The Impact of Immigration on Unemployment and Wages

A Study of the Norwegian Labor Market

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PREFACE

This thesis was written as a final part of the Master of Science in Economics and Business Administration at Norges Handelshøyskole in Bergen.

The thesis has the title "Impact of Immigration on Unemployment and Wages", with focus on the Norwegian labor market. This topic struck me as interesting first because of the increasing debate about immigration, immigrants and their contribution to the Norwegian Economy and second because of the lack of research on the topic.

I hope that this thesis will be a valuable contribution to the existing papers and current research on the topic for Norway.

I would like to thank my supervisor, Krisztina Molnar, for taking the time to provide me with valuable feedback and assistance during the writing process.

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SUMMARY

According to the United Nations Population Fund (UNFPA), there were 191 million people living outside their country of birth in 2005. Also, net immigration accounted for three quarters of population growth during 2000-2005 in developed regions. The increase in net migration has lead to diverging perspectives on the issue. Accordingly, debate has increased about the benefits and/or harm from immigration. A suitable study of the impacts of immigration may enlighten the current debate.

This thesis studies the impact of immigration on wage and unemployment in Norway. I present a set of theories that explain the effect of immigration on the host economy. The theories presented will be assessed from a Norwegian perspective. The study also includes a summary of Norwegian immigration and economy history with focus on the developments in 2001-2006. The summary forms the base for further analysis.

Regression analysis was used to test the significance of changes in unemployment and wage using different independent variables. The results showed that the effects do not have enough statistical significance to say that immigration bids down wages and raises unemployment. After finding no statistical significance, a qualitative analysis and evaluation of the immigration and economic history of Norway is done to determine whether the changes in unemployment and wages during the period of study can be explained by changes in economic trends and indicators.

The results presented have implications for the development of immigration policies. Thus, the current Norwegian immigration policies are evaluated and discussed to determine their wisdom or otherwise based on the statistical findings.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

A growing concern about immigration is whether or not it increases competition for jobs in the receiving country, in other words, whether immigrants "rob jobs" from the natives. Various studies have been made from different countries such as the U.S., the U.K., The Netherlands, Australia and Germany to analyze the relationship between immigration and labor market outcomes. Most results show that immigration has a very small or insignificant impact on unemployment and/or wages. The fear of increased labor market competition, resulting from increased immigration, may in many cases affect the development of immigration policies. In other words, many immigration policies might be based on expectations and beliefs of what immigration will provoke in the host country's labor market. A more fit development of policies would have to be based on actual results of the effects of immigration on wage rates and unemployment levels.

The purpose of the thesis is to study the effects of immigration on Norwegian wages and employment. The idea for the topic was born after reading articles and watching debates regarding the unease of the Norwegian population about the increasing levels of immigration. Hence, in this thesis, I will test and answer the question of whether immigrants taking away the jobs of natives and lowering their wages is a reality or a plain belief. Additionally, the thesis will analyze the extent to which Norwegian immigration policies have been correctly chosen or whether different paths may have been taken based on the results of immigration effects on labor market.

To answer the previous questions, I will do a statistical and qualitative analysis. The statistical analysis will test two equations using SPSS, the unemployment equation and the wage equation. By doing a regression analysis I will test the impact that immigration, and other factors, has on wages and unemployment and how significant the impact is. The qualitative will complement the results from the statistical analysis and will include an evaluation of immigration and economic trends in Norway to find out whether changes in wages and unemployment can be explained by changes in immigration trends or changes in the economy.

There is, so far, very little research on the immigration impact in Norway. Hence, the study from the thesis will also serve to complement the existing research on Norway, more specifically, the study done by Zorlu and Hartog in 2003 on the wage impact of immigration in Norway. Unlike other existing studies that have focused on the ability of immigrants to assimilate the Norwegian labor market, this thesis focuses on how these immigrants affect the economy that receives them. However, both assimilation and impact are of great importance when determining immigration policies. Hence, the thesis will also help complement the assimilation studies.

The structure of the paper consists of five main chapters. The first chapter presents different theories about immigration and labor market. The theories used in this paper are chosen from earlier papers on country specific effects of immigration. The second chapter presents a summary of research done on Norway and other selected European countries; the Netherlands, the U.K., Germany, and Sweden. The third chapter presents an overview of Norwegian Immigration and Economy history, which will be background information for the analysis in the next chapter. The fourth chapter is the most important, it is here the qualitative and statistical analyses are done and main conclusions drawn. To limit the study, I focus on changes occurred during 2001-2006. The different theories presented will be judge from the Norwegian-perspective and the results from studies presented in chapter two will be compared to the results for Norway. The fifth chapter will focus on the immigration policies developed in Norway. This chapter reviews the 'wisdom or otherwise of changes in immigration policy', based on the results from statistical and qualitative analysis.

The data used comprises net immigration flows, immigration by country background, number of permits granted for skilled work, employment and unemployment levels of immigrants and working population, education levels of immigrants and natives, after-tax incomes, wages and salaries for both groups, GDP, number of workers in unions, and unemployment benefits. Most data is available for 2000-2007, other data is available from 1970-2007, and others are only available for given years.

1. A THEORETICAL FRAMEWORK

This chapter introduces the theoretical framework that explains the labor market impacts of immigration. The purpose is to develop a clearer understanding of how immigration can affect the labor market; and hence be able to determine if the fear that immigration will lower wages and increase unemployment is justified.

There are many theories about the relationship between immigration and the labor market outcomes. Nevertheless, a common conclusion, many of these studies have arrived to, is that there is no significant effect on employment from immigration. For instance, Pischke and Velling, who studied the German labor market in 1997 found little evidence for labor displacement. Also, Pope and Withers, studied the Australian labor market from 1861 to 1991, and found that the "the hypothesis that migrants add to net unemployment is not supported". Another conclusion some of the studies have arrived to is that educational background affects the impact of immigration on labor markets. For instance; Borjas, Freeman, Katz, DiNardio, and Abowd in their study of the American labor market in 1997 concluded that the impact of immigration on "native labor depends critically on the distribution of skills between immigrants and natives". In other words, significant impact from increased immigration may be experienced, only when the two groups have different skill levels. Friedberg and Hunt (1995) in their study of the American labor market added that the effect of immigration on the labor market also depends on the economic state of the host country and the period the study takes place.

Consequently, this paper will include theories that look at different sides of the economy. Firstly, it is important to define whether the host country has an open or a closed economy. One can then study the effects of immigration from the open and the closed economy point of view. Secondly, since much of the recent opinion around the impact of immigration depends on whether it is seen from the employers' or the workers' side, it is crucial to consider the Supply-side and Demand-side Hypothesis. Thirdly, it is vital to determine the type of unemployment in the country, the length of stay of immigrants, whether it refers to legal or illegal immigration, and how the host country defines immigrants. Finally, it is important to look at the role of unions in the host economy and how this affects the impact of immigration.

1.1 The Closed Economy Theory

Friedberg and Hunt (1995) argue that one of the most common models to study the effect of immigration on the labor market is to determine whether the economy is open or closed.

An autarky, or closed economy, is self-sufficient and not affected by influences from the rest of the world. It is normally not engaged in international trade with other economies. However, if engaged in international trade, this will be severely limited. An economy cannot be completely closed if international immigration is to be taken into account. Hence, the model of a closed economy assumes that the economy is closed after immigration has occurred.

The effect of immigration on unemployment and wages in a closed economy is based on the substitutability and/or complementarity of factors of production, labor and capital. Labor is divided in skilled and unskilled, so that the effect of immigration depends on the substitutability and/or complementarity of skilled and unskilled labor and capital between natives and immigrants.

The degree of substitutability depends on which factor the receiving country uses intensively in production as this changes the composition of labor. In other words, it depends on whether the country is skilled-labor intensive or unskilled-labor intensive and how elastic wage and employment are to changes in supply of labor. Theory tells us that in the production function, the output will be highest when the cost of inputs is lowest per units produced. An increase in supply of labor will decrease the price of this factor; hence employers will be induced to produce more labor intensive output, be it skilled or unskilled labor and immigrant or native labor. Uri (1980:2) defines this as the 'gross substitution effect'. However, since not all labor is substitutable for one another, the effect in wages and employment will depend on the immigrant flow. Skilled labor is perfect substitute for skilled labor, imperfect substitute for unskilled labor and complementary to capital.

Grossman (1982) and Friedberg and Hunt (1995) all use a model of a closed economy that follows the previous reasoning. For instance, if the receiving country uses skilled-

labor intensively, but the immigrant inflow is unskilled, the greatest effect will be on native unskilled labor rather than natives skilled. Since unskilled-labor is a perfect substitute for unskilled labor only, this means that an increase in the supply of unskilled-workers will lower the wage of native unskilled workers. When unskilled labor becomes cheaper to use, employers will desire to change from skilled labor and capital to unskilled labor. This reasoning is in accord with the economics of scale theory for which a firm will choose the production input (in this case unskilled labor) that minimizes the total cost of producing and increases the total output. Friedberg and Hunt (1995), in their analysis of the closed economy model, conclude that given the scale effects in output, which comes from using unskilled-labor, employers will need to use more of all inputs, that is, skilled and unskilled labor and capital.

In the opposite case, that is, if the receiving country uses skilled-labor intensively and there is an increase in the supply of skilled labor, from increased immigration, the skilled immigrants will lower the wage of the native skilled-workers. The wage fall will be accompanied by an overall increase in the employment of skilled-workers. Since capital and skilled-labor are complementary (when labor is divided by skills) the increased employment of skilled-workers will augment the demand for capital to be used together with the skilled-workers. The effect that an increase in the supply of skilled-workers may have on native unskilled-workers is rather ambiguous. On the one hand, there is an increased competition in the labor market and a greater need for skilled labor. On the other hand, the increase of skilled labor input will also increase the total output which means that employers will have a need to use all inputs (skilled and unskilled). Friedberg and Hunt (995) add that immigration may have an even greater impact on natives' wages if immigrants are willing to work at lower wage rates than natives are. The effect will then be two-folded, there will be an increase in the supply of skilled immigrant labor and the immigrants willing to work at lower wages will make labor more elastic than it was before their arrival.

In conclusion, according to the closed economy model, the effect of immigration on labor market outcomes will depend on the qualifications of the immigrant inflow and their substitutability or complementarity to the native-born. The analysis follows a simple review of production and scale economics theory. It is important to notice that according to the closed economy model, immigration will not only affect the size of

the labor supply, but also its elasticity to price changes (wages). In short, the closed economy model predicts that immigration will affect the labor market through wage adjustments (Friedberg and Hunt 1995). However, if wages are rigid due to union intervention, the adjustment to unemployment will come through unemployment rather than wage reduction (Friedberg and Hunt 1995). One has to be skeptical to the results of the closed economy since some of the closed economy analysis tends to separate capital from labor when this is divided by skills. Therefore, it is necessary to take into account the conclusions that can be arrived to from an open economy model.

1.2 The Open Economy Theory

This section will review how the effects of immigration on labor market outcomes are explained from an open economy model. An open economy, as opposite to the closed economy, engages in international trade. This means that capital and factors of production move freely around the countries. Consequently, on the open economy model, the impact of immigration will not only depend on factor endowments, but also on the size of immigration.

The open economy model can be related to the theory of international trade. If the international trade theory were to be linked to international immigration, Friedberg and Hunt (1995) suggest that a commonly employed study model is Heckscher-Ohlin. Trefler (1998) complements it with the factor price equalization theorem and the Ricardian model. However, as it will be clear later, these models are no absolute. It is important to consider different alternatives to identify the true benefit of immigration.

1.2.1 The Heckscher-Ohlin model

The Heckscher-Ohlin model suggests that trade arises because some countries have more availability to some factors of production than others. It tries to predict the effect that trade will have on the income of groups representing the different factors of production (Pugel 2004). In the short run, the Heckscher-Ohlin theory predicts that opening up for trade will benefit the groups that are tied to the sectors in which production increases, due to the increase in demand for that specific product. In the long run, the model predicts that the product prices will equalize between countries,

an increase in the supply of labor will decrease wages, while a decrease in the supply of labor will lead to an increase in the wages of workers for the given sector.

To understand more clearly how the Heckscher-Ohlin model relates to immigration and labor market outcomes, this section will include theories by Daniel Trefler (1998) and Friedberg and Hunt (1995). Both studies argue that the effect of immigration will depend on the quality of inputs and technology across countries. The quality of labor can change due to better labor market incentives and/or higher school quality (Trefler 1998). First, if factor endowments are similar across countries, Trefler (1998) argues that there will be no impact of immigration on labor market. Friedberg and Hunt (1995) achieve the same conclusion, by arguing that if input qualities are similar factor price equalization will occur, in this case although the increased supply of immigrants will increase total output of the labor-intensive product, factor prices will remain unchanged (Friedberg and Hunt 1995:8). Hence, the immigration benefits will be equal to zero.

Second, if countries have different factor endowments, theory suggest that a country specializes in the production of goods for which it has greater factor availability. The implications are that countries with a large labor endowment will produce goods that are labor-intensive. Friedberg and Hunt (1995) continue the analysis by suggesting that, the impact of immigration will then depend on the size both of immigration level and the receiving economy. For a small economy, and if immigration levels are large enough, theory suggests the economy will move to more labor-intensive products. A high enough inflow of labor supply will lower wages. If immigration levels are rather small, Friedberg and Hunt (1995) suggest that there will be no effect on wages. There will be an increase in output. Consequently, the country can sell these products on the world market, and thus "factor price equalization will be achieved through trade" (Friedberg and Hunt 1995:8). If the economy is large, any changes in output will change the world prices of those goods. Thus, the larger output generated by an increase in foreign labor supply, will reduce the world prices of such goods. This, in turn, will affect wages. "Any changes in wages of native groups will be accompanied by changes in native employment or hours worked" (Friedberg and Hunt 1995).

