beta + z'_{i}\alpha + \varepsilon_{it} \qquad (1)$$

However, due to the limitation of individual identifier in the data set, fix effect and random effect cannot be performed effectively.

OLS Regression Result of log paid employment income (pile)							
Variables	**Pooled**	**1994**	**2000**	**2004**	**2007**	**2010**	**2013**
Immigrant	-0.044**	-0.019	-0.063**	-0.048**	-0.104**	-0.081**	-0.087**
Age	0.009**	0.010**	0.008**	0.008**	0.008**	0.009**	0.009**
Female	-0.251**	-0.232**	-0.273**	-0.244**	-0.257**	-0.246**	-0.247**
Native*male	0.945**	0.098**	0.086**	0.122**	0.105**	0.085**	0.068**
Annual weeks worked	0.019**	0.016**	0.017**	0.019**	0.189**	0.022**	0.021**
High Skilled	0.450**	0.391**	0.469**	0.462**	0.471**	0.464**	0.479**
Medium skilled	0.192**	0.158**	0.200**	0.189**	0.184**	0.191**	0.206**
Education level (educ)							
Medium Education	0.212**	0.182**	0.212**	0.211**	0.197**	0.227**	0.210**
High Education	0.494**	0.420**	0.450**	0.471**	0.452**	0.526**	0.529**
Immigr*Mediumed	0.006	0.032*	0.019	-0.002	0.064**	-0.003	-0.011
Immigr*Highed	0.088**	0.048**	0.089**	0.096**	0.150**	0.099**	0.099**
Industrial Sectors							
Industry	0.240**	0.217**	0.206**	0.249**	0.306**	0.297**	0.210**
Service	0.171**	0.136**	0.116**	0.162**	0.208**	0.195**	0.090**
Region							
States with lower number of immigrants	-0.066**	-0.049**	-0.097**	-0.085**	-0.090*	-0.064**	-0.081**
Constant term	8.479	8.467	8.610	8.516	8.588	8.412	8.533
Prob>F	0.000	0.000	0.000	0.000	0.000	0.000	0.000
R-Square	0.319	0.315	0.340	0.335	0.334	0.340	0.335
Observation	276,392	34,247	56,603	52,894	52,431	47,781	32,436

*represents the significant at 5% level, * represents the significant at 10% level*

Analysis of Oaxaca Blinder Decomposition

Discussion and Result of Oaxaca Blinder Decomposition

Output from Decompose (**Pooled**)	
Mean Prediction (Native)	10.56178**
Mean Prediction (Immigrants)	10.42073**
Predicted Difference	0.1410471**
Due to Endowment (E)	0.106887**
Due to Coefficient (C)	0.0254163**
Due to Interaction (CE)	0.0087438**

The human capital predictors including age, gender, skills, experience, educational levels and regions, which are the regions that have high number of immigrants including California, Texas, Florida and New York are included in the model to measure the wage differential of immigrants and native workers for pooled data**.** The mean predictions of log paid employment income **(**logpmi**)** of native workers is 10**.**56, while the log paid employment income of immigrants is 10**.**42 for pooled data all years**.** The wage gaps between native workers and immigrants are 0**.**14**.**

The endowment demonstrates the mean increase in immigrant's wages if they have the same characteristics as the natives**.** The increase of 0**.**11 indicates that differences in age, gender, skills, experience, educational levels and regions account for the major reasons for wage gaps**.** The remaining gap or unexplained part is regards to the discrimination **(**Jann,2008**).**

The interaction effect indicates the changes in immigrant wages when the native workers coefficient is applied to immigrant's characteristics, which is 0**.**009**.**

Output from Decompose (pooled)	
Mean Prediction (Native)	10.56039**
Mean Prediction (Immigrants)	10.41969**
Predicted Difference	0.1407074**
Due to Endownment (E)	0.0638869**
Due to Coefficient (C)	0.1034409**
Due to Interaction (CE)	-0.0266204**

Ages, gender, types of jobs including part-time or full-time (ptime), educational levels (educ), ages (age) and gender (female) are included in the model as human capital predictors to measure the wage differential of immigrant and native workers. The mean predictors of log paid employment income of native workers is 10.56, while the mean predictors of log paid employment income of immigrants is 10.42. The wage gaps between them is 0.14.

