Effect of Immigration Policy on Labour Market Outcomes for Refugees in Sweden - The "Swedish Temporary Aliens Act" of 2016

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Abstract: Immigration has played a significant role in Swedish politics for decades, but the effect policy-making has on different immigrant groups remains disputable. This study researches how the Swedish Aliens Act implemented in 2016 has affected the unemployment rate of refugees in Sweden. To test for this, a difference-in-difference regression model is used with data obtained from Statistics Sweden (SCB) on unemployment rates for three different groups. The treatment group is refugees and the two control groups looked at are other immigrants and Swedish natives. The results obtained show that the unemployment rate of refugees has increased after the implementation of the reform in 2016. This result is partly explained by receiving temporary residence permits instead of permanent permits, as it affects their employment opportunities. The results additionally show that the effect on refugees' unemployment rate is the same when comparing refugees with other immigrants or Swedish natives. The discussion of the results highlights the lack of an immediate change in the trends of refugee unemployment rates in the post-reform period, indicating a time lag in the effect of the reform. However, despite the issues, this paper concludes that the Swedish Temporary Aliens Act has increased refugee unemployment rates in Sweden.

Acknowledgements

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1. Introduction

International migration has been a prevalent topic for decades. Reasons for migration and its nature have varied from country to country. Many countries were subjected to a major influx of immigrants between 2011 and 2015 as a result of different political disputes and civil wars, especially those in the Middle East. It has become clear that Europe, including Sweden, suffered from an influx of refugees. There was approximately a 100% increase in the number of asylum seekers in Sweden between 2014 and 2015 (Migrationsverket 2015, 2016). As a reaction to the massive influx of refugees, the Swedish government decided to adapt themselves to the European Union's (EU) minimum level. This was done through the introduction of the Swedish Temporary Aliens Act in November 2015, which was later implemented in 2016. The purpose of this Act was to reduce asylum applications in Sweden (Swedish Red Cross 2018). This was partially achieved by the reform as the number of applications fell to under 30 000 in 2016, showing a decline in numbers after the announcement in 2015 (Migrationsverket n.d.a). The reform's function was to retract the right for asylum seekers to receive a permanent Swedish residency. Asylum seekers were instead granted temporary residence permits, with a duration of stay based on their refugee status (SFS 2016:752).

A qualitative study conducted by the Swedish Red Cross (2018) concludes that refugees' mental health has been negatively affected by the reform. They additionally claim that the Act creates harder maintenance requirements. This study will therefore be investigating whether the Swedish Temporary Aliens Act has in fact affected refugees' labour market outcomes in Sweden, with a focus on refugee unemployment rates. In order to do so, this paper answers the question:

Are unemployment rates for refugees in Sweden affected by the Swedish Temporary Aliens Act implemented in 2016?

There have been several empirical studies conducted on labour market outcomes comparing refugees with natives and/or other immigrants. A paper by Bloch (2000) examines how policy changes affected the labour market participation of refugees and asylum seekers in the UK during the 1990s. Bloch concludes that policies restricting access to social and economic institutions have a negative effect on refugee settlement. Other papers, such as Ruiz & Vargas-Silva (2018), research the differences in labour market outcomes depending on the individuals' residential status. Their research suggests that the outcomes for refugees in the UK are much worse than the outcomes for

other immigrants. These empirical studies, among others, point to the general trend of worse conditions for refugees compared to other groups.

However, Hagelund (2020) claims that after the implementation of the Swedish Temporary Aliens Act in 2016, the "residential rights of refugees are now conditional on their ability to succeed in the labour market". This creates an incentive for refugees to search for jobs. The Swedish Red Cross (2018) mentions that after the implementation of the same Act, there has been an increased willingness in refugees' acceptance of low-skilled jobs. Despite this, they constitute that the Act has had negative psychological effects on the refugees. Their research even indicates that the Act makes it harder for them to receive jobs. Thus, previous literature presents contradicting results. The Act may incentivise certain refugees to search for jobs. Conversely, studies show that it creates difficulties in receiving jobs and that refugees generally have worse labour market outcomes. Our hypothesis is therefore that the Swedish Aliens Act of 2016 will not affect the unemployment rates of refugees in Sweden.

To test this hypothesis, we look at the unemployment rates of three different groups in Sweden; refugees, other immigrants, and Swedish natives. Observations between the years 2010 and 2020 in 21 different Swedish regions are obtained from Statistics Sweden's (SCB) database. The difference-in-difference (DiD) framework is used to look at the effect of the Act on the unemployment rates of refugees post-reform period, compared to the control groups. The results show that unemployment rates of refugees increase after the implementation of the temporary Aliens Act in 2016. The results display a similar effect on refugee unemployment rates when compared to either Swedish natives or other immigrants.

There is plenty of research studying the labour market outcomes of refugees in different contexts. To our knowledge, this paper will be the first to test the effect of the 2016 Swedish Temporary Aliens Act on the unemployment rates of refugees in Sweden, using econometric methods.

This paper will be organised as follows. Section 2 provides a background of the research topic, including an overview of the Swedish labour market, the function of the Swedish Migration Agency, background on immigration trends in Sweden, and an explanation of the 2016 Swedish Temporary Aliens Act. Section 3 introduces previous literature on the subject in both an international and

domestic setting, and our contribution to it. Section 4 will show our research method, data specifics, and empirical methods used. Section 5 focuses on the results obtained from our regressions. Section 6 focuses on the interpretation of our results, a discussion of potential issues with the research, and possible future studies that can be conducted in the field. Section 7 will conclude the results and summarise the paper.

2. Background

2.1 Overview of the Swedish Labour Market

A detailed table on the development and characteristics of the Swedish labour market can be found in Appendix 1. Between 2010 and 2020, the total working-age population in Sweden (16-64 years old) grew from 5 989 700 to 6 323 900. Simultaneously, the fraction of the population that participates in the labour force has steadily increased from 80% in 2010 to 84% in 2020. The overall unemployment rate has slightly decreased from 9% in 2010 to 8% in 2020. This shows that more people from the Swedish population are now participating in the labour force and fewer people are unemployed (Appendix 1).

As seen in Appendix 1, Sweden faced its lowest unemployment rate of approximately 6% in 2018. Since then, the general trend has shifted to an upward one with rising unemployment rates as of 2019. Although the COVID-19 pandemic is a contributing factor, the unemployment rate started rising before 2020. OECD economic surveys of Sweden from 2019 stated that labour shortages were coinciding with high unemployment rates, specifically for certain types of workers, such as immigrants (OECD 2021). Many studies of the Swedish labour market exhibit employment gaps between immigrants and Swedish natives, with an increasing "immigrant-native employment gap". The widening of the gap has been attributed to two main factors; the immigrants' duration of stay in Sweden and unequal treatment (Schröder 2007). The major influx of immigrants in Sweden in the past five years, therefore, provides an explanation as to why the gap widened; the share of foreign-born residents with a shorter length of stay in Sweden increased drastically.

Other factors such as gender, education levels, and country of origin play vital roles in the employment levels of immigrants in Sweden. The Swedish government has therefore recently

attempted to improve the situation by targeting the factors they could influence, such as the immigrants' skill level. The Vocational Education and Training (VET) programme and entry agreements targeting immigrants and the long-term unemployed are examples of such schemes. The schemes have been introduced to combat the worsening of the immigrant-native employment gap that has developed in recent years (OECD 2021).

2.2 The Swedish Migration Agency

The Swedish Migration Agency is the governmental body in Sweden that handles the applications from people seeking residence permits, protection, or citizenship in Sweden. They are for instance responsible for providing asylum seekers with money and housing as they wait for their application decision (Migrationsverket n.d.c).

The Swedish migration policies and regulations are set by the parliament and government. This means that the Migration Agency receives directions from the government on how much money they are allowed to spend and which objectives they should have. The UN's Declaration of Human Rights is integrated into the Agency's policies, where refugees for instance are protected by their right to seek asylum. The policies are additionally regulated through other signed international agreements, both within the EU and outside of it (Migrationsverket n.d.c).

The decisions that the Swedish Migration Agency makes should be unbiased so that each person is treated equally. Thus, each application is considered individually, depending on the individual's situation. The decision is either being granted a residence permit or being sent back home (Migrationsverket n.d.c).

2.3 Immigration Trends in Sweden

To understand Swedish immigration policies, it is crucial to know why they were implemented in the first place. Thus, there is a need to examine asylum-seeking and immigration trends in Sweden during the past years.

Figure 1: Total number of Asylum Seekers in Sweden 2010-2020
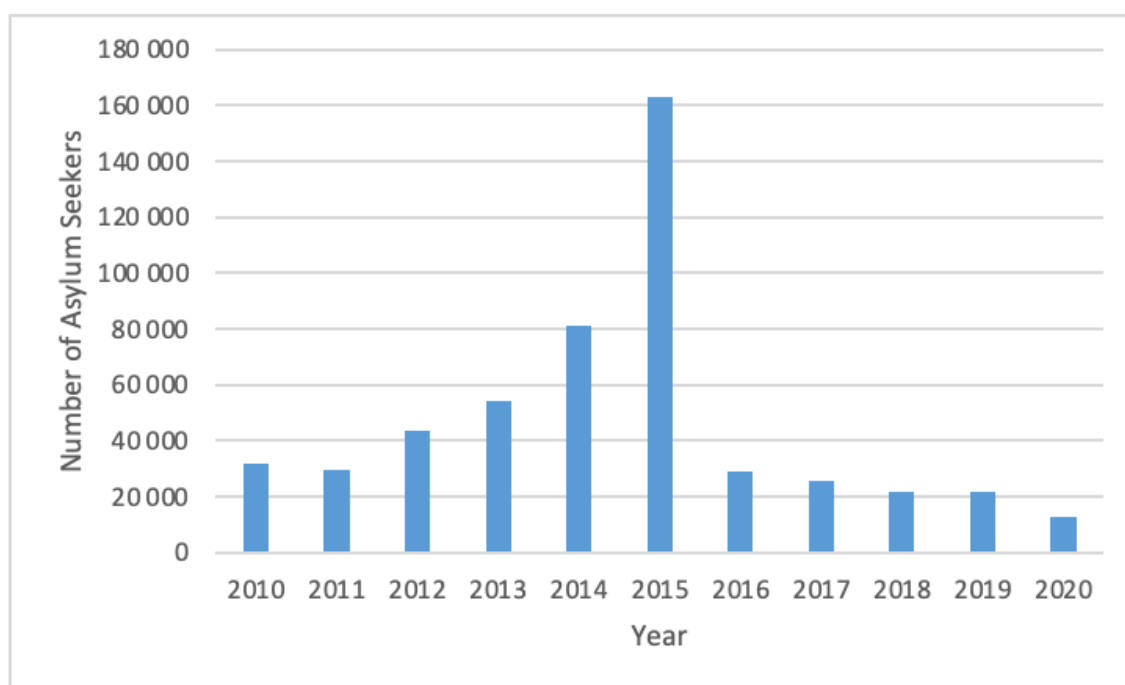
As shown in Figure 1, the total number of asylum seekers increased between 2011 and 2015. This increase can partly be explained by the escalation of the conflict in Syria, which emerged into a civil war in 2011 (migrationsinfo.se 2013). By the end of 2015, about 4.6 million Syrian refugees were in the neighbouring countries and about 7 million Syrians were internally displaced. Many of the refugees reached Europe where Germany, Hungary, Sweden, and Austria collectively took in about two-thirds of all of the incoming asylum applications in 2015 (Nationalencyklopedin n.d.). This explains the sharp increase in asylum seekers in 2015, shown in Figure 1. However, the sudden increase in asylum seekers was followed by a sharp decrease in the years following 2015. This can be explained by several factors; tighter border controls in the EU, the introduction of Swedish ID controls, and the implementation of the Aliens Act (Swedish Red Cross 2018).