1.2.2 Factor price equalization theorem

Trefler (1998) and Friedberg and Hunt (1995) agree in that if factor price equalization occurs, then there is no economic reason for immigration to occur. The factor price equalization theorem says that "given certain conditions and assumptions, free trade equalizes not only product prices but also the price of individual factors between two countries" (Pugel 2004). In other words, and in our case, this would imply that given certain conditions and assumptions free trade would equalize the wages of workers in all trading countries, so that all workers earn the same wage. If wages are equal, the incentives for immigration will disappear. Some reasoning behind this theorem may be that, international trade forces producers to charge a common price for their goods (Trefler 1998). This implies that producers gain nothing from trade since all prices are equal. If immigration does occur, the factor price equalization theorem says that immigrants will not have any effect on the host economy, neither benefits nor losses.
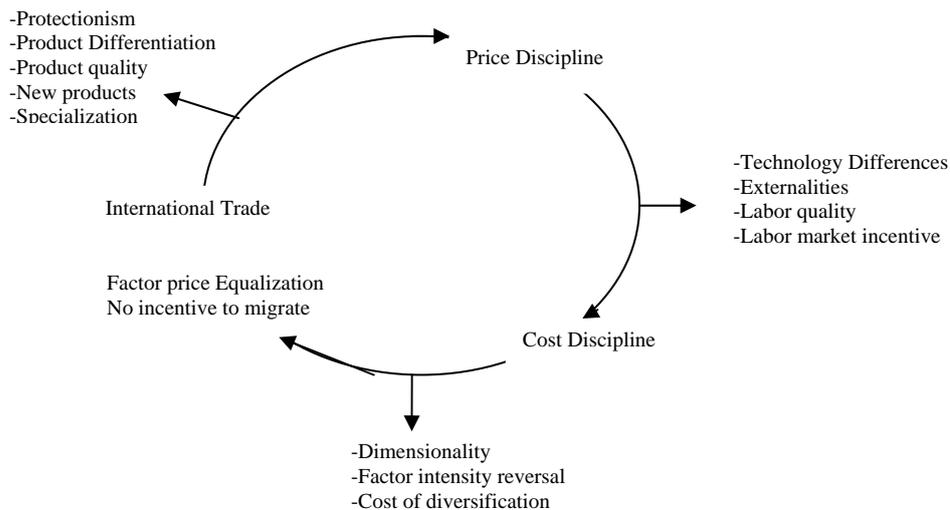
Figure 1- factor price equalization; Source: The immigration Debate 1998

However, one has to be skeptical to this reasoning given that countries are different and wage setting varies among countries. Moreover, the increasing trade and immigration rates today are a proof that the theorem most be questioned. Figure 1 shows the reasoning behind the theorem. However, as mentioned earlier no country is completely equal to one another. Hence, figure one also shows those country specific "determinants that disguise the tendency towards factor price equalization" (Trefler 1998). Factors such as technology differences across countries, the quality of labor, the protectionism against free trade, production differentiation strategies, and the role

of labor market unions make that international trade have different effects on each economy, so that factor-price equalization does not occur.

1.2.3 The Ricardian Model

The Ricardian model refers to the theory of comparative advantage. In essence, this theory suggests that even if a given country is better at producing everything, another country can still benefit from trade by producing the good for which it has the lowest opportunity cost (Pugel 2004). To study the effects of immigration on the host country according to the Ricardian model, Trefler (1998) makes use of the terms-of-trade. The results derived from the Ricardian Model are very different to those derived from the Heckscher-Ohlin theory and it no longer accounts for factor-price equalization. The basic idea is that when immigrants are employed to produce the good at which the receiving country has a comparative advantage, they will increase the output for that given good. Note that this assumption is in accord with the closed economy model in which the increase in supply of labor led to an increase in total output. Basically, the increased supply of goods created by immigration will reduce the international prices of the country's export relative to the international prices of their imports. Hence, this analysis says that immigration will have a negative effect on the host country through the reduction of its terms-of-trade. However, by focusing on the terms-of-trade only, this model fails to capture the complete picture of the benefits of immigration on labor market outcomes.

For this reason, Simon (1989) argues that international immigration and international trade theory do not go together because the gains from trade are not exactly the same as the gains from immigration. Moreover, people and goods do not move alike and neither for the same reasons. Also Borjas (1992) advocates for the inconsistency of these theories, after all "Immigration is a stock whereas trade is a flow". This is perhaps the reason why factor price equalization, the Ricardian Model and Heckscher-Ohlin fail to account for the benefits of immigration proven by many other studies. Simon's (1989) reasoning behind follows the idea that trade will benefit consumers in both countries, whereas immigration will only benefit the migrant. However, this reasoning can also be questioned, since trade theory does tell that the gains from trade will vary after country size. So, neither all consumers nor all producers gain/lose. The

argument that only the migrant benefits from immigration must also be questioned using more modern literature like the studies presented in chapter two of this paper.

In conclusion, it is clear to see that international trade theory does not identify any migration benefits. According to the Heckscher-Ohlin and Factor price equalization, there are no incentive and hence no benefits from trade. The Ricardian model, on the other hand, finds that migration has negative effects on the labor market outcomes. To complement this analysis, the following section will review a very different model to analyze the effects of immigration on labor market.

1.3 Supply-side hypothesis vs. Demand-side hypothesis

This section will present the supply-side and demand-side hypotheses to identify the winners and losers from immigration and achieve a general conclusion of the overall impact of immigration on unemployment and wages. The previous theoretical models advocate either for a negative or a non-existing effect of immigration on employment and wages. Many researchers argue that the reason for this is an increased focus on the supply side of the labor market and too little attention on the demand side. In other words, there is a prevailing focus on who loses from immigration instead of who gains from immigration.

1.3.1 The Supply-Side Hypothesis

The supply-side hypothesis analysis is based on the general labor market theory. The main focus of analysis is the effect that a change in labor or wages may have on the native workers. Thus, this section will offer an overview of the simple supply-demand curve to review how employment and wages interact in the labor market curve. Later on, the analysis will include immigration and try to deduce the effects of immigration on labor market from the general labor theory analysis.

To begin with, recall from the previous section that the effect of immigration will be greatest depending on the substitutability of immigrants to natives. Thus, this section will assume that immigrants are perfect substitutes for natives. Besides the changes in wage and unemployment, it is important to consider the changes in output. After all,

"what affects a country's production potential is, among other things, the number of workers and their qualifications" (Gärtner 2006:142).
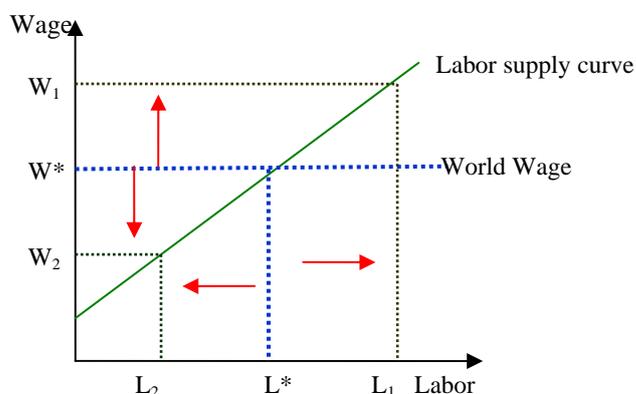
Figure 2 - The Classical Labor Market; Source: Macroeconomics (Gärtner 2006)

Figure 2 illustrates the standard labor supply curve, it shows how people's willingness to work will change according to the wage received (how much it costs to work). The upward-sloping supply curve indicates a positive relation between wage and labor. An important assumption made in this paper is that wages are perfectly flexible and hence, changes in labor supply will be cleared by changes in the real wages. At a wage level of W^* the labor force will be represented by L^*, this is the equilibrium point between supply and demand for labor. If wages were to increase from W^* to W_1, people will be more inclined to work and hence the supply of labor will increase from L^* to L_1. However, not all who wish to work would manage to find a job; this results in an excess supply of labor (Gärtner 2006:148). With an excess of labor supply, the labor market will be in disequilibrium. The only way in which the market can achieve equilibrium again will be if wages are pushed down back to W^*. If, on the other hand, wages were to decrease from W^* to W_2 workers will not be as inclined to work. Thus, the labor force level would be reduced from L^* to L_2. At this point, firms would want to employ more labor that what is available (Gärtner 2006:148).

With regard to international immigration, the analysis is rather similar, only in this case the increase in supply of labor is a result of immigration. When immigrants move from one country to another, it is normally due to incentives in that economy, these incentives may be higher wages and/or better market conditions. As immigrants raise the supply of labor in the host country the wages will decrease to clear the market. As

a result both the cost of immigrants (wages) and the natives will be lower than before immigration. However, this is not a proof of increased unemployment. The reason is that the labor market is not static; there are always people who leave jobs and others who get them (Gärtner 2006:163). Consequently, if the amount of people that enter the labor market is larger than the amount that leaves (or does not manage to enter) the labor market, the total employment will increase, instead of decrease. Hence, the fear that immigrants will increase unemployment in the receiving country is not completely justified. In other words, while immigrants do compete for jobs with natives, (and manage to enter the labor market unlike other natives) unemployment levels will not necessarily increase.

Another reason why the supply-side hypothesis seems to advocate for the detrimental effects of international immigration is due to minimum wages. The most significant effect for our analysis of international immigration will be when minimum wages are set at a higher level than world wages; thus, it is not really relevant to consider minimum wages lower than the world wages. Suppose minimum wages in the labor market are set above $W*$ in figure 2, at this rate employers will demand less labor than what is offered since the "unit labor costs rises as the real wages rise" (Gärtner 2006:157). As long as the wages are high people will continue to offer labor. Also, immigrants will be induced to immigrate to the country with better wages; however as wages are fixed, the increase supply of labor through immigration will only result in unemployment (Gärtner 2006:151).

In conclusion, the supply-side theory focuses on the wage losses of native workers. However, the results achieved can be rather ambiguous because effects do not seem to be as detrimental when wages are perfectly flexible. However, effects seem to be very negative when wages are fixed. Nonetheless, it is also important to look at the demand side of the economy to determine the overall effect of immigration.

1.3.2 The Demand-Side Hypothesis

From the previous section, it was possible to see that immigration may have negative effects on natives due to decrease in wages. This effect is greater if the immigrant inflow possess the same skill levels as the natives. Borjas (2005) suggests that, despite

the previous analysis, immigration might have a positive effect on the host country. For this reason, it is important to identify and analyze the magnitude of these contributions through the Immigration Surplus.

Throughout this analysis, Borjas (2005) wishes to find out whether immigrants in fact offer any benefits to the native population, if so, where these benefits may come from, how these benefits reach the natives and how large they are (Borjas 1995:3). This part will conclude that natives benefit from immigration, although the benefits are small, governments can increase them by having a more open immigrant policy. The analysis assumes a perfect competitive market with full employment. To get a better understanding of this immigration surplus, the analysis will be based on a standard supply-demand labor curve.
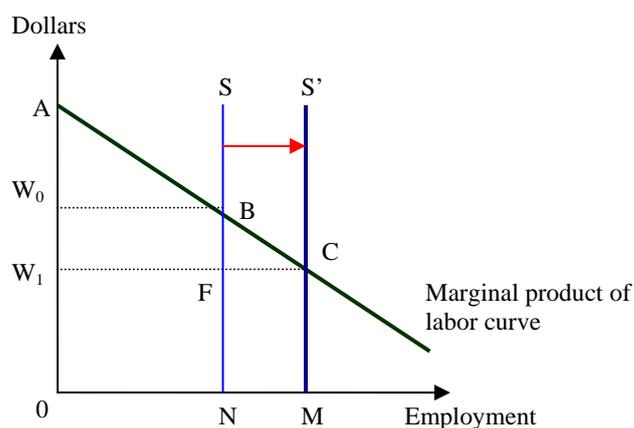
Figure 3 - The immigration Surplus; Source: Labor Economics (Borjas 2005)

Figure 3 presents the standard supply-demand labor curve. For simplicity reasons, the labor supply curve is assumed to be inelastic (Borjas 2005:338). In other words, the supply of labor does not depend on the price of labor, that is to say, no matter what the wage is workers will supply a given amount of labor N. The marginal product of labor curve is also the demand curve. In this paper, it is called the marginal product of labor to indicate how much a unit of labor is worth to the firm (Gartner 2006:145). To begin with, assume there are no immigrants in the workforce so that N represents the native workers only. Figure 3 show that N native workers supply labor at a wage of W_0. When the labor force is composed only by native workers, the area below the marginal product of labor curve gives the total output of the workforce (Borjas

2005:338). The sum of the rectangular area and the triangle indicate the price of labor times the amount of workers available; accordingly, the area *ABN0* measures the income accruing to natives.

When immigration occurs, the impact of immigrants on the natives' wage and employment will depend on the substitutability of immigrants to the natives (as mentioned under the closed/open economy analysis). Hence, the impact will be greatest when immigrants and natives are perfect substitutes. This will move the supply curve to the right, so that the new labor is indicated by *M*. The new wage rate after immigration is W_1; the inflow of immigrant workers has lowered the wage rate. Just as before immigration, the national income is represented by the area below the demand curve, *ACM0*. The difference now is that the income will be divided by natives and immigrants. The total income accruing to immigrants will be the wage they receive times the supplied amount of labor; in other words, area *FCMN* in Figure 3. The triangle *BCF* shows the income increase accruing to natives (Borjas 2005:338). This is the difference between the wage before and after immigration and the increased supply of labor. It is also easy to see that natives will lose the area W_0BFW_1, as a result of immigration. Borjas (2005) argues that this quantity native workers lose is gained by the native employers. Thus, although natives experience a wage loss, this will be "offset by the increase in income accruing to native-owned firms" (Borjas 2005:338). The income accruing to native-owned firms will be *BCF* plus W_0BFW_1.