The endowment demonstrates that human predictors variables included in the model account for the major reason of the mean increase in immigrant′s wages if they have the same characteristics as natives. The interaction effect indicates the changes in immigrant wages when the native workers coefficient is applied to immigrant′s characteristics, which is **-0.**027**.** This indicates that native workers may not have greater returns than immigrants for the similar human capital charachertistics that included in this model**.** The potential assumption is that part**-**time and full**-**time variables indicating earning levels of full**-**time and part**-**time jobs can be different**.**

Hypothesis Discussion

The hypothesis of this paper as mentioned in the introduction that the wage differentials of native workers and immigrants would decrease if the workers are substitute and the duration of living in the United States increase. The result of regression estimation demonstrates that the wage of males unskilled immigrants having low skilled and low education level working in agricultural sector and live in the states with low number of immigrants including Florida, California, New York and Texas do not decrease overtime according the the coefficient of immigrant dummy variable. Moreover, the hypothesis as regards to the narrower of the wage gaps of immigrants and natives as the duration of living in the countries is not applied in this case as the marginal effect of being an immigrants and earning indicating by the coefficient does not increase overtime. This means that the wage gaps of immigrants and native workers also do not reduce overtime.

Conclusion

The results of OLS regression suggests that being immigrants earn less average paid employment income than natives especially unskills immigrants working in argricultural sector having low education living in the states with low number of immigrants. The findings of Oaxaca-Blinder decomposition demonstrate that there are wage differentials of native workers and immigrants taken into account the similar human capital characteristics. Also, the endownment effect indicates that the human capital predictors are able to explain the differentials. This is accordance with the human capital theory and empirical research that human capitals can indicate the earning of workers in labour market. Also, the issue about substitution of workers can be further analysed as it has not been exactly determined whether the inflow of immigrants substitute or complement native workers as the wages gaps of

immigrants and native workers neither decrease nor increase consistently as regards to the coefficient of being immigrant variables in OLS regression.

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Appendix

Table 1: Share of workers by Gender

	Native Workers			Immigrants		
Years	**males**	**females**	**Total**	**males**	**females**	**Total**
1994	46.90%	53.10%	100%	46.97%	53.03%	100%
2000	46.94%	53.06%	100%	48.15%	51.85%	100%
2004	48.66%	51.34%	100%	51.47%	48.53%	100%
2007	46.72%	53.28%	100%	47.63%	52.37%	100%
2010	46.68%	53.32%	100%	47.54%	52.46%	100%
2013	48.17%	51.83%	100%	47.35%	52.65%	100%

Source: Luxembourg Income Study (LIS) Database

Table 2: The Share of Native Workers and Immigrants by Educations

	Native Workers					
	1994	**2000**	**2004**	**2007**	**2010**	**2013**
less than 1st grade	0.24%	0.13%	0.14%	0.11%	0.11%	0.10%
1st, 2nd, 3rd, or 4th grade	0.11%	0.10%	0.11%	0.10%	0.07%	0.08%
5th or 6th grade	0.30%	0.26%	0.22%	0.16%	0.14%	0.16%
7th and 8th grade	1.36%	0.95%	0.89%	0.79%	0.74%	0.69%
9th grade	1.50%	1.11%	1.07%	0.91%	0.94%	0.87%
10th grade	2.47%	2.07%	1.85%	1.80%	1.68%	1.54%
11th grade	3.01%	2.56%	2.49%	2.51%	2.35%	1.98%
12th grade no diploma	1%	1%	1.03%	1.01%	0.94%	1.13%
high school graduate, high school diploma	34.77%	32.42%	32.41%	30.96%	29.88%	28.45%
some college but no degree	20.08%	20.06%	19.30%	19.42%	19.09%	18.68%
associate degree in college occupation	4.77%	5.32%	5.70%	5.23%	5.05%	5.28%
associate degree in college academic	4.13%	4.94%	4.85%	5.49%	6.38%	6.74%
bachelor's degree (eg. BA, AB, BS)	18.14%	20.49%	20.80%	21.98%	22.60%	23.43%
master's degree (e.g. MA, MS, MENG, MED)	5.97%	6.34%	6.79%	7.37%	7.72%	8.37%
professional school degree (e.g. MD)	1.43%	1.31%	1.39%	1.34%	1.20%	1.26%
doctorate degree (e.g. PHD,EDD)	0.91%	0.94%	0.96%	0.82%	1.11%	1.24%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Luxembourg Income Study (LIS) Database