An increase in the number of asylum seekers in one year, often led to an increase in overall immigration the year after, since asylum seekers are only considered to be immigrants when they are granted a residence permit (SCB 2022b).

Figure 2: Immigration to Sweden between 2010 and 2020
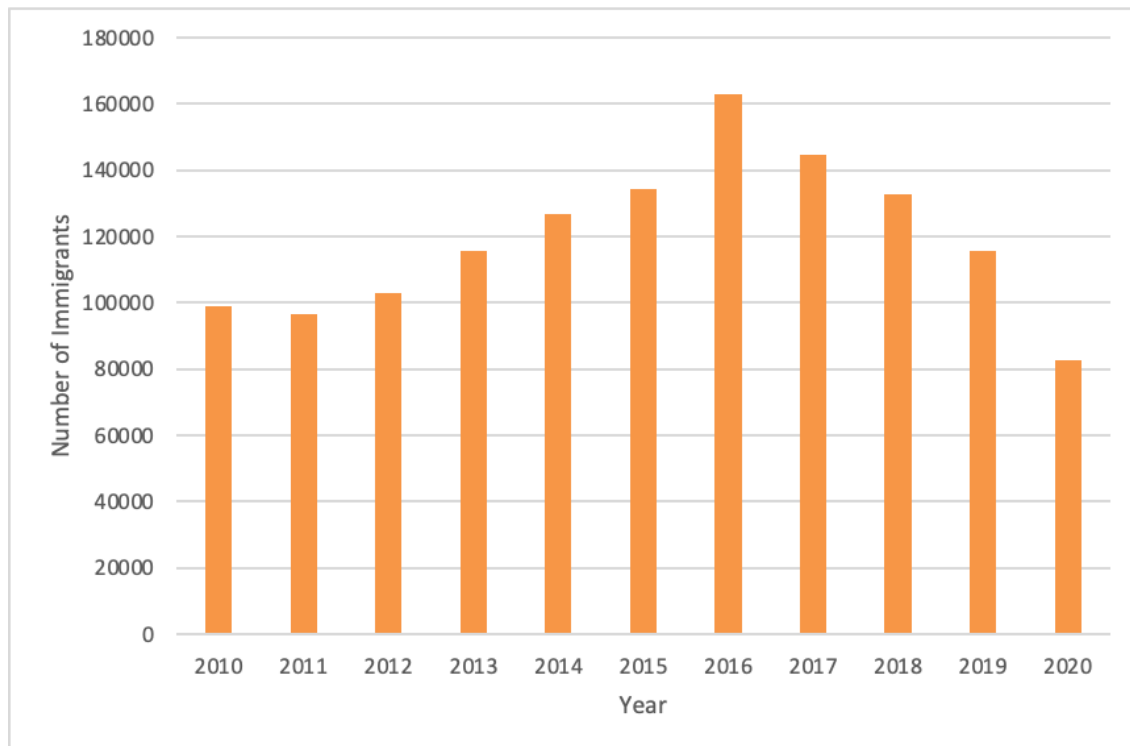
Figure 2 shows immigration patterns between 2010 and 2020. The sharp increase in the number of immigrants in 2016 was due to the massive increase in asylum seekers in 2015. Since there was a vast increase in 2015, the waiting time to receive a decision on the asylum applications was delayed as more applications were being processed than usual. In 2018, the effect of the sharp increase in inflow was starting to subside (SCB 2022b).

However, not all asylum seekers are granted a residence permit. Statistics on the number of asylum seekers who received a residence permit between 2010 and 2020 can be found in Figure 3.

Figure 3: Asylum Seekers that Received a Residence Permit between 2010 and 2020
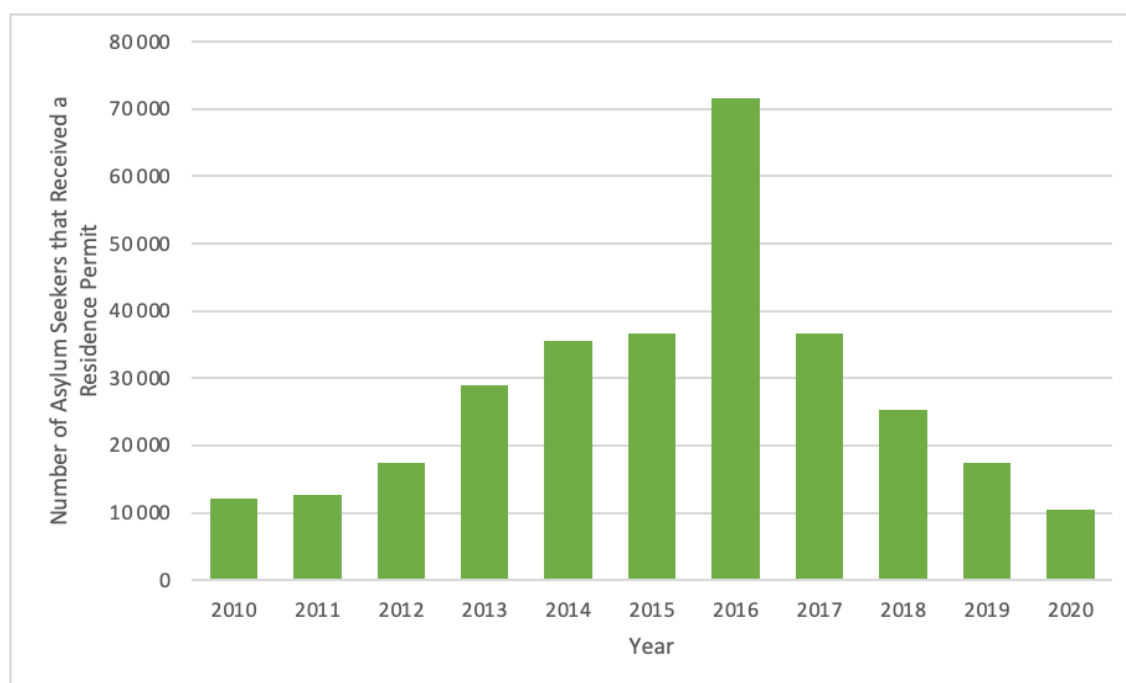
Note: Graph made of data obtained from Migrationsverket (2010-2020).

The number of granted residence permits follows a similar trend as immigration numbers shown in Figure 2. The number of asylum applications that were accepted peaked in 2016, due to the delay in the application handling process. People who applied for asylum in 2015, received answers on their applications in 2016 and 2017 (SCB 2022b). The average number of days it takes for the Swedish Migration Agency to handle the asylum applications each year can be found in Appendix 2. During 2015 and the years following, the application handling time for asylum increased significantly compared to the years before 2015. The time lag between applying for asylum and receiving an answer was thus intensified during 2015 and the years following. This time lag and its effect on the research will be discussed in section 6.2.1.

2.4 The Swedish Temporary Aliens Act in 2016

In November 2015, the Swedish government announced that Swedish legislation in the area of immigration would be adapted to the EU's minimum level. During this announcement, they presented the alteration of the Aliens Act (SFS 2005:716), which was to be implemented in 2016. The law change consisted of granting temporary residence permits to those who seek asylum for

protection in Sweden after November 2015, instead of granting them a permanent residency (SFS 2016:752). The implementation of this temporary law was motivated as a result of the vast influx of refugees in 2015, to drastically decrease the number of asylum applications received by the Swedish Migration Agency (Riksdagen 2016). After the implementation of the Act, the only way for refugees to receive a permanent residence permit is to apply for it at the Swedish Migration Agency, given that they fulfil certain requirements. The requirements are the following: the individual must have had a temporary residence permit for three years prior to their application, be able to support themselves financially, and live an orderly life (Migrationsverket 2021).

In other words, the alteration of the Act meant that individuals seeking asylum after November 2015 could only receive a temporary residence with a duration of either 11 months or 3 years based on their status. Whether they can switch their residence status from a temporary to a permanent one, depends on their ability to succeed in the labour market among other factors.

3. Literature Review

International migration, and the refugee crisis of 2015 in particular, has been empirically and theoretically researched for years as a result of different refugee crises. This section will provide insight on previous research on immigrants and their labour market outcomes. Section 3.1 focuses on the labour market outcomes for refugees in an international setting. Section 3.2 focuses on labour market outcomes for refugees in a domestic setting. Lastly, section 3.3 will explain how our research topic will contribute to the existing literature.

3.1 Labour Market Outcomes for Refugees in an International Setting

Immigration is a topic that is of concern for every country around the world, one country's resident inflow is another country's resident outflow. It is therefore not surprising that immigration is commonly researched among economists.

Ruiz & Vargas-Silva (2018) compare labour market outcomes for natives, other immigrants, and refugees in the United Kingdom (UK). They discuss different reasons as to why labour market outcomes are worse for refugees than for other groups. One reason is that their skills are not as

transferable across countries compared to other immigrants. Another reason is, when seeking asylum, individuals are faced with legal restrictions which limit their possibility to participate in the labour force, leading to labour market inactivity. This has negative long-term consequences on labour market outcomes for refugees. Labour market inactivity could lead to psychological discouragement and deterioration of skills. A third reason is that the mental well-being of refugees is low due to traumatic events, which have affected both their mental and physical health, further affecting their ability to work. Ruiz & Vargas-Silva conclude that asylum seekers and refugees have worse labour market outcomes than both natives and other immigrants in the UK. Refugees are able to catch up with the others in terms of employment levels, but not in terms of earnings or hourly salaries. Asylum seekers, on the other hand, have a lower likelihood of employment, lower earnings, and lower hourly salaries.