Borjas (2005) calls the area *BCF* the *Immigration Surplus*. The argument offered for the immigration surplus, lies in the idea that immigrants will normally work at a lower wage rate than natives do, while the production level is expected to be the same since they are perfect substitutes. They will cost less than what they produce (Borjas 2005). A handy use of the immigration surplus would be to compare it to the fiscal costs of having immigrants; that is the cost of services provided to them (Borjas 1995:8). Moreover, Borjas (1995) argues that most of the fear on the detrimental effects of immigration on labor market originates because of the focus given to the wage that is taken away from the natives and not on the efficiency gains, that is the immigration surplus. Appendix A shows how to calculate the immigration surplus by its money value and as a percentage of GDP.

Despite the ability of the demand-side hypothesis to prove the benefits of immigration on the labor market, there are a couple of factors that may weaken the model. Firstly, the calculations assume that only labor endowment and not capital stock increases. Borjas (1995) argues that the immigration surplus might be smaller if immigrants bring in capital. Secondly, the model assumes that immigrants do have an impact of the wages of natives. However, as it will be presented in section 2 of the paper, many studies show that immigrants do not have a significant impact on the wages of natives (Borjas 1995:9). In spite of this, one cannot neglect the fact that immigration does expand the labor market, and however weak, one may expect a wage fall when labor supply increases. Also, from Figure 3, it can be deduce that the economic effects of immigration occur only when immigration does lower the wage of natives. Hence, a fall in the wage of natives does not signalize a detrimental effect on the labor market.

In conclusion, the demand-side hypothesis, tries to account for the overall benefit of immigration by arguing that despite the wage fall native workers might experience, there will be an overall increase in the income accruing to them. In other words, even though immigrants lower the wage of native, their presence in the labor market will increase the total GDP. Thus, the economy as a whole will gain from immigration.

1.4 Complementary factors to the theoretical analysis

This section looks at different factors that alter or change how a given economy is affected by immigration. Despite the increasing levels of globalization, countries remain different in the various aspects of their economy. This will affect the impact of immigration from country to country. Therefore, it is important to complement the theoretical analysis with given country specific factors.

1.4.1 Type of Unemployment

It is vital to consider the type of unemployment in the host economy. Unemployment can be frictional when both employers and workers "need time to allocate each other" (Borjas 2005:483). This may be a result of industries undergoing structural changes. Frictional unemployment does not distort the effect of immigration on the labor market.

Unemployment can be seasonal, so that some industries and workers are more active in some seasons than others. Many countries experience high inflow of foreign workers during active seasons, like the summer, and leave the country after the season is over. Hence, immigration impacts on employment and wages may be different if studied during different seasons.

Unemployment can be structural if "there is a mismatch between the skills that workers supply and the skills that firms demand" (Borjas 2005:484). This mismatch might induce firms to attract foreign workforce to fill the available positions. Hence, unlike seasonal and frictional unemployment, structural unemployment will have a great effect on the perception of increased immigration in the labor market since immigrants will occupy the jobs that natives are not able to.

Unemployment can be cyclical if "there is an excess supply of workers and the market cannot clear because wages are fixed" (Borjas 2005:484). In this case, an inflow of immigrant workers will only result in increased unemployment. Thus, the perception of immigrants in the host economy will be rather negative if the economy experiences a cyclical unemployment at the time immigration occurs.

1.4.2 Legal versus Illegal Immigration

It is also central to consider whether the country has large levels of legal immigration compared to illegal immigration or vice versa. Most data on immigrants' wages and labor market participation is available for legal workers only. Hence, studies of the effects of immigration may be distorted given that data on illegal immigrants is not available. Moreover illegal immigrants will normally be limited to taking certain jobs, while legal immigrants are normally not constrained (Friedberg and Hunt 1995).

1.4.3 Definition of Immigrants versus Natives

It is important to differentiate between immigrants and natives. Some countries grant citizenship based on residence or place of birth, some others require that at least one parent be a national, and others grant citizenship on grounds of ethnicity and not place of birth or residence. How a country defines natives and immigrants will affect the impact of immigration since it affects the data available for immigrants and natives.

1.4.4 The Length of Stay

It is also essential to consider the length of stay of the immigration flow, whether immigrants come to stay permanently or just for a short period will affect their perceived effect on the host economy. This will also affect the spending and saving patterns and the capital changes. Moreover, whether it is the skilled or the unskilled who stay will give different effects. After all, the effect of immigration on the labor market of the host country is greatest when the degree of substitutability between the two groups is strongest.

1.5 The role of the Unions

This section discuses the role of unions in the labor market. The importance of studying the role of unions varies with the country in focus. Norway is a country with high levels of unionization. According to data from Statistics Norway almost 50% of the working population belongs to a union. Thus, in such case, it is vital to consider how unions alter the impact of immigration on labor market.

Unions aim at increasing the well-being of their members by raising wage and employment rates. So, unions will normally influence "employment contracts, hours of work, wages, fringe benefits, labor turnover, worker productivity, job satisfaction, and the firm's profitability" (Borjas 2005:400). The role of monopolistic unions may distort the impact of immigration on the labor market since unions will set the wage of workers while firms can only determine how much labor to demand based on the wages set by the union (Borjas 2005:411). Because demand for labor is elastic, this will react to the changes in wage, so some workers might lose their jobs given that "the unit cost of labor raises as wages raise" (Gärtner 2006:157). If demand for labor could not respond to changes in wages, the unions could achieve a higher well-being for the members since jobs would not be sacrificed; however this may reduce the contribution of workers to the national income (Borjas 2005), since wages are higher but employment and productivity are the same. When immigrants are a part of the given labor market, and unemployment levels raise, natives may be inclined to believe that immigrants increase this problem. So, this may help understand why many believe immigration is bad for an economy and on what grounds governments base

their policy-making. However, in this case the raise in unemployment will result from union intervention and not immigration.

The effect unions have on immigrants can be ambiguous. Unions can either benefit or harm immigrants. Some unions can support immigrants on the job searching process and the establishment of contracts with firms to secure a fair treatment and easy adjustment in the labor market. Other unions may prioritize native workers. Hence, not only do unions affect wage setting and labor conditions, but they also might influence the adjustment of immigrants to the labor market. This in turn will affect the performance of immigrants in the host economy and distort their impact of wages and employment.

2. EARLIER STUDIES ON IMMIGRATION-LABOR MARKET EFFECTS

This section will present earlier studies about the effects of immigration on labor market for different countries. There are three reasons why these studies are included here. Firstly, there is almost no research about the impact of immigration on unemployment for Norway. Secondly, the research that exists about the impact in wages sets a great focus on changes in the wages of immigrants and their assimilation to the Norwegian market. Third, the studies presented will help analyze the impact of immigration in the Norwegian labor market.

2.1 Three Norwegian studies

2.1.1 Zorlu and Hartog (2003)

One of the few studies about Norway is that of Zorlu and Hartog (2003). They study *the effect of immigration on wages in three European countries*, including Norway in 1989 and 1996. Some general findings are that non-OECD immigrants in Norway have a disadvantaged labor market position with earnings lower than those of OECD-immigrants, and that OECD-immigrants have comparable earnings to Norwegians.

The study estimates wage elasticities in 1989 and 1996 for natives and immigrants. It is shown that the "impact of **pooled immigrants** is positive on the wages of low- and medium-skilled workers" (Zorlu and Hartog 2003:18). Nonetheless, the elasticities calculated are rather low; 0.07 in 1989 to 0.025 in 1996 for low-skilled workers and 0.092 in 1989 to 0.015 in 1996 for medium-skilled workers. The elasticities of high-skilled immigrants are negative, -0.088 in 1989 to -0013 in 1996, meaning that high-skilled immigrants have a negative impact on the wages of high-skilled native workers. However, the study shows that the elasticities from the **pooled immigrants** are not significant. In other words, the decrease in the wage of natives is not significant. The study states that the Nordic immigrants comparable in quality with skilled Norwegians can be perfect substitutes to Norwegian workers and hence, decrease their wage. On the other hand, they will increase the wage of the group with which they are imperfect substitutes, unskilled workers. This explains why the elasticity of low and medium skilled is positive (Zorlu and Hartog 2003:17).

2.1.2 Hayfron (1997)

Another study was made by Hayfron (1997) about *the performance of immigrants in the Norwegian Labor market*. The study includes immigrants who arrived in 1970-1979 and their earnings development by 1980 and 1990. Hayfron's study shows that "the immigrant group from 1970-1979 experienced an earnings increase of 11% in 1980 and 1990 and reveals a divergence between the earnings of immigrants and natives" (Hayfron 1997:2). Note that this study focuses on the earnings development of immigrants and their divergence to that of the natives instead of the impact of immigration on the wages of natives. However, an important remark from this study is that different arriving groups show different earnings assimilation.

2.1.3 Bernt and Bratsberg (2000)

Bernt and Bratsberg (2000) wrote about the *labor market assimilation of immigrants in Norway*. However, they consider both changes in wages and in employment. Some relevant conclusions from Bernt and Bratsberg's (2000) study are that immigrants have a labor force participation that is significantly lower from those of natives in 1990. They also show that immigrants from Central and South America, Africa and post-1980 immigrants from non-OECD Europe and Asia have low earning profiles, while the immigrants from OECD-countries do rather well in the Norwegian market. This result is also consistent with the study of Hayfron (1997) as presented above.

2.2 The Dutch Study

Zorlu and Hartog (2003) study the Netherlands and the immigration impact on wages. The Dutch study focuses on guest workers (Zorlu and Hartog 2003:5). Just as in the case of Norway, they find that the presence of ethnic minorities from the EU have a positive effect on the wages of low-skilled natives and negative effect on the wages of high-skilled natives. Non-EU immigrants, however, have a negative effect on the wages of low-skilled natives and a positive effect on the wages of high-skilled workers. However, the effects have little or no significance among native's wages. The effects are higher when measure among immigrants themselves. These results are similar to those found for Norway.

2.3 The U.K. Study

Zorlu and Hartog (2003) also study the United Kingdom. The research on immigration impact on British labor market focuses on "non-white immigrants and their descendents". The results from the U.K. study show that black and Pakistani people have a negative effect on the wages of whites, while Indian and mixed have a positive effect (on all skill categories). This indicates that low-skilled blacks and Pakistanis are substitutes for white workers, and high-skilled Indian and mixed are complement for white workers (Zorlu and Hartog 2003:15). The elasticities for each different immigrant groups are quite large; however, the effect of **pooled** immigrants does not show to be significant.

2.4 The German Study

Pischke and Velling (1997) study the *employment effects of immigration to Germany*. This study looks at local labor regions rather than on the country as a whole. Since this study takes into account local labor markets, there are different assumptions taken here than for Norway. However, Germany is in many ways similar to Norway given that the role of the unions in wages setting processes is rather significant for the impact of immigration for both countries. In general, Pischke and Velling (1997) found little evidence for displacement from immigration and also identified that immigrants had lower participation rates than natives. However, they did find a little evidence that shows a negative effect of immigration on employment and unemployment. Nonetheless, this evidence may be attributed to movements within the local labor regions studied.

2.5 The Swedish Study

Sweden is similar to Norway in that they both received most part of its immigrants from the Nordic countries. Jan Ekberg (1983) studies the income effects of immigration to Sweden. He identifies a small additional income to the Swedish from increased immigrant labor. In other words, there was an increase in disposable income in Sweden, although rather small. This has an effect on economic growth and relates to the 'immigration-surplus theory'.

3. TRENDS IN NORWEGIAN IMMIGRATION AND ECONOMY HISTORY

This chapter offers an overview of the Norwegian immigration and economy history with special focus on immigration and economic trends during 2001-2006. The data will complement the qualitative and statistical analysis in chapter four.

3.1 Norwegian Immigration History – An overview

This section offers a short overview of the Norwegian immigration history. Norway has had net immigration since the late 1960's (SOPEMI report 2007) but it was until mid 1980's that immigration became significant. It was in this time that asylum seekers started to flow into the country (NOU 2004:20). Yet, it is important to note that in Norway immigrants are considered to be those who plan to stay 6 months or longer. Hence, asylum seekers are not registered as immigrants until settled in a municipality and with a positive outcome of their application (SOPEMI report 2007). Immigration flow to Norway has increased almost continuously since the late 1980's. Between 1986 and 1996 the immigration flow was between 20 000 and 30 000. From 1996 and until today immigration has increased by around 33% compared to previous levels. Table 1 below gives an overview of migration from 2000 to 2007.

