The Effects of Recent Refugee Influxes on Different Regions in Germany

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Abstract

Germany has witnessed several large-scale refugee influxes from parts of the Middle East and Africa over the past decade. This paper studies the ways in which these recent refugee influxes have affected social and labor market indicators in the different regions of Germany. Using a fixed effects model as the core methodological framework, the paper finds that refugees lower unemployment and have no significant impact on safety standards in Germany's different regions. The paper also deduces that refugees do not significantly affect the agricultural labor market, but have a positive, significant, and almost equal effect on employment in the manufacturing sector and employment in the industrial sector.

Keywords: Königsteiner Schlüssel, refugee, migrant, regional distribution

1. Introduction

In 2015, after experiencing relatively consistent refugee influx patterns since 2006, Germany saw a sharp rise in the number of incoming refugees as Chancellor Angela Merkel decided to open the country's borders to refugees from the outside. According to UNHCR's population databank, in 2018, over a million people were living in Germany under refugee status (UNHCR n.d.). The aim of this study is to understand: "**How have the recent refugee influxes affected regional social and labor market indicators in Germany?**".

Historically, migration flows have played a major role in shaping contemporary Germany; however, recent influxes are different as they are mostly comprised of refugees seeking asylum and not migrants. The main distinction between migrants and refugees is that migrants move by choice, while refugees flee by force (Eldridge n.d.). Under the 1951 Refugee Convention, countries which host refugees are obliged under international law to provide these populations with social services and integrate them into their new society (ibid.), thus this paper focuses solely on refugees. This obligation towards host countries is one of the reasons why refugees are claimed as a burden by some and is one of the primary components fueling anti-refugee rhetoric.

This paper explores the claim that refugees are a burden, by testing if there is empirical evidence suggesting that refugees add pressure on unemployment and make societies more unsafe in Germany. The paper also explores how refugees contribute to employment in Germany's different economic sectors. A stronger understanding of the contribution of refugees to the different economic sectors could inspire researchers and policymakers to find ways to improve this contribution in a way that benefits both refugees and the German population.

Unlike countries that assign refugees to camps, Germany has a quota system (Königsteiner Schlüssel) for allocating refugees to regions within the country. The system distributes refugees in accordance with a formula for distributing federal sources, according to each state's tax revenues and total population (Katz, Noring, and Garrelts 2016). While the system is equitable, fair, and efficient, research has shown that it imposes pressure on large cities, as it fails to consider factors like higher population densities, special housing conditions, or secondary migration patterns in such regions (ibid.). Germany's use of the Königsteiner Schlüssel system inspired me to structure the analysis throughout this paper by the regional level, meaning that the paper will look at the regional number of refugees and its effect on several regional indicators. Using regional indicators yields more accurate results by capturing any inherent differences across regions.

To analyze the regional data set compiled, the fixed effects model was used as the core methodological framework. Additionally, the panel vector autoregres-

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sive (PVAR) model was applied for robustness check. In terms of testing arguments that have anti-refugee rhetoric, the results of this paper show that, opposite to the mainstream stigma surrounding refugees, the effect of refugee populations on unemployment is significant and negative, meaning that refugees lower unemployment. This could be due to the increase in capacity utilization in Germany in response to the influx of refugees or due to the fact that previously unemployed Germans are now taking jobs in refugee-related organizations (Furlanetto 2016, p. 22). Additionally, the results indicate that refugees have no significant effect on the two safety indicators recorded for Germany (intentional homicide rate and vehicle theft), indicating that refugees do not threaten safety in different regions of the country. There are two potential reasons why that would be the case; the first one being the relatively good conditions refugees live in, and the second being that refugees are not clustered in one region of Germany but rather distributed across the country.

In terms of the contribution of refugees to different economic sectors, the paper concludes that refugees do not have a significant effect on employment in agriculture. They have a positive, significant, and almost equal effect on employment in manufacturing and employment in industry. Such results can be explained by the scale of the manufacturing and industry sectors in Germany, which are much larger than the agricultural sector, and hence offer more opportunities for contribution from refugees. In addition, the agricultural sector in Germany is highly automated, limiting the number of refugees it can absorb as labor capital (*Germany - Agriculture* n.d.).

Several closely related research papers also study refugees and their influence on the different walks of life in host countries. Tumen (2016) explores the impacts of unexpected flows of Syrian refugees into Turkey during 2012 and 2013 on the economic outcomes of labor markets, consumer prices, and housing rents. He finds that the influx of Syrian refugees in Turkey has led to a reduction in the prices of goods produced by informal markets, an increase in housing rents, and no effect on the wage earnings of native individuals. While a difference-in-differences analysis is used as the main methodological framework in Tumen's paper, it cannot be applied to the German case since all states were affected by the refugee influx, leaving no control group. Instead, I use the fixed effects model and the PVAR model to analyze the data set.

Del Carpio and Wagner (2015) examine whether Syrian refugees have a statistically significant impact on employment data of the native Turkish population. Their main finding is that the number of people engaging in formal work and attending school has increased since the inflow of refugees into Turkey.