Other papers have additionally studied the effects of policies on labour market participation. Bloch (2000) examines the direction of social policy toward refugees and asylum-seekers and the impact of policy on labour market participation. The article highlights the importance of immigration status, due to the different rights that are associated with them. Refugees are those whose status is recognised by the host country and thus have the right to work and claim benefits. Bloch, however, defines an asylum seeker as someone who seeks protection based on their claim to be a refugee. They are unable to work and only have access to a restricted amount of social welfare. Furthermore, Bloch emphasises the importance of employment, arguing that it is the key to a successful settlement of refugees. However, without the security of status and the associated rights, it is hard for asylum seekers to participate both on a structural and emotional level. Bloch adds that being uncertain about your status gives little incentive to build a life. The paper concludes that the escalation of policies implemented by the government to restrict refugees' access to economic and social institutions, affects their settlement negatively.

Sarzin (2021) studies the effect that the economic inclusion of forced migrants has on the host countries by looking at literature on past events and the conclusions drawn. In Denmark for example, there was a spatial dispersal policy implemented between 1986 and 1998 that allocated immigrants and refugees to different municipalities, with no regard to their characteristics or preferences. According to the paper, this had a positive effect on the unskilled natives' wages and employment. Most of the immigrants and refugees found employment in low-skilled jobs which

pushed less-educated natives to pursue higher-skilled occupations. Sarzin presented the consequences of the influx of refugees in 2014 and 2015 on the German labour market. The short-term labour market consequences of this influx did not affect the employment of natives. It was, however, associated with higher unemployment rates among non-German workers. One explanation for this result was that refugees themselves had a hard time finding jobs. Sarzin draws several conclusions based on the statistics presented in her paper, one being that the host countries can take in a large number of refugees with no effect on the labour market outcomes for natives. Another insight is that inflows lead to a positive effect on labour market outcomes for native workers.

Card's (1990) research on the Mariel Boatlift looks into the effect of forced migration on host countries and their natives. The Mariel Boatlift consisted of the arrival of 125 000 Cuban immigrants to Miami in 1980. Card investigated the effect of this inflow on the Miami Labour market with a focus on wages and unemployment rates of less-skilled workers. Card concludes that the immigrant influx resulted in an increase in the labour force in Miami by 7%, where the sharpest increase was in the labour supply of less-skilled occupations. He found that the influx did not affect the wages or unemployment rates of less-skilled workers. It did not affect the less skilled non-Cuban workers' labour market outcomes, nor the unskilled Cuban workers who immigrated before the major influx due to the Mariel Boatlift.

Previous research on refugee labour market outcomes in an international setting, therefore, shows that the influx of refugees does not affect the labour market outcomes of natives. It additionally shows that the implementation of different economic and social policies could restrict refugees' activity in the labour market.

3.2 Labour Market Outcomes for Refugees in a Swedish Setting

Sweden has been in the spotlight regarding immigration politics and its reactions to different crises and happenings. A wide array of papers have looked at Sweden with a focus on this matter. The fact that plenty of research has been conducted in this field is attributed to the variation in immigration trends in Sweden in previous years, due to both reasons for immigration and the immigrants' country of origin. A paper written by Aldén and Hammarstedt (2014) looking into the integration of

immigrants in the Swedish labour market states that there is a connection between the immigrant's length of residence in the country and their labour market outcome. Groups that have lived a longer time in Sweden generally exhibit lower rates of unemployment than those with a shorter time of residence. Aldén and Hammarstedt additionally focus on the difference in trends based on age and education levels, concluding that women often show higher unemployment rates regardless of which immigrant group they belong to, compared to men. They mention that the groups exhibiting the highest unemployment rates are often family and refugee immigrants.

There are additional studies that look at different policies implemented by the Swedish government. Hagelund (2020), for example, looks at the policy changes in Sweden among other Scandinavian countries as a reaction to the 2015 refugee crisis. Hagelund pinpoints that Sweden has taken a "comparatively liberal approach to immigration and cultural diversity". She presents the Swedish Temporary Aliens Act of 2016 as an example of a policy change implemented. Hagelund takes a more theoretical approach, claiming that the Swedish government's changes did not directly affect the social rights of refugees with legal residency. The conclusion here is that "refugees' residential rights are made conditional on their ability to succeed in the labour market", forcing newcomers to actively seek labour market participation.

Other consequences caused by the Aliens Act have been researched by the Swedish Red Cross (2018). The study was conducted by interviewing several refugees that were affected by the implementation of the Act. Examining the psychological effects it has on refugees, they conclude that the mental health of those asylum seekers is negatively affected by the fact that their resident status is uncertain. Their research shows that temporary permits additionally have an impact on the integration process. Interviewees expressed their concern over difficulties in receiving jobs since employers hesitate to employ someone that might not remain in the country. The report mentions that the Swedish employment services have expressed worries over the effect the Act has on employment prospects and study motivation of refugees. The Act leads to refugees no longer having the incentive to complete studies given their uncertain status. They would rather settle for low-skilled jobs to earn an income. They additionally mention that temporary residence permits demotivate them from gaining knowledge and experiences that are necessary when moving to a new country. This results in worsened employment opportunities and lower wages for refugees.

Research in the Swedish context, therefore, shows that refugees often have it worse and show higher unemployment levels in comparison to other groups. Policies implemented by the government show no direct effect on this particular matter, but it is rather other factors that indirectly contribute to the worsening or improvement of those outcomes.

3.3 Our Contribution to Existing Literature

This paper aims to examine the effect of the implementation of the Swedish Temporary Aliens Act in 2016 on the labour market outcomes for refugees, by looking specifically at their unemployment levels. To specify, refugees in this paper will comprise individuals that have sought asylum and were provided with a residence permit in Sweden, whereas asylum seekers are those who have yet to receive a decision on their application and therefore have no residence status in Sweden. Our research will contribute to the existing literature in three ways. Firstly, as we are looking at data specific to the Swedish labour market and a policy implemented by the Swedish government, our research will be of interest to policymakers in Sweden. Secondly, our research will be looking into how an individual's residential status and their reason for immigrating affect their labour market success. Lastly, we will be investigating an Act that has never been researched in empirical economics, but rather only theoretically discussed.

4. Research Design

This section outlines our main research question, the hypothesis we have formulated and the dataset we have constructed. We hypothesise that the refugee unemployment rate is not affected by the Act and suggest the use of a DiD regression model to investigate this.

4.1 Research Question

Previous empirical studies have suggested that labour market outcomes for refugees are generally worse than for natives in both international and domestic contexts. In section 2.1 we outline the existence of an immigrant-native employment gap in Sweden, which has been widening in recent years. It is therefore important to conduct research in order to influence policymakers into implementing effective policies that contribute to favoured labour market outcomes. Refugees and

their integration has been a prevalent topic in Swedish politics, making the investigation of policies affecting their labour market outcomes relevant. Hence, this paper answers the following question:

Are unemployment rates for refugees in Sweden affected by the Swedish Temporary Aliens Act implemented in 2016?

This paper therefore acts as a complement to different organisations' qualitative studies on this reform, such as the Swedish Red Cross' (2018) report. Their research suggests that after the implementation of the Act, refugees were more prone to take on lower-skilled jobs. Hagelund (2020) states that after the implementation of the Act, refugees' residential status was now based on their ability to succeed in the labour market, incentivising them to search for jobs. On the other hand, the Swedish Red Cross' (2018) research claims that the Act had negative psychological effects on the refugees. Furthermore, their research shows that the Act has made it harder for refugees to receive jobs. To conclude, previous literature suggests that the implementation of the Act led to difficulties for refugees in finding jobs whilst others claim that the implementation of the Act incentivised refugees to search for jobs. Based on this, we believe the effect of some refugees being incentivised to search for jobs may be cancelled out by the difficulties in receiving jobs. Our hypothesis is therefore the following:

The implementation of the Swedish Temporary Aliens Act of 2016 will not affect the unemployment rates of refugees in Sweden.

To investigate this question and see whether our hypothesis is correct, we have chosen to look at unemployment rates in Sweden as our outcome variable. We divide our outcome variable into three different categories; unemployment rates for refugees, other immigrants, and Swedish natives. Our paper is therefore limited to the effect of the Act on unemployment levels, and not wages, which is another vital labour market outcome.

4.2 Choice of Method

The hypothesis we generated is that the Temporary Aliens Act of 2016 will show no effect on refugee unemployment rates in Sweden. Based on this, we would expect the refugee unemployment rates to show little or no change if they are granted a temporary residence permit instead of a

permanent one. Looking at the data available in Appendix 3, the average refugee unemployment rate increased slightly in the post-reform period but started to fall back down to pre-reform rates in 2019. However, it is difficult to know whether this slight increase is a result of the reform as it could be attributed to other factors. Additionally, there could be an interpretation issue with the data due to the time lag between applications received and decisions made by the agency.

In order to test whether our hypothesis holds, we use the DiD framework to examine whether a change in the Act contributes to changes in refugee unemployment levels. This will allow us to control for factors that would have affected our outcome variable otherwise. In order to use this method, the dataset is divided into two periods; a pre-reform period, from 2010 to 2015, and a post-reform period, from 2016 to 2020.

4.3 Data Description

This section presents the process of obtaining the data. We list out our main dataset and variables list constructed from the data.

4.3.1 Main Dataset

To be able to answer our research question, data was obtained from SCB. SCB is a Swedish government agency working under the Ministry of Finance. They have the primary responsibility for providing users and customers with official statistics. This is done by collecting and coordinating the system of official statistics in Sweden. SCB provides detailed statistics on immigration and natives, which has been valuable to this study (SCB n.d). Through their statistical database, we generated data and sorted it to look at the required variables. The data provided by SCB is aggregated data, since they do not make microdata available to the public.

The data needed to conduct the research was the unemployment rates of three different groups; refugees, natives, and other immigrants, sorted by year, region, gender, and the highest level of education obtained. The unemployment rates obtained are based on the number of people who are registered as unemployed in the Swedish employment service's database. The treatment group in the research is refugees, defined as people between the ages of 20-64 that immigrated to Sweden as asylum seekers but have already received a residence permit from the Swedish Migration Agency. As

for the control group, two different groups were picked, as this was done in e.g. Ruiz and Vargas-Silva's (2018) research. The first control is other immigrants between the ages of 20-64 that immigrated to Sweden for reasons that differ from the refugees'. The second control group is Swedish natives, defined as people between the ages of 20-64 that are born in Sweden.

To create the final dataset, different data series were sorted on the variables and groups mentioned above. The data series that were used can be found in Appendix 4. The data found on SCB was stored in an excel file which was then imported into STATA to run the regressions.

4.3.2 Variable Description

Below is a table summarising the variables used in our analysis. A more detailed variable list is available in Appendix 5.

