THE EFFECT OF FORCED INTERNAL DISPLACEMENT ON THE LABOR MARKET: EVIDENCE FROM GEORGIA

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Kyiv School of EconomicsAbstract

THE EFFECT OF FORCED INTERNAL DISPLACEMENT ON THE LABOR MARKET: EVIDENCE FROM GEORGIA

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One of the important factors affecting the labor market is internal displacement, which shows new indicators in the situation in Ukraine. The similar problem with IDP`s was observed in Georgia, so we will analyze the example of this country and the Russian invasion there in 2008. The results of this research can be used in the case of Ukraine or other countries which suffer from Russian invasion.

The purpose of this work is to estimate the impact of Georgian IDP`s on the labor market outcomes of locals in Georgia. Using a difference-in-differences strategy, the goal is to find out how internal displacement affects the employment outcomes of locals and discover its impact on wage outcomes.

The results can inform policymakers and stakeholders in designing effective policies and programs to support IDPs' socio-economic integration and improve their labor market outcomes

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LIST OF ABBREVIATIONS

IDMC. Internal Displacement Monitoring Centre

ILO. International Labor Organization

IDP. Internally displaced persons

IOM. International Organization for Migration

CPI. Consumer Price Index

DID. Difference-in-differences regression

NUTS. Nomenclature of territorial units for statistics

NACE Rev. Statistical classification of economic activities in the European Community

Chapter 1

INTRODUCTION

Forced internal displacement, also known as forced migration or forced displacement, occurs when individuals or groups are compelled to leave their homes or communities against their will due to conflict, persecution, natural disasters, or other factors. The forced displacement of people has been a significant feature of human history and has had significant impacts on the labor market.

The conflict in Ukraine that began in 2014 has led to significant forced internal displacement within the country. According to the Internal Displacement Monitoring Centre (IDMC), as of 2021, there are an estimated 1.5 million internally displaced persons (IDPs) in Ukraine, making it one of the countries with the highest number of IDPs in the world. Moreover, according to a report by the International Organization for Migration (IOM), as of August 2022 after Russia's full-scale invasion of Ukraine on February 24, 2022, more than 7 million people have been forced to leave their homes and become internally displaced within Ukraine. One of the main challenges is to understand IDPs impacts on the labor market, and in this research, we try to find what the impact may be.

The effects of forced internal displacement on the labor market can be complex and varied. The wave of displaced people can create a sudden increase in the number of job seekers, leading to a reduction in wages and working conditions. For example, Bagir (2017) conducted a study focusing on two aspects of migration to Turkey: the initial migration to the borders and the subsequent migration from the borders to the inner region of the country. The study observed notable negative effects on employment and wages for low-skilled and inexperienced native Turkish individuals in the primary migration phase. These effects were found to be statistically

significant.

In their study, Maystadt and Verwimp (2014) discovered that the arrival of refugees from Rwanda and Burundi had a slightly detrimental effect on the employment outcomes of agricultural workers in Tanzania. But it is important to notice that mentioned studies observe long-term effect of refugees while our study analyses shorter-term outcomes of IDP.

In other cases, forced displacement can lead to labor shortages, particularly in industries that rely on migrant workers. For example, during World War II, the forced displacement of millions of people within Europe led to labor shortages in many industries, including agriculture and manufacturing. This led to the recruitment of labor from other parts of Europe and beyond to fill the gap. In addition, based on the analysis of residential construction and the formation of new businesses, Cengiz and Tekguc (2017) in their research findings confirm that migrants generate a favorable increase in demand, which counteracts, to some extent or entirely, the negative impact of the influx of labor supply.

However, in this work, we show that IDPs can have a positive impact on the local population in terms of labor outcomes. Using the example of armed conflict between Georgia and Russia in 2008 as natural experiment and applying a difference-in-differences strategy we have found strong and meaningful correlation between the informal employment-to-population ratio and IDPs effect. Specifically, the data shows a statistically significant positive association between the two variables. In addition, the probability of being formally employed for locals has also risen after IDPs influx. On the other hand, unemployment rate has decreased among different groups of locals (men, women, high and low educated persons).

In this study we also observed monetary labor market outcomes for informal and formal markets separately and find the positive relation between the variables that represent the outcomes and IDPs effect.

The thesis is structured into several chapters: Chapter 2 is about the main historical aspects of Russo-Georgian war, Chapter 3 includes a review of the relevant literature, Chapter 4 describes the methodology used in the research, Chapter 5 provides a detailed explanation of the data, and Chapter 6 presents the main results of the study. The final chapter, Chapter 7, contains the conclusions drawn from the research as well as policy recommendations based on the findings.

Chapter 2

THEORETICAL ASPECTS

1.1 Historical background

In 2008, Georgia experienced a new wave of displacement as a result of the armed conflict between Georgia and Russia. According to the United Nations High Commissioner for Refugees (UNHCR), the conflict resulted in the displacement of approximately 128,000 people within Georgia, including both new and long-term IDPs.

By the end of 2008, there were approximately 246,000 registered IDPs in Georgia, according to the UNHCR. These IDPs were mainly from the conflicts in Abkhazia and South Ossetia in the early 1990s, but the 2008 conflict led to a significant increase in the number of IDPs in the country.

