

University of Gothenburg

School of Business, Economics and Law

Department of Economics

Bachelor Thesis

**The effects of labour supply increase caused
by immigration to Sweden: The substitution
between native and foreign born labourers**

Authors:

Fernanda Fuentes

Miriam Lilja

Supervisor:

Ylenia Brilli

June 07, 2016



UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Abstract

In the aftermath of the migration crisis which Europe faced during 2015 Sweden's migration policy has been adapted to a significantly more restrictive one. As a result of the significant influx of people into the country, the government is concerned about the integration of the immigrants into the labour market. This thesis analyses both empirically and theoretically whether natives and foreign born labourers are perfect substitutes or not on the labour market using descriptive data and an econometric linear model with data over wages across 109 different professions during the years 2004 to 2013. Native and foreign born labourers are found to be imperfect substitutes on the labour market.

Contents

- 1. Introduction..... 3
- 2. Literature Review 5
- 3. Theory..... 7
 - 3.1 The migration decision 7
 - 3.2. Supply and demand on the labour market..... 8
 - 3.3. The level of wage..... 9
 - 3.4. Migration as an exogenous shift of labour supply 10
 - 3.5. The effects of unemployment, rigid wages and bargained wages on the setting of wages 13
- 4. Background..... 15
- 5. Data and descriptive statistics..... 20
- 6. Econometric analysis..... 23
 - 6.1 Econometric model 23
 - 6.2. Assumptions 24
- 7. Empirical Results 26
- 8. Limitations of the model 30
- 9. Conclusions and discussion 31

1. Introduction

The recent rates of migration into Sweden have reached levels never seen before in the migration history of the country and as a result, policy makers have been induced to take measures toward a strict migration policy (Migrationsverket, 2016). Especially between the years 2011 and 2015 the number of migrants has been extraordinary high (Migrationsverket, 2016)¹. However, it is certainly not the first time people from far countries come to Sweden seeking either a place of refuge or work opportunities. An overview of the history of migration in Sweden gives an understanding about how immigration itself has changed from being driven by the influx of foreign labour to asylum seekers during the last 40 years. In the end of the 60s, regulated immigration was introduced, causing that non-Nordic labour immigration was reduced and family immigration increased instead. In addition, the number of asylum seekers from countries such as Iran and Iraq started to rise in the mid-80s (Migrationsverket, 2016). Today, immigrants face a difficult situation at the Swedish labour market. Firstly, it takes many years for an immigrant to get a job (SCB, 2015) and secondly, there are significant differences in the rate of employment between immigrants depending on their migration status² (SCB, 2014). Notwithstanding the government's ambitious efforts to improve immigrants' employability³, they struggle finding gainful employment.

That being so, it is of high interest to address the problem from a comparative perspective between natives' and immigrants' performance at the labour market and to examine the effects of immigration on wages which is the aim of this thesis. More precisely, the purpose of this thesis is to empirically and theoretically estimate which consequences a labour supply increase, caused by immigration, has on the labour market and whether native and foreign born labourers are perfect substitutes on the Swedish labour market.

¹ Between these years 371 972 persons have sought asylum in Sweden. (Dataset: "Asylsökande till Sverige 2005-2015"), Migrationsverket.

² The migration status of an immigrant tells the reason why the person has migrated; for examples there are refugee migrants and labour force migrants.

³ For example, the government aimed to improve the matching in the labour market by investing in in-service training to combat long-term unemployment as well as introducing the so called "fast track" to the labour market for immigrants with work experience.

As migration concerns most countries, similar studies have been conducted in different countries besides Sweden which makes this thesis an enriching contribution to the field by analysing the issue in a less liberal labour market. This is done by studying how the share of immigrants within different professions varies depending on the wage level of the professions. Real wages for 109 different professions across the Swedish labour market along with figures of migration during the time period from 2004 to 2013 are used in a simple regression model in order to estimate any existing rate of substitution between natives and immigrants. As stated by Borjas (2014) an increase in labour supply, caused by external factors, might have an initially negative impact on the wage levels in the country and decrease its employment level which is also something we analyse in this thesis by using statistical descriptive data. Somehow expected, accordingly to previous studies, we do not find immigrants to be perfect substitutes for natives, with exception of a small share of European immigrants. Neither do we find any decrease in the wages in the Swedish economy caused by an increase in immigration.

The thesis' roadmap looks at follows: firstly, an overview of the major studies done in the area is presented. Secondly, the theoretical framework used in the thesis is presented. Following, section 4 sets out the background to the problem. In section 5 the data used in the thesis is described along with descriptive statistics. Section 6 sets out the econometric model and the results are presented in section 7. Finally, in section 8 a discussion of the findings and a brief conclusion is given.

2. Literature Review

The issue of the effects of immigration on the receiving country's labour market has been studied in various countries. For example, Ottaviano and Peri (2012) found small wage effects of immigration on the real wages of less-educated native US workers and imperfect substitutability between them and immigrants. Similarly, Akbary and Aydede (2013) found that immigrants to Canada are imperfect substitutes for native-born workers throughout all the different education levels defined in the study. Dustmann et al. (2013) estimated the wage effects of immigration across the wage distribution of natives in the UK. They found that wages decreased at the parts of the distribution where the ratio of immigrants relative to natives was higher and that natives' wages increased where the contrary was the case, but in general immigration induced a modest growth in average wages. In addition to the field in European countries, Glitz (2012) found no significant evidences of negative effects on German native workers' wages due to immigration from eastern Europe and the former Soviet Union, which he deduced could be explained by lack of flexibility of Germany's labour market compared with other countries'. Moreover, he concluded that the relative inflexibility of Germany's labour market lead to an adjustment of the labour market, due to immigration, through changes in employment rates instead of adjusting through changes in wages.

In a study conducted in the two labour markets presented above, i.e. North America and Europe, Bigsten and Ruist (2010) analyse how the wage levels were affected by immigration from low-wage countries. They found that the average wage decrease was lower in cases when international capital adjustment was allowed, than when it was not. Furthermore, they found that by redistributing some of the output gains to the natives, whose wages decrease due to immigration, the overall effect of immigration would be positive.

Regarding the Swedish labour market Wahlberg (2008) estimated the differences in wage distribution between three different groups in Sweden: natives, non-refugee- and refugee immigrants. He found "considerable gender and ethnicity-related differences in the coefficients at various percentiles of the native, refugee, and non-refugee wage distributions" (Wahlberg 2008, p.16) and that the differences in wage between natives and non-refugee immigrants decreased throughout the time distribution, but it increased between natives and refugee immigrants. Linkogle (2014) conducted a case study on the outcome of a labor market

integration project in Sweden, administrated by the public authority Arbetsförmedlingen⁴, where migrants with university degree or working experience participated. She found that the most important factor that impacted on the project outcome was the migrant's personal level of motivation. But the outcome was also highly depended on how well the participants were met by the responsible public agency.

The principal focus of the studies that were conducted in North America and also European countries was to determine the impact of immigration on the levels of wages between the natives and immigrates and to discover whether there is degree at which the two groups are able to substitute each other. In the case of the Swedish studies Wahlberg focuses on the differences in wage between natives and immigrants in the Swedish labour market and Linkogle addresses the determining factors for a positive outcome from participating in the integration project. Given the scarcity of studies focusing on the degree of substitutability between natives and immigrants in Sweden, as it has been done in the countries previously mentioned, we aim to contribute to this field addressing similar questions.

⁴ Arbetsförmedlingen is the national public agency for employment services.

3. Theory

3.1 The migration decision

In microeconomics and behavioural theory people are often assumed to be rational beings who do anything to maximize their benefits. Therefore, anyone would migrate if the benefit of moving was larger than the benefit of staying. This benefit is in microeconomics often measured in wage. If the level of wage in the new country was higher than in the original country, a person would choose to migrate (Brochmann et al. 1997). The migration flow of people will continue until any differences in the level of wages between the countries have been equalized by the changes in labour supply (Brochmann et al. 1997). When making this assumption, microeconomic theory assumes that migration itself is cost free. This assumption, however, is not likely to reflect the real-world situation. Migrants are a heterogeneous group and far from everybody choose to migrate, even though they live in a country with lower wages. The cost of migration can only partly be estimated as a monetary cost, in most cases other variables have a large impact on the decision to migrate or not. For example the inevitable experience of linguistic, cultural and social difficulties can be considered as high costs of migration (Brochmann et al. 1997). Therefore, we ought to drop the assumption that the migration is cost free. Hick (1932, p.76) explains that differences in wages cannot be eradicated by the movement of labour from one place to another and that “differences in net economic advantages, chiefly differences in wages, are the main causes of migration”. Therefore, the determining factor of the migration decision is a comparison of earning opportunities across the source and host countries (Borjas, 2014).