Table 1: Variable List

Variable	Description
Year	Year of the observation
Refugee	A dummy set to 1 if the observation is for refugees
Post	Reform effect, a dummy set to 1 for years 2016, 2017, 2018, 2019 and 2020
Post Treatment Effect	Refugee*Post, the additional reform effect on refugee unemployment rate
Unemp	Unemployment rate for each observation
Male	A dummy set to 1 if the observation is for males
Upper Education	A dummy set to 1 if the observation is for those who completed higher education

The control groups were chosen because the Act only affected refugees. Thus, by using the DiD method we can determine how the Act affected our treatment group.

4.3.3 Descriptive Statistics

Summary statistics can be found in Appendix 6, 7, 8, and 9. Two datasets were used for this paper. The first dataset was obtained for the construction of descriptive statistics. This consisted of 693 observations looking at the unemployment rates for the three different groups, without sorting them according to gender and education level. The second sample was obtained for regression purposes and consisted of 4158 observations, displaying unemployment rates based on status, gender, and education level. Both datasets consisted of unemployment rates across 21 (all) Swedish regions, for refugees, other immigrants, and natives between 2010 and 2020.

The three figures below show colour-coded maps, with each colour representing a level of average unemployment rates in each region across the years 2010-2020, using the first dataset. Variables used for the maps can be found in Appendix 6.

Figure 4: Average Unemployment Rate for Refugees in Each Region across Years

25.1%-35.0%
35.1%-45.0%
≥45.1%
No data
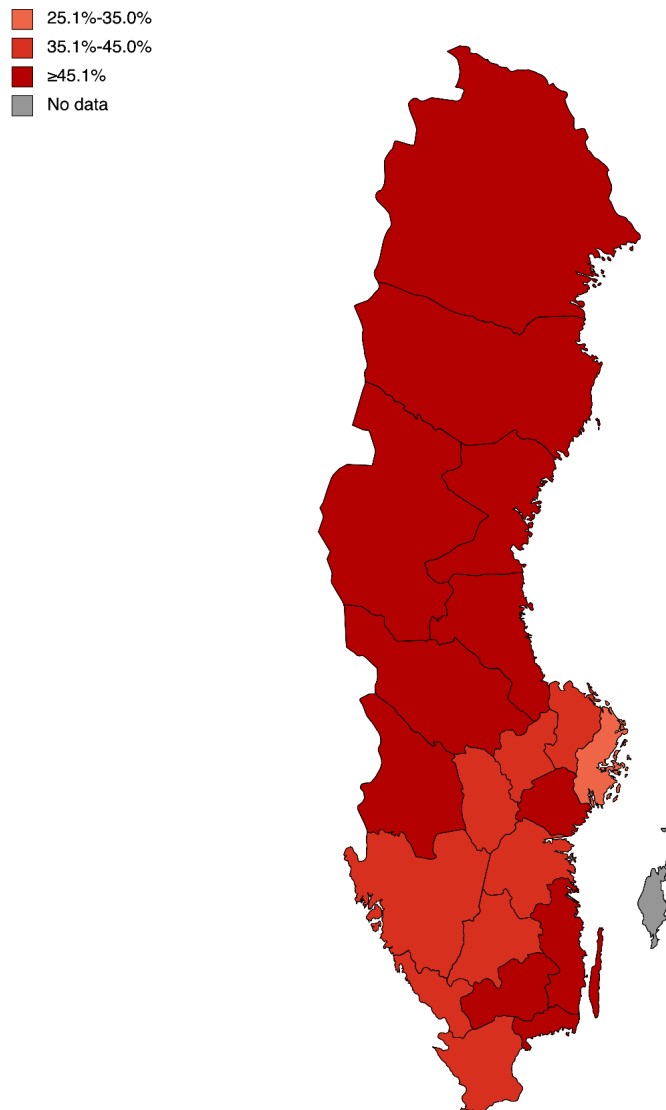
Created with .mapchart.net

*Note: Map made of data obtained from SCB (2010-2020).

Figure 4 shows the average unemployment rates across the different regions for refugees, showing that throughout Sweden, the majority of regions have an average rate of 45% or above. South of Sweden exhibits lower refugee unemployment levels compared to the rest of Sweden.

Figure 5: Average Unemployment Rate for Other Immigrants in Each Region across Years

Legend:
- 5.1%-15.0%
- 15.1%-25.0%
- 25.1%-35.0%
- No data
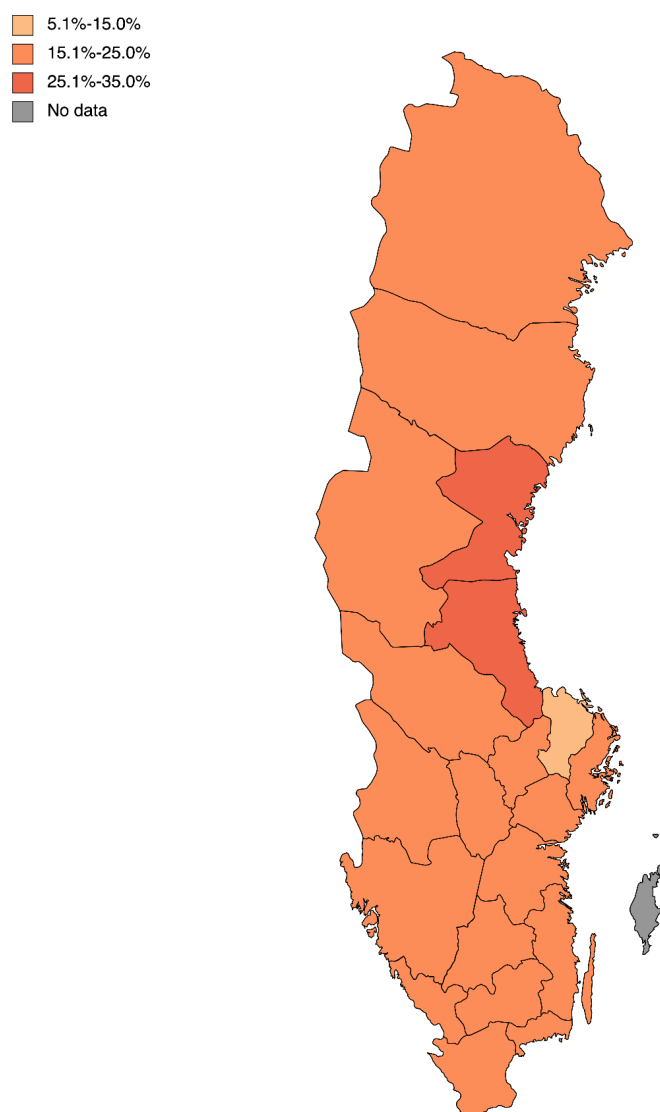
Created with .mapchart.net

Note: Map made of data obtained from SCB (2010-2020).

Figure 5 shows how the average unemployment rate of most of the regions lies between 15.1% and 25.0%. The data obtained showed similar unemployment rates in all of the regions with minor deviations, with Uppsala showing the lowest average unemployment rate of 14.9%.

Figure 6: Average Unemployment Rate for Swedish Natives in Each Region across Years 2010-2020
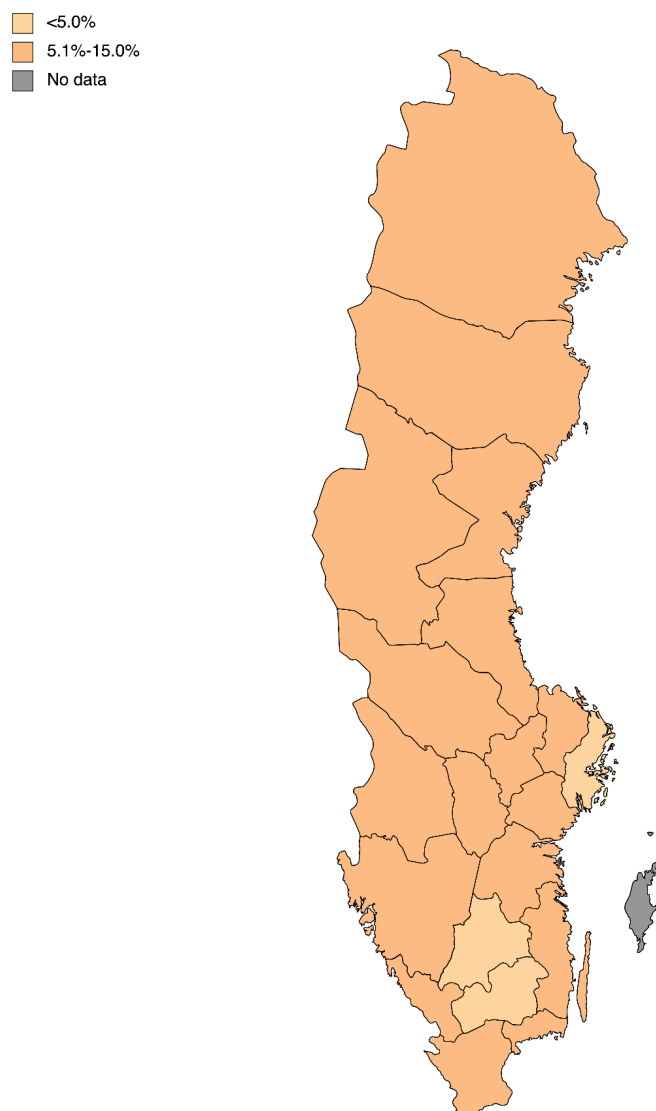
Created with .mapchart.net

Note: Map made of data obtained from SCB (2010-2020).

The dataset shows that natives have similar unemployment rates across regions, lying between 5% and 15% with certain exceptions seen in **Figure 6**. South of Sweden once again exhibits those deviations, in regions Stockholm, Jönköping, and Kronoberg.

As refugees are the group in focus, **Figure 7** shows a graph of the average unemployment rate for refugees, each year in five different regions; Jämtland, Gävleborg, Norrbotten, Uppsala, and Stockholm. Unemployment rates from the first dataset were used. Those five regions showcased the most variation in Sweden, with both Stockholm and Uppsala having the lowest refugee unemployment rates from 2010 to 2020. In contrast, Gävleborg and Jämtland displayed the highest refugee unemployment rates. Södermanland is displayed as it shows the average trend in unemployment that most regions have.