	Immigrants					
	1994	**2000**	**2004**	**2007**	**2010**	**2013**
less than 1st grade	1.75%	1.42%	1.32%	1.05%	1.12%	1.18%
1st, 2nd, 3rd, or 4th grade	4.80%	3.61%	3.52%	2.96%	3.08%	2.62%
5th or 6th grade	9.84%	8.94%	8.55%	7.89%	7.25%	6.61%
7th and 8th grade	4.81%	4.23%	4.54%	4.32%	3.82%	3.93%
9th grade	4.08%	4.25%	5.13%	4.85%	4.69%	4.75%
10th grade	2.51%	2.30%	2.37%	2.63%	2.28%	2.48%
11th grade	2.39%	2.38%	2.33%	2.35%	2.42%	2.23%
12th grade no diploma	2%	2%	2.51%	2.06%	2.35%	2.34%
high school graduate, high school diploma	24.62 %	24.10 %	25.33 %	25.33 %	26.45 %	24.76 %
some college but no degree	13.04 %	12.03 %	11.00 %	10.95 %	11.19 %	10.70 %
associate degree in college occupation	3.01%	3.21%	3.11%	2.74%	2.99%	2.65%
associate degree in college academic	2.93%	3.11%	2.77%	3.52%	3.78%	4.13%
bachelor's degree (eg. BA, AB, BS)	16.02 %	18.67 %	17.96 %	18.31 %	18.07 %	19.42 %
master's degree (e.g. MA, MS, MENG, MED)	5.06%	6.24%	6.73%	7.92%	7.61%	8.91%
professional school degree (e.g. MD)	1.78%	1.69%	1.52%	1.39%	1.22%	1.14%
doctorate degree (e.g. PHD,EDD)	1.46%	1.59%	1.31%	1.73%	1.69%	2.15%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Luxembourg Income Study (LIS) Database

Table 3: Immigration and Sector of Employment

Sector of Employment	**1994**	**2000**	**2004**	**2007**	**2010**	**2013**
Private sector	8,156	13,867	14,002	15,156	15,026	11,083
local government	404	611	581	663	661	450
State government	277	409	432	469	483	354
Central government	228	298	347	357	441	325
Total	**9,065**	**15,185**	**15,362**	**16,645**	**16,611**	**12,212**

Source: Luxembourg Income Study (LIS) Database

Table 4*: *The number of Immigration and Native workers according to Industrial Sector sorted by Education

1994	Native Workers			Immigrant		
	Industrial Sector			Industrial Sector		
Educational Attainment	**agriculture**	**industry**	**Service**	**agriculture**	**industry**	**Service**
less than 1st grade	0	2	1	6	22	6
1st,2nd,3rd,or 4th grade	3	6	6	14	64	33
5th or 6th grade	3	20	15	27	141	93
7th and 8th grade	12	107	64	11	73	71
9th grade	4	124	86	6	49	49
10th grade	16	212	176	3	45	38
11th grade	8	243	223	2	40	42
12th grade no diploma	2	64	90	2	26	33
high school graduate - high school d	139	4,013	5,259	14	360	613
some college but no degree	65	1,918	4,047	4	164	417
associate degree in college occupati	19	516	1,140	2	41	107
associate degree in college academic	9	339	1,048	0	29	121
bachelor's degree (e.g. BA,AB,BS)	69	1,651	4,954	0	202	609
master's degree (e.g. MA,MS,MENG,MED	13	409	2,128	0	74	238
professional school degree (e.g. MD,	1	31	501	0	10	103
doctorate degree (e.g. PHD,EDD)	1	37	349	2	24	74
Total	364	9,692	20,087	93	1,364	2,647