	2000	2001	2002	2003	2004	2005	2006	2007
Inflow	**36 542**	**34 264**	**40 122**	**35 957**	**36 482**	**40 148**	**45 776**	**61 774**
Foreigners	27 785	25 412	30 788	26 787	28 314	31 355	37 425	53 498
Nationals	8 757	8 852	9 334	9 170	8 618	8 793	8 351	8 276
Outflow	**26 854**	**26 309**	**22 948**	**24 672**	**23 271**	**21 709**	**22 053**	**22 122**
Foreigners	14 931	15 216	12 273	14 345	13 856	12 628	12 490	13 324
Nationals	11 923	11 093	10 675	10 327	9 415	9 081	9 563	8 798
NetMigration	**9 688**	**7 955**	**17 174**	**11 285**	**13 211**	**18 439**	**23 723**	**39 652**
Foreigners	12 854	10 196	18 515	12 442	14 008	18 727	24 935	40 174
Nationals	-3 166	-2 241	-1 341	-1 157	-797	-288	-1 212	-522

Table 1-Migration flows 2000 – 2006; Source: Statistics Norway (SSB)

The total immigrant flow of 53 498 in 2007 is by far the highest ever recorded. Also, the net immigration of 39 652 in 2007 is by far the highest ever recorded. There has been emigration too over the years. This is "mostly determined by economic cycles in Norway or exceptional events as the return of many Kosovars during 2000-2001"

(SOPEMI report 2007). Immigration has been represented evenly by men and women but for countries like Poland, from where most workers arrive, about 80% were men (SOPEMI report 2007). Today immigrants in Norway account for 9.7% (or 460 000) of the population and represent 213 countries and regions. Figure 4 below shows the immigration flow from 1970 to 2008 according to nationality.
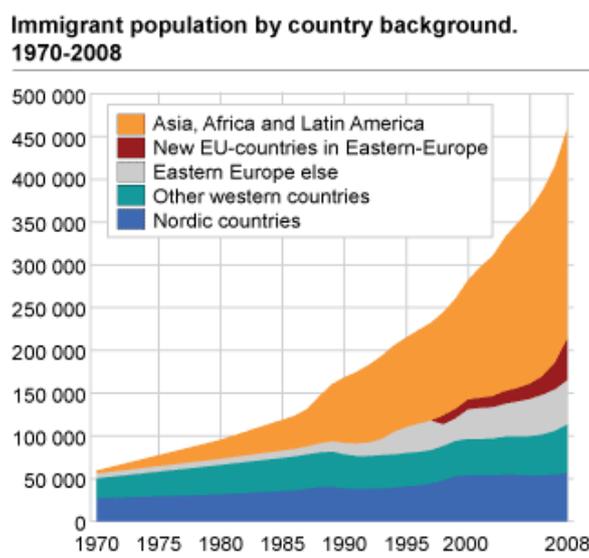
Figure 4-Immigrant population by country background; Source: Statistics Norway (SSB)

Figure 4 shows that first generation immigrants were mostly from Nordic and western European countries and a few from Asia, African and Latin America. Most came from Poland, Sweden, Denmark and Iraq. Since the 1980's the share of Asian, African and Latin American increased significantly. In fact, "the annual average almost doubled from 6 300 yearly for the period 1986-1990 to 11 800 from the period 1996-2000, and increased further to 13 600 for the period 2001-2005. Immigration from Nordic and Western European countries stayed more or less the same. From 2005 to 2006 there was a total increase of almost 5 300 persons in immigration. The Nordic and west European groups are still dominated by Polish, Swedish and Danish groups. In fact, there are about 56 000 immigrants from the Nordic countries and 57 000 from the rest of Western Europe (and North America)[1]. Figure 4 also shows that from year 2000 not only does the share of Asian, African and Latin American increase, but also new immigrants from the new EU-countries and Eastern Europe started to come so that

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[1] http://www.ssb.no/english/subjects/00/00/10/innvandring_en/

they account for 48 000 of the immigrant population. Turkey, other countries in Asia, Africa and South America make up 246 000 of immigrant population[2].

To give a better depiction of the dominant immigrant groups in Norway, figure 5 below shows the 15 biggest immigrant groups in Norway per January 1, 2008. The figure shows the share of persons born in Norway with two foreign-born parents. It is clear from figure 5 that the largest immigrant groups come from Poland and Asian countries pooled together (Pakistan, Iraq, Iran, Turkey) but also the Nordic countries (Denmark and Sweden) are still predominant in Norway.
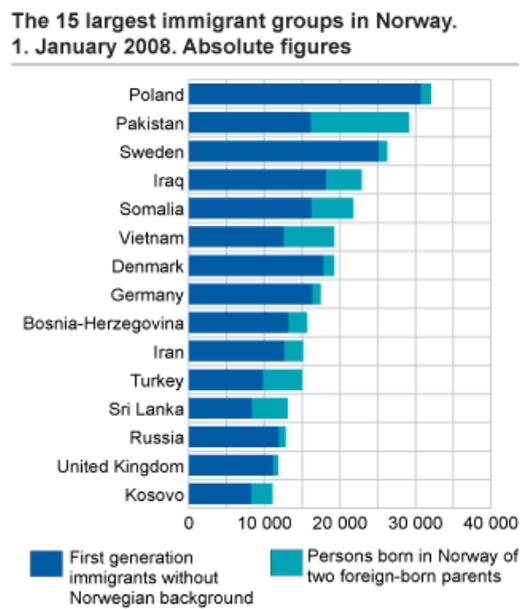
Figure 5- the 15 largest immigrant groups in Norway; Source: Statistics Norway (SSB)

3.1.1 Labor Immigration

Although the section above offers a general overview of immigration trends, the main focus should be on labor immigration. Figure 6 below depicts the number of residing immigrants in Norway according to immigration category for the 1990-2006 periods. Figure 6 show that the largest immigration categories have been family reunification and refugees. Family reunification had kept high and stable levels of 5 000 until 1996. Between 1996 and 2001 family reunification had almost doubled. In 2001-2003 family reunification increased to around 14 000. Refugees were predominant during 1992-1994 but later on decreased to around 1 000. The number of refugees increased quite noticeably during 1998-2001, but fell just below 5 000 in later years. Labor

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[2] http://www.ssb.no/english/subjects/00/00/10/innvandring_en/

immigration has had historically lower levels than the previous two categories. Between 1990 and 1996 there were slightly more than 1 000 labor immigrants. Labor immigration started to grow slowly after 1997, but it was after 2003 that it started to increase noticeably. In 2006 there were 29 500 new non-Nordic immigrant workers registered. Nordic citizens are not registered as immigrant workers since they do not need working permits (SOPEMI report 2007). By 2006 labor immigration was the largest category. Workers from Poland accounted for 60% of total labor immigrants.
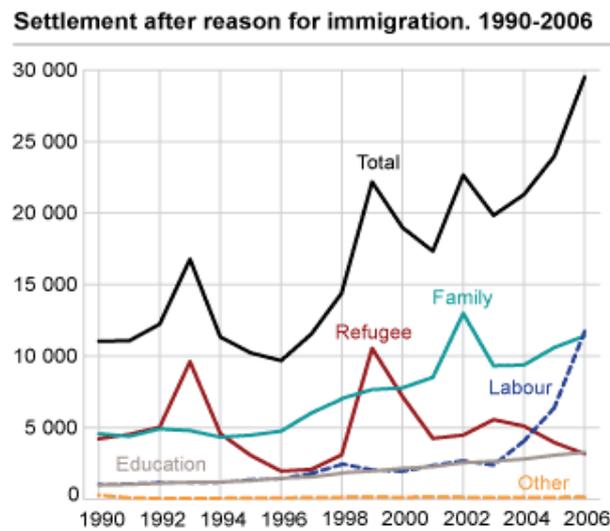
Figure 6- Settlement after reason for immigration 1990-2006; Source: Statistics Norway (SSB)

Education immigration has, since 1992-2003, been at nearly the same level as labor immigration. The 2007 SOPEMI report shows that around 38% of immigrant students in Norway are granted residence after ended studies. This implies that many become part of the labor market and hence labor migrants. The report also shows that in 2006, "40 500 new working permits were granted, this is an increase from 28 400 in 2005. 29 100 of permit-holders were from the new EEA-countries (including Bulgaria and Romania). Moreover, working permit renewals accounted for 30 300 in 2006, an increase of 36% from 2005. 25 800 of the renewals were granted to nationals from the new EEA-countries. Combining new permits and renewals, there was an increase of more than 20 000 permits from 2005 to 2006" (SOPEMI report 2007:17). Part of this increase in working permits and renewal is due to the EEA-enlargement, which had noticeable consequences for labor immigration in Norway.

Before 2006, the larger majority of immigrant workers with nationalities outside the EEA-countries were mostly granted permits for seasonal work. Table 2 below gives an overview of permits granted for high-qualified jobs like IT and engineering, also called 'skilled work permits'. From 2001 to 2007 India, China, Russia and U.S. were the countries with the largest representation. Up until 2005 most skilled workers were from the U.S. followed by Russia. In 2006 and 2007 the largest group was from India. In 2007 the number of Indians who were granted a skilled work permit increased by 92% compared to 2006. In total there were more permits granted for skilled work in 2007, reaching a total of 2 908, an increase of 45% from the year before. Between 2001 and 2007 there was an increase of 2 131 skilled workers.

	2001	2002	2003	2004	2005	2006	2007
India	52	53	47	36	105	322	617
China	21	39	29	22	103	112	205
Russia	43	81	58	68	147	200	253
USA	64	129	100	97	164	184	232
Others	597	1374	893	524	759	1193	1601
TOTAL	**777**	**1676**	**1127**	**747**	**1278**	**2011**	**2908**

Table 2- Permits granted for skilled work 2001-2007; Source: UDI and SOPEMI report 2007

If we consider the number of skilled workers as a percentage of employed immigrants by country of origin in 2006, we find that the majority of skilled labor immigrants are from India. Skilled workers from India are 10.7% of total employed Indians. The U.S. follows next with 5.8% skilled immigrants of total employed Americans. There are 4.5% skilled Chinese workers of total employed Chinese. Iraq and Sri Lanka have the lowest percentage of skilled workers. Only 0.07% of workers from Sri Lanka are skilled workers, and 0.034% of workers from Iraq are employed in skilled labor. The top-five countries with most labor immigrants are Sweden (16 769), Poland (11 274), Denmark (10 385), Germany (8 460), and Bosnia (7 651). However, only 0.15% of Polish workers are employed in skilled labor; 0.12% of German workers and 0.43% of Bosnian workers are employed in skilled labor. The statistics for 2006 do not show how many workers from Denmark and Sweden are employed in skilled labor. Appendix D shows the number of skilled workers and as a percentage of total workers by country for the 17 largest immigrant groups in Norway in 2006.

3.1.2 Labor Market

Just as the immigration rate has increased significantly over the past years in Norway, the employment rate has also increased. Table 3 provides an overview of employment rates for immigrants as a percentage of total employment from 2000 to 2006. The rate of immigrant employment has increased steadily during the years presented. In 2006, the rate of immigrant participation in the Norwegian labor market was 60.1% of total working population (70%). In absolute numbers this represents an increase of 21 652 employed immigrants. Moreover, the employment rate of immigrants in Norway has increased by 9.2 percentage points or 70 243 between 2000 and 2006.

	2000	2001	2002	2003	2004	2005	2006
Population	61.1	60.8	70.1	69.4	69.3	68.5	70.0
Immigrants	50.9	51.3	57.5	56.6	56.6	57.1	60.1

**Table 3- Employment rates of immigrants as percentage of total population employed 2000-2006
Source: Statistics Norway (SSB) and SOPEMI report 2007**

When divided by country of origin, statistics show that immigrant workers from the Nordic countries had the highest employment rate of 73.5%. Immigrant workers from the EU and Eastern Europe had an employment rate of 71% while immigrant workers from Africa had the lowest participation rate at 45.2%. However, it was Africans who experienced the highest increase in employment from 2005 to 2006. Immigrants from South and Central America had the highest employment rates among non-Europeans[3]. The variations in employment rates among immigrant groups may be explained by the 'differences in education and age structure'. Moreover, due to cultural factors some immigrant groups may not be supportive of women in the labor market. This lowers the employment rate of immigrants (SOPEMI report 2007:17).

Despite the increasing levels of employment among immigrant workers, the levels of unemployment are still considerably larger than that of the total population. There are various factors that may contribute to the unemployment problem among immigrants. Among the most significant issues are the "inadequate knowledge of the Norwegian language, insufficient or unrecognized education, lack of work experience from - and knowledge about - Norwegian working life, and last but not least discrimination in the labor market" (SOPEMI report 2007:49).

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[3] http://www.ssb.no/emner/06/01/innvregsys/

Figure 7 below illustrates the unemployment rates among immigrants by country of origin during 1989-2007 as a percentage of total labor force. Figure 7 also shows the development in total unemployment for all immigrant groups pooled together.

**Registered unemployed aged 16-74, by country
background. As a percentage of the labour force.
End of November 1989-2007[1]**

¹ Break in the time series in 1999 due to changes in the definition of
unemployed.
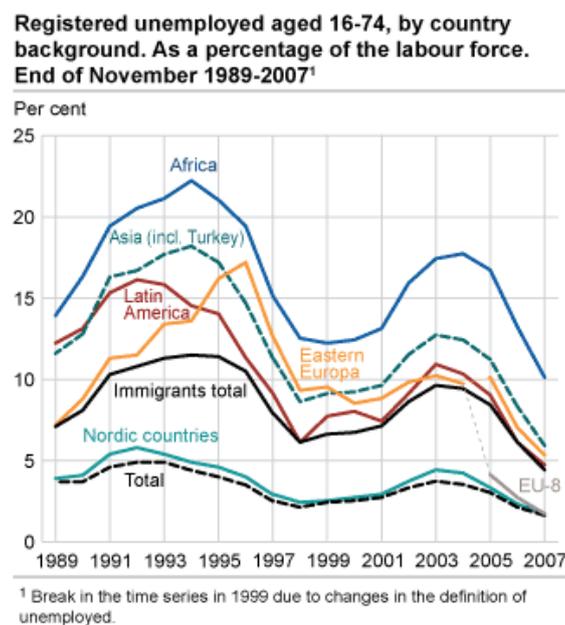
**Figure 7- registered unemployed aged 16-74, by country of origin. As a percentage of the labor
force 1989-2007; Source: Statistics Norway (SSB)**

Pooled together immigrants had an unemployment rate of 5% in 2007. This is a clear decrease from 2006 when the unemployment rate was 7.3%. During the same period the unemployment rate for the total population decreased from 2.5% to 1.7%. Figure 7 shows that the unemployment rate was highest during 1991-1996, reaching over 10%. There was a significant decrease between 1996 and 2001. From 2001 to 2005, unemployment among immigrants increased. The highest recorded unemployment rate in the periods 2001-2007 was in 2004, reaching 9.8%. Unemployment has fallen since 2005. It is noteworthy that, the unemployment rates reflect only those who are registered at the labor and welfare service. Thus, it does not give an absolute picture of total unemployment (SOPEMI report 2007).

When considering country background, Africans have had the highest unemployment rates. In 2007 Africans had an unemployment rate of 11.2%. Between 1991 and 1996 Africans had unemployment rates over 20%. This may be explained by the fact that 'there are many refugees with short time residence among Africans compared to other

groups' (SOPEMI report 2007:50). As shown in figure 7, Nordic citizens and Western Europeans had almost the same unemployment rate as Norwegians.