Chatzichristou (2018) studies the effect of Syrian refugees on labor market indicators in Germany from 2011 to 2016. The results show that Syrian refugee inflows have a positive and significant impact on the employment of German citizens and have led to an overall increase in German wages.

The main distinguishing factor between both papers mentioned above and this one is that I will be using regional indicators since I believe that the effect of refugees differs based on the region they are allocated to. Moreover, I am extending my analysis beyond labor market variables, where I also explore social indicators pertaining to safety. Finally, while both papers look at the number of Syrian refugees, I explore the refugee population as a whole, regardless of nationality.

2. Methodology

This section of the paper explores the methodology used, including the data set, variables, and analytical frameworks.

2.1. Variables

"Appendix A: Description of Variables" provides a summary of all variables (independent, dependent, and control), which are taken at the regional level, including their units.

Since this paper aims to test the effect of refugees on different regional indicators, the independent variable is "Number of Refugees per region". Data on the number and distribution of refugees, collected from The Federal Office for Migration and Refugees in Germany, was used to calculate the number of refugees per region using the following equation:

$$\begin{aligned}\text{Number of refugees per region} &= \text{Total number of refugees} \\ &\times \text{Percentage of refugee applications accepted in region} \end{aligned} \quad (1)$$

For the dependent variables, "Unemployment Rate", "Vehicle Theft", and "Intentional Homicide Rate" are all used to test two of the common anti-refugee arguments (refugees add burden on unemployment and refugees make societies less safe). Additionally, the variables "Employment in Agriculture", "Employment in Manufacturing", and "Employment in Industry" are used to understand the ways in which refugees affect the different economic sectors in Germany.

Three control variables are incorporated into the analysis. The first is "Population Size", which is used

because it is one of the two factors considered in Germany's Königsteiner Schlüssel system. The second control variable is "GDP/capita", which is used as a substitute for tax revenues, the other factor considered in the Königsteiner Schlüssel system. I use GDP per capita as there is no data available on regional tax revenues. The last control variable is the lagged dependent variable (value of the dependent variable in previous years). After performing several test regressions, results indicated that the dependent variables used are significantly affected by their values in previous years, so I decided to add a lagged dependent variable as a control for each regression.

Data for all the dependent and control variables were extracted from the OECD Regional Databasa. In total, the data set compiled contains data on 16 regions for the years 2010 until 2018.

The data set has several limitations. Firstly, a few indicators did not have an observation for the year 2018, which in turn affects the consistency of the results. For example, data on employment in agriculture only runs until 2017.

Moreover, the data set does not account for the inter-regional migration of refugees. The data assumes that refugees stay in the region to which they are assigned, but that is not what ends up taking place. Deviations from the quota are highest in the region of North Rhine-Westphalia, where more refugees move there after their initial assignment, and Bremen, where more refugees move to new regions after their initial assignment (Katz, Noring, and Garrelts 2016). This could lead the analysis to underestimate the effect of refugees in regions like North Rhine-Westphalia and overestimate the effect of refugees in other regions like Bremen. However, existing research reassures that such deviations from the norm are "very minor, which is remarkable taking into account that approximately 1.1 million refugees were distributed in 2015 (ibid.). In the future, one way to account for the inter-regional migration of refugees is to track their movement by taking more frequent data on their location, ideally quarterly data, which is currently unavailable online.

The final limitation is the lack of data on tax revenues per region. It would have been ideal to use this as a control variable, especially since it is used as a factor in Germany's Königsteiner Schlüssel system. In order to account for that, as explained in the discussion on control variables, data for regional GDP per capita was used as a substitute. GDP per capita was chosen specifically since it is indicative of the amount of tax revenues generated in the different regions of Germany, where one of the main components of GDP is government spending which is financed through tax revenues.

2.2. Analytical Frameworks

I analyze the data set using three main frameworks: simple fixed effects model, extended fixed effects model, and panel vector autoregressive (PVAR) model. While I perform all these methods, it is the extended fixed effects model that is at the core of this paper. Because the simple fixed effects model does not include any control variables, it is incorporated solely as a baseline for comparison and robustness check. The PVAR model, on the other hand, displays a lot of noise because the data set is relatively small, and therefore I use it for a robustness check, as explained in section IV of the report.

3. Results

This section summarizes the quantitative results, along with the conclusions and narratives that could be derived. It is divided into three subsections ("Unemployment Rate", "Safety", and "Employment in the Different Economic Sectors") depending on the type of dependent variables studied.

3.1. Unemployment Rate

Table 1: *Fixed Effects - The Effect of Refugees on Unemployment Rate (unit: % unemployed over labor force)*

SIMPLE	Coefficient	Standard Error	P-value
Number of Refugees	-0.136357	0.0477714	0.005
Constant	6.321759	0.207115	0.000

EXTENDED	Coefficient	Standard Error	P-value
Number of Refugees	-0.055643	0.0204247	0.008
Lagged Unemployment Rate	0.6993827	0.0541107	0.000
Population Size	2.61e-06	6.13e-07	0.000
GDP per capita	-0.0002649	0.0000606	0.000
Constant	0.3535225	3.281009	0.914

**Note:* *Values of the "Number of Refugees" variable were divided by 10000 for scaling purposes*

An analysis of the following descriptive statistics will contextualize table 1. In the sample studied, the average regional unemployment rate is 5.83%. As for the annual influx of refugees per region, it is 35,972 refugees, which constitutes almost 0.726% of the average regional population. Considering that the unemployment rate and

the proportion of refugees to total population are both relatively small, it was initially suspected that refugees have an insignificant impact on unemployment.