The decision to migrate can be defined by the following formula (Borjas, 2014),:

$$(F.1) \text{ The migration decision } I = \log \left(\frac{w_1}{w_0 + C} \right) \approx (\mu_1 - \mu_0 - \pi) + (v_1 - v_0)$$

where w_0 and w_1 give earnings in the source country and the host country respectively. C gives the level of migration cost, μ_0 and μ_1 give the mean earnings in the source and host country respectively, and π gives a "time equivalent" measure of C , the level of migration costs, $\pi = C/w_0$. The random variables v_0 and v_1 measure deviations from mean earnings respectively in the source and in the host country and are assumed to be normally distributed.

A person will decide to migrate if $I > 0$ and stay in the source country otherwise (Borjas, 2014).

It is of course hard, if not impossible, to measure how one individual migrant values the potential cost and benefit of moving to Sweden since these are not always quantifiable.

3.2. Supply and demand on the labour market

A firm's labour demand is equal to the value of the marginal product, shortly VMP_L (Perloff, 2013). The firms' demand for labour can also be expressed as the firms' required wage, w . This means that labour demand increases when the marginal value of the production increases, or when the marginal product of labour increases, as shown in formula F.2. The marginal value is denoted MV in the formula, and the marginal product of labour is denoted MP_L .

(F.2) The Labour Demand Curve: $VMP_L = MV \times MP_L = w$

Equilibrium will be found where the wage equals the value of the marginal product of labour. This is because, up to this level, the firm will benefit from hiring another employee, since the value of the marginal product is larger than the wage. After this point, the wage will be larger than the marginal value of the production, and so the firm will not benefit from it. So equilibrium is found where the wage is equal to the value of the marginal product.

The labour supply curve is derived from individuals' marginal rate of substitution, MRS , between income and leisure which is equal to their marginal rate of transformation, MRT , between income and leisure (Perloff, 2014). The utility of leisure time is denominated U_N in the formula and the utility of income is denominated U_Y . A higher wage can either increase the labour supply of an individual or decrease it, depending on how much the individual values the wage against leisure time. The labour supply curve of one individual is presented in formula F.3.

(F.3) The Individual Labour Supply Curve: $MRS = \frac{U_N}{U_Y} = -w = MRT$

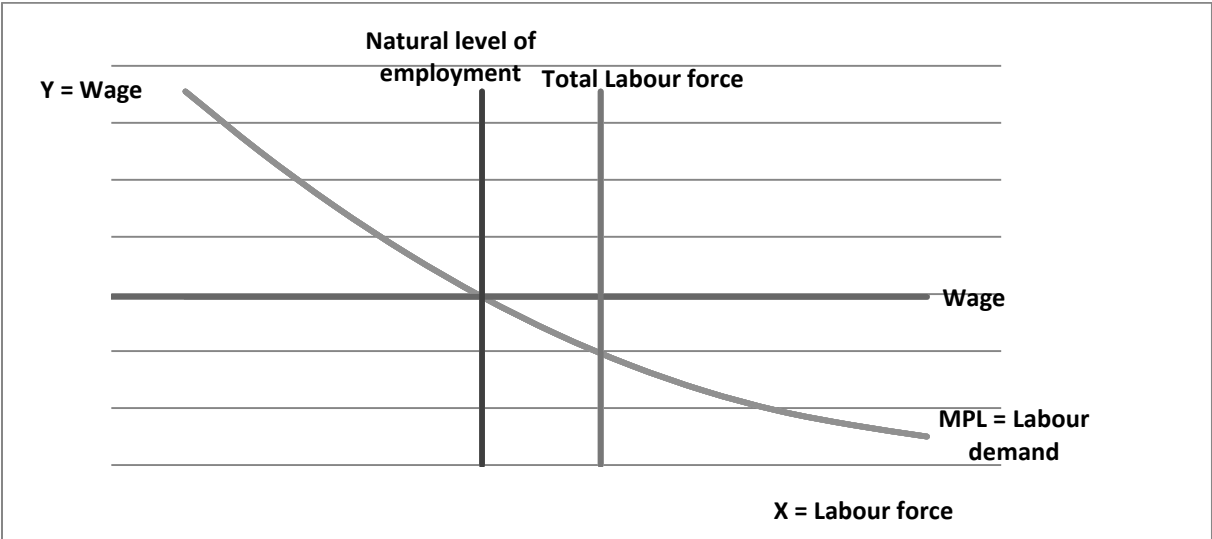
The aggregated labour supply curve, meaning the sum of all the supply curves of individuals, for a specific sector should always be upward sloping. This is because when the wage increases, more people will give up their current occupation and instead get employment within the sector. However, the aggregated labour supply curve for the whole economy is not necessarily upward sloping, since people might prefer to have more leisure time after a certain level of wage (Burkett, 2006).

The quantity of utilized labour force will stabilize in equilibrium at the quantity level where both the labourers and the firms are satisfied with the wage.

3.3. The level of wage

The level of wage is stabilized in the equilibrium between labour demand, labour supply and the natural employment level, which is illustrated in Figure 1 below. The wage is constant in the short run. The equilibrium will stabilize at the level where the wage is equal to the value of the marginal product, which is equal to the labour demand as described in Figure 1. Up to this point of equilibrium, the firm will benefit from hiring more labour force, since the value of the marginal product is higher than the wage (Borjas, 2010). At the point where the wage equals the marginal product of labour, the firms will hire a certain number of labourers. This number denotes the natural level of employment, as a share of the total labour force.

Figure 1 – Equilibrium on the labour market



An exogenous shift of the wage level can be induced by a shift in the labour supply or demand curve. If the wage shifts in Figure.1, the state of equilibrium will move along the labour demand curve, since the natural level of unemployment will adjust to the new intersection between labour demand and wage.

Individual labourers will have different productivity, due to different individual attributes. More productive labourers will generate a higher wage for themselves, since the wage will equal the value of the marginal product. This is true in cases where wages are perfectly flexible and individually set.

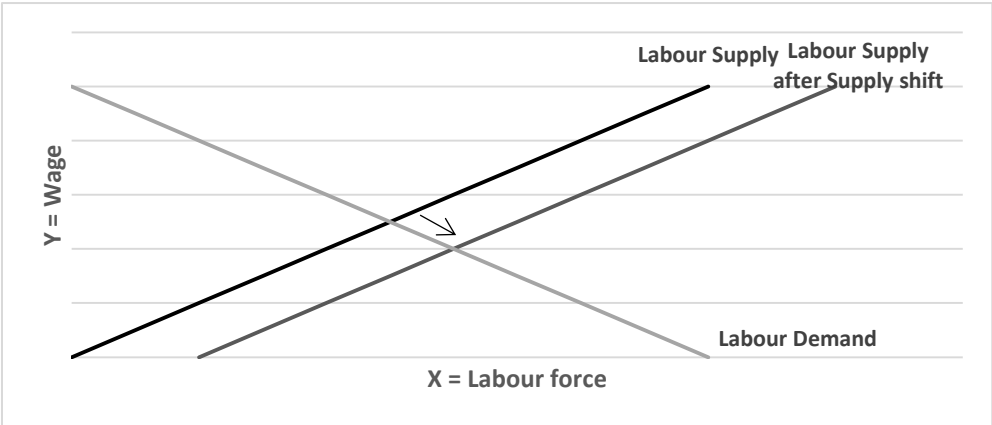
It is also possible that different groups of individuals have generally different productivity compared to each other. If the substitution between the groups is perfect, their marginal production will also be exactly the same. If one of the groups has a lower marginal productivity, that group will earn generally less in wage (Brojas, 2014). If that is the case, the two groups of labourers are imperfect substitutes on the labour market.