Source: Luxembourg Income Study (LIS) Database

2000	Native Workers			Immigrant		
	Industrial Sector			Industrial Sector		
Educational Attainment	**agriculture**	**industry**	**Service**	**agriculture**	**industry**	**Service**
less than 1st grade	0	2	3	6	29	20
1st,2nd,3rd,or 4th grade	0	9	2	28	93	72
5th or 6th grade	1	16	22	55	298	200
7th and 8th grade	10	82	91	15	140	129
9th grade	6	137	130	19	133	112
10th grade	10	261	278	4	63	74
11th grade	19	336	408	5	68	102
12th grade no diploma	7	165	191	4	53	89
high school graduate - high school d	239	5843	8572	23	722	1054
some college but no degree	79	3006	6827	8	292	674
associate degree in college occupati	24	897	2112	0	84	201
associate degree in college academic	33	689	1941	1	49	215
bachelor's degree (e.g. BA,AB,BS)	100	2613	8541	7	390	1158
master's degree (e.g. MA,MS,MENG,MED	16	505	3387	3	136	476
professional school degree (e.g. MD,	3	48	699	10	150	0
doctorate degree (e.g. PHD,EDD)	1	54	538	33	156	0
Total	548	14,663	33,742	221	2856	4,576

Source: Luxembourg Income Study (LIS) Database

2004	Native Workers			Immigrant		
	Industrial Sector			Industrial Sector		
Educational Attainment	**agriculture**	**industry**	**Service**	**agriculture**	**industry**	**Service**
less than 1st grade	0	0	5	4	33	26
1st,2nd,3rd,or 4th grade	3	7	7	17	89	106
5th or 6th grade	2	11	23	45	229	264
7th and 8th grade	7	57	89	15	132	158
9th grade	7	86	125	12	168	178
10th grade	11	170	240	3	62	103
11th grade	10	263	383	4	71	88
12th grade no diploma	4	107	209	2	61	93
high school graduate - high school d	161	4170	8738	34	616	1324
some college but no degree	53	1,972	6,528	6	212	753
associate degree in college occupati	31	732	2,291	1	71	220
associate degree in college academic	11	458	1,996	0	45	190
bachelor's degree (e.g. BA,AB,BS)	58	1,842	8,815	4	289	1304
master's degree (e.g. MA,MS,MENG,MED	12	449	3,456	1	132	552
professional school degree (e.g. MD,	30	688	0	9	143	0
doctorate degree (e.g. PHD,EDD)	1	47	497	29	143	0
Total	401	11,059	33,402	186	2,496	5,359

Source: Luxembourg Income Study (LIS) Database

2007	Native Workers			Immigrant		
	Industrial Sector			Industrial Sector		
Educational Attainment	**agriculture**	**industry**	**Service**	**agriculture**	**industry**	**Service**
less than 1st grade	0	2	5	3	17	28
1st,2nd,3rd,or 4th grade	0	8	7	16	88	92
5th or 6th grade	0	15	21	33	261	258
7th and 8th grade	3	50	83	19	125	171
9th grade	2	69	105	13	186	185
10th grade	7	139	253	5	96	112
11th grade	13	237	358	3	72	121
12th grade no diploma	1	102	183	4	53	109
high school graduate - high school d	152	3,715	8,213	28	636	1,401
some college but no degree	57	1,899	6,982	10	207	782
associate degree in college occupati	24	656	2,026	0	57	219
associate degree in college academic	14	469	2,241	0	59	287
bachelor's degree (e.g. BA,AB,BS)	64	1,695	9,023	4	286	1,509
master's degree (e.g. MA,MS,MENG,MED	15	439	3,594	2	176	734
professional school degree (e.g. MD,	0	34	709	0	8	148
doctorate degree (e.g. PHD,EDD)	3	23	469	0	39	190
Total	355	9,552	34,272	140	2,366	6,346