As mentioned earlier, much of the unemployment problem among immigrants can be explained by the different levels of education among groups. Figure 8 below shows the level of education for the immigrant population aged 30-44 in 2001.
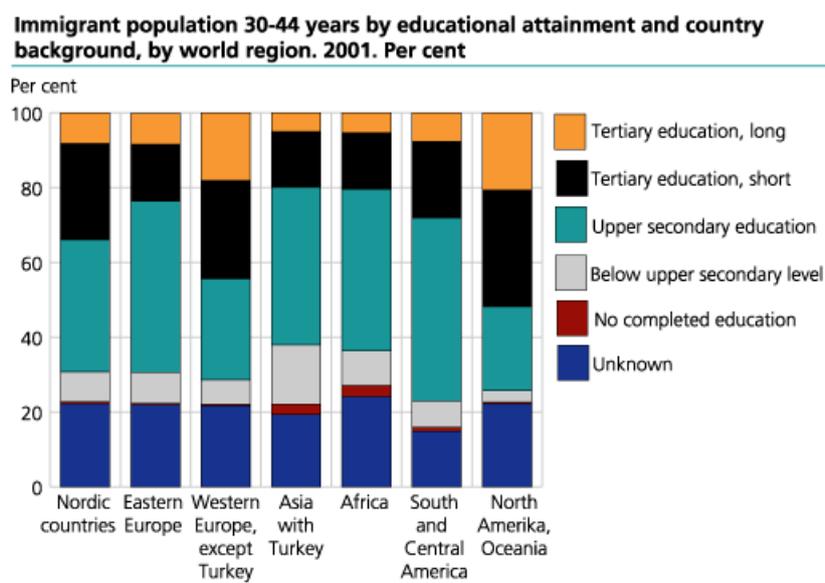
Figure 8- Immigrant population 30-44 years by educational attainment and country background Source: Statistics Norway (SSB)

Many immigrants have upper secondary education and very few have long tertiary education. Nationals from the Philippines, Russia, Poland and India have higher levels of education compared to other immigrants. Among immigrants from non-European countries, 15% have only completed elementary school. 8% of European immigrants have only completed elementary education. In total, 1.6% of immigrants have only completed primary school. Immigrants from European and Nordic countries pooled together have on average higher education than other immigrants. However, North Americans, Asians and Russians have the highest level of highly educated workers (long tertiary education). In a research in 2001, Statistics Norway calculated that immigrants have higher education than non-immigrants. Of all immigrants, 27% have short to long tertiary education; 21.5% of non-immigrants have the same level. Somalia is the country with largest levels of illiterate people, reaching 31.5%[4].

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[4] http://www.ssb.no/samfunnsspeilet/utg/200102/7.shtml

Another important figure to look at is the income and wage levels among immigrants. There was no data for every year between 2001 and 2006, only for 2002 and 2003. Table 4 shows wage and income after taxes and interest payments/housing-incomes per person/main income-earner for registered and married couples with and without children. Wage and Income are arranged by region and include both first and second generation immigrants. In 2002 an income-earner from North America and Oceania had the highest total income, followed by the Nordic Countries. Income-earners from Asia, Africa, South & Central America, and Turkey had the lowest total income for 2002. The immigrant groups with the highest wage are from North America and Oceania. Western Europeans have higher levels than the Nordic Countries. In 2003 income-earners from the Nordic countries had an income increase of 5% and a wage increase of 2%. Income-earners from North America and Oceania had a fall of 1.9% in income 3.6% in wages. Income-earners from Eastern Europe and Asia, Africa, Central & South America, Turkey had an increase in total income after taxes but a fall in wages of around 0.6% and 3.5% respectively.

	2002 Total income after taxes	2002 Wages and Salaries	2003 Total Income after taxes	2003 Wages and Salaries
Nordic Countries	423 400	555 700	446 000	568 500
Western Europe	395 200	575 800	434 500	603 400
Eastern Europe	336 200	382 900	353 100	380 600
North America and Oceania	519 500	916 000	509 300	882 900
Asia, Africa, Central & South America, Turkey	314 100	304 900	326 100	294 100

Table 4- Income and wages for immigrants by region 2002-2003; Source: Statistics Norway (SSB)

To sum up, immigration has increased considerably since 2004 mostly due to the new EU-countries. Labor immigration has become the largest category. Measured by income, unemployment and employment, immigrants from Nordic countries, EU, and North America/Oceania have better performance than citizens from Eastern Europe and third-countries. Yet, most skilled work permits granted during 2001-2007 were for immigrants from non-EU and non-Nordic countries (i.e. China, India, and Russia).

3.2 Norwegian Economy History – An overview

This section will provide a short overview of the Norwegian economy history and the main economic indicators. For many years Norway has been ranked among top three

wealthiest countries in the world measured by GDP per capita. More than 100 years ago Norway was just below average among West-European countries. Some of the changes that the Norwegian economy has experienced over the years are productivity growth, trade structure, and welfare development (Hodne and Grytten 2002). The Norwegian economic history can be divided in four main phases. First, the 1900-1920 was a period of great economic growth with full employment. This period marked Norway's way into industrialization. Second, the 1920's was characterized as a period of economic setback with price falls, bank crises, unemployment, and debt problems. Third, after WWII and until 1973 the economy started to recover. Norway had an unemployment rate of around 1% and a yearly productivity growth of 4.2%.There was also an increase and improvement of the welfare system. In the fourth phase, from 1973 until early 2000, the economy is characterized by an increase in income from oil and gas. This contributed to further economic growth and lower unemployment compared to other industrial countries (Hodne and Grytten 2002:23-24).

By the 3rd quarter of 2000 the economy had flatten compared to previous years. GDP growth was just below 2%, which was significantly slower than in the 1990's[5]. 2001 was a year of slow growth. Exports and investments fell significantly. The growth in productivity was overshadowed by increased imports. There were two factors that affected the economy, a slower development of the international economy and a more expansive financial policy[6]. 2002-2007 was a period of remarkably good economic growth. Unemployment started to decrease and employment to increase. After these five years of "strong and continuous growth in the Norwegian economy, it now seems that the cyclical peak is behind us. Weaker growth impulses from abroad and lower household demand contribute to the slowdown whereas a continued increase in demand from the petroleum industry and public sector dampens the decline"[7]. Below follows a presentation of important economic indicators for the past years and for degree of unionization in the labor market.

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[5] http://www.ssb.no/emner/08/05/10/oa/200009/norsk-ok.pdf
[6] http://www.ssb.no/emner/08/05/10/oa/200106/norsk-ok.pdf
[7] http://www.ssb.no/english/subjects/08/05/kt_en/

3.2.1 GDP – historical development

Table 5 presents the total GDP and GDP per capita for Norway during1999-2007. The total GDP is given in million NOK and measured at market value.

	1999	2000	2001	2002	2003	2004	2005	2006	2007
GDP Total MNOK	1 240 426	1 481 241	1 536 887	1 532 307	1 593 826	1 743 041	1 945 716	2 161 728	2 276 757
Population	4 478 497	4 503 436	4 524 066	4 552 252	4 577 457	4 606 363	4 640 219	4 681 134	4 737 171
GDP per cap.	276 974	328 914	339 713	336 604	348 190	378 398	419 315	461 196	480 615

Table 5- Gross Domestic Product 1999-2007 NOK million. Source: Statistics Norway (SSB)

As a general patter, GDP per capita increased continuously during the periods presented (1999-2007). GDP per capita decreased in 2002 compared to 2001. The decrease can be partly explained by oil productivity variations in the first quarters of 2002; there was a decrease of 3% in oil production compared to 2001; the closing down of some oil production units, an increasing oil price measured in USD, and the weakening of the USD against the NOK decreased further the gains from oil exports[8].

3.2.2 Income – Historical development

Table 6 below shows after-tax incomes as the sum of wages, salaries, profits, interest payments, rents and other forms of earnings received by population from 1993-2006.

	1993	1995	1997	1999	2001	2003	2004	2005	2006
After-tax incomes	364 094	407 460.8	471 290.3	537 526	582 673	679 869.5	727 657	817 456.5	757 745
Total pop.	4 324 836	4 369 973	4 417 612	4 478 497	4 524 066	4 577 457	4 606 363	4 640 219	4 681 134

Table 6- Income for residents 1993-2006 NOK million. Source: Statistics Norway (SSB)

After-tax incomes have increased steadily between 1993 and 2005. In 2005 they were 12.3% higher than in 2004. After-tax incomes increased by 453 362.5 from 1993 to 2005. From 2003, the calculations not longer include training allowance or travel money for refugees. In 2006 after-tax income fell by 7%. This may be, among other reasons, due to lower property incomes and lower unemployment benefits in 2006 compared to 2005 (Statistics Norway – SSB).

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[8] http://www.ssb.no/emner/08/05/10/oa/200206/norsk-ok.pdf

3.2.3 Wage – Historical development

Figure 9 below shows wage growth among full-time employees from 1998 to 2006. "Since the start of the 1990's, wage developments have been higher than price developments in Norway. There has therefore been a real wage growth throughout this period"[9]. Wages for all employees were highest during 2001-2002 and lowest during 2002-2003. The average wage for all employees was 30 600 in 2006. Wage growth from 2005 to 2006 was 4.8% on average (Statistics Norway – Key figures).
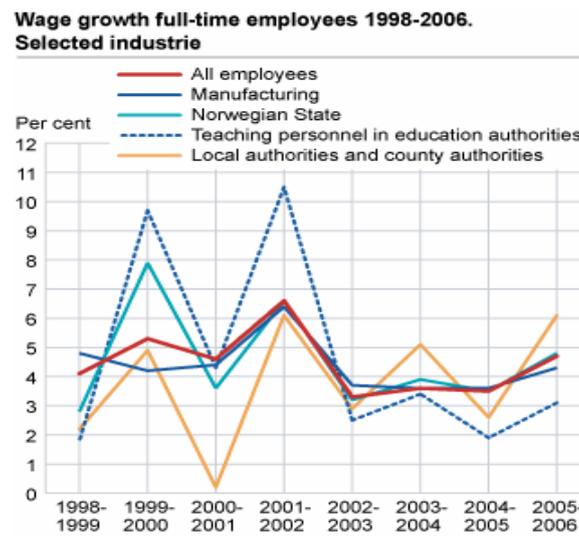
Figure 9- Wage growth for full-time employees 1998-2006. Source: Statistics Norway (SSB)

3.2.4 Employment levels

Employment in Norway is very high. Women's participation in the labor force is also very high, 7 out of 10 women are currently employed. By the first quarter of 2008, the employment rate was 71.7% with a total labor force of 73.6% (Statistics Norway – Key figures). Table 7 show the number of persons employed between 1999 and 2007.

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total Population	2 306.4	2 319.5	2 327.7	2 336.6	2 312.5	2 323.3	2 351.7	2 432.8	2 531.0

Table 7- Employment levels 1999-2007. Source: Statistics Norway (SSB)

Employment levels increased steadily in the period 1999-2002. In 2003 employment levels were around 1% lower than in 2002. From 2004 onwards, employment levels continued to increase. The Amount of people employed in 2007 was 4%, or 98 200,

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[9] http://www.ssb.no/english/subjects/06/lonn_en/

higher than in 2006. This was also the highest growth in the number of employed persons during the period presented (1999-2007).

3.2.5 Unemployment – Historical developments

Unemployment is rather low compared to other countries, with some variations in different years. Even though unemployment is low, sickness absence is high, reaching 6.9% of working population. Figure 10 shows unemployment as a percentage of labor force. "Unemployment was stable at just below 2% from the start of the 1970's until the negative economic trend in 1983-84. In 1993, 6% of the population was unemployed, the highest rate in 1972-2007. Unemployment rates started to decrease and between 2004 and 2005 it had fallen to around 4.6%. While in 2006, unemployment was 3.4%, in the 1st quarter of 2008, it was 2.5% of labor force"[10].

Figure 10- Unemployment as percentage of labor force 1972-2007
Source: Statistics Norway (SSB)

3.2.6 Degree of Unionization

As mentioned in the theoretical section of this paper, labor unions and their leaders, may have a highly influential role in the labor market. In Norway, a high level of employees belongs to a trade union or association. Table 8 below shows the number of employees in trade unions and associations during 2001-2007. Since 2001 the number of members in associations has increased. The largest growth in membership was in 2006 and 2007. In 2007 membership increased by 29 000 from 2006.

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[10] http://www.ssb.no/english/subjects/06/arbeid_en/

	2001	2002	2003	2004	2005	2006	2007
Wage earners in unions	1 481 271	1 505 995	1 508 412	1 510 633	1 517 442	1 547 365	1 576 255

Table 8- Organisations and Associations for wage earners 2001-2007; Source: Statistics Norway.

To sum up, the Norwegian economy has had many ups and downs. The 1900's were characterized by high growth. However, the economy experienced a recession in 2002 mostly caused by the oil crisis and changes in the international economy. Since then, the Norwegian economy has had high and stable growth; GDP total and per capita has increased, population has increased, total wages have increased, employment is higher and unemployment has fallen.

4. THE IMMIGRATION IMPACT ON UNEMPLOYMENT AND WAGES

In this chapter I do a regression analysis to test the impact of net immigration on unemployment and wages. I complement the statistical results with an empirical and qualitative analysis of Norwegian labor market developments to determine whether or not net immigration bids down wages and increases unemployment in Norway.

4.1 Statistical Analysis – Regression

In this section I will study the effects of immigration on unemployment and wages by doing a Regression Analysis for unemployment and wage for 2001-2006. The purpose of the regression analysis is to study and explain changes in unemployment and wage based on several independent variables; net immigration, unemployment benefits, employment rate, and GDP. Moreover, the regression analysis will help find which of the independent variables have the most significant impact on the dependent variables, unemployment and wage. The results will also be compared to and complement other studies done on Norway.

The independent variables were chosen based on a study by Pope and Withers (1993) on the unemployment and wage effects of immigration in Australia. I left out some of the explanatory variables in Pope and Withers (1993); due to lack of data or bad quality of the time series; for example some data was not available on a yearly basis. The variables collected for the regression analysis are yearly numbers for net immigration, unemployment, wage rate, and employment. GDP and unemployment benefits are given in NOK per year.