3.4. Migration as an exogenous shift of labour supply

In the figures 2.1-2.4 below, the effect of a labour supply shift on the labour market is illustrated. The outward shift of the labour supply curve will initially affect the wage negatively (Figure 2.1) (Borjas, 2014). The lowered wage leads to an increase in the demand for labour. This means that the elasticity, ϵ , of labour demand is negative.

Figure 2. The consequences of a labour supply shift

Figure 2.1

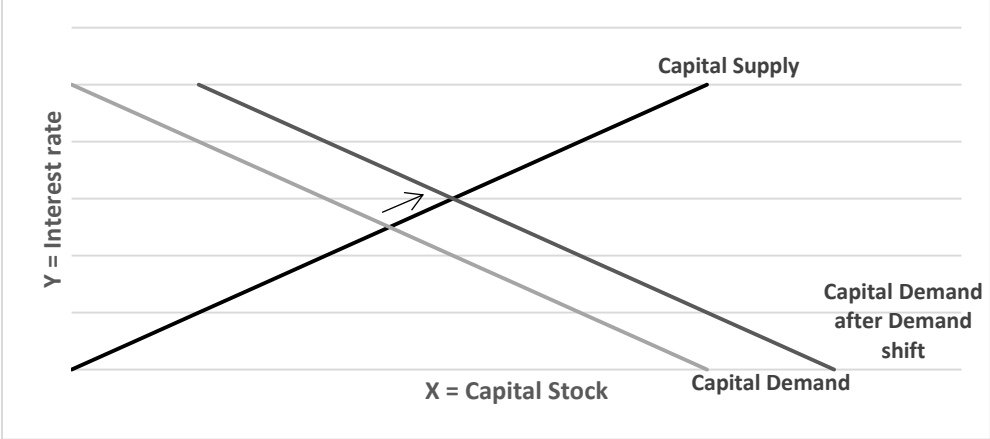


The elasticity of labour demand is illustrated in the formula F.4. The elasticity of labour is normally negative, but it can vary in size depending on the difficulty to find substitutes for the labour force. If it is hard to find substitutes, the elasticity will be less negative.

(F.4) The elasticity of labour demand: $\epsilon = \frac{\text{percentage change in labor demand}}{\text{percentage change in wage}} = \frac{\Delta L/L}{\Delta w/w}$

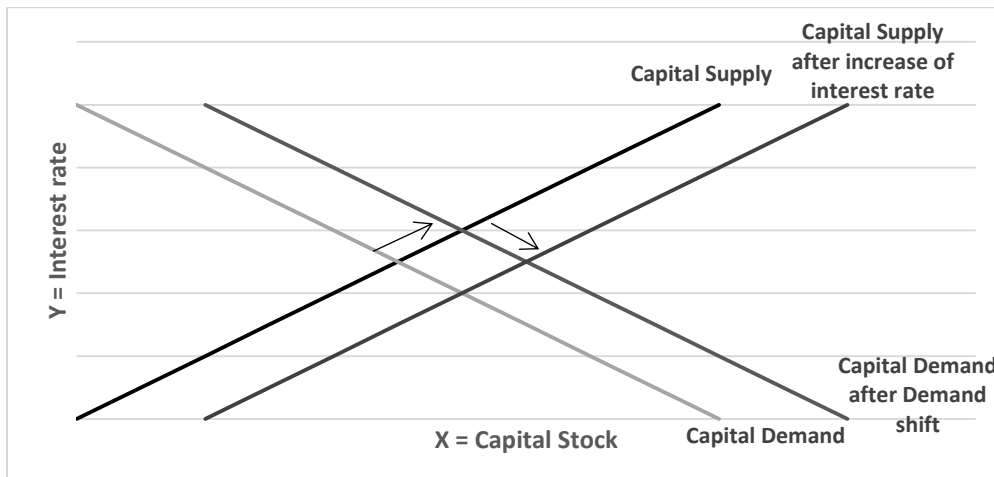
If capital and labour are complements, the increase in labour supply will increase the demand for capital. Consequently, the capital demand curve shifts outwardly. The increased demand for capital will push up the return on capital (Figure 2.2).

Figure 2.2



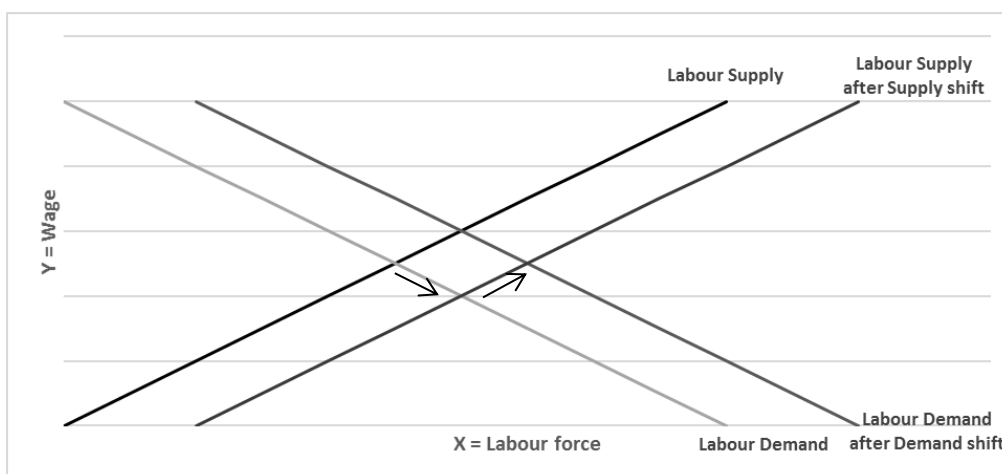
In the long run, the increase of the return on capital will generate capital inflows, which makes the capital supply curve to shift outward. The increase in capital supply will make the return to capital decrease to the equilibrium level again (Figure 2.3). The increased capital stock will make the labour demand curve shift outwardly.

Figure 2.3



The final result will be in equilibrium, when the capital stock has increased with exactly the same amount of size as the workforce (Figure 2.4). So, in the long run both wages and return on capital are exogenous from immigration. The wages and the return on capital will be unchanged, although both the capital stock and the workforce will have increased due to the increase of labour force.

Figure 2.4



If capital and labour are substitutes instead, the increased labour supply, followed by a wage decrease will generate a decrease in demand for capital. Consequently, the decreased demand for capital will decrease the return on capital which in its turn leads to a decrease in the capital supply. When the capital supply decreases, the interest rate will again be pushed up to the original level. The lowered wage will increase the demand for labour, until the wage has been

pushed up to its original level. At the new equilibrium, the wage and the interest rate will be unchanged, but the labour will represent a larger share of the production than before.

3.5. The effects of unemployment, rigid wages and bargained wages on the setting of wages

As mentioned before, the firms' required wage is equal to the value of the marginal product of labour. However, the required wage fluctuates with the unemployment rate as well. The higher rate of unemployment, the lower is the firms' required wage. This is because when the unemployment rate is high, firms are less worried to lose their skilled labourers. On the other hand, the required wage increases when the unemployment rate is low. When the unemployment rate is low, good labourers are scarce and hard to find, so the firms are willing to pay more to make their labourers stay (Gottfries, 2013). The firms' required wage can be explained by the following formula, F.5, where a is a constant that tells how much the wages would increase if there was no unemployment, b is a constant telling how sensitive wages are to variation in unemployment, u is the current unemployment rate, W is the average wage level and W^d is the required wage:

$$(F.5) \text{ The firm's required wage: } W^d = (1 + a - bu)W$$

Many firms set their wages in advance, say in December the year before the pay-out. As a result wage changes will to a large extent be dependent on the expected conditions for the next coming year. Wages that are set in advance are called rigid wages. Wages that are not set in advance, and therefore adjusted over time, are called flexible wages. In the following formula, F.6, the wage average is expressed where π denotes the share of firms which apply rigid wages, while $1 - \pi$ denotes the share of firms which have flexible wages. W_{t-1} denotes the wage of the previous period, W_t denotes the wage of the current period, u_t denotes the current unemployment rate and u^n denotes the natural rate of unemployment.