Source: Luxembourg Income Study (LIS) Database

2010	Native Workers			Immigrant		
	Industrial Sector			Industrial Sector		
Educational Attainment	**agriculture**	**industry**	**Service**	**agriculture**	**industry**	**Service**
less than 1st grade	0	1	2	5	23	18
1st,2nd,3rd,or 4th grade	0	3	4	11	76	120
5th or 6th grade	0	6	16	35	194	263
7th and 8th grade	6	32	50	20	116	161
9th grade	1	47	93	21	132	192
10th grade	10	113	188	4	74	84
11th grade	9	153	300	5	59	105
12th grade no diploma	5	65	145	8	44	105
high school graduate - high school d	126	2,955	7,013	38	566	1,483
some college but no degree	54	1,375	5,518	3	184	781
associate degree in college occupati	20	495	1,805	2	49	228
associate degree in college academic	20	473	2,342	1	67	307
bachelor's degree (e.g. BA,AB,BS)	65	1,526	8,805	6	256	1,483
master's degree (e.g. MA,MS,MENG,MED	10	397	3,701	1	154	728
professional school degree (e.g. MD,	2	21	604	0	4	109
doctorate degree (e.g. PHD,EDD)	1	38	578	1	31	233
Total	329	7,700	31,164	161	2,029	6,400

Source: Luxembourg Income Study (LIS) Database

2013	Native Workers			Immigrant		
	Industrial Sector			Industrial Sector		
Educational Attainment	**agriculture**	**industry**	**Service**	**agriculture**	**industry**	**Service**
less than 1st grade	0	3	3	1	12	21
1st,2nd,3rd,or 4th grade	1	1	4	13	66	75
5th or 6th grade	3	5	9	26	150	194
7th and 8th grade	8	63	120	4	55	78
9th grade	7	81	169	4	49	86
10th grade	7	56	110	4	48	85
11th grade	62	1,877	4,424	26	380	1042
12th grade no diploma	31	903	3,612	4	132	544
high school graduate - high school d	20	358	1,177	0	41	156
some college but no degree	13	307	1,642	1	35	230
associate degree in college occupati	46	1,076	5,920	3	186	1061
associate degree in college academic	4	266	2,708	0	110	580
bachelor's degree (e.g. BA,AB,BS)	46	1,076	5,920	3	186	1,061
master's degree (e.g. MA,MS,MENG,MED	4	266	2,708	0	110	580
professional school degree (e.g. MD,	12	426	0	3	99	0
doctorate degree (e.g. PHD,EDD)	1	20	418	24	169	0
Total	265	6,784	28,944	116	1,828	5,793

Source: Luxembourg Income Study (LIS) Database

Table 5: Share of workers by Employment

	Native Workers			Immigrants		
Years	**Unemployed**	**Employed**	**Total**	**Unemployed**	**Employed**	**Total**
1994	19.11%	80.89%	**100%**	28.51%	71.49%	**100%**
2000	17.94%	82.06%	**100%**	23.33 %	76.67%	**100%**
2004	18.67%	81.33%	**100%**	25.71 %	74.29 %	**100%**
2007	19.85%	80.15%	**100%**	24.59 %	75.41%	**100%**
2010	24.29%	75.71%	**100%**	28.22 %	71.78 %	**100%**
2013	23.47%	76.53%	**100%**	27.02 %	72.98 %	**100%**