Surprisingly, contrary to this speculation, refugees have a statistically significantly negative effect on unemployment rates in the different regions of Germany. As it can be seen from Table 1, the coefficient for the variable "Number of Refugees" in the extended fixed effects model is -0.055643. This value suggests that an increase of 10,000 refugees in one region in Germany lowers the unemployment rate in that region by 0.055643%. This is a small number in terms of magnitude, especially since the average annual influx of refugees per region is 35,972 refugees.

However, regardless of magnitude, the effect is still statistically significant, indicating that refugees lower the unemployment rate in the different regions of Germany. There are two potential explanations for this result. The first explanation is that unemployment falls due to the increase in capacity utilization in response to refugees flowing into the economy (Furlanetto 2016, p. 22). In other words, refugees lead to an increase in GDP per capita, and that in return reduces unemployment. The second rationale is that the increase in the number of refugees requires the country to open more jobs in the NGO and social work sector, and these jobs are being filled by previously unemployed Germans, hence reducing the unemployment gap.

Note that while these results are relatively optimistic, refugees are not incorporated in existing unemployment statistics. This means that the results above do not include unemployed refugees.

3.2. Safety

The extended fixed effects results in tables 2 and 3 indicate that the influx of refugees has no statistically significant effect on safety measures in the different regions of Germany. This can be deduced from the p-value for the "Number of Refugees" variable in each of the extended fixed effects regressions above. For the effect of refugees on intentional homicide rate (Table 2), the p-value is 0.341, and for the effect of refugees on vehicle theft (Table 3), the p-value is 0.724. Both values are much higher than 0.05, indicating that with 95% confidence, the effect of refugees on both safety indicators is statistically insignificant. This suggests that, contrary to the mainstream anti-refugee argument, refugees do not pose a threat to the safety of German society.

Table 2: *Fixed Effects - The Effect of Refugees on Intentional Homicide Rate (unit: homicides for 100,000 population)*

SIMPLE	Coefficient	Standard Error	P-value
Number of Refugees	0.0499648	0.0372319	0.183
Constant	3.951625	0.1196548	0.000

EXTENDED	Coefficient	Standard Error	P-value
Number of Refugees	0.0381645	0.0398556	0.341
Lagged Homicide Rate	0.0514793	0.1190392	0.667
Population Size	8.58e-07	1.14e-06	0.453
GDP per capita	-0.0001218	0.0000932	0.195
Constant	4.888429	4.992572	0.331

**Note:* *Values of the "Number of Refugees" variable were divided by 10000 for scaling purposes*

Table 3: *Fixed Effects - The Effect of Refugees on Vehicle Theft (unit: motor vehicle theft for 10,000 population)*

SIMPLE	Coefficient	Standard Error	P-value
Number of Refugees	1.994939	1.003739	0.050
Constant	98.29577	3.225786	0.000

EXTENDED	Coefficient	Standard Error	P-value
Number of Refugees	0.2538217	0.7159653	0.724
Lagged Vehicle Theft	0.6037158	0.086662	0.000
Population Size	7.26e-07	0.0000198	0.971
GDP per capita	-0.0020147	0.0017049	0.241
Constant	123.3462	99.53695	0.219

**Note:* *Values of the "Number of Refugees" variable were divided by 10000 for scaling purposes*

There is no clear consensus in the literature on the question of whether refugees affect the safety of host communities. In the context of Germany, it can be speculated that refugees do not affect safety standards because they live in relatively better conditions than those in less developed countries. Refugees also have higher chances of contributing to society because of the low unemployment rates in Germany's different regions. Finally, the Königsteiner Schlüssel system in Germany considers the productivity of each province through tax revenues, which means that richer provinces end

up having more refugees (Katz, Noring, and Garrelts 2016).

3.3. Employment in the Different Economic Sectors

Table 4: *Fixed Effects - The Effect of Refugees on Employment in Agriculture (unit: number of persons)*

SIMPLE	Coefficient	Standard Error	P-value
Number of Refugees	-0.0177641	0.0117742	0.131
Constant	40352.97	6832.306	0.000

EXTENDED	Coefficient	Standard Error	P-value
Number of Refugees	-0.0052893	0.0078997	0.505
Lagged Employment in Agriculture	0.7096773	0.0636966	0.000
Population Size	-0.0005671	0.00226	0.802
GDP per capita	-0.2604314	0.1522706	0.091
GVA in Agriculture	-0.1598804	0.8597174	0.853
Constant	26513.77	11500.84	0.023

Table 5: *Fixed Effects - The Effect of Refugees on Employment in Manufacturing (unit: number of persons)*

SIMPLE	Coefficient	Standard Error	P-value
Number of Refugees	0.0999305	0.1000535	0.318
Constant	460740	60919.12	0.000