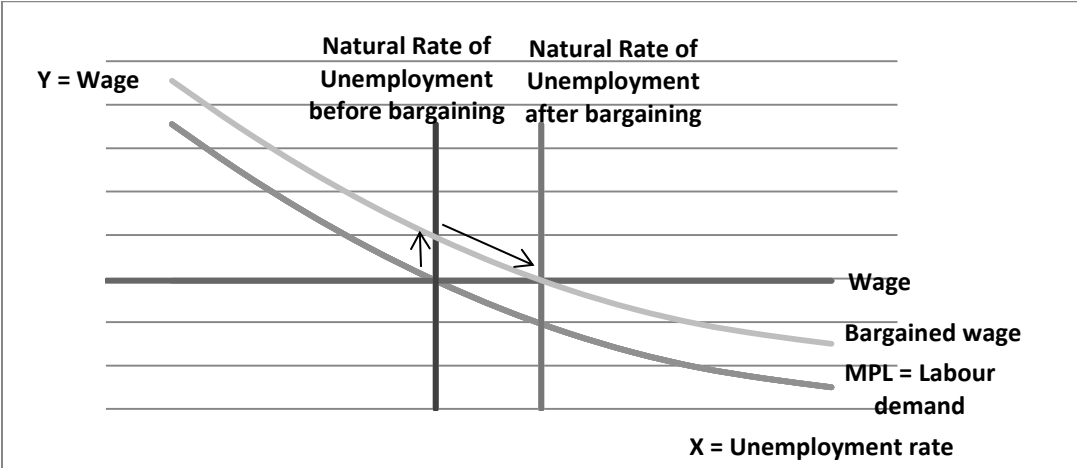
$$(F.6) \quad \frac{\Delta W_t^d}{W_{t-1}} = \frac{\Delta W_t}{W_{t-1}} - \hat{b}(u_t - u^n) \quad \text{where } \hat{b} = \frac{\pi b}{1 - \pi}$$

If π is large, the wage change will be highly dependent on the changes in the unemployment rate, since there will be many firms with flexible wages which adjust their wages

immediately. In real life, however, almost all firms have rigid wages. In the case of Sweden, the wages are set yearly in an agreement between trade unions and firms. This means that the wages are inflexible and will not adjust to changes in the unemployment rate in the short run. (Gotfries, 2013)

To influence the wages, workers can join labour unions through which they can demand wage increases by negotiations or threatening to strike, which might increase the firms' costs, pushing up the wages to a higher level than the firms would otherwise prefer. It is possible to think of this change like an add-on to the firms' desired wage, with an increased required wage for every level of marginal product of labour, like showed in figure.3. When the wages increase, the unemployment rate will also increase, because the firms will not afford to hire the same volume of labour as before. How the "add-on" change to the firms' desired wage affects the natural rate of unemployment is illustrated in the graph below.

Figure.3 The effect of bargaining on the equilibrium rate of unemployment



4. Background

There is no doubt that one of the most debated topics in Sweden in 2016 is how to handle the large immigration that the country has faced during the last decade, reaching its culmination⁵ in 2015 (Migrationsverket, 2016). There is a large discussion going on about how the immigrants will get integrated on the labour market and whether their integration will impact negatively on the level of the wages in the economy.

First, an important difference between immigrants regarding their different migration statuses must be mentioned. Non-refugee immigrants leave their home country to settle down in another country, either permanently or temporary, due to for example work opportunities or family reunion. Refugee immigrants leave their home country due to persecution and therefore seek asylum in another country (Amnesty, 2016).

There is a large difference in the employment rate and the income level among migrants in Sweden, depending on their migration status. Labour force migrants and migrants from other EU/Nordic countries have the highest employment rate among migrants, almost but not quite as high as the employment rate of the natives. Refugees and people who migrate because they have relatives in Sweden have the absolutely lowest employment rate (SCB, 2014).

In 2004, 15 percent of the population aged between 25-64⁶ in Sweden was foreign born. During the following years, Sweden experienced a large net immigration and in 2014 the foreign born population⁷ had increased to almost 22 percent⁸ (SCB, 2016).

Most immigrants applying for resident permits in Sweden are refugees. Through the years 2004 to 2013 the share of migrants that were refugees was on average 17 percent. On average 7 percent of the migrants were relatives to refugees and 28 percent were relatives to non-refugees. In addition, approximately 15 percent were labour force migrants and 22 percent

⁵ The level of asylum requests started to cease in the beginning of 2016.

⁶ We repeatedly refer to this age-group in this study, because these people are likely to have finished their education and be available on the labour market.

⁷ The specific Swedish Statistics dataset for the number of inhabitants which is foreign born is "Utrikes födda i riket efter födelseland, ålder och kön. År 2000 – 2015", SCB.

⁸ The specific Swedish Statistics dataset for the total size of the population in Sweden is "Folkmängden efter region, civilstånd, ålder och kön. År 1968 – 2015", SCB.

were migrants under the EES-agreement⁹. Other, less common migrant statuses are those of guest students and adoptive children¹⁰ (Migrationsverket, 2016).

In table.1 the employment rate for the Swedish population, categorized by whether the person is native born or not, is shown. The employment rate of the foreign born population in Sweden is lower than the employment rate of the native born population. The differences in employment level between the groups are more or less constant over the years¹¹ (SCB, 2016), indicating on a structural employment gap of approximately 25 percent. However, after the financial crisis in 2008, the foreign born population had lost more percentages of their employment rate than the native born population. In 2009 the employment rate of the foreign born population decreased more than the natives', which made the employment gap between the groups broaden. This indicates that foreign born people to a higher extent work in sectors which are more sensitive to market fluctuations.

Table.1 - Employment rate for the Swedish population aged between 25-64 years

Employment rate for the Swedish population aged between 25-64 years											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Employment rate foreign born	57,48%	57,24%	58,12%	59,15%	59,06%	55,54%	57,00%	58,76%	59,49%	59,85%	60,40%
Employment rate natives	81,67%	81,72%	82,72%	83,89%	84,04%	82,37%	83,58%	84,53%	84,87%	84,92%	85,17%
Difference in percentage points	24,19%	24,48%	24,60%	24,74%	24,98%	26,83%	26,58%	25,77%	25,38%	25,07%	24,77%

Source: SCB, 2016

The disposable income per consumption unit¹² differs between native and foreign born people in Sweden, as it is shown in table.2, and during the last few years the income gap between these groups has widened¹³ (SCB, 2016). During the same time period, the real and nominal wages increased in general in Sweden (Svenskt Näringsliv, 2016).

⁹ The EES-agreement grants free movement for products, services, capital and people for citizens within the EU and the EFTA-countries, Iceland, Norway and Lichtenstein.

¹⁰ The specific dataset used for the number of accepted resident permits by migrant status is "Beviljade uppehållstillstånd 1980-2015, Översikter och statistik från tidigare år", Migrationsverket.

¹¹ The specific Swedish Statistics dataset used for the employment rate of the foreign and native born population is "Befolkningen 16+ år (RAMS) i riket efter sysselsättning, födelseregion, senaste invandringsår, ålder och kön. År 2004 – 2014, Registerbaserad arbetsmarknadsstatistik", SCB.

¹² The consumption unit is a standardized measure used to calculate the income per family. The first adult gets one consumption unit, every other adult 0,5 units and children get 0,3 consumption units.

¹³ The specific Swedish Statistics dataset used for the disposable income per consumption unit is "Disponibel inkomst per konsumtionsenhet för personer och antal år i Sverige efter födelseland. År 2011-2014", SCB.

Table.2 – Disposable income per consumption unit, median value in thousands of SEK.