Figure 7: Average Unemployment Rate of Refugees in Five Different Regions per Year between 2010 and 2020
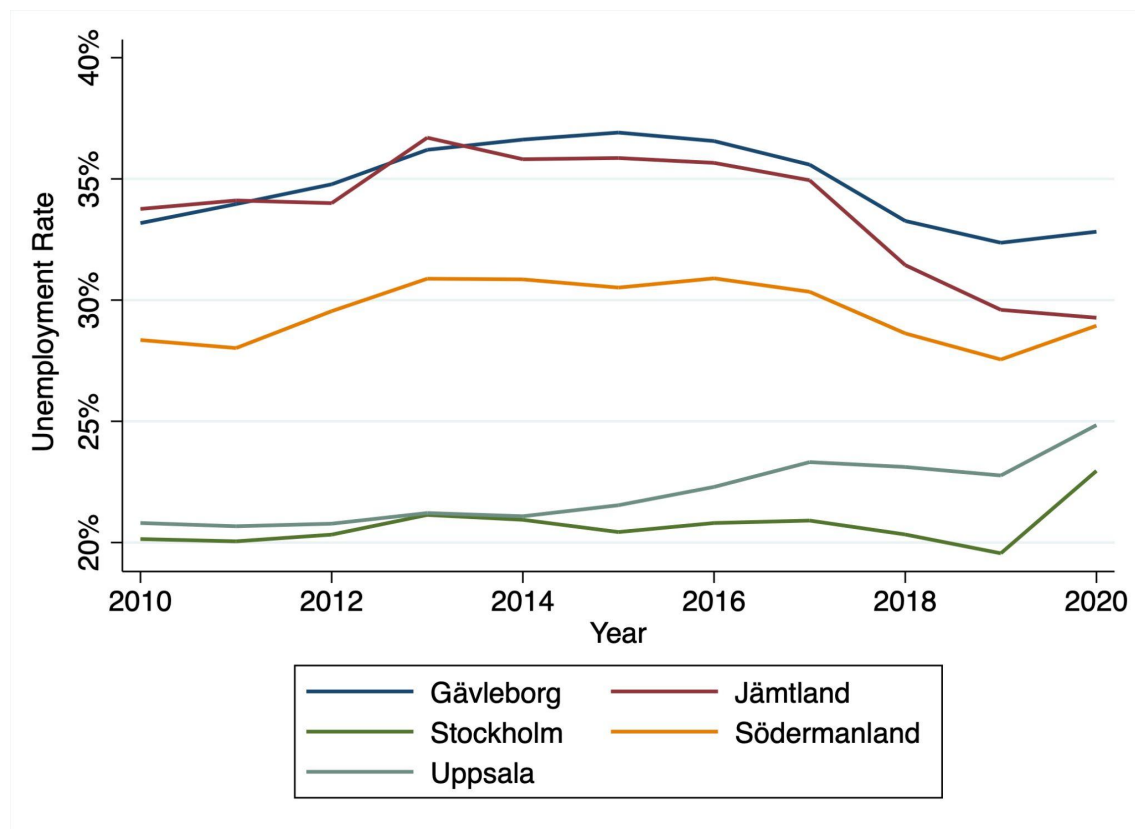
Note: Graph made of data obtained from SCB (2010-2020).

Looking at the unemployment rates shown in **Figure 7**, there has been a change in the general trend, possibly explained by the reform among other factors. The trend however begins to shift around 2017. This could be explained by the time lag between the time refugees seek asylum and the time in which they are granted a residency, discussed in section 6.2.1. Unemployment rates show a decrease in Gävleborg, Jämtland, and Södermanland starting in 2017. In contrast, unemployment rates start to increase after 2017 in Stockholm and Uppsala.

4.4 Parallel Trends Condition

The key assumption for the DiD methodology is the parallel trends assumption. This means that in the absence of policy, the treatment and control would have followed the same trend, and thus the changes in unemployment should have been the same (Angrist & Pischke 2008). The trends in average unemployment rates for the different groups between 2010 and 2020 are shown in Figures 8 & 9.

Figure 8: Development of Average Unemployment rate in Sweden between 2010 and 2020 for Refugees and Other Immigrants
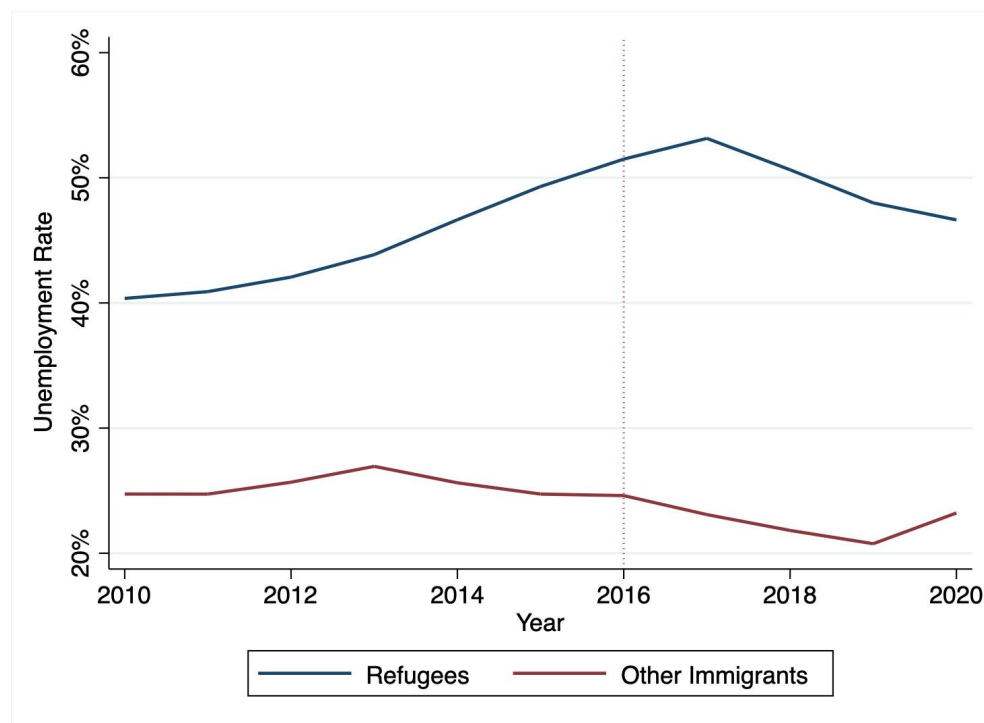
Note 1: dashed vertical line at 2016 represents the time of the implementation of the Swedish Temporary Aliens Act.

Note : Graph made of data obtained from SCB (2010-2020).

Figure 9: Development of Average Unemployment Rate in Sweden between 2010 and 2020 for Refugees and Swedish Natives

Looking at Figures 8 & 9, the parallel trends assumption does not seem to be completely fulfilled. Figure 8 shows that unemployment rates increased until 2013 for both refugees and other immigrants. However, after 2013 the unemployment rates started to decrease for other immigrants but not for refugees. Hence, they cease to follow the same trend up until the intervention period in 2016, which is a condition required for the parallel trends assumption to be fulfilled. In Figure 9, we can see a deviation in the trends that average unemployment rates for refugees and Swedish natives follow, prior to 2016. Unemployment rates for refugees are rising whilst they are decreasing for Swedish natives.

What happens to a country as the inflow of refugees suddenly increases? Sarzin (2021) examines what happened to the German labour market in the short-run as the inflow increased drastically. Sarzin concludes that labour market outcomes for native Germans did not worsen after the increased inflow. However, for the non-Germans, the unemployment rate was higher as the inflow

increased. This suggests that as the inflow of refugees increases, the labour market outcomes in terms of unemployment only get worse for the refugees themselves and not the natives. Looking at Figures 8 & 9, we find this to be true as well, the unemployment rate for refugees has been increasing since the influx increased in 2012 and 2013 whilst it has not affected the natives or other immigrants negatively. Increasing the number of refugees drastically from one year to another does not imply that the number of working opportunities will increase by the same amount, potentially leaving a higher rate of the increased number of refugees unemployed. This could then be a reason why the parallel trend assumption is not completely fulfilled.

4.5 Econometric Specification

This section will specify the econometric models that we used to test our hypothesis. The regressions performed in our analysis were done using STATA/SE 17.0.

The DiD framework will be used to test whether the Swedish Temporary Aliens Act implemented in 2016 affected the unemployment rates of refugees in Sweden. In order to measure the extent to which their conditions have been affected, we decided to run two DiD regressions; one between refugees and other immigrants and one between refugees and Swedish natives. The main outcome variables are the unemployment rates of each group being tested for every region in Sweden and every year between 2010 and 2020. Both of our regressions will take the following form:

$$Unemp = \beta_0 + \beta_1 PostReform + \beta_2 Refugee + \beta_3 Male + \beta_4 UpperEducation + \delta_1 Post \times Refugee + \varepsilon$$

The most common regression form, in this case, is a DiD regression. For both regressions, *Unemp* is the variable representing the unemployment rate. *Post* is a dummy variable indicating whether the observation is from after the implementation of the Act and is therefore equal to 1 for the years 2016, 2017, 2018, 2019, or 2020 and 0 for the years 2010, 2011, 2012, 2013, 2014, and 2015. For the first version of the regression, *Refugee* is a dummy set to 1 for refugees and 0 for other immigrants. For the second version of the regression the dummy *Refugee* is set to 0 for Swedish natives. For both regressions, *Post Treatment Effect,* is the interaction between *Post* and *Refugee.* The coefficient δ_1 shows the combined effect of the years after the implementation of the Act and being a refugee.

The interaction term is the variable that is in focus for this paper, as it shows how the unemployment rates for refugees, other immigrants and Swedish natives react to the Act. In both regressions, the effect of the reform on other immigrants or Swedish natives will be $\hat{\beta}_1$ whilst the effect on refugees will be $\hat{\beta}_1 + \hat{\delta}_1$. The variable *Male* is a dummy set to 1 for males and 0 for females, and *Upper Education* is a dummy set to 1 for observations of those with upper education and 0 for those that only have middle or high school education. *Male* and *Upper Education* are both control variables set in the regressions for robustness, as those two variables are often used as control variables in other studies.

5. Results

To examine the overall effect of the reform we first regress our outcome variable, the unemployment rate, on the dependent variable post, which is set to 1 for the years following the Act (2016-2020). The regression used in STATA to obtain the following results is found in Appendix 10.

Regression A: Unemployment Rates for All Groups

Variables	Unemployment Rate
Post	0.00249
	(0.00539)
Constant	0.276***
	(0.00324)
Number of observations	4,158

Robust standard errors in parentheses
Significance levels: ***** p<0.01, ** p<0.05, * p<0.1**

The *Post* variable slightly shows an increase in the unemployment rates. The effect presented by the coefficient shows that the unemployment rate increased by approximately 0.25% after the reform for all groups investigated. This estimate is statistically insignificant, we are therefore unable to draw

conclusions based on this result since we do not know if the effect is found by chance or by the presence of an actual effect.

The second step is to look at the DiD regressions. The interaction effect between post and refugee is given by the DiD estimator, *Post Treatment Effect,* in both regressions. The results of this will be found in the next two regressions.