EXTENDED	Coefficient	Standard Error	P-value
Number of Refugees	0.1032274	0.0269547	0.000
Lagged Employment in Manufacturing	0.852892	0.0527184	0.000
Population Size	-0.0312085	0.0093793	0.001
GDP per capita	-0.6061691	0.4518043	0.183
GVA in Manufacturing	0.4813488	2.21	0.029
Constant	230918.8	36838.31	0.000

Table 6: *Fixed Effects - The Effect of Refugees on Employment in Industry (unit: number of persons)*

SIMPLE	Coefficient	Standard Error	P-value
Number of Refugees	0.0986175	0.1114346	0.376
Constant	496820.9	62374.9	0.000

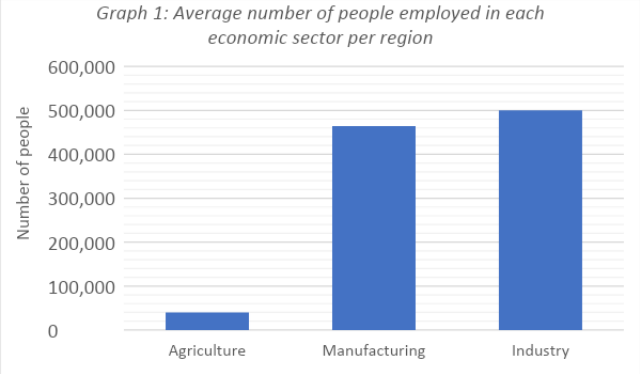
EXTENDED	Coefficient	Standard Error	P-value
Number of Refugees	0.1144903	0.030252	0.000
Lagged Employment in Industry	0.8608272	0.0582289	0.000
Population Size	-0.043107	0.0094826	0.000
GDP per capita	-0.9099951	0.4672911	0.055
GVA in Industry	0.6930724	0.2289901	0.003
Constant	291458	39400.52	0.000

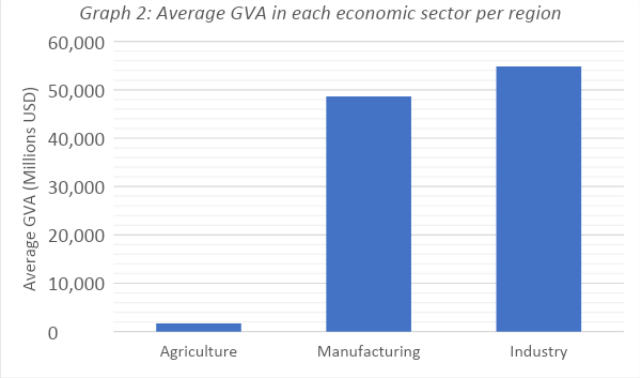
Starting with Table 4, the p-value for the "Number of Refugees" variable in the extended fixed effects model is 0.131. The value, being higher than 0.05, suggests that with 95% confidence the coefficient is insignificant; refugees do not affect employment in agriculture. As for tables 5 and 6, they encompass different results. The p-value for the "Number of Refugees" variable in the extended fixed effects model is 0.000 in both tables, indicating that refugees have a significant effect on employment in manufacturing and employment in industry.

The coefficients in tables 5 and 6 can be used to compare the magnitude of the effect refugees have on employment in manufacturing and employment in industry. In the extended fixed effects model in Table 5, the coefficient for the "Number of Refugees" variable is 0.1032274. This suggests that for every 100 refugees entering a region, almost 10 people in that region get employed in the manufacturing sector. As for Table 6, the coefficient for the "Number of Refugees" variable is 0.1144903. This means that for every 100 refugees entering a region, almost 11 people in that region get employed in the industrial sector. Both numbers are similar, indicating that the effect that refugees have on both sectors is comparable.

In summary, the results from the tables above show that refugees do not affect employment in agriculture but do affect employment in the manufacturing and industry sectors positively and almost equally. The first potential explanation is the size of the manufacturing and industry sectors which are significantly larger

than that of agricultural ones. The sizes of all three sectors, in terms of the number of employees and gross value added (GVA), has been visualized through the two graphs below:





As graphs 1 and 2 illustrate, the manufacturing and industry sectors have higher numbers of employees and a larger GVA than the agricultural sector. This means that refugees have more opportunities to contribute to both these large sectors.

The second rationale behind the results in tables 4, 5, and 6 is the fact that the agricultural sector does not absorb refugees as employees as much as the two other sectors do. This is because the agricultural sector is highly automated, requiring only a small labor force (*Germany - Agriculture* n.d.).

4. Robustness Check

As mentioned in the Methodology section, the results from the PVAR model display a lot of noise due to the small size of the dataset. For that reason, those results were used for robustness checks. All PVAR results are displayed in "Appendix B: PVAR Results", which includes tables of each PVAR result, along with the associated impulse response function.