Disposable income per consumption unit, median value in thousands of SEK.				
Year	2011	2012	2013	2014
Native born	227,4	233,2	238	246,3
Foreign born	173,7	178,2	182,3	188
Difference	53,7	55	55,7	58,3

Source: SCB, 2016

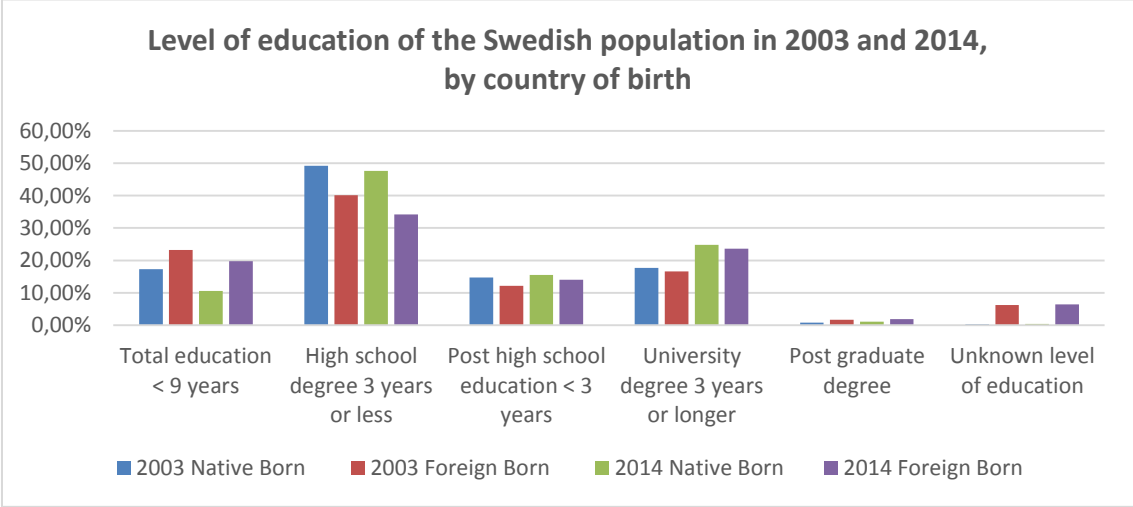
The level of education of the Swedish population has increased during the last twenty years. The share of the population with a university degree has almost doubled, whereof the share of the population with a high university education¹⁴ has more than doubled. During the same period, the share of the population without high-school education has decreased by half¹⁵ (SCB, 2016). There is, however, a significant difference in the level of education between the native and foreign born population. The level of education of the Swedish population, and the difference in educational level between native and foreign born people, is presented in figure.4 below. Note that the foreign born category includes all foreign born citizens, unconditionally of how long they have stayed in Sweden. Also, the educational level of adult immigrants is self-reported. The most remarkable difference between the groups is that one in five of the foreign born population did not have a high-school degree in 2014, while the same value for the native born population was one in ten¹⁶ (SCB, 2016).

¹⁴ 5 years or more of post-high school studies.

¹⁵ The specific Swedish Statistics dataset used for the educational level of the Swedish population over time is "Utbildningsnivå 1990–2015 efter kön, 25–64 år", SCB.

¹⁶ The specific Swedish Statistics dataset used for the educational level of the Swedish population in 2003 and 2014 is "Befolkning 16-74 år efter kön, ålder, nationell bakgrund, utbildningsnivå och utbildningsinriktning SUN 2000. År 2000 – 2015", SCB.

Figure.4 – Level of education of the Swedish population in 2003 and 2014, by country of birth



Source: SCB, 2016

Sweden is a highly knowledge-based economy with a high demand for skilled labourers. (OECD, 2015). Moreover, it has one of the largest shares of high-skilled jobs on the labour market, compared with other OECD countries and during the last few decades many of the traditional mid-skilled jobs have been replaced with high-skilled jobs. As a consequence, the demand for high-skilled work-force in Sweden has increased, while the demand for low-skilled workforce has decreased (OECD, 2015). Consequently, it is harder for low-educated labourers to find employment in Sweden. It might also make it especially hard for immigrants to find a job, since they generally have a lower level of education than Swedish natives, as well as other competitive disadvantages when applying for a job. This can be shown for example by a steadily increasing share of long-term unemployed immigrants in Sweden, which in 2014 was almost 50 percent (OECD, 2015).

It is generally harder for foreign born people to get a high-skilled employment matching their level of education. In 2014, 11 percent of the foreign born citizens with long university education¹⁷ had low-skilled jobs. The corresponding percentage for the native born was 3 percent (SCB, 2016). This situation might be caused by the immigrants’ lack in language

¹⁷ Three years of university education or longer

skill, absence of a personal professional network or documented experience, but it could also be caused by systematic discrimination on the labour market¹⁸.

The Swedish labour market and wages have historically not been very flexible. Wages have been set by collective agreements rather than individually and the labour unions have been very strong. The collective agreements can be seen as the most important source of regulation of the conditions on the Swedish labour market (Glavå, 2011). The labour unions gained much of their influence power in 1938 when LO (the Swedish Union Trade Confederation) and SAF¹⁹ (the Confederation of Swedish Enterprise) concluded the Saltsjöbad agreement which gave the government a more passive role in the process of setting wages (Sigeman, 2006). An example of the significant role that collective agreements play on the Swedish labour market is that there is no legislation for a minimum wage, but a minimum level of the wages is defined in the collective agreements (Glavå, 2011).

¹⁸ Evidence for one example of systematic discrimination on the labor market have been stated by Arai and Thoursie (2009) who discovered that changing name from a foreign sounding name to a Swedish sounding name induces an increase of wage for the name changer in Sweden.

¹⁹ SAF later changed name to Svenskt Näringsliv.

5. Data and descriptive statistics

The data set used for the following analyse is a panel data set, with data from a total of 109 professions in Sweden. Data over different professions in Sweden, totally 114 in number, was provided by Swedish bureau of Statistics. The professions are classified by the SSYK 96 model²⁰ (SCB 2016). From the 114 professions provided by Swedish Statistics, 109 held complete information about the mean wage through the years 2004 and 2013. The remaining 5 professions did not contain complete information about the mean wage. Therefore, 109 professions were used and 5 professions were left out.

The observation of 109 professions over ten years gives a total number of 1090 observations. Information about the average nominal and real wage²¹ and the number of employees within each profession, including the continent²² of origin²³ of the employees, is included in the data. The nominal wages have been CPI-adjusted²⁴ to real wages, with 2003 as the anchor year (SCB, 2016).

The average real wage of each profession through the period 2004 to 2013 was calculated and the median average wage of all professions was estimated. The professions were divided into two sets, depending on whether the average real wage of the profession was higher or lower than the median average wage, one with “low wage professions” and the other with “high wage professions”. The median wage of all professions over the years was 20 949 SEK.

The data is presented on an aggregated level, meaning that no individual attributes, like for example employment level or wage, for the employees are presented. Access to individual data would have been favourable in order to better answer our research question, but it was unfortunately not available for this analysis²⁵.

²⁰ SSYK 96 is based on the international job classification system ISCO-88 and the EU version ISCO-88(COM). For more recent data the classification system has been replaced by SSYK 2012.

²¹ The specific Swedish Statistics dataset used for average nominal wages per profession and year is “Genomsnittlig månadslön och lönespridning efter sektor, yrkesgrupp (SSYK) och kön. År 2004 – 2015” , SCB.

²² Africa, Asia, Oceanic, North and Central America, South America, Europe excluding the Nordic countries, the Nordic countries excluding Sweden and Sweden.

²³ The specific Swedish Statistics dataset used for the number of employees from each continent per profession and year is “Anställda 16-64 år i riket efter yrke (3-siffrig SSYK 96), födelseregion och kön. År 2001 – 2013”, SCB.

²⁴ The specific Swedish Statistics dataset used for the CPI development over the years is “Konsumentprisindex (KPI) årsmedeltal totalt, skuggindex, 1980=100 efter år”, SCB.

²⁵ Swedish Statistics provides access to its database LINDA (Longitudinell Individdatabas) with data over individual wage changes for 1968 through 2014 only for post-graduate researchers.

In each data set two variables were generated, one indicating the percentage share of employees from outside of Europe and the other indicating the percentage share of employees from Europe but outside from Sweden.

The percentage share of foreign employees is clearly larger in low wage professions than in high wage professions, as shown in table 3 and 4. Also, the share of European employees out of all foreign employees is slightly smaller in the low wage professions than in the high wage professions.

Table.3 Share of foreign employees in low wage professions 2004-2013

Share of foreign employees in low wage professions 2004-2013				
	Non-Europe	Europe	All	Ratio: Europe/All foreign labourers
Average	5,48%	8,81%	14,29%	61,65%
Median	4,41%	7,52%	12,21%	61,59%

Table.4 Share of foreign employees in high wage professions 2004-2013

Share of foreign employees in high wage professions 2004-2013				
	Non Europe	Europe	All	Ratio: Europe/All foreign labourers
Average	3,34%	6,33%	9,68%	65,39%
Median	2,74%	5,67%	8,63%	65,70%

The real wages for the time period observed are presented in table 5. The standard deviation of the high wage professions is larger than that of the low wage professions.