Source: Luxembourg Income Study (LIS) Database

Table 6: Share of Workers by Marital Status

	Native Workers						Immigrants					
Yeas	**Married**	**Never Married**	**Separated**	**Divorced**	**Windowed**	**Total**	**Married**	**Never Married**	**Separated**	**Divorced**	**Windowed**	**Total**
1994	64.66%	18.93%	3.23%	12.07%	1.11%	100%	68.79%	19.26%	3.78%	7.01%	1.17%	100%
2000	63.21%	20.15%	2.55%	12.87%	1.21%	100%	69.34%	19.74%	3.24%	6.53%	1.14%	100%
2004	61.27%	22.12%	2.69%	12.82%	1.10%	100%	67.84%	20.73%	3.42%	7.07%	0.94%	100%
2007	59.16%	24.29%	2.76%	12.58%	1.20%	100%	67.63%	21.48%	3.55%	6.42%	0.92%	100%
2010	56.83%	26.88%	2.88%	12.18%	1.22%	100%	66.51%	22.31%	3.61%	6.59%	0.98%	100%
2013	55.02%	29.46%	2.66%	11.79%	1.07%	100%	67.43%	21.56%	3.39%	6.73%	0.90%	100%

Source: Luxembourg Income Study (LIS) Database

Table 7: The Share of Workers by Working Full-time or Part-time

	Native Workers			Immigrants		
Years	**Full-time**	**Part-time**	**Total**	**Full-time**	**Part-time**	**Total**
1994	86.12%	13.88%	100%	86.43%	13.57%	100%
2000	88.76%	11.24%	100%	91.00%	9.00%	100%
2004	87.90%	12.10%	100%	89.43%	10.57%	100%
2007	88.59%	11.41%	100%	89.23%	10.77%	100%
2010	86.47%	13.53%	100%	85.92%	14.08%	100%
2013	87.32%	12.68%	100%	87.06%	12.94%	100%

Source: Luxembourg Income Study (LIS) Database

Table 8: Descriptive Statistic of Paid Employment Income

year	number of observation	mean	minimum	maximum	Standard Deviation	skewness	kurtorsis
1994	35,571	34165.68	12000	199011	21264.29	2.38093	11.83947
2000	58,963	40349.66	12000	199900	25365.06	1.98323	8.579528
2004	55,183	43930.16	12000	198000	27779.49	1.75735	7.008829
2007	54,731	47522.32	12000	198516	29691.08	1.55848	5.917011
2010	50,426	48956.25	12000	199999	31048.01	1.506106	5.60004
2013	35,571	34165.68	12000	199011	21264.29	1.40817	5.134317

Source: Luxembourg Income Study (LIS) Database

Table 9: The Share of Workers by Region

Years	Immigrants or Natives	Texas	California	New York	Florida
1994	Immigrants	20%	42%	32%	27%
	Natives	80%	58%	68%	73%
	Total	**100%**	**100%**	**100%**	**100%**
2000	Immigrants	24%	42%	31%	29%
	Natives	76%	58%	69%	71%
	Total	**100%**	**100%**	**100%**	**100%**
2004	Immigrants	26%	44%	31%	30%
	Natives	74%	56%	69%	70%
	Total	**100%**	**100%**	**100%**	**100%**
2007	Immigrants	28%	43%	32%	32%
	Natives	72%	57%	68%	68%
	Total	**100%**	**100%**	**100%**	**100%**
2010	Immigrants	30%	43%	33%	31%
	Natives	70%	57%	67%	69%
	Total	**100%**	**100%**	**100%**	**100%**
2013	Immigrants	32%	42%	31%	38%
	Natives	68%	58%	69%	62%
	Total	**100%**	**100%**	**100%**	**100%**

Source: Luxembourg Income Study (LIS) Database

Table 10: Year of Schooling

Level of Education	Years of schooling
less than 1st grade	0
1st,2nd,3rd,or 4th grade	4
5th or 6th grade	6
7th and 8th grade	8
9th grade	9
10th grade	10
11th grade	11
12th grade no diploma	12
high school graduate - high school	13
some college but no degree	15
associate degree in college occupation	15
associate degree in college academic	15
bachelor's degree (e.g. BA,AB,BS)	17
master's degree (e.g. MA,MS,MENG,ME)	19
professional school degree (e.g. MD)	21
doctorate degree (e.g. PHD,EDD)	23