As it can be seen from graphs VIII.1 through VIII.6 in Appendix B, the PVAR results confirm those achieved through the extended fixed effects model. That holds for the variables that are significant; "Unemployment Rate", "Employment in Manufacturing", and "Employment in Industry". The results from the extended fixed effects model, show that the assertion that refugees lower unemployment rates in Germany, are supported by Graph VIII.1. In the subplot in "Refugee Ratio : Unemployment Rate" has a negative slope, confirming that the effect of refugees on the unemployment rate is negative. As for employment in manufacturing and employment in industry, the results from the extended fixed effects model show that refugees affect employment in the manufacturing and industry sectors positively and almost equally. This result is supported by Graph VIII.5 and Graph VIII.6, where the lines in subplots "Refugee Ratio : Employment in Manufacturing" and "Refugee Ratio : Employment in Industry" both have a positive slope and are very similar in shape. Put simply, all three significant variables move in the same direction in the extended fixed effects model and the PVAR model.

5. Conclusion

This paper offers empirical evidence on the positive impact refugees have on the regions that host them. The analysis suggests that refugees affect unemployment negatively and have no significant impact on two safety indicators.

In terms of the impact that refugees have on the different economic sectors, the results suggest that refugees impact employment in the manufacturing and industry sectors, but do not impact employment in the agricultural sector. This could suggest that the size of each economic sector (agriculture, manufacturing, and industry) in the different regions should be a factor considered in Germany's Königsteiner Schlüssel system. For instance, if region 1 has a large manufacturing sector and minimal agricultural activity, while region 2 relies heavily on agriculture, then a higher number of refugees should be placed in region 1 as it provides more economic opportunities for refugees.

Overall, the results provide an alternative outlook on refugees that is often overlooked by mainstream media. While the results cannot be generalized on refugees all over the world, it seems from the analysis conducted in this paper that Germany could be benefiting from the presence of refugees within its borders, especially considering its aging population. This, however, does not undermine the fact that more can be done to better allocate refugees across Germany, in ways that benefit

the German population and make use of the refugees' untapped potential. A starting point is questioning the current Königsteiner Schlüssel system and finding ways to improve it.

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Appendix A: Description of Variables

Table VII.1: Variables and Units

Variable Type	**Variable Name**	**Unit**
Independent	Number of refugees	Number of persons
Dependent	Unemployment Rate	Percentage unemployed over labor force 15+
	Vehicle Theft	Motor vehicle theft for 10,000 population
	Intentional Homicide Rate	Homicides for 100,000 population
	Employment in Agriculture	Number of persons
	Employment in Manufacturing	
	Employment in Industry	
Control	Population size	Number of persons
	GDP/capita	USD per head, constant prices, constant PPP, base year 2015
	Lagged dependent variable	Depending on the variable

Appendix B: PVAR Results

Table VIII.1: PVAR - Refugee Ratio and Unemployment Rate

	Coefficient	Standard Error	P-value
Refugee Ratio$_t$			
Refugee Ratio$_{t-1}$	1.018592	0.1031249	0.000
Unemployment Rate$_{t-1}$	-0.0000951	0.0009148	0.917
GDP/capita$_{t-1}$	0.036397	0.0386087	0.346
Unemployment Rate$_t$			
Refugee Ratio$_{t-1}$	-25.24527	18.16344	0.165
Unemployment Rate$_{t-1}$	0.9422102	0.1478083	0.000
GDP/capita$_{t-1}$	-1.424928	5.533024	0.797
GDP/capita$_t$			
Refugee Ratio$_{t-1}$	0.9887665	0.6020484	0.101
Unemployment Rate$_{t-1}$	-0.0000436	0.0047318	0.993
GDP/capita$_{t-1}$	0.8787042	0.18465	0.000