Table.5 Real wages in year 2004-2013, anchor 2003

Real wages year 2004-2013, anchor year 2003			
	Low wage	High wage	All
Average	18918,84	27375,66	23147,25
Median	18861,26	24852,77	21115,79
Standard deviation	1934,425	8120,94	7260,12

By observing professions with different wage levels, it is possible to analyse whether they are differently affected by immigration and labour force inflow. In this study, it is not possible to observe the educational level of the individual foreign labourers. However, it is plausible that the migrants who get employment in more highly payed professions, are in general more highly educated and highly skilled, than the migrants who get employment in low wage sectors. By analysing the impact of migration on the professions with high wage compared to the professions with low wage, we can analyse whether it is plausible that migrants with different educational background influence the labour market differently.

In the data, a variable indicating the number of immigrants is used. This variable holds information about the total number of granted resident permits per year. The number of granted resident permits is used, instead of the total number of immigrants applying for resident permits. This is because those who get permission to reside in the country are the most likely to integrate to the labour market. Many immigrants in Sweden have not got their resident permit yet (Sveriges Radio, 2015) and are therefore unlikely to have employment²⁶ (Arbetet, 2015). The statistics are provided by Migrationsverket through the years 2004 to 2013.

In the following analysis, large emphasis is put on the share of foreign born workers in different professions. The professions with the highest share of foreign born labourers are cleaner, restaurant and large kitchen staff and assistants and health care assistants. The professions with the lowest share of foreign born labourers are found within the agricultural sector.

²⁶ Asylum seekers, who legally reside in the country while their asylum request is in process, are in some cases allowed to get employment. This is an exception from the standard requirements for work permit, called AT-UND. The process to get AD-UNT is however quite complicated and bureaucratic, which lead to that most asylum seekers do not work. (Migrationsverket, 2016)

6. Econometric analysis

The main focus of this study is to analyse whether native and foreign born workers are perfect substitutes in the labour market in Sweden. Therefore, we will test if it is observable that native and foreign labourers work in different sectors in Sweden, and if there are differences in the wage level of the professions within those sectors. In our analysis we assume that a significant correlation between wage and the share of foreign born labourers indicate on imperfect substitution between native born and foreign born labourers.

6.1 Econometric model

To observe the impact of the share of foreign born labourers and immigration on wages, the following regression is run:

$$wage_{it} = \beta_1 year_t + \beta_2 foreignshare_europe_{it} + \beta_3 foreignshare_noneurope_{it} + \beta_4 immigration_t + \mu_{it}$$

Next, the results are analysed through a simple linear regression, with focus on the effect on the dependent variable, the share of foreign born labourers, in different professions. In order to generate a more informative result, the foreign labourers are divided into the two groups European and non-European. Finally, the professions are divided into two different data sets, dependent on the wage level of the professions, as it was described in section 5, which leads to an even more informative result.

The econometric models are specified as:

$$foreignshare_{it} = \beta_1 year_t + \beta_2 wage_{it} + \beta_3 immigration_t + \mu_{it}$$

To distinguish any differences in substitution between European and non-European immigrants we run the following regressions, where the foreign labourers are divided into two groups dependent on their origin:

$$foreignshare_europe_{it} = \beta_1 year_t + \beta_2 wage_{it} + \beta_3 immigration_t + \mu_{it}$$

$$foreignshare_noneurope_{it} = \beta_1 year_t + \beta_2 wage_{it} + \beta_3 immigration_t + \mu_{it}$$

Where for profession i and time t ,

foreignshare is the total share of foreign workers in a profession, expressed as percentage,

foreignshare_europe is the share of foreign workers from European countries in a profession, expressed as percentage,

foreignshare_nonerope is the share of foreign workers from outside Europe in a profession, expressed as percentage,

year indicates a year between 2004-2013,

wage is the monthly average real wage for a profession, expressed in thousands,

immigration is the number of immigrants that obtained a Swedish residence permit in a specific year during the time period 2004-2013, expressed in thousands,

μ is the error term or disturbance, the unobserved factors that affect the outcome,

We include the variable *year* in order to control for the time trend. The years observed are the years between 2004 and 2013.

6.2. Assumptions

The following analysis observes the contemporaneous effects of migration into the labour market. As mentioned in section 3.6, wages are often rigid and adjust slowly to changes on

the labour market. Since we observe the years 2004 to 2013, it is likely that the wages have not fully adjusted yet. Therefore it is highly possible that the increased migration into Sweden induces long run consequences on to the economy, but these are not observed in this analysis.

Moreover, the European and the non-European immigrants are treated like two internally homogenous groups, besides their place of origin. Although we are aware of the large variation of individual characteristics and abilities within these two groups, presented in the background section in this paper, this is not taken into account. This is due to lack of individual data for characteristics like education, gender, age et cetera. It is however brought up in the final discussion.

Additionally, we observe if native and foreign labourers work within the same or different professions, and if there is a wage difference between the professions they work in. However, we cannot empirically test what causes this difference. Either the difference is caused by imperfect substitution between the native and foreign born labourers, which makes the firms hire them in different extent, or it is caused by different preferences from the different groups of labourers, which makes them apply for different job positions.

As mentioned in section 3.1, there are different reasons why a person chooses to migrate. The decision might be induced by either internal or external factors. An internal factor could be a demand for labour force in Sweden. In this case, the immigration will cause a labour supply increase moving along the labour supply curve, to meet the labour demand. External factors could be war in another country or family reunion, causing people who would never have migrated otherwise, to seek asylum in Sweden. In this case, the immigration will cause a labour supply increase causing a rightward shift of the labour supply curve (Figure 2.1). From the following analysis, it is not possible to state whether the foreign labourers represented in the data have immigrated due to internal or external factors. However, since most immigrants during the observed period have been refugees and relatives to inhabitants in Sweden, we assume that there has been a shift of the labour supply curve in at least some extent.

7. Empirical Results

The results of the linear regression models are presented in the following tables, containing the variables previously described. When wage is used as the dependent variable, all coefficients are of interest. When the share of foreign labourers is used as the dependent variable, in different ways, the coefficient of interest is wage.

In table.6, wage is the dependent variable. It is significant that wages across all the professions increases in general for every year. None of the other coefficients are significant.

Table.6. Regression results: The real wage in all professions

Table.6 Regression results: The real wage in all professions			
Variable	Coefficient	Standard Error	P> t
year	0,704	0,192	0
foreignshare noneurope	-0,139	0,085	0,102
foreignshare europe	-0,459	0,0918	0,639
immigration	-0,0019	0,0316	0,952
cons	-1387,087	-382,4388	2137,51
Adjusted R^2	12,43%		

In table.7, the share of foreign labourers is the dependent variable. The correlation between wage and the share of foreign labourers is significant, but very small.

Table.7. Regression results: The share of foreign employees in a profession

Table.7 Regression results: The share of foreign employees in a profession			
Variable	Coefficient	Standard Error	P> t
Year	0,54811	0,1821	0,003
Wage	-0,0002644	0,0000281	0
Immigration	-0,005386	0,0301	0,858
Cons	-1082,298	363,286	0,003
Adjusted R^2	9,98%		

When the variable denoting foreign born labourers is divided into the two groups European and non-European, in table 8 and 9, a small difference in the impact of wages on the share of foreign labourers can be distinguished. The correlation is somewhat more negative for non-

European labourers; however the difference is small enough to be considered as negligible. Additionally, the share of non-European labourers increases more over the time period.

Table.8. Regression results: The share of European (non-Swedish) employees in a profession

Table.8 Regression results: The share of European (non-Swedish) employees in a profession			
Variable	Coefficient	Standard Error	P> t
Year	0,168	0,102	0,099
Wage	-0,000128	0,0000158	0
Immigration	-0,0008572	0,0169	0,959
Cons	-327,655	203,428	0,108
Adjusted R^2	6,34%		

Table.9. Regression results: The share of non-European employees in a profession

Table.9 Regression results: The share of non-European employees in a profession			
Variable	Coefficient	Standard Error	P> t
Year	0,3797	0,0935	0
Wage	-0,0001366	0,0000144	0
Immigration	-0,004529	0,0155	0,77
Cons	-754,64	186,496	0
Adjusted R^2	12,50%		

In table.10, the share of non-European labourers in low wage professions is the dependent variable. When the wage increases by 1000 SEK, the share of foreign labourers decreases by 1.38 percentages. The variable wage is highly significance.