4.1.1 Unemployment Equation for Norwegian Population

The unemployment equation will test directly whether or not immigrants take away the jobs from the natives in Norway. The components of the unemployment equation are net immigration, unemployment benefits, and wage rates. Below follows a summary of the main results from the statistical analysis. The regression test was run on SPPS.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.999[a]	.999	.997	37.7029

a. Predictors: (Constant), WageRate, Unemploymentbenefits, NetImmigration

b. Dependent Variable: UnemploymentRate

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1437.062	305.960		4.697	.042
	NetImmigration	.013	.007	.104	1.897	.198
	Unemploymentbenefits	.325	.009	1.020	37.853	.001
	WageRate	.000	.001	-.067	-1.275	.331

a. Dependent Variable: UnemploymentRate

The most important results to consider are the Beta-coefficients of the effect of the independent variables on the dependent variable, the t-values for relation significance, and the p-values for significance of probability. From the model summary, we see that we have explained 99.7% of the variation in unemployment with the help of net immigration, unemployment benefits and wage.

'Net immigration' has a positive effect on unemployment (B = 0.104). This means that when net immigration increases with one person, unemployment will increase by 10.4%. Even though net immigration has a positive effect on unemployment, this effect is not significant enough to say that an increase in net immigration level will increase the unemployment rate in Norway, t = 4.697 and p-value (0.05) < 0.198.

'Unemployment benefits' have a positive effect on unemployment rates (B = 0.325). This means that when unemployment benefits increase with 1NOK, unemployment will increase by 32.5%. Large t-values indicate that there is a significant relationship between dependent and independent variable. We can say that the high unemployment benefits in Norway contribute to the increase in unemployment rates, t = 37.853 and p-value (0.05) > 0.001.

'Wage Rates' has a negative effect on unemployment (B = -0.067). This means that when wage rates increase with 1NOK, unemployment will decrease by 6.7%. Even though wage rates have a negative effect on unemployment, this is not significant enough to say that an increase in wages among Norwegians will lower unemployment t = -1.275 and p-value (0.05) < 0.331.

4.1.2 Wage equation for the Norwegian population

The wage equation will test directly whether or not increased immigration reduces the wage rates of natives in Norway. The components of the wage equation are GDP, Net immigration, Unemployment rates, and Employment rates. Below follows a sum up of the results from the statistical analysis. The regression test was run on SPPS.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	.998	2656.729

a. Predictors: (Constant), NetImmigration, UnemploymentRate, GDP, Employment

From the model summary, we see that we have explained a 99.8% of the variation in wage with the help of unemployment, employment, GDP, and net immigration.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1935100.548	340251.470		-5.687	.111
	UnemploymentRate	37.167	4.449	.449	8.355	.076
	Employment	.954	.150	.743	6.373	.099
	GDP	.098	.014	.446	6.796	.093
	NetImmigration	-.007	.553	.000	-.012	.992

a. Dependent Variable: WageRate

'Unemployment' has a positive effect on wages (B = 0.449). This means that when the unemployment rate increases with one person, the wage rate will increase with 44.9%. This may be expected in the case that labor offer is greater than labor demand and firms increase wages to attract more workers and decrease unemployment. The effect, however, is not significant. We can not argue that an increase in Norwegian unemployment rates will raise the wage rates; t = 8.355 and p-value (0.05) < 0.076.

'Employment' has a positive effect on wages too, (B = 0.743). This means that when the employment rate increases with one person, the wage rate will increase with 74.3%. Despite the positive relation between employment and wage rates, the effect is not significant enough to say that higher employment rate in Norway will increase the wage rate; t = 6.373 and p-value (0.05) < 0.099.

'The Gross Domestic Product' level has a positive effect on wages (B = 0.446). This means that when the total GDP increases with one NOK, the wage rate will increase with 44.6%. This may be a proof to the immigration surplus theory presented by Borjas (2005), in which the total GDP increase if more important than the negative effect of net immigration on wages. After all, income accruing to nationals will increase in general. The positive effect of GDP on wage rate is not significant enough to say that an increase in GDP in Norway will increase wages; t = 6.796 and p-value (0.05) < 0.093.

'Net immigration' has a negative effect on wage rates (B = -0.007). This means that when net immigration increases with one person, the wage rate will fall with 0.7%. This is as expected since an increase in labor will decrease the price of labor. Yet, the negative effect between net immigration and wage rate is not significant enough to say that an increase in net immigration in Norway will lower the wage of Norwegians; t = -0.012 and p-value (0.05) < 0.992

In conclusion, the statistical analysis of the immigration impact on the Norwegian labor market confirms that, immigration neither has a negative effect on Norwegian's wage rate nor increases the levels of unemployment among natives. In the regression analysis we could see that most of the independent variables used had an effect on wage and unemployment. However, these effects are not significant. Only the unemployment benefits appear to increase unemployment significantly. This is rather important, since it is recurring topic in the immigration debate in Norway. It is noteworthy that not all possible independent variables were included in the analysis, other factors such as union participation and education divided by levels; skilled, medium, and unskilled, may have altered the results. Hence, the conclusions drawn here are valid for the data gathered. Nonetheless, these results do resemble the results

from Zorlu and Hartog (2003). In both studies it is concluded that although there is a negative relationship between net immigration and wages, the effect is no significant. Immigration does not affect the elasticity of either unemployment or wages. Some general patterns in both studies are that non-OECD countries are at a disadvantaged position in the labor market. Immigrants from OECD countries are similar to Norwegians in skill composition, employment and wages. The wage rate for total working population still increases. The assimilation of immigrants to the Norwegian labor market is improving. Even though immigrants' wages increase there is still a divergence between natives' and immigrants' wages and employment.

Regarding the other studies presented in chapter two, it is important to evaluate the results on the grounds of similarities and differences between Norway and the other European countries mentioned. In Norway and Sweden immigrants are those born abroad and those with two parents born abroad, while in the Netherlands and the UK, one foreign-born parent suffices. In Germany citizenship is grounded on the basis of ethnicity not place of birth or residence. The markets of the Netherlands, Germany, Sweden and Norway are highly organised and the bottom of the wage structure is protected by minimum wage legislation and an advanced welfare system. The UK labour market is characterised by a relatively wide range of the wage distribution, and is commonly taken as more flexible than the others (Zorlu and Hartog 2003). Despite the differences in economic performance and population composition among Norway and some of the countries in focus, Norway has still similar patterns to at least three of the countries presented earlier. This enhances the comparing grounds to these countries when there is little study done on the Norwegian labor market. The results from the immigration impact on labor market outcomes are similar for all countries; there is no significant relation between net immigration and unemployment/wages for either of the sample countries.

4.2 Immigration and Labor Market Trends – A Qualitative Analysis

In this section, I will make a qualitative analysis of immigration and labor market in Norway using the data presented in sections 3.1 and 3.2. I will compare the changes in immigration data and economic indicators for Norway for the years available. This analysis will complement the results from the regression analysis; by identifying what

other factors may explain changes in wage and unemployment when net immigration does not have any significant effects. Also, the theories presented in chapter one will be evaluated from a Norwegian perspective based on the results from both analyses.

4.2.1 Employment and the Immigration Impact

To understand and complement the results from the regression analysis, it is vital to consider the employment conditions in the country during the period of study. By looking at the employment statistics of immigrants and natives during 2001-2006/2007, and the economic development of the country, I will be able to evaluate whether the fall in employment levels can be explained through economic changes; since net immigration does not have a significant impact. Net immigration was 17 174 in 2002; 9 219 higher than 2001 and 5 889 higher than 2003. Employment rate among immigrants increased between 2001 and 2006 on average, but with a stop in 2002 for natives and immigrants. Some of the factors affecting economic growth in Norway in 2002 were "low economic growth internationally, a strict monetary policy topping several years of impaired competitive strength for Norwegian establishments due to strong growth in salaries"[11]. Investments in mainland establishments decreased, oil investments shrank, interest rates were low, the NOK value was down, and electricity prices were high throughout the winter. Higher labor supply, caused by immigration, would be expected to contribute to unemployment in periods of low productivity. However, the regression analysis shows that increased net immigration did not have a significant impact on unemployment in the period studied. This must mean that the increased unemployment in these periods was mostly due to the growth recession during 2002.

The type of unemployment in the economy during times of high immigration will contribute to understanding the impact of immigration. Unemployment in Norway can be defined as structural. In other words, there is a mismatch between the skills that Norwegian workers can offer and the skills that firms have need for. The increasing levels of education in Norway create a shortage of people willing to do unskilled work. This shortage works like a magnet for foreign workers willing to do the unskilled work at better wages and labor conditions than in the home country. Even though more Norwegians take education at a higher level, there is still a shortage of

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[11] http://www.ssb.no/english/subjects/08/05/kt_en/arkiv/art-2003-03-20-01-en.html

skilled workers compared to what firms demand. This is partly due to the contrast between slow population growth among natives and high economic growth. Thus, firms are induced to employ foreign workers to meet the demand. This analysis shows that immigration in reality contributes to balance the economy by complementing the skills provided by native workers, and providing those that are no available. Hence, it supports the results from the regression analysis that immigration does not contribute to the increase in net unemployment.

4.2.2 Wages and the Immigration Impact

To complement the results from the regression analysis and determine the impact of immigration on the Norwegian labor market it is also vital to study the wages and salaries development for both groups; immigrants and natives. A fear natives have from increased immigration is that the wages will fall. They will indeed. This goes back to the 'closed economy theory, the Supply-side Hypothesis and Immigration Surplus presented earlier. As mentioned before, increased labor supply will lower wages, assuming that wages can move freely to clear the market. Wages for immigrants fell in average in the period 2002-2003, although when divided by regions some saw wage increases while others saw decreases. The wages among natives in 2002-2003 fell by around 3 percentage points from 2001-2002.

Even though it is expected that increased immigration will decrease wages, as it was showed by the negative B-coefficient (-0.007) between 'net immigration' and 'wages' in the regression analysis, the regression concluded that this negative impact is not statistically significant. This must mean that the decrease in wage experienced by the total salaried population was also a result of the growth recession during 2002. An important indicator was the reduced purchasing power of households in 2002 due to high electricity prices and the weakened NOK, among others.

There were also income differences among immigrants and natives. Natives had much higher after-tax income and interest payments. Some of the differences in the income levels of the groups may be due to dissimilar gender participation, age, and education among immigrants. That natives have higher total after-tax incomes than immigrants is a suggestion that immigrants have lower qualification in terms of knowledge of the

Norwegian language, labor market experience and education level/quality. This is another reminder of why most immigrants are employed in unskilled labor. However, it also shows that although the immigration rate has increased, natives' total after-tax incomes continue to increase at a much higher rate than those of immigrants. Hence, this analysis supports the results from the regression analysis; and it can be concluded that net immigration does not reduce wages and incomes of natives.

4.2.3 Population growth and the immigration impact

The 'net immigration' levels in the regression analysis are registered data from 2001-2006. However, there are some important factors to remember when referring to net immigration in a country since *registered* net immigration is hardly equal to *real* net immigration. The difference between *real* and *registered* data may affect the elasticity of 'net immigration' on wages and unemployment; although it might not affect the significance of the elasticities.

Firstly, it is important to consider the levels of legal and illegal immigration. The theory chapter mentioned that the real immigration data may be distorted since illegal immigrants are no registered. Hence, the real contribution to population growth will also be distorted. It is not clear how many illegal immigrants there are in Norway today, most of them are asylum seekers who were not granted a residence permit[12]. Since asylum seekers are not registered as immigrants until they are granted a legal permit, the real net immigration will vary from the registered data. Illegal immigrants in Norway do not have an ID number and therefore are not able to get into the normal labor market and the welfare system. This makes it difficult to measure real unemployment and contribution to the economy in terms of tax earnings. Thus, the distortion in the data for net immigration and total population may constitute an estimation error in the regression analysis provided in this thesis.

Secondly, it is important to consider the length of stay in the country. The theory chapter stated that the length of stay affects savings and spending patterns, and effects on wages and unemployment. Immigrants from Nordic and EU-countries stay the shortest in Norway. Those who stay longer are from non-Western countries. Also, the

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[12] http://www.aftenposten.no/english/local/article2127874.ece

immigration review showed that OECD-countries are rather similar to Norwegians in terms of education, employment and wage. Hence, the analysis of immigration impact on unemployment and wages will be distorted by how long the different groups stayed and their subsequent performance in the labor market. This becomes an estimation error on the analysis provided.

In general terms, net immigration growth has contributed positively to population growth in Norway (Appendix B). In 1999 net immigration was around 80% higher than national birth. In 2002, and 2005-2006 net immigration had also surpassed birth rates in Norway. In 2000, 2001, and 2003-2004 birth rates were just slightly higher than net immigration. In other words, immigration has help accelerate population growth. This has a positive impact for the economy since productivity increases as production inputs increase, because an increase in labor supply will decrease wages and motivate producers to make more labor-intensive products. This is due to the economies of scale; since productivity and production gains will be higher, the lower the unit cost of input is. The positive contribution of net immigration to the economy supports the results from the regression analysis, since it shows that although *real* and *registered* data may vary, total net immigration does no have any significant negative effects on unemployment and wages.

4.2.4 Education and the Immigration Impact

The quality of education plays a crucial role in determining the impact of immigration on unemployment and wages. Norwegians in general do not have high education levels compared to other developed countries. In 2006/2007 there were 600 000 people with primary and lower secondary education, but only over 200 000 with college/university degree (Appendix C). This explains why in 2001, Statistics Norway registered that 5.5 percentage-points more immigrants than natives had a college or university degree. Still, immigrants take on most unskilled labor. There can be two reasons for this; first, pooled together, the amount of uneducated persons is higher among immigrants than among natives; and second many well-educated immigrants are not able to get their education recognized in Norway.

This limits their participation in the skilled-labor sector and their contribution to productivity growth. Thus, it has a negative effect on the perception Norwegians have

about the presence of immigrants. Many tend to think that immigrants consume more welfare benefits than they contribute. Also, since the effect of immigration will be greatest when immigrants are complement to natives, a change in the number of skilled/unskilled workers will alter the wage elasticities of natives, although it might not alter the significance of these elasticities. Hence, a change in the recognition of education of high-skilled immigrants will affect their impact on wages and unemployment by increasing labor participation levels and performance.