***Note:** The logarithm function has been applied to the "GDP/capita" variable for scaling purposes*

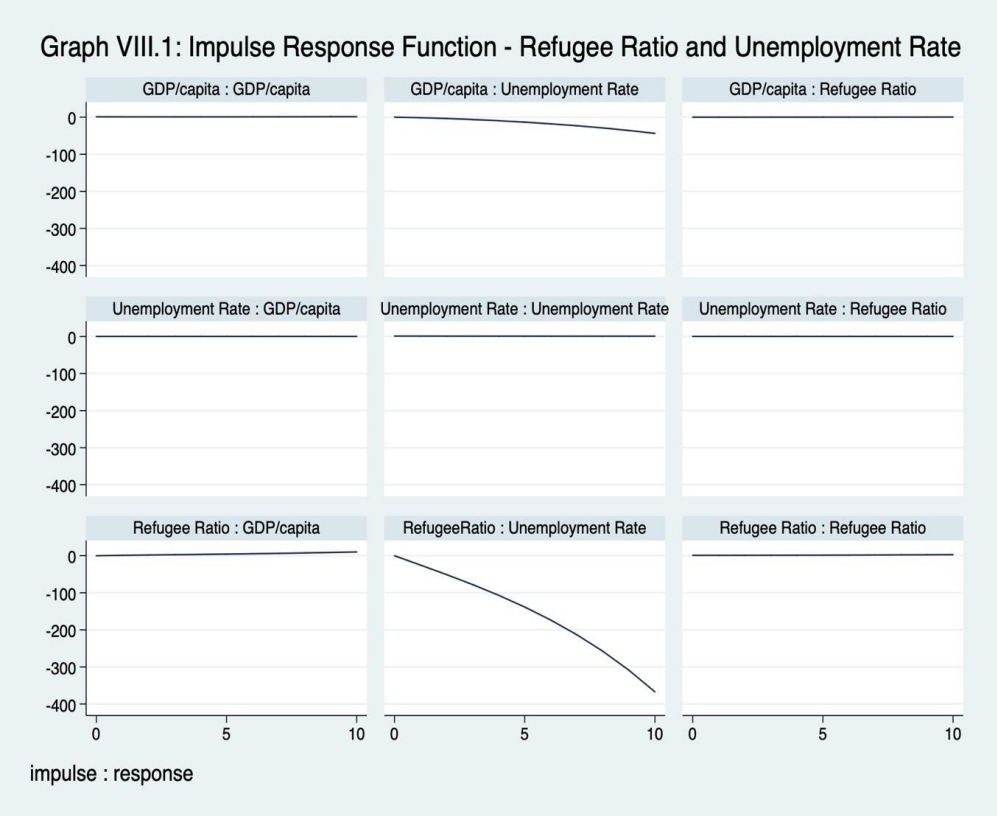

Table VIII.2: PVAR - Refugee Ratio and Intentional Homicide Rate

	Coefficient	Standard Error	P-value
Homicide Rate$_t$			
Homicide Rate$_{t-1}$	0.1395641	0.276847	0.614
Refugee Ratio$_{t-1}$	77.9048	54.93094	0.156
GDP/capita$_{t-1}$	2.24316	5.348129	0.675
Refugee Ratio$_t$			
Homicide Rate$_{t-1}$	-0.0005678	0.0015556	0.715
Refugee Ratio$_{t-1}$	1.522617	0.2442973	0.000
GDP/capita$_{t-1}$	0.1307972	0.016775	0.000
GDP/capita$_t$			
Homicide Rate$_{t-1}$	-0.0040027	0.0076189	0.599
Refugee Ratio$_{t-1}$	0.1947073	1.48134	0.895
GDP/capita$_{t-1}$	0.7720255	0.111854	0.000

***Note:** The logarithm function has been applied to the "GDP/capita" variable for scaling purposes*

Graph VIII.2: Impulse Response Function - Refugee Ratio and Intentional Homicide Rate

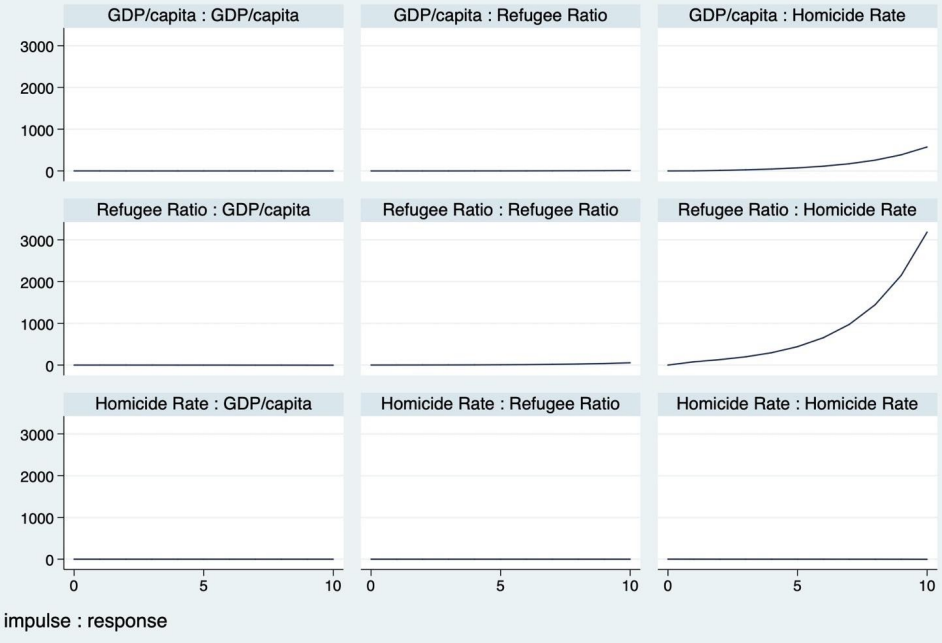

Table VIII.3: PVAR - Refugee Ratio and Vehicle Theft

	Coefficient	Standard Error	P-value
Vehicle Theft$_t$			
Vehicle Theft$_{t-1}$	0.6097457	0.3326091	0.067
Refugee Ratio$_{t-1}$	1.091661	0.7735242	0.158
GDP/capita$_{t-1}$	0.0004156	0.0029067	0.886
Refugee Ratio$_t$			
Vehicle Theft$_{t-1}$	0.0340103	0.0902878	0.706
Refugee Ratio$_{t-1}$	1.37761	0.2980386	0.000
GDP/capita$_{t-1}$	0.0033762	0.0010374	0.001
GDP/capita$_t$			
Vehicle Theft$_{t-1}$	-8.446513	17.26308	0.625
Refugee Ratio$_{t-1}$	-25.70481	72.91255	0.724
GDP/capita$_{t-1}$	0.6254253	0.2163096	0.004