Table.10. Regression results: The share of non-European employees in low wage professions

Table.10 Regression results: The share of non-European employees in low wage professions			
Variable	Coefficient	Standard Error	P> t
year	0,985	0,149	0
wage	-1,38	0,108	0
immigration	-0,003	0,023	0,909
cons	-1946,859	296,305	0
Adjusted R^2	27,42%		

In table.11, the share of European labourers in low wage professions is the dependent variable. When the wage increases by 1000 SEK, the share of foreign labourers decreases by 0.007 percentages. The variable wage is highly significance.

Table.11 Regression results: The share of European (non-Swedish) employees in low wage professions

Table.11 Regression results: The share of European (non-Swedish) employees in low wage professions			
Variable	Coefficient	Standard Error	P> t
year	0,004	0,002	0,01
wage	-0,007	0,001	0
immigration	-0,00003	0,0003	0,916
cons	-8,555	3,349	0,011
Adjusted R^2	5,98%		

In table.12, the share of non-European labourers in high wage professions is the dependent variable. When the wage increases by 1000 SEK, the share of foreign labourers decreases by 0.0001 percentages. The variable wage is not significant.

Table.12 Regression results: The share of non-European employees in high wage professions

Table.12 Regression results: The share of non-European employees in high wage professions			
Variable	Coefficient	Standard Error	P> t
year	0,0007	0,001	0,552
wage	-0,0001	0,0002	0,347
immigration	0,00002	0,0002	0,905
cons	-1,295	2,269	0,568
Adjusted R^2	7,20%		

In table.13, the share of non-European labourers in high wage professions is the dependent variable. When the wage increases by 1000 SEK, the share of foreign labourers decreases by 0.028 percentages. The variable wage is significant at a 5% significance level.

Table.13. Regression results: The share of European (non-Swedish) employees in high wage professions

Table.13 Regression results: The share of European (non-Swedish) employees in high wage professions			
Variable	Coefficient	Standard Error	P> t
year	0,254	0,09	0,005
wage	-0,028	0,012	0,025
immigration	-0,004	0,015	0,798
cons	-505,736	180,098	0,005
Adjusted R^2	1,10%		

The coefficient immigration is very small and insignificant for all regressions. This means that there is no observable or trustworthy correlation between immigration and the share of migrants in a profession, in this test.

As we observe, the adjusted R^2 of the all the regressions, besides in table.6, table.9 and table.10 are below 10%. A low R^2 means that the model has a low goodness of fit and hence that little of the variance in the dependent variable is explained by the variance of the observed independent variables. This can be a consequence of the few observed variables included in the regression models. It is plausible that many different factors impact the share of foreign born labourers in different professions.

8. Limitations of the model

The previous analysis is based on non-individual data, taking few variables into account. It is plausible that missing variables might cause biasedness to the variables included, which cannot be neglected.

The few variables included in the model do also generate a general, non-complex result. Desirable variables which were not provided in the available data are educational level, gender, age and time of residence in Sweden.

Because of this, the results and conclusions from this analysis should be interpreted with consideration of the limitations of the model. However, the coefficients are highly significant and point in the same direction, thus the conclusion should not be rejected.

9. Conclusions and discussion

Initially, the theory described in this thesis indicates that an exogenous labour supply shift would decrease the wages on the labour market. If natives and immigrants are perfect substitutes they will both be equally affected by the change. However, if they are not perfect substitutes, the group which experiences the labour supply increase will be more affected. In the situation observed in this analysis, the group experiencing the labour supply increase is the immigrant, however no decrease in wages is observed. Neither is any correlation between immigration and wages found. This can possibly be because of the rigid wage system in Sweden, making the wages inflexible. Like mentioned earlier, an inflexible labour market and inflexible wages might induce that the employment level, rather than the wages, adjust to changes in labour supply caused by immigration. This was the case in Glitz's study of the case in Germany (Glitz, 2012), and could possibly also be the case in Sweden. This could also explain why the employment rate among immigrants is so much lower than that of natives, as shown in table 1.

The analysis proves that foreign born and native labourers to a high extent work in different professions. It does not tell whether this difference is caused by different preferences or by imperfect substitution. The fact remains, however, that the structural employment gap is wide and that the employment level of foreign born labourers is more volatile, indicating that they work within more insecure professions. This indicates the existence imperfect substitution between the groups.

The disposable income per person of the foreign born population is lower than income of the native population, as showed in table.2, and the gap has widened through the years 2011 to 2014. This might be because the foreign born people are in higher extent unemployed, but also because they work in different professions than native born people. This is confirmed by the results in section 7, which ratifies that the share of foreign workers is higher in low payed professions. The fact that foreign born labourers are to a higher extent unemployed or low paid is an evidence of imperfect substitution between the groups.

The negative correlation between the share of foreign labourers and wage is evident in both high and low payed professions. The effect, however, is stronger in low wage professions. This might be because the foreign born labourers who get employed in high wage sectors, which require higher qualifications, are better substitutes to natives than others. In this case, a

higher level of education might generate better substitution. Another reason why there is a less negative correlation between foreign labourers and wage in high wage professions might be that the migrants who get high wage jobs do not arrive to Sweden because of exogenous factors, but because of labour demand, which would not affect the wage negatively, according to this model. This is evident from the fact that a larger share of migrants who get employed in high wage sectors are from within Europe. European countries do to a large extent have agreements on free movement for workers, like the EES-agreement mentioned in section 4.

European labourers seem to be better substitutes to native born labourers, than non-Europe labourers, since the correlation between European labourers and the wage is less negative. This might be because European labourers are more like native labourers, due to more similar educational, cultural and social background, which makes them better substitutes to each other.

The purpose of this thesis was to answer the question whether the immigrants are perfect substitutes or not to native born labourers on the Swedish labour market. It is evident that, according with the results of this thesis, foreign and native labourers are not perfect substitutes on the Swedish labour market.

If the wages in Sweden had been more flexible, it is likely that the employment gap and thus possibly the income gap would decrease. It is not likely, however, that the negative correlation between wage and foreign labourers would diminish since this would not affect the substitution between native born and foreign born labourer.

It seems as European labourers are better substitutes to native labourers than non-European, potentially because they are more alike each other. It does also seem as foreign labourers in high wage professions are better substitutes to native labourers, than foreign labourers in low wage professions. This is possibly because higher education makes these labourers better substitutes to natives.

References

Amnesty (2016). Envar har rätt att i andra länder söka och åtnjuta fristad från förföljelse, *Vad gör vi?*. [<http://www.amnesty.se/vad-gor-vi/flyktingar-och-migranter/>] Accessed: 2016-04-22.

Akbari, A. H. and Aydede, Y. (2013). Are the educational credentials of immigrant and native-born workers perfect substitutes in Canadian labour markets? A production function analysis. *Education Economics*, 21:5, 485-502.

Arai, M. and Thoursie, S. P. (2009). Renouncing personal names: an empirical examination of surname change and earnings. *Journal of Labor Economics*, 27:1, 127-147.

Arbetet (2015). Få asylsökande har jobb trots arbetstillstånd, *Arbetet* (June 5th). [<http://arbetet.se/2015/06/05/mycket-fa-asylsokande-har-jobb-trots-tillstand/>] Accessed: 2016-06-04

Bigsten, A. and Ruist, J. (2010). *Wage effects of labor migration with international capital mobility*. Working papers in economics No. 464, School of Business, Economics and Law, University of Gothenburg.

Borjas, G. J. (2014). *Immigration Economics*. Harvard University Press, London.

Borjas, G. J. (2010). *Labour Economics*. 5th edition. McGraw-Hill, New York.

Brochmann, G., Hammat, T., Fais, T. and Tamas, K. (1997). *International Migration, Immobility and Development, Multidisciplinary Perspectives*. Berg, Oxford.

Dustmann, C., Frattini, T. and Preston, I. P. (2013). The effect of immigration along the distribution of wages. *Review of Economic Studies*, 80:1, 145-173.