4.2.5 Evaluation of theories from the Norwegian perspective

Now that the main results from the qualitative analysis of the impact of immigration on unemployment and wages are drawn, it is time to evaluate, from the Norwegian perspective, which of the theories presented earlier best explain the results. Firstly, the Norwegian case is far from a closed economy model. The reason is that according to the closed economy, the impact of immigration will come through wage reduction or unemployment. There is no proof of wage reduction due to immigration in the previous analysis. The wage reduction from 2002 is better explained by the growth recession. Moreover, after 2002 Norwegians experienced a stable increase in wages at the same time that net immigration increased. Also, the unemployment level has been falling at the same time that net immigration has been increasing.

Secondly, the Norwegian case cannot be completely explained by the open economy theory either. Norway is far from a factor-price equalization world, since wages are not the same across the countries most immigrant groups come from. It should be recalled that one of the incentives to immigrate is that wage and labor conditions are better in the host country. Moreover, the Norwegian results are not in accord with the suggested by Heckscher-Ohlin. This theory suggests that the impact of immigration will depend on the size of immigration and the economy. For a small economy like Norway, a high immigration flow will lower wages. Although this is the expected outcome from the theory, the actual results show that wages have not decreased in Norway since 2003 even though net immigration has increased greatly. Whether or not this is due to government intervention, the results drawn from the regression and qualitative analysis cannot be explained using the Open Economy Theory.

Thirdly, the Supply-side hypothesis focuses on who loses from immigration. The idea is that immigration bids down the wage of natives. However, the regression analysis shows that net immigration did not contribute to reduction in wages. Also, total after-tax incomes have increased at the same time net immigration has increased. This can be partly explained by the good economic performance of the country and by the fact that according to the labor immigration law, immigrants in Norway must not have lower wages than natives for similar job positions and skills. Also, immigration does not contribute to unemployment since it increases the total number of persons that enter the labor market compared to those who leave. Hence, there is a net increase in labor market participation.

Finally, the Demand-side hypothesis focuses on the overall gains from immigration rather than on who loses and who wins. Since the results from the regression analysis show that immigration has not had any significant effect on wages and unemployment but instead has contributed to productivity growth by enhancing population growth, it becomes necessary to set our focus on the net benefits from immigration. In other words, the Demand-Side hypothesis is the theory that relates more closely to the Norwegian study. To determine the overall effect of immigration, we need to measure the size of the contribution to the productivity growth. This can be measured by the immigration surplus model presented earlier. Given the data available, I was able to calculate the immigration surplus for 2004-2006. In 2004 immigration contributed to 0.97% of total GDP growth, in absolute terms it means that 16 925.37 of the total GDP in Norway was due to net immigration. In 2005, immigration contributed to 1.44% of the total GDP, or 27 940.77 of Norwegian GDP was due to net immigration. In 2006, 1.15% of the total GDP came from net immigration.

To sum up, net immigration, in general, has not any significant effect on wages and unemployment levels in the period of study, 2001-2006. Moreover, the lower wages and higher unemployment in Norway in 2002 are better explained by the growth recession. Also, net immigration has contributed to population growth. Yet, the net contribution of immigration to GDP is rather low compared to the total GDP.

5. EVALUATION OF IMMIGRATION POLICIES

This chapter will offer an overview and evaluation of Norwegian immigration policy, especially with regard to labor immigration. The statistical and qualitative analysis in the previous section concluded that immigration does not have a significant impact on labor and wages in Norway. Thus, considering the current increased concern about immigration and its effect on the welfare state, it is important to evaluate the accuracy of the policies undertaken through the past years.

5.1 The Development of the Norwegian labor immigration policy

The 1950's and 1960's were characterized by an open Norwegian labor market until the 1970's with the immigration-stop in 1975. Working-permit applications increased significantly with the open-door policy and were granted almost automatically due to the lack of workforce. The immigration-stop was intended to follow a more restrictive immigration policy by putting a "stop" to the access of labor permits. These events marked the beginning of a restrictive Norwegian immigration policy. There were new conditions and requirements for working permits and the amount of permits granted was limited. Employers were responsible for housing which were to be checked by the health department. Also, immigrant workers were required to know how to write and read their mother tongue. A new restriction called, the 25%-rule was introduced and demanded that under no circumstances could there be more than 25%-immigrant workers in a company. The length of the contract and the time the vacancy would be available for immigrant workers should also be regulated. Moreover, working permits could only be granted to persons with 'special competence' that was not available in the local labor market[13].

During the 21st. Norway has gone from facing unemployment to facing a shortage of labor force. In 2004 there was a fear of increased (and unwanted) immigration due to the new EU-countries; in 2008 the fear is for lack of workforce in Europe and the increased competition among European countries for qualified labor immigration[14]. Considering the shortage of workers, labor immigration has contributed to smooth the economy and reduce the press of high production costs and low employment. In other

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[13] http://www.regjeringen.no/nb/dep/krd/dok/NOUer/2004/NOU-2004-20/8.html?id=387482

[14] http://www.udi.no/templates/Arkiv.aspx?id=2131 - Vårkonferanse om arbeidsinnvandring

words, increased labor immigration has contributed to the economic growth and welfare (St.meld.nr. 18 2007-2008: 7). This series of events have contributed to a change in immigration policies. It seems as the government is growing concern for a more flexible immigration policy. In news report of April 15, 2008 it was stated that the government wishes to make application procedures easier in order to increase labor immigration: *Citizens from the EU will no longer need residence and working permit, all they need is a job to go to and support from the employers. Immigrants from non EU-countries still need a working permit* (Dagens Næringsliv). Most regulations apply to workers from non-EU countries since Norway is subject to EU and EEA regulations for labor immigration.

5.1.1 The European Economic Area

Being part of the EEA-agreement gives Norway a larger pool of workers given that the labor force in Norway is only 2 ½ million while it is 240 mill in the EEA. However, as abovementioned, Norway is required to adopt all regulations stated by the EEA- agreement. This implies that, while Norway can decide how to deal with immigration from third-countries, it cannot single-handed determine the immigration policies for EEA-immigrants. Immigration Law § 50 states that immigrants comprised by the EEA-agreement can enter the country without a permit and stay in the country for up to 3 months. If the immigrants enter the country to look for jobs, they can stay for up to 6 months without a permit. The law also states that a member country cannot deport immigrants covered by the EEA-agreement in the case that immigrants stay over the allowed period if the individual has good prospects to get a job. Moreover, it is restricted for the member countries to demand documentation and fees as this will hinder workers from free-mobility. It is accepted to ask for a passport or identification card but not to ask for visas or permits for stay. Unlike for immigrants from third countries the length of stay is regulated by the EEA-rules. If an EEA-citizen plan to work for more than 12 months, the member state is to issue a working permit for 5 years which can be renewed without problems if needed (NOU 2004: 20).

To sum up, Norway's immigration policy is quite restricted by regional agreements. This implies that policy changes affect mostly third-countries workers. It also affects

how restrictive policies can be and more importantly, the quality and characteristics of the immigration flow and their performance in the Norwegian labor market.

5.1.2 A Common Nordic Labor Market[15]

The common Nordic Labor Market includes Denmark, Finland, Sweden and Norway. It was ratified on May 22, 1954 and states that citizens from the member countries are not required having a working permit for any of the member countries. Yet, it is also stated that the agreement shall not mean an impediment of the work opportunities for the country's own citizens. An important item on the agreement is the attempts made for mutual recognition of higher education. Taking into account the need for workers with higher education in Norway, this recognition would have positive effects on the immigrant flow and its performance in the labor market. It also helps explain why most Nordic workers are placed at almost the same levels as Norwegian regarding education, employment and wages. However, as presented earlier, most high-skilled immigrants come from non-Nordic countries. Like the EEA-agreement, the Common Nordic Labor Market affects the development of immigration policy in Norway since Norway cannot have restrictive policies for these countries. Consequently, all changes in immigration policy in Norway, again, affect the third-countries immigrants. Just as abovementioned, this is important because Norway is limited to control non-EU, non-EEA and non-Nordic labor immigration.

To sum up, this implies that Norway must work harder to attract skilled workers from third-countries given than they cannot 'directly' decide the quality of the immigrant flow from the EU, EEA and Nordic Countries. Moreover, now that the government is opting for a more flexible immigration policy it becomes vital to secure that immigrant workers, especially from third-countries, adjust correctly to the market so as to increase the levels of labor market participation.

5.1.3 Norway and the need for labor force

One of the main drivers for the development of immigration policies in Norway is the need for labor and the immigrant workers' ability to adapt to working-life conditions. The shortage of labor force during the 1990's and 2000 has contributed to a more

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[15] Arbeidsdirektoratet – Labor market problems and Programmes in Norway, pp. 126-127

positive view towards labor immigration. In Norway, some of the main causes of labor force shortage have been fast swings in the economy, lack of IT know-how, and demographic trends (ageing population). These factors are moving Norway to a more open-door policy compared to the restrictive policy they have kept since 1975. In all three cases, the supply of labor through immigration has helped stabilized the economy. During the 1990's the inflow of Swedes and Danes contributed to a more stable labor market (NOU 2004: 20). Statistics Norway suggests that the population is ageing so fast that the amount of persons in working-age is decreasing. Without immigration, population growth will soon start to decrease. Immigration might help reduce the effects of the ageing population even though it might not be the solution to the problem as a whole. This means that the policies regarding how many people are admitted and who is admitted need to be adapted to the ageing population factor, the need for unskilled and skilled work and economic trends in the country. However, it is important to remember that the labor shortage problem is not temporary; this means that immigration policies should focus on retaining labor immigrants specially those in the sectors with most labor shortage.

5.1.4 Unions

As we saw earlier, about 50% of the working population belongs to a trade union or wage-earner association. The view that labor unions have towards immigration will affect their performance and adaptation to the labor market. Unions can either work to secure the well-being of native workers only, or work to secure the well-being of all workers. Consequently, this will affect the productivity and overall result for the labor market. According to the "Common Union" (Fellesborbundet), unions in Norway have a positive view towards labor immigration[16]. Still, unions are worried about social dumping, especially from countries where wages are normally much lower than in Norway[17] as this would hamper the employment opportunities of local workers; hence, contributing to the negative perception of labor immigration. In their fight to secure the well-being of Norwegian workers, unions have contributed significantly to the development of policies against social dumping. This involvement affects the impact of immigration on the labor Norwegian labor market and represents a key

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[16] http://www.dn.no/arkiv/article42073.ece - Dagens Næringsliv – February 18, 2003
[17] http://www.dn.no/arkiv/article42073.ece - Dagens Næringsliv – February 18, 2003

factor in explaining why an increase in net immigration has no significant effect on wages and employment as it was shown in the previous chapter.

5.2 Labor immigration and wages

The changes that occurred, after the immigration-stop of 1975, shape today's ground for immigration policy. Some of the most important changes include that wages and working conditions of immigrants will not be any lower than those of natives. This is an important policy change. Making sure that immigrant workers and natives have the same working conditions and wages will protect the country from social dumping. It will help securing that natives are not affected negatively by increased immigration. This policy has an important role in explaining why an increase in net immigration has no significant effects on wage rates, just like the regression analysis showed. Moreover, the results are complemented by the theory of immigration and labor market in chapter one, which argues that the impact of immigration will be greatest when immigration reduces wages, through increased labor supply. If immigration does not reduce wages, the theory states that there will be no impact on labor market outcomes. In the case of Norway wages are regulated by the authorities and made inflexible downwards, eliminating any negative effect immigration may have on them. In short, this policy adopted by government plays two vital roles; it protects the labor force against dumping from employers tempted to hire immigrant workers at a lower wage rate, and secures that through regulated means, the country has access to a larger pool of labor force that, otherwise, is scarce.

5.3 Labor immigration and local employment

An important regulator of immigration policy is that increased labor immigration will not cause unbalances in the labor market. In other words, increased labor immigration should not weaken the employment opportunities of the population and shall not contribute to unemployment. For this reason, the immigration policy requires that every vacancy be first made available to the local population. If the firm or employer can prove that it is not possible to get the require workers among the local population, the vacancy may be listed within the EEA-countries and at last within the third-countries. The Norwegian government also wishes to get all immigrants in working-age into the labor market. In other words, there must always be an assessment of the

local labor market before employing foreign workforce. Moreover, the permits will be given for the specific job and the specific employer. These restrictions will ensure that it is the sectors with labor force shortage that get covered and benefit from labor immigration.

5.4 Total number to be admitted

Simon (1989) argues that "total number to be admitted legally is the key economic element of immigration policy". Norway has three main decision dilemmas ahead, either admitting less immigrants than there are now, admitting more immigrants than there are now or just keep the amount of immigrants admitted to the country at the current level. As abovementioned this will be determined by the need of workforce in the country. The amount of immigrants admitted (legally) has been restrictive so far. However, the current problems with ageing population and shortening of labor force has lead the Norwegian government to change towards a policy that admits more labor immigration than it has done before; so much that the authorities are "trying to work to market the working opportunities in Norway, want to handle applications in four weeks as opposed to the current eight, and wish to improve the recognition and acceptance of higher education from other countries (UDI). On news report of April 15, 2008 the government announced the opening of increased labor immigration from countries outside the EU. This will contribute to easier labor immigration of skilled workers for instance form India, which is the largest country with skilled labor immigration in Norway. This will be a definite advantage for Norway given the increased competition with the rest of the European countries for skilled labor. On October 26, 2006 the minister of labor and inclusion also advocated for a more open labor immigration policy, he sets focus on long-time immigration. Once again, the focus will be on skilled workers. In order to increase the economic gains for labor immigration to Norway, it is recommended that the country attracts substantially more skilled labor as long as it does not have adverse effects to natives' per-person income and total national product.