***Note:** Values of the "Refugee Ratio" variable have been multiplied by 1000 for scaling purposes*

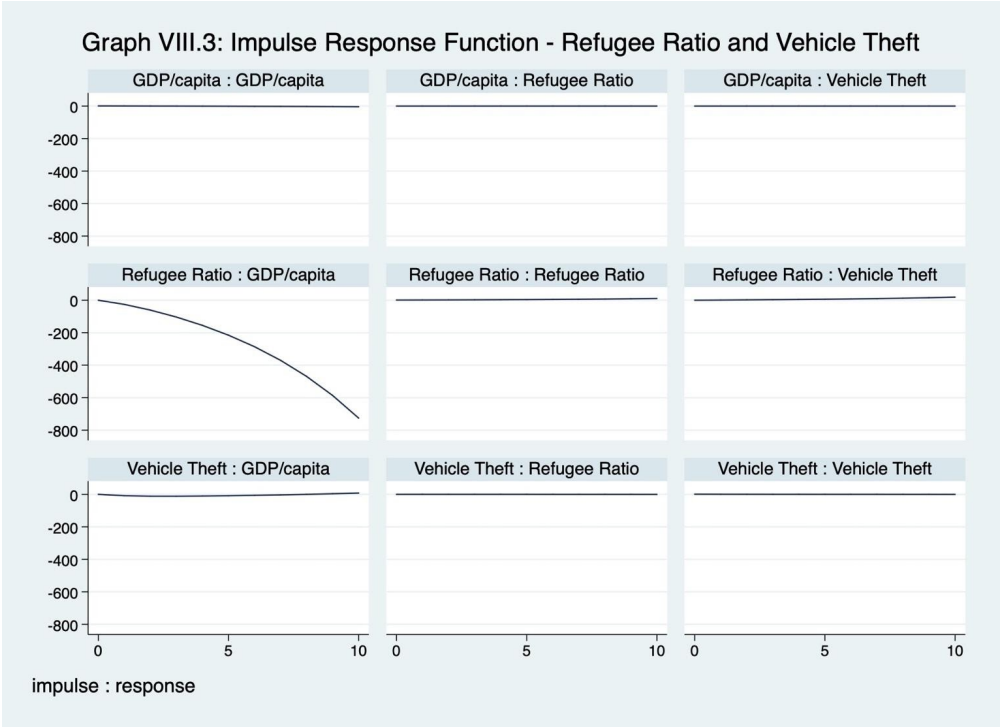

Table VIII.4: PVAR - Refugee Ratio and Employment in Agriculture

	Coefficient	Standard Error	P-value
Employment in Agriculture$_t$			
Employment in Agriculture$_{t-1}$	1.017037	0.1948584	0.000
Refugee Ratio$_{t-1}$	27.93323	78.24212	0.721
GDP/capita$_{t-1}$	-0.1542437	0.0956082	0.107
Refugee Ratio$_t$			
Employment in Agriculture$_{t-1}$	0.0005427	0.0004478	0.226
Refugee Ratio$_{t-1}$	1.201188	0.1327127	0.000
GDP/capita$_{t-1}$	0.0023912	0.000483	0.000
GDP/capita$_t$			
Employment in Agriculture$_{t-1}$	0.014325	0.1264607	0.910
Refugee Ratio$_{t-1}$	53.93103	44.52727	0.226
GDP/capita$_{t-1}$	1.0069	0.1326757	0.000