Regression B: Unemployment Rates for Refugees and Other Immigrants

Variables	Unemployment Rate
Post	-0.0271***
	(0.00286)
Refugee	0.185***
	(0.00470)
Post Treatment Effect	0.0883***
	(0.00712)
Male	0.0245***
	(0.00353)
Upper Education	-0.101***
	(0.00339)
Constant	0.275***
	(0.00294)
Number of observations	2,772

Robust standard errors in parentheses
Significance levels: ***** p<0.01, ** p<0.05, * p<0.1**

Regression B provides a statistically significant effect on the DiD estimator on the unemployment rates. The coefficient on the interaction term, *Post Treatment Effect*, is 8.8% and is statistically significant at a 1% level. This means that the policy change in 2016 is associated with an average increase in the unemployment rate by 8.8% for the refugees compared to other immigrants.

Regression C: Unemployment Rates for Refugees and Swedish Natives

Variables	Unemployment Rate
Post	-0.0267***
	(0.00173)
Refugees	0.303***
	(0.00449)
Post Treatment Effect	0.0880***
	(0.00675)
Male	0.0220***
	(0.00335)
Upper Education	-0.0971***
	(0.00323)
Constant	0.157***
	(0.00241)
Number of observations	2,772

Robust standard errors in parentheses
Significance levels: ***** p<0.01, ** p<0.05, * p<0.1**

Regression C provides a statistically significant effect on the DiD estimator on the unemployment rates. The coefficient on the interaction term, *Post Treatment Effect*, is 8.8% and is statistically significant at a 1% level. This means that the policy change in 2016 is associated with an average increase in the unemployment rate by 8.8% for the refugees compared to Swedish natives.

6. Discussion

6.1 Interpretation of Results

Regression A shows that the 2016 Act has slightly increased the overall unemployment rate in Sweden, however, this result is statistically insignificant. We are therefore unable to draw conclusions based on it. Looking at Regressions B and C, refugee unemployment rates rise by approximately 8.8% when compared to either Swedish natives or other immigrants. These results were statistically significant, in contrast to Regression A. This means that when adding the interaction term to obtain the DiD estimate, the results become statistically significant at a 1% level. As we can see, the effect sizes when comparing Regression B to Regression C are almost equal. This means that refugee unemployment rates show a similar change when comparing them to either other immigrants or Swedish natives. Based on our findings, we argue that refugee unemployment rates increase as a result of the Temporary Swedish Aliens Act of 2016 in comparison to other immigrants and natives. The results obtained are, however, not in line with the hypothesis of our research.

One explanation as to why the results deviate from our hypothesis is that when an individual is offered a temporary residence permit instead of a permanent one, the increased uncertainty of their residential status may affect employers' evaluation of job applications. When employers are looking at applications from individuals and compare two people with the same qualifications, but have different types of residence permits, the employer would value the individual with a permanent one.

Other explanations are provided by studies that have been referenced or mentioned earlier in this paper, such as the qualitative study conducted by the Swedish Red Cross (2018). Although the Act may incentivise the refugees to look for jobs in order to receive a permanent status in Sweden, temporary residence permits have fed into the constant fear of refugees being deported back to their country. This uncertainty has negatively affected their mental health which could affect their productivity levels or even ability to work. This is however something that is beyond the scope of our research.

6.2 Potential Issues

This section will pinpoint the different issues we have faced when conducting the research, possibly compromising the results obtained.

6.2.1 Time Lag - Asylum Seeker to Refugee

As stated in section 2.3, a time lag occurs as an asylum seeker waits for a decision on their application to officially become a refugee, as processing the application takes time. In Appendix 2, it can be seen that the number of days for the application handling process increased in 2015 and the years following compared to prior years. This intensified time lag could potentially have affected the results of the research since the delay resulted in prolonged waiting times for receiving residence permits. Ruiz & Vargas-Silva (2018) conclude that periods of labour market inactivity have long-term consequences on refugees since it leads to psychological discouragement and deterioration of skills. In Sweden, asylum seekers are not automatically allowed to join the labour force, if they want to work they need to apply for a work permit (Migrationsverket 2022). If the asylum application process then takes longer than usual due to a heavy inflow of asylum seekers, potential labour force participants are excluded from the labour market for longer than usual. This could then have had an impact on their labour market outcomes, attributed to increased psychological discouragement and deterioration of skills among the asylum seekers. Thus, the results in the research might not only reflect the effect of the Act itself but are additionally affected by the increased time lag.

6.2.2 Time Lag in Human Capital Investment

As mentioned in section 2.1, the Swedish government has introduced schemes to improve immigrants' skills. Such schemes have been introduced to combat the deviations in unemployment rates between different groups in Sweden, which can be seen when comparing Figures 4, 5, and 6. Refugees in Sweden generally experience higher unemployment rates than other groups.

This investment in long-term human capital indicates that there is bound to be a time lag between the time the refugee begins the programme and ends, having the requirements needed to boost their chances of employment. Since we are looking at individuals that received a refugee status from 2016 and onwards, and are only working with data up until 2020, refugees are likely to be either in the process of obtaining the required skills or have just managed to finish the programmes they started

with. For example, someone that came here at the age of sixteen could still be completing their upper education. This is connected to an issue highlighted in Ruiz and Vargas-Silva's research (2018); papers that study refugee labour market outcomes are often short-term looking, and less is known about long-term dynamics. Our research is therefore considered to be short-term looking, as we only look at the effects of the Act that occur four years after.

Government schemes focusing on immigrants' skills and abilities were in place before the Act was implemented. For example, the Swedish language programme for immigrants (Svenskundervisning för invandrare- SFI) was introduced in 1965 (Skolinspektionen 2010). Immigrants in Sweden, including refugees, have therefore had access to such programmes for a while. This means that there is a possibility that refugees who arrived before 2016, have already benefited from the government's investment in long-term human capital. Refugee unemployment levels in the post-reform period might be affected by this, as some refugees that arrived before 2016 gained employment after 2016. This affects the precision of our results, as the change in unemployment rates occurs as a result of other factors.

6.2.3 Is the Rise in Unemployment Attributed to the Act or Increased Inflow?

Another issue faced is the question of whether our results are attributed to the Act itself or whether unemployment has risen merely as a result of increased inflow in 2015 and onwards. As mentioned in section 4.4, increasing the number of refugees drastically from one year to another does not imply that the number of working opportunities will increase by the same amount, potentially leaving a higher rate of the increased number of refugees unemployed. However, looking at Figure 10, the percentage of refugees participating in the labour force between the years 2010 and 2018 has slightly increased. However, we see that this increase began before the implementation of the Act, possibly due to other factors. This indicates that the increase in refugee unemployment rates shown in our results is not attributed to the major increase in the inflow of refugees in 2015, since the percentage of refugees absorbed by the labour market is not changing drastically from year to year.

Figure 10: Refugee Participation in the Swedish Labour Force between 2010 and 2018
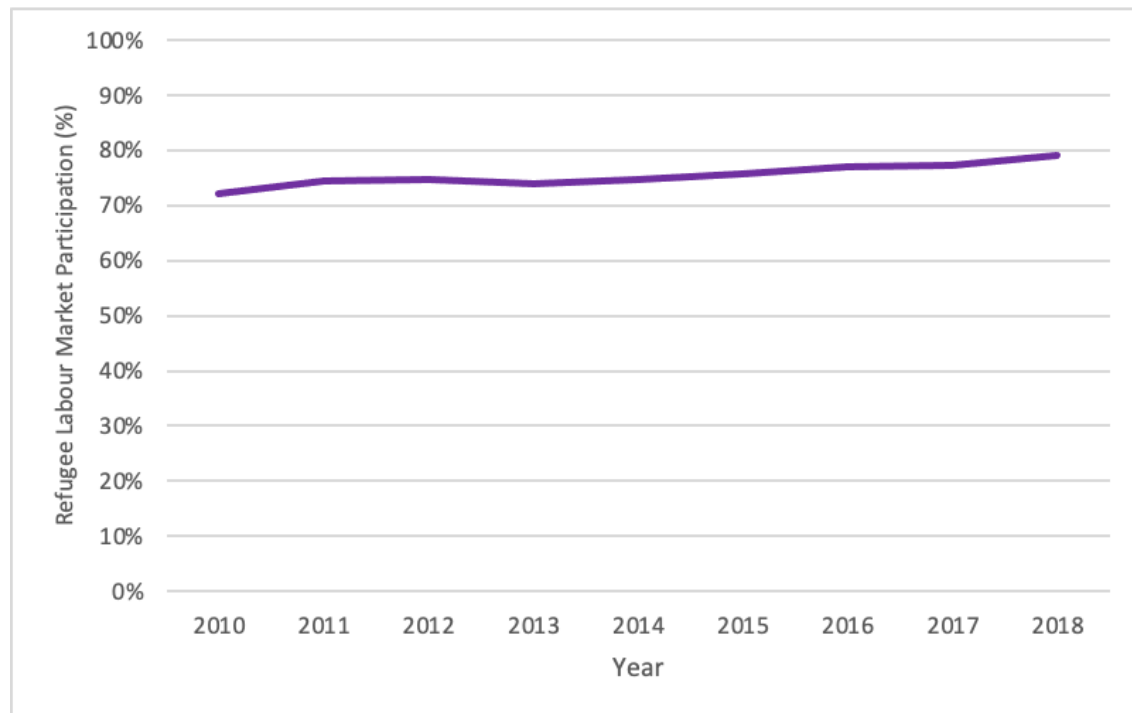
Note: Graph made of data obtained from SCB (2010-2018).

6.2.4 Parallel Trends Assumption not Completely Fulfilled

To run a DiD regression, the parallel trends assumption should be fulfilled. Refugees and other immigrants/Swedish natives are to follow similar unemployment trends up until the intervention period, to show that the absence of the treatment displays a similar difference between both of the groups over time (Angrist & Pischke 2008). The unemployment rates between the different groups in our research began to follow the same trend up until 2013 when refugee unemployment rates deviated into an upward trend and the control groups began to show a downward trend. A very important explanation for this has been discussed in more depth in section 4.4 and concerns the vast increase in asylum applications in 2015 and how it affected refugees but not other immigrants or Swedish natives. A consequence of the assumption not being completely fulfilled is biased results. This means that the effect we found might be greater than the actual effect of the reform.

6.3 Future Studies

This research presents the effect that Swedish government policymaking has on refugee labour market outcomes. It has shown that a refugee's employment prospects are affected by their residential status. The research that we have conducted sheds a light on several other topics that would be interesting to research. One of the main topics is in connection to the time lag in long-term capital investment. Our research is only short-term looking, the reason for this is due to the unavailability of data past 2020. One interesting study would be to look at the long-term effects of the same Act. This would eliminate some of the time lag issues this research faces. It would help constitute whether government schemes and their investment in long-term human capital affects refugees' employment prospects. Such research is vital to provide more precision as some factors that may affect the results can be eliminated.