5.5 Skilled labor or unskilled labor

Another important concern when developing immigration policies is related to the quality of the immigration flow. The similar demographic trends in Europe increase

the competition for workers. Hence, the countries with labor shortage must be able to attract the required labor supply through labor immigration. As it was presented in the previous chapter, most of the immigrant flow in Norway has low education levels. The amount of skilled work permits granted has increased but it is still not enough. This combined with the low levels of population with higher education increases the need for skilled workers. Many employers are skeptical about taking in immigrant workers afraid that they will not be able to adapt, even if it is in skilled positions like engineering, hence, the representative of the Confederation of Norwegian Enterprise, NHO, stresses the importance of recognizing higher education from other countries. Even though Norway has a shortage of skilled workers, more Norwegians decide to take a college or university degree. This in turn, creates shortage of unskilled workers. The demand for unskilled workers is falling but the amount of unskilled workers who registered at the Employment office is falling even more[18]. Consequently there is still a need for unskilled workers. Hence, the immigration policies, should not only attract the required workers, but should also develop guidelines for the correct integration into the labor market. This will increase effectiveness and productivity.

5.6 Workers from third-countries

As it was mentioned earlier, Norway as a member of the EEA-agreement and the Nordic Common Market is very much regulated by the rules established in the agreements regarding immigration. Some of the latest changes that apply directly to immigrants from EEA-countries are that they can start working even before the permit is finalized. The permits will be divided by categories, high qualified specialists, educated persons, Graduates, Seasonal workers and unskilled workers. While, limited by the agreements, the government can still determine much of the regulations linked to immigrants from third-countries. In the later years Norway has had increased immigration form third-countries. This has created concerns about the welfare and social structure of the country. However, given the shortage of labor and following the abovementioned liberal policy, the government recognizes the importance of attracting more immigrants form third-countries like Central and Easter Europe. But above all more workers from India, since Indian workers have the IT know-how that Norway needs (Dagens Næringsliv – January 09, 2001).

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[18] Dagens Næringsliv – February 9, 2001

5.7 Labor immigration and the welfare state

Another important concern from increased immigration is the impact it may have on welfare state. Norway, as a country with high living standards and welfare benefits, needs high labor market participation to finance the welfare costs. A common worry is that immigrants, set as a whole, will consume more welfare benefits than they will contribute to the country. Yet, given the requirements and conditions for working permits, it is rather clear that labor immigration can be net contributors to the welfare state. Important factors in this matter will be the ability to adapt and the length of stay in the country. Many of the problems related to adaptation and net contribution to the welfare state have arisen because many short-time workers have stayed permanently but have not integrated fully to the market. Hence, the Norwegian government needs develop policies that will help labor immigrants adapt and integrate in the market. It also needs to attract more skilled labor, achieving this successfully will contribute positively to the welfare state (NOU 2004: 20).

To sum up, the current practices in immigration policies have contributed to stop any adverse effects of immigration on wages and unemployment. Labor immigrants shall not have lower wages than natives, and all vacancies will be made known to the local population first. This is very important in explaining the results from the statistical tests. Additionally, it was clear that Norway is moving from a restrictive immigration policy to a more liberal one. This change is desired due to the shortage of labor force the country faces, the demographic trends and the skill composition of the market. In light of these factors and the will of the Norwegian government to increase net labor immigration, it can be concluded that skilled immigration must be prioritized, all current immigrants be put to work, and that integration policies be better developed to secure the proper performance of workers. Also, unskilled immigrants should not be forgotten. Although the demand for these workers is low, the supply is much lower. Many immigrants in Norway are low or unskilled, hence, it should be possible to adjust integration polices to include unskilled workers in the labor market. In general, the wage regulations have hindered any negative impact of immigration. Nonetheless, the change to more receptive and liberal policies is needed, which if well implemented will increase the net contribution of immigration to the labor market.

6. CONCLUSION

This thesis had two main purposes: 1) to determine whether an increase in net immigration bids down the wages of Norwegians and increases unemployment or not, and 2) to assess the wisdom of the Norwegian immigration policies in the past years.

1) The regression analysis in sections 4.1.1 and 4.1.2 shows the significance of the independent variables used in explaining the changes in *unemployment* and *wages* in Norway during 2001-2006.

The results from the regression analysis showed that an increase in 'Net Immigration' during 2001-2006 had a positive effect on *unemployment*. However, this effect is not significant enough to claim that the increased net immigration during the past years contributed to higher unemployment. Out of all independent variables used in the regression analysis only 'Unemployment Benefits' was statistically significant; meaning that the high unemployment benefits in Norway in the period 2001-2006 contributed to the increase in unemployment.

The results also showed that, 'Net Immigration' had a negative effect on *wages* during 2001-2006. However this effect was not significant either. We cannot assert that an increase in 'Net immigration' has lowered the wages of Norwegians. The changes in GDP, unemployment and employment have all a positive effect on wages. However, none of these effects are significant either.

The qualitative analysis of the trends in Norwegian immigration and economy history showed that the growth recession of 2002 was a major explanatory of the changes in GDP, wages, and unemployment. Moreover, the regulations in immigration policy in Norway, requiring that immigrants should not earn less than Norwegians, help explain why net immigration does not have a significant impact on wages.

To sum up, the increase in net immigration experienced in Norway during 2001-2006 has neither bid down the wages of natives, nor contributed to an increase in the unemployment rates in the country. The results provided by the regression analysis together with the qualitative analysis helped to achieve purpose number one.

2) The analysis presented in chapter five shows a summary of immigration policies in Norway, more specifically labor immigration policies. The analysis shows that the immigration policies in Norway are very much tied to the regulations set by the EFTA, EEA and the Common Nordic Labor Market agreement. Hence, Norway cannot directly restrict the flow of immigrants from member countries to the kingdom. Many of the immigration policies have been directed to immigrants from non-European countries. One common rule for all labor immigrants is that they shall not earn less than what is stipulated for Norwegians.

The policies have been rather restrictive with a lot of requirements to be fulfilled by those wishing to take employment in Norway. Given the lack of labor force in Norway, a restrictive immigration policy in years when the country needs workers to balance the economy, is not wise; especially thinking of the skilled labor force since most of Norway's skilled workers come from non-European countries. India, China, Russia and U.S.A were among the largest providers of skilled workers to Norway during 2001-2007.

Nonetheless, the immigration policies seem to be changing directions for the past 2-3 years. Norway is moving to more flexible policies by making it easier for immigrants to work in the country. Also the government wishes to implement programs for the recognition of the education of foreign skilled persons. This is a very positive turn since Norway has a great need for skills that are scarce or not available in the country. By making immigration policies more open with a greater focus on workers with higher education, Norway can finally meet the demand for skilled labor force.

To sum up, since no significant effect was proven of 'net immigration' on Norwegian wages and unemployment, there is no reason to restrict the flow of labor immigrants to the country. Hence, moving to a more flexible labor immigration policy is a wise move. This is supported both by the results from Zorlu and Hartog (2003), where no significant impact on Norwegian wages was proven, and the results from European studies similar to Norway. The analysis of immigration policies complemented with the statistical analysis and previous studies done about Norway and other European countries helped to achieve purpose number two.

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APPENDIX A: CALCULATING THE IMMIGRATION SURPLUS
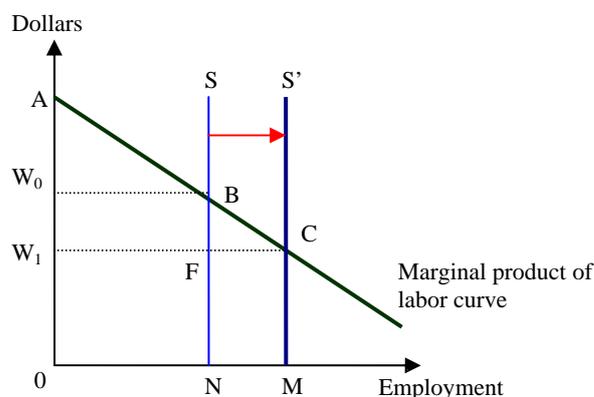
The immigration surplus is represented by the triangle BCF, to find the NOK value of the immigration surplus, we need to find the area of the triangle, so that[19]:

(1) *Immigration surplus = ½ x (w_0 – w_1) x (M – N)*

The formula can be rewritten so as to find the immigration surplus as a fraction of national income:

Immigration surplus as a fraction of national income
= ½ x (% change in native wage rate) x (% change in employment) x (labor's share of national income)

OR

(2) <u>*Immigration surplus*</u> *= ½ x* <u>*(w_0 – w_1)*</u> *x* <u>*(M – N)*</u> *x* <u>*w_1* M</u>
   National Income   w1   M   National income

Where w_1*M is what immigrants get in labor earnings.

Net change in income of native workers:

(3) <u>*Change in Native labor earnings*</u> *= sem (1 – m)*
   National Income (GDP)

Net change in income of employers:

(4) <u>*Change in Income of employers*</u> *= – sem (1 – ½ m)*
   National Income (GDP)

Where *s* is labor's share of national income, *e* is the percentage change in wage resulting from a 1% change in the size of labor force, and *m* is the fraction of workforce that is foreign born[20].

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[19] Source: Borjas, George J. – Labor Economics (2005): 338

APPENDIX B: POPULATION GROWTH IN NORWAY 1971-2006
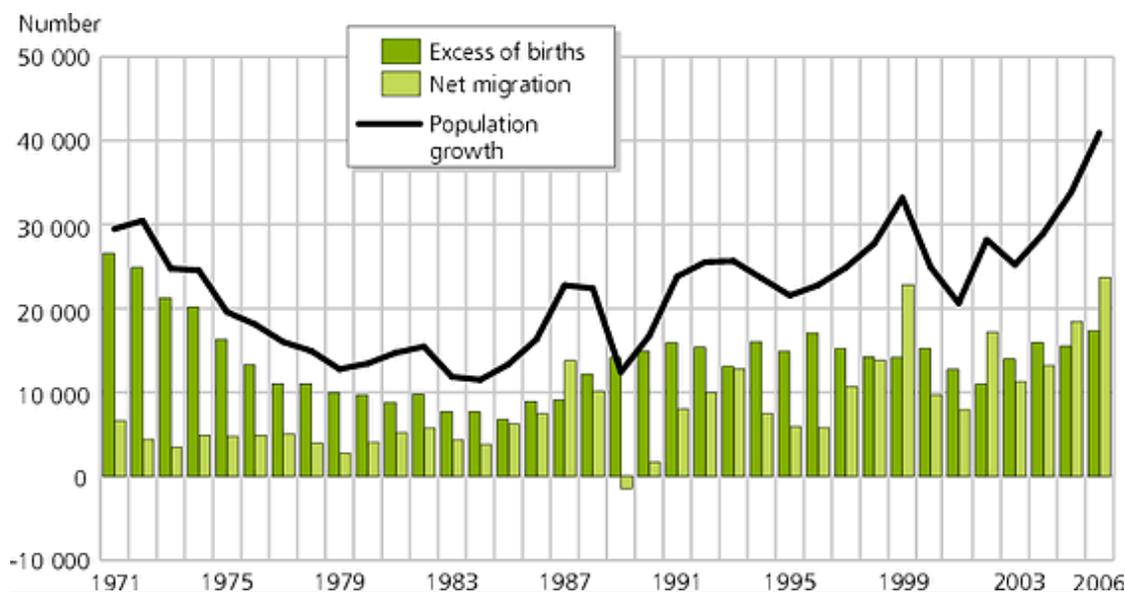
Source: Population, Statistics Norway (SSB)

APPENDIX C: EDUCATION STATISTICS FOR NORWEGIANS
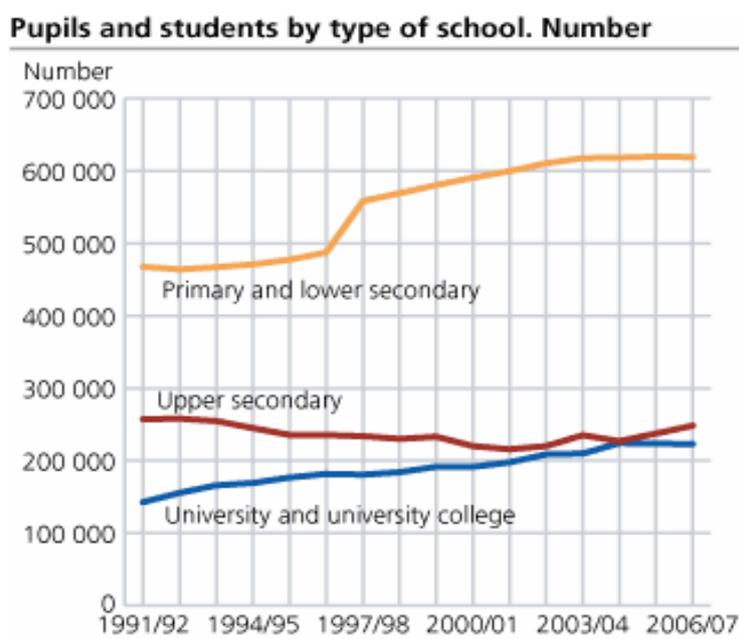
Source: Statistics Norway (SSB)

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[20] Source: Borjas, George J. – Economic Benefits from Immigration (1995): 6-7

APPENDIX D: SKILLED WORKERS AS A PERCENTAGE OF TOTAL WORKERS BY COUNTRY IN 2006

	Skilled workers	Total workers	Percentage
Sweden	N/A	16 769	N/A
Poland	17	11 274	0.15%
Denmark	N/A	10 385	N/A
Germany	10	8 460	0.12%
Bosnia	33	7 651	0.43%
Vietnam	27	7 334	0.37%
Pakistan	14	6 866	0.20%
UK	11	6 640	0.17%
Iran	35	6 196	0.56%
Iraq	2	5 809	0.034%
Sri Lanka	4	5 192	0.077%
Turkey	15	4 778	0.31%
Russia	200	4 684	4.3%
Somalia	N/A	3 672	N/A
USA	184	3 154	5.8%
India	322	3 017	10.7%
Kina	112	2 477	4.5%