Glavå, M. (2011). *Arbetsrätt*. 2nd edition. Studentlitteratur, Lund.

Glitz, A. (2012). The labor market impact of immigration: A quasi-experiment exploiting immigrant location rules in Germany. *Journal of Labor Economics*, 30:1, 175-213.

Gotfries, N. (2013). *Macroeconomics*. Palgrave Macmillan, Hampshire

Hicks, J.R. (1932). *The theory of wages*. Macmillan, London

Linkogle, M. (2014). *Shortening the Path to the Swedish Labor Market. Identifying connections in the action net renewed by Länsstyrelsen Västra Götaland's efforts to improve, strengthen and expand programs for foreign academics*. School of Public Administration, Gothenburg University.

Migrationsverket (2016). *Arbeta och praktisera under tiden som asylsökande*, Arbeta och praktisera. [<http://www.migrationsverket.se/Privatpersoner/Skydd-och-asyl-i-Sverige/Medan-du-vantar/Arbeta-och-praktisera.html>] Accessed: 2016-06-04

Migrationsverket (2016). *Asylsökande till Sverige 2000-2015*, Översikter och statistik från tidigare år. [<http://www.migrationsverket.se/Om-Migrationsverket/Statistik/Oversikter-och-statistik-fran-tidigare-ar.html>] Accessed: 2016-04-23.

Migrationsverket (2016). *Beviljade uppehållstillstånd 1980-2015*, Översikter och statistik från tidigare år. [<http://www.migrationsverket.se/Om-Migrationsverket/Statistik/Oversikter-och-statistik-fran-tidigare-ar.html>] Accessed: 2016-04-11.

Migrationsverket (2016). *Totalt antal asylsökande 2013, 2014, 2015 och 2016*, Statistik. [<http://www.migrationsverket.se/Om-Migrationsverket/Statistik.html>] Accessed: 2016-04-23.

OECD (2015). OECD Economic Surveys: Sweden 2015 (Mars) [http://www.keepeek.com/Digital-Asset-Management/oecd/economics/oecd-economic-surveys-sweden-2015_eco_surveys-swe-2015-en#page1] Accessed: 2016-03-29.

Ottaviano, G. I. P. and Peri, G. (2012). Rethinking the effects of immigration on wages. *Journal of the European Economic Association*, 10: 152–197.

Perloff, J. M. (2014). *Microeconomics with calculus*. 3th edition. Person, Boston;London.

Regeringen (2015). *Arbetsmarknadspolitiska satsningar i budgetpropositionen för 2016*, Pressmeddelanden. [<http://www.regeringen.se/pressmeddelanden/2015/09/arbetsmarknadspolitiska-satsningar-i-budgetpropositionen-for-2016/>] Accessed: 2016-05-06.

SCB (2016) *Anställda 16-64 år i riket efter yrke (3-siffrig SSYK 96), födelseregion och kön. År 2001 – 2013*, Yrkesregistret med yrkesstatistik. [http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__AM__AM0208__AM0208B/YREG13B/?rxid=dde5ec1c-4e9e-4cb2-a169-9a9853b243db] Accessed: 2016-04-06

SCB (2016) *Befolkningen 16+ år (RAMS) i riket efter sysselsättning, födelseregion, senaste invandringsår, ålder och kön. År 2004 – 2014*, Registerbaserad arbetsmarknadsstatistik (RAMS). [http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__AM__AM0207__AM0207H/BefSysFoIaAldR/?rxid=74bdf475-277e-45a1-8651-8756793b8ef8] Accessed: 2016-04-19

SCB (2016). *Disponibel inkomst per konsumtionsenhet för personer och antal år i Sverige efter födelseland. År 2011-2014*, Inkomster och skatter. [http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__HE__HE0110__HE0110F/Tab5DispInkN/?rxid=bfa23706-4dd2-42e2-b847-819be610ac6b] Accessed: 2016-04-06.

- SCB (2016). *Folkmängden efter region, civilstånd, ålder och kön. År 1968 – 2015*, Folkmängd.
[http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__BE__BE0101__BE0101A/BefolkningNy/?rxid=bbb6f58e-769e-4a45-9905-4334fcb35869] Accessed: 2016-04-19
- SCB (2016). *Genomsnittlig månadslön och lönespridning efter sektor, yrkesgrupp (SSYK) och kön. År 2004 – 2015*, Lönestrukturstatistik, hela ekonomin.
[http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__AM__AM0110__AM0110B/LoneSpridSektorYrk/?rxid=4bf2a657-31f1-40e7-b3af-864713541560] Accessed: 2016-04-06
- SCB (2014). *Integration, establishment on the Swedish labour market*, Integration Report 7.
[http://www.scb.se/Statistik/_Publikationer/LE0105_2014A01_BR_BE57BR1401.pdf] Accessed: 2016-04-01
- SCB (2016). *Konsumentprisindex (KPI) årsmedeltal totalt, skuggindex, 1980=100 efter år*, Priser och Konsumtion.
[http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__PR__PR0101__PR0101A/KPI_SkuggAr/?rxid=4ad99635-d16d-49fa-8170-134d1e5a8f47] Accessed: 2016-04-19
- SCB (2015). *Kriget i Syrien medförde rekordstor invandring*, Artikel (April 7th).
[http://www.scb.se/sv/_Hitta-statistik/Artiklar/Kriget-i-Syrien-medforde-rekordstor-invandring] Accessed: 2016-04-20.
- SCB (2016) *Standard för svensk yrkesklassificering (SSYK)*
[http://www.scb.se/sv/_Dokumentation/Klassifikationer-och-standarder/Standard-for-svensk-yrkesklassificering-SSYK/] Accessed: 2015-05-10
- SCB (2016). *Städjobb vanligt bland utrikes födda*, Statistiknyhet (Mars 16th).
[http://www.scb.se/sv/_Hitta-statistik/Statistik-efter-amne/Arbetsmarknad/Sysselsattning-forvarvsarbete-och-arbetstider/Yrkesregistret-med-yrkesstatistik/59064/59071/Behallare-for-Press/399983/] Accessed: 2016-03-28.
- SCB (2016), *Befolkning 16-74 år efter kön, ålder, nationell bakgrund, utbildningsnivå och utbildningsinriktning SUN 2000. År 2000 – 2015*, Befolkningens utbildning.
[http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__UF__UF0506/UtbSUNBef/?rxid=061f3228-afb7-43a1-ad4c-41b1db56249c] Accessed: 2016-03-30
- SCB (2016) *Utbildningsnivå 1990–2015 efter kön, 25–64 år*, Befolkningens utbildning.[http://www.scb.se/sv/_Hitta-statistik/Statistik-efter-amne/Utbildning-och-forskning/Befolkningens-utbildning/Befolkningens-utbildning/#c_undefined] Accessed: 2016-03-30
- SCB (2016). *Utrikes födda i riket efter födelseland, ålder och kön. År 2000 – 2015*, Utrikes födda.
[http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__BE__BE0101__BE0101E/UtrikesFoddaR/?rxid=b5cee08e-f86d-4d80-a3f6-968a1db27d8c] Accessed: 2016-04-19

Sigeman, T. (2006). *Arbetsrätten: en översikt*. 4th edition. Norstedts juridik, Stockholm.

Svenskt Näringsliv (2016). *Löneutveckling, BNP och KPI*, Svenskt Näringsliv .
[http://www.svensktnaringsliv.se/fragor/fakta-om-loner-och-arbetstid/foia2015/1-loneutveckling-bnp-och-kpi_619532.html] Accessed: 2016-04-07.

Sveriges Radio (2015). *Väntan på uppehållstillstånd allt längre*, Nyheter (September 17th).
[<http://sverigesradio.se/sida/artikel.aspx?programid=83&artikel=6257165>] Accessed: 2016-04-21.

The Economist (2015). Getting the new arrivals to work. *The Economist* (December 12th).
[<http://www.economist.com/news/business/21679791-businesses-could-benefit-and-refugees-integrate-faster-if-newcomers-europe-were-able>] Accessed: 2016-04-22.

Wahlberg, R. (2008). *Differences in wage distributions between natives, non-refugees, and refugees*. Working papers in economics No. 316, School of Business, Economics and Law, University of Gothenburg.