Future research could additionally look at whether this Act has led to an increase in the number of refugees that have taken low-skilled or low-paying jobs. An aspect that has been touched upon in previous studies is the fact that the Act incentivises more refugees to take low-skilled jobs (Swedish Red Cross 2018). Lastly, new world events have proven the topic of immigration to be of greater importance, such as climate change or the war between Russia and Ukraine. Governments have implemented new policies as a result of this. For example, in March 2022, Switzerland decided to grant Ukrainian asylum seekers temporary protection statuses, without having to go through the regular asylum procedure (Library of Congress 2022). This policy most likely affected the labour market outcomes of different groups in Switzerland. Looking into the employment prospects of those refugees could contribute to investigating the effects of policymaking on refugee labour market participation and their labour market conditions.

While there is always more research needed to examine the effects of Swedish policymaking in the area of immigration, our study has provided an insight into how changing immigration policies to the EU minimum level might affect refugee labour market outcomes.

7. Conclusion

The contribution of this paper is twofold. Firstly, it illustrates how a refugee's residential rights affect their employment prospects and thus the conditions they generally faced in the labour market. On what grounds an individual decides to migrate to a country does have an effect on their employment prospects as well. Refugees are forced to make the shift in their lives and do not guarantee that they will receive jobs as a result of it. Secondly, this paper quantifies the effect of this Act in comparison to other studies which merely provide the qualitative consequences of this Act.

This paper, therefore, provides evidence that the Swedish Temporary Aliens Acts implemented in 2016, affects the labour market conditions of refugees in Sweden by increasing unemployment rates, a result that proves our hypothesis wrong. More specifically, having a temporary residence permit instead of a permanent one reduces a refugee's chances of employment. This raises the question of whether the long-term effects of this Act differ from the short-term effects. It additionally makes it interesting to examine whether policies implemented by other governments have similar effects on refugee labour market conditions.

Previous research states that refugees generally face worse labour market outcomes; wages and level of employment being two factors among many. Policymakers should therefore consider how alterations to laws on certain groups would affect their labour market conditions, as majorly worsened labour market conditions for one group could mean worse economic conditions for the country as a whole. Although migration and its connection to the labour market is such an intricate topic, this paper shows that looking closely and quantifying the effects of reforms unveils the different effects policies can have on the economy.

8. References

Aldén, Lina; Hammarstedt, Mats. 2014. *Integration of immigrants on the Swedish labour market - recent trends and explanations.* Växjö: Linnaeus University.

Angrist, Joshua D.; Pischke, Jörn-Steffen. 2008. Mostly Harmless Econometrics: An Empiricist's Companion. Princeton: Princeton University Press, page 230.

Bloch, Alice. 2000. Refugee settlement in Britain: the impact of policy on participation. *Journal of Ethnic and Migration Studies* 26(1): 75-88.
https://www.researchgate.net/publication/247376025_Refugee_settlement_in_Britain_The_impact_of_policy_on_participation (Accessed 2022-04-05).

Card, David. 1990. The Impact of the Mariel Boatlift on the Miami Labor Market.
Industrial and Labor Relations Review 43(2): 245-257.
https://davidcard.berkeley.edu/papers/mariel-impact.pdf (Accessed 2022-03-16).

Hagelund, Anniken. 2020. After the refugee crisis: public discourse and policy change in Denmark, Norway and Sweden. *Comparative Migration Studies* 8 Article 13.
https://doi.org/10.1186/s40878-019-0169-8 (Accessed 2022-05-10).

Library of Congress. 2022. *Switzerland: Government Grants Temporary Protection Status to Ukrainian Refugees.*
https://www.loc.gov/item/global-legal-monitor/2022-03-15/switzerland-government-grants-temporary-protection-status-to-ukrainian-refugees/ (Accessed 2022-05-13).

migrationsinfo.se. 2013. *Fler flyktingar till följd av våldet i Syrien.*
https://www.migrationsinfo.se/fler-flyktingar-till-foljd-av-valdet-i-syrien/ (Accessed 2022-03-17).

Migrationsverket. 2015. *Inkomna ansökningar om asyl, 2014*.
https://www.migrationsverket.se/download/18.39a9cd9514a346077211b0a/1485556218186/Inko
mna%20ans%C3%B6kningar%20om%20asyl%202014%20-%20Applications%20for%20asylum%2
0received%202014.pdf (Accessed 2022-03-20).

Migrationsverket. 2016. *Inkomna ansökningar om asyl, 2015*.
https://www.migrationsverket.se/download/18.7c00d8e6143101d166d1aab/1485556214938/Inko
mna%20ans%C3%B6kningar%20om%20asyl%202015%20-%20Applications%20for%20asylum%2
0received%202015.pdf (Accessed 2022-03-20).

Migrationsverket. 2017. *Avgjorda asylärenden beslutade av Migrationsverket, 2016*.
https://www.migrationsverket.se/download/18.2d998ffc151ac3871592564/1485556054285/Avgjor
da%20asyl%C3%A4renden%202016%20-%20Asylum%20decisions%202016.pdf (Accessed
2022-03-20).

Migrationsverket. 2021. *Special requirements for permanent residence permits*.
https://www.migrationsverket.se/English/Private-individuals/Studying-and-researching-in-Sweden/
Permanent-residence-permits-for-doctoral-students/Special-requirements-for-permanent-residence-
permits.html (Accessed 2022-05-04).

Migrationsverket. 2022. *Arbeta under tiden som asylsökande*.
https://www.migrationsverket.se/Privatpersoner/Skydd-och-asyl-i-Sverige/Medan-du-vantar/Arbet
a.html (Accessed 2022-05-08).

Migrationsverket. n.d.a. *Asyl*.
https://www.migrationsverket.se/Om-Migrationsverket/Statistik/Asyl.html (Accessed 2022-05-15).

Migrationsverket. n.d.b. *Beviljade uppehållstillstånd efter grund 2009-2020*.
https://www.migrationsverket.se/download/18.2b2a286016dabb81a1854ef/1614956082418/Bevilja
de%20uppeh%C3%A5llstillst%C3%A5nd%202009-2020.pdf (Accessed 2022-03-18).

Migrationsverket. n.d.c. *The Mission of the Migration Agency.*
https://www.migrationsverket.se/English/About-the-Migration-Agency/Our-mission.html
(Accessed 2022-03-18).

Nationalencyklopedin. n.d. flyktingkrisen 2015.
https://www.ne.se/uppslagsverk/encyklopedi/enkel/flyktingkrisen-2015 (Accessed 2022-03-21).

OECD. 2021. *Economic Surveys Sweden.*
https://www.oecd.org/economy/surveys/Sweden-2021-OECD-economic-survey-overview.pdf
(Accessed 2022-02-20).

Riksdagen. 2016. *Socialförsäkringsutskottets betänkande 2015/16:SfU16.*
https://data.riksdagen.se/fil/D8CE95B9-8E10-41D0-9400-6B51020B0C41 (Accessed 2022-03-16).

Ruiz, Isabel; Vargas-Silva, Carlos. 2018. *Differences in labour market outcomes between natives, refugees and other migrants in the UK.* Oxford: University of Oxford.

Sarzin, Zara. 2021. *The impact of forced migration on the labor market outcomes and welfare of host communities.*
https://www.unhcr.org/people-forced-to-flee-book/wp-content/uploads/sites/137/2021/10/Zara
-Sarzin_The-impact-of-forced-migration-on-the-labor-market-outcomes-and-welfare-of-host-comm
unities.pdf (Accessed 2022-03-16).

SCB. 2019. *Arbetsmarknadssituationen för flyktingar och flyktinganhöriga 2010–2018.*
https://www.scb.se/contentassets/aed279a514e44e36aa871c0bfd531a42/am0401_2019a01_sm_am
110sm1901.pdf (Accessed 2022-05-15).

SCB. 2022a. *Invandringar och utvandringar efter födelseland och kön. År 2000-2021.*
https://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__BE__BE0101__BE0101J/ImmiE
miFod/?loadedQueryId=121784&timeType=from&timeValue=2000 (Accessed 2022-03-17).

SCB. 2022b. *Invandring till Sverige.*
https://www.scb.se/hitta-statistik/sverige-i-siffror/manniskorna-i-sverige/invandring-till-sverige/
(Accessed 2022-03-17).

SCB. n.d. *Om SCB.* https://www.scb.se/om-scb/ (Accessed 2022-03-16).

Schröder, Lena. 2007. From problematic objects to resourceful subjects: An overview of
immigrant-native labour market gaps from a policy perspective. *Swedish Economic Policy Review* 14(1):
7-31.
https://www.government.se/49b738/contentassets/6310cf0f5c5049c6b0ee15d1cfc49b74/lena-schr
oder-from-problematic-objects-to-resourceful-subjects-an-overview-of-immigrant-native-labour-mar
ket-gaps-from-a-policy-perspective (Accessed 2022-03-07).

SFS 2005:716. *Aliens Act.*

SFS 2016:752. *Law on temporary limitations to the possibility of being granted a residence permit in Sweden*

Skolinspektionen. 2010. *Svenskundervisning för invandrare (sf) – en granskning av hur utbildningen formas efter
deltagarnas förutsättningar och mål.*
https://www.skolinspektionen.se/globalassets/02-beslut-rapporter-stat/granskningsrapporter/tkg/2
010/svenskundervisning-for-invandrare-tkg/svenskundervisning-for-invandrare-tkg-webb-slutrappo
rt-sfi.pdf (Accessed 2022-05-13).

Swedish Red Cross. 2018. *Humanitära konsekvenser av den tillfälliga utlänningslagen.*
https://www.rodakorset.se/globalassets/rodakorset.se/dokument/om-oss/fakta-och-standpunkter/
rapporter/konsekvenser-av-den-nya-lagen-181206.pdf (Accessed 2022-05-11).

9. Appendix

Appendix 1: Swedish Labour Market Characteristics

This table shows the characteristics of the Swedish labour market, ages 16-64.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employed (tppl)	4394,8	4490,5	4501,7	4545,1	4588,0	4650,8	4727,9	4822,2	4900,9	4926,9	4852,1
Unemployed (tppl)	417,1	382,9	393,6	403,0	400,2	376,7	355,6	346,8	333,5	361,6	447,1
Part of labour force (tppl)	4811,9	4873,4	4895,4	4948,0	4988,2	5027,5	5083,5	5169,0	5234,4	5288,6	5299,2
Not part of the labour force (tppl)	1177,8	1132,1	1114,7	1070,0	1049,5	1037,1	1024,7	1009,1	997,1	997,0	1024,6
Population, age 16-64 (tppl)	5989,7	6005,5	6010,1	6018,1	6037,7	6064,6	6108,2	6178,1	6231,6	6285,6	6323,9
% of the labour force that are unemployed	9%	8%	8%	8%	8%	7%	7%	7%	6%	7%	8%
% of population participating in labour force	80%	81%	81%	82%	83%	83%	83%	84%	84%	84%	84%
% of population not participating in labour force	20%	19%	19%	18%	17%	17%	17%	16%	16%	16%	16%

*tppl: thousand people
Source for whole table: SCB, "Tidigare definitioner. Befolkningen 15-74 år (AKU), 1000-tal efter kön, ålder, arbetskraftstillhörighet och år"**, Sorted on variables:**
- **Table content:** in 1000 people
- **Gender:** total (both men and women)
- **Age:** 16-64
- **Arbetskraftstillhörighet:** employed, unemployed, not part of labour force, part of labour force, population
- **Year:** 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.