***Note:** Values of the "Refugee Ratio" variable have been multiplied by 1000 for scaling purposes*

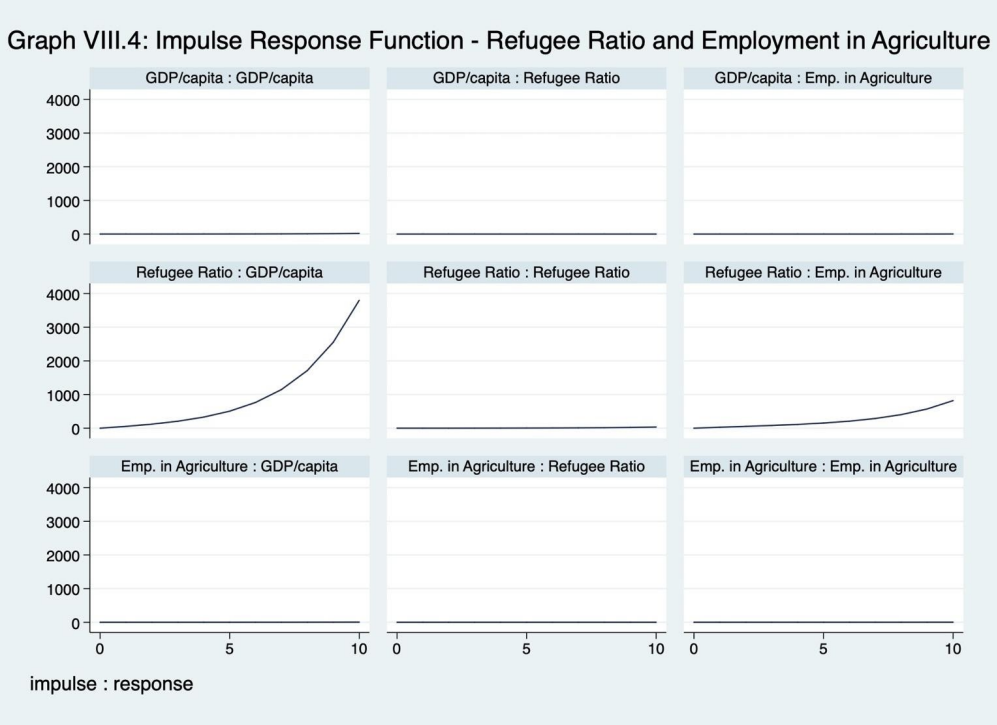

Table VIII.5: PVAR - Refugee Ratio and Employment in Manufacturing

	Coefficient	Standard Error	P-value
Employment in Manufacturing$_t$			
Employment in Manufacturing$_{t-1}$	0.8571159	0.0951286	0.000
Refugee Ratio$_{t-1}$	512.9726	141.2569	0.000
GDP/capita$_{t-1}$	-0.3342224	0.3741931	0.372
Refugee Ratio$_t$			
Employment in Manufacturing$_{t-1}$	-0.0000461	0.0000439	0.294
Refugee Ratio$_{t-1}$	1.142237	0.1106329	0.000
GDP/capita$_{t-1}$	0.0023987	0.0005157	0.000
GDP/capita$_t$			
Employment in Manufacturing$_{t-1}$	-0.0027657	0.013045	0.832
Refugee Ratio$_{t-1}$	52.75429	39.86701	0.186
GDP/capita$_{t-1}$	1.017904	0.1427907	0.000

***Note:** Values of the "Refugee Ratio" variable have been multiplied by 1000 for scaling purposes*

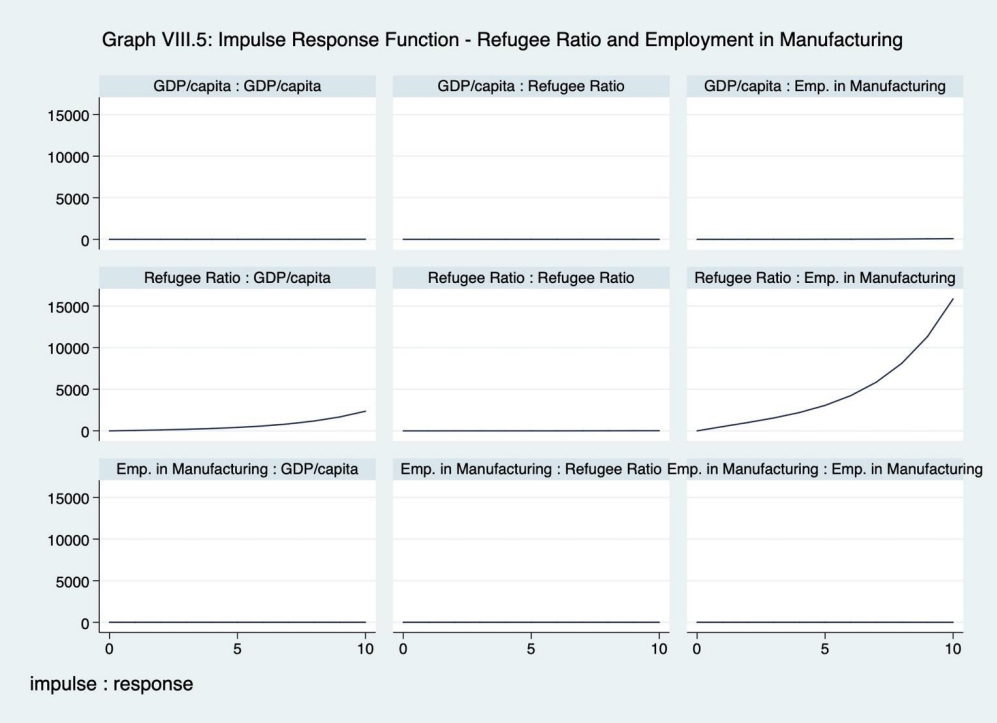

Table VIII.6: PVAR - Refugee Ratio and Employment in Industry

	Coefficient	Standard Error	P-value
Employment in Industry$_t$			
Employment in Industry$_{t-1}$	0.8495431	0.1138848	0.000
Refugee Ratio$_{t-1}$	636.4974	148.6826	0.000
GDP/capita$_{t-1}$	-0.2255763	0.4726122	0.633
Refugee Ratio$_t$			
Employment in Industry$_{t-1}$	-0.0000476	0.0000459	0.300
Refugee Ratio$_{t-1}$	1.141396	0.1105887	0.000
GDP/capita$_{t-1}$	0.0024131	0.0005314	0.000
GDP/capita$_t$			
Employment in Industry$_{t-1}$	-0.0028399	0.0137016	0.836
Refugee Ratio$_{t-1}$	52.70016	39.84817	0.186
GDP/capita$_{t-1}$	1.018646	0.1475078	0.000

***Note:** Values of the "Refugee Ratio" variable have been multiplied by 1000 for scaling purposes*

Graph VIII.6: Impulse Response Function - Refugee Ratio and Employment in Industry