Appendix 2: Application handling time for asylum seekers 2010-2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Average handling time for asylum seekers (days)	130	149	108	122	142	229	328	496	507	288	302

Source: Migrationsverket, https://www.migrationsverket.se/Om-Migrationsverket/Statistik/Asyl.html. Used information regarding average application handling time from the following pdf's:

- "Avgjorda asylärenden 2020", "Avgjorda asylärenden 2019", "Avgjorda asylärenden 2018", "Avgjorda asylärenden 2017", "Avgjorda asylärenden 2016", "Avgjorda asylärenden 2015", "Avgjorda asylärenden 2014", "Avgjorda asylärenden 2013", "Avgjorda asylärenden 2012", "Avgjorda asylärenden 2011", "Avgjorda asylärenden 2010"

Appendix 3: Summary statistics for unemployment rates divided by year for refugees-controlled dataset

	Summary of Unemployment Rate		
Year	**Mean**	**Std. dev.**	**Freq.**
2010	0.404	0.103	126
2011	0.409	0.116	126
2012	0.421	0.130	126
2013	0.439	0.135	126
2014	0.466	0.137	126
2015	0.493	0.138	126
2016	0.515	0.136	126
2017	0.531	0.136	126
2018	0.506	0.132	126
2019	0.480	0.126	126
2020	0.466	0.119	126
Total	0.466	0.135	1,386

Appendix 4: Dataset

This table describes which data series from SCB were used to create the final dataset and which variables were looked at from each data series-

Dataserie	Variables	No. observations
Swedish: "Arbetsmarknadsvariabler efter län, kön, utbildningsnivå och bakgrundsvariabel. År 1997-2020" **English:** "Labour market variables based on region, gender, education level and background variables. Years 1997-2020"	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** middle school **Background variable:** reason for immigration; in need of protection and their relatives **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** highschool **Background variable:** reason for immigration; in need of protection and their relatives **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** higher education **Background variable:** reason for immigration; in need of protection and their relatives	**231**

	Year: 2010-2020	
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** female **Education level:** middle school **Background variable:** reason for immigration; in need of protection and their relatives **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender: fe**male **Education level:** highschool **Background variable:** reason for immigration; in need of protection and their relatives **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** female **Education level:** higher education **Background variable:** reason for immigration; in need of protection and their relatives **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland,	**231**

background variables. Years 1997-2020" Source: SCB	Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** middle school **Background variable:** reason for immigration; other foreign born immigrants **Year:** 2010-2020	
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** high school **Background variable:** reason for immigration; other foreign born immigrants **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** higher education **Background variable:** reason for immigration; other foreign born immigrants **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten.	**231**

	Gender: female **Education level:** middle school **Background variable:** reason for immigration; other foreign born immigrants **Year:** 2010-2020	
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** female **Education level:** high school **Background variable:** reason for immigration; other foreign born immigrants **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** female **Education level:** higher education **Background variable:** reason for immigration; other foreign born immigrants **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** middle school **Background variable:** birth region; Sweden **Year:** 2010-2020	**231**

"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** high school **Background variable:** birth region; Sweden **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** higher education **Background variable:** birth region; Sweden **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** female **Education level:** middle school **Background variable:** birth region; Sweden **Year:** 2010-2020	**231**
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten.	**231**

	Gender: female **Education level:** high school **Background variable:** birth region; Sweden **Year:** 2010-2020	
"Labour market variables based on region, gender, education level and background variables. Years 1997-2020" Source: SCB	**Tabel content:** proportion of registered unemployed persons **Region:** Stockholm, Uppsala, Södermanland, Östergötlands, Jönköping, Kronoberg, Kalmar, Gotland, Blekinge, Skåne, Halland, Västra Götaland, Värmland, Örebro, Västmanland, Dalarna, Gävleborg, Västernorrland, Jämtland, Västerbotten, and Norrbotten. **Gender:** male **Education level:** higher education **Background variable:** birth region; Sweden **Year:** 2010-2020	**231**

Appendix 5: Long list of variables used

Variable	Description
Year	Year of the observation
Region	Region of the observation
Education	Variable stating the highest level of education completed; middle school, high school or upper education
Gender	Variable stating the gender observed, either male or female
Status	Variable stating whether the group is refugees, other immigrants or natives
Refugee	A dummy set to 1 if the observation is for refugees
Post	Reform affect, a dummy set to 1 for years 2016, 2017, 2018, 2019 and 2020
Post Treatment Effect	Refugee*Post, the additional reform effect on refugee unemployment rate
Unemp	Unemployment rate for each observation
Unempmean	Average unemployment rate in each region across year (2010-2020)
Unempmean2	Average unemployment rate for each group per year
Male	A dummy set to 1 if the observation is for males

Upper Education	A dummy set to 1 if the observation is for those who completed higher education		

Appendix 6: Summary statistics for unemployment rates divided by region per group-uncontrolled dataset

	Summary of Unemployment Rate (Refugees)		
Region	**Mean**	**Std. dev**	**Freq.**
Blekinge	0.520	0.067	11
Dalarna	0.530	0.082	11
Gotland	0.477	0.105	11
Gävleborg	0.594	0.048	11
Halland	0.381	0.062	11
Jämtland	0.631	0.066	11
Jönköping	0.362	0.045	11
Kalmar	0.462	0.084	11
Kronobergs	0.453	0.046	11
Norrbotten	0.519	0.044	11
Skåne	0.385	0.046	11
Stockholm	0.307	0.020	11
Södermanland	0.504	0.037	11
Uppsala	0.351	0.056	11
Värmland	0.487	0.064	11
Västenorrland	0.565	0.048	11
Västerbotten	0.461	0.022	11
Västmanland	0.443	0.038	11
Västra Götaland	0.365	0.026	11
Örebro	0.441	0.030	11

Östergötland	0.435	0.037	11
Total	0.461	0.098	231

	Summary of Unemployment Rate (Other immigrants)		
Region	**Mean**	**Std. dev.**	**Freq.**
Blekinge	0.215	0.020	11
Dalarna	0.181	0.019	11
Gotland	0.205	0.039	11
Gävleborg	0.268	0.013	11
Halland	0.197	0.022	11
Jämtland	0.210	0.032	11
Jönköping	0.187	0.024	11
Kalmar	0.202	0.023	11
Kronobergs	0.199	0.027	11
Norrbotten	0.205	0.034	11
Skåne	0.210	0.011	11
Stockholm	0.161	0.016	11
Södermanland	0.224	0.018	11
Uppsala	0.149	0.011	11
Värmland	0.202	0.016	11
Västenorrland	0.260	0.026	11
Västerbotten	0.187	0.024	11
Västmanland	0.203	0.015	11
Västra Götaland	0.187	0.022	11
Örebro	0.231	0.026	11
Östergötland	0.203	0.017	11

	Total	0.204	0.034	231

	Summary of Unemployment Rate (Swedish natives)		
Region	Mean	Std. dev.	Freq.
Blekinge	0.133	0.022	11
Dalarna	0.108	0.024	11
Gotland	0.123	0.020	11
Gävleborg	0.144	0.026	11
Halland	0.090	0.015	11
Jämtland	0.129	0.029	11
Jönköping	0.083	0.019	11
Kalmar	0.106	0.021	11
Kronobergs	0.092	0.019	11
Norrbotten	0.126	0.026	11
Skåne	0.113	0.013	11
Stockholm	0.076	0.010	11
Södermanland	0.118	0.021	11
Uppsala	0.081	0.013	11
Värmland	0.128	0.025	11
Västernorrland	0.137	0.026	11
Västerbotten	0.113	0.023	11
Västmanland	0.115	0.020	11
Västra Götaland	0.096	0.020	11
Örebro	0.112	0.023	11
Östergötland	0.109	0.022	11
Total	0.111	0.028	231

Appendix 7: Summary statistics for unemployment rates divided by region- controlled dataset

Region	Summary of Unemployment Rate		
	Mean	Std. dev.	Freq.
Blekinge	0.313	0.183	198
Dalarna	0.285	0.195	198
Gotland	0.289	0.180	198
Gävleborg	0.348	0.200	198
Halland	0.241	0.140	198
Jämtland	0.337	0.225	198
Jönköping	0.224	0.132	198
Kalmar	0.275	0.173	198
Kronoberg	0.270	0.168	198
Norrbotten	0.300	0.179	198
Skåne	0.262	0.131	198
Stockholm	0.207	0.114	198
Södermanland	0.295	0.174	198
Uppsala	0.220	0.139	198
Värmland	0.289	0.170	198
Västernorrland	0.339	0.193	198
Västerbotten	0.278	0.166	198
Västmanland	0.268	0.153	198
Västra Götaland	0.233	0.127	198
Örebro	0.275	0.153	198
Östergötland	0.272	0.154	198
Total	0.277	0.170	4,158

Appendix 8: Summary statistics for unemployment rates divided by status- controlled data set

	Summary of Unemployment Rate		
Status	**Mean**	**Std. dev.**	**Freq.**
Natives	0.124	0.055	1386
Other immigrants	0.242	0.071	1386
Refugees	0.466	0.135	1386
Total	0.277	0.170	4158

Appendix 9: Summary statistics for unemployment rates divided by year- controlled data set

	Summary of Unemployment Rate		
Year	**Mean**	**Std. dev.**	**Freq.**
2010	0.266	0.129	378
2011	0.265	0.138	378
2012	0.272	0.147	378
2013	0.283	0.155	378
2014	0.284	0.168	378
2015	0.287	0.182	378
2016	0.291	0.193	378
2017	0.290	0.201	378
2018	0.276	0.193	378
2019	0.263	0.182	378
2020	0.273	0.167	378
Total	0.277	0.170	4,158

Appendix 10: Full set of regressions

Reform effect

$$Unemp = \beta_0 + \beta_1 Post + \varepsilon$$

Reform effect with DiD-estimator: refugees vs. other immigrants/refugees vs. Swedish natives

$$Unemp = \beta_0 + \beta_1 Post + \beta_2 Refugee + \beta_3 Male + \beta_4 UpperEducation + \delta_1 Post \times Refugee + \varepsilon$$