According to the United Nations High Commissioner for Refugees (UNHCR) and the International Organization for Migration (IOM) IDPs are mainly concentrated in the following regions of Georgia:

- Samegrelo-Zemo Svaneti - located in the northwestern part of Georgia, this region has the highest number of IDPs due to its proximity to the conflict zone in Abkhazia.
- Imereti - located in central Georgia, this region has the second-highest number of IDPs. Many IDPs were settled in the city of Kutaisi, which is the second-largest city in Georgia.
- Shida Kartli - located in central Georgia, this region has the third-highest number of IDPs. Many IDPs were settled in the city of Gori, which is located near the conflict zone in South Ossetia.
- Kvemo Kartli - located in southeastern Georgia, this region has the fourth-highest number of IDPs. Many IDPs were settled in the city of

Rustavi, which is located near the capital city Tbilisi.

- Tbilisi - the capital city of Georgia has a significant number of IDPs, primarily due to its larger population and its role as a hub for various international organizations and NGOs working on refugee and IDP issues.

Figure 1 represents population density of regions in Georgia and, as can be seen, the mentioned regions also have the largest density. In Chapter 4 we notice that these regions are chosen as treatment area in our research.

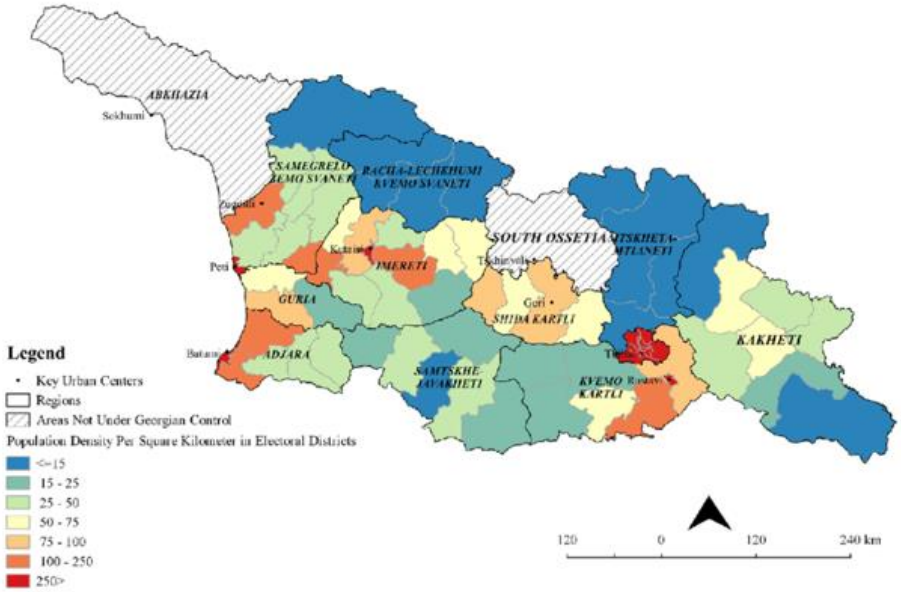

Figure 1. Population density and the indicator map of geographic locations of Georgia in 2008

Source: Sichinava, D. D. 2017. "Cleavages, electoral geography, and the territorialization of political parties in the Republic of Georgia." *Eurasian Geography and Economics* 58: 670 - 690.

The displacement caused by the 2008 conflict was particularly difficult for IDPs who had already been living in difficult conditions for many years, as

they were often forced to flee their homes once again. Many IDPs from the 2008 conflict also faced challenges in accessing basic services such as healthcare, education, and employment.

Since 2008, the government of Georgia, with support from international organizations, has implemented various measures to improve the living conditions and livelihoods of IDPs. Some of these measures include:

a. Provision of temporary and permanent housing: The Georgian government, with support from international organizations, provided temporary shelter and later permanent housing to IDPs who were displaced as a result of the 2008 conflict. This was aimed at ensuring that they had safe and secure housing, which is a basic human right.

b. Access to education and healthcare: The government and international organizations have implemented programs to improve access to education and healthcare services for IDPs. This has included the construction of schools and healthcare facilities in areas where IDPs are concentrated, as well as programs to improve the quality of education and healthcare services provided to IDPs.

c. Vocational training and job placement: The government and international organizations have implemented programs to provide vocational training and job placement services to IDPs. This is aimed at helping IDPs to acquire the skills needed to find employment and become self-sufficient.

d. Financial assistance for small businesses: The government and international organizations have also provided financial assistance to IDPs who wish to start small businesses. This is aimed at helping them to become self-employed and improve their livelihoods.

e. Legal and social assistance: The government and international organizations have provided legal and social assistance to IDPs,

including assistance with legal documentation and social support services such as psychosocial counseling.

These measures have helped to improve the living conditions and livelihoods of IDPs in Georgia. However, significant challenges remain in ensuring the full and equal rights of IDPs in the country.

1.2 IDPs and labor market in Georgia

The 2008 conflict in Georgia and subsequent displacement of people within the country had a significant impact on the labor market for both IDPs and non-IDPs. The conflict and displacement led to a deterioration of economic conditions, with many businesses closing and unemployment rates rising. This made it more difficult for both IDPs and non-IDPs to find work.

For IDPs specifically, the challenges of accessing the labor market were further compounded by the fact that many had limited education and skills, which made it difficult for them to compete for jobs in the formal sector. Additionally, many IDPs faced discrimination from employers, which made it even more complicated for them to find employment.

In response to these challenges, the government of Georgia and international organizations implemented various programs to support the socio-economic integration of IDPs. These programs included vocational training, job placement services, and financial assistance for starting businesses. However, these programs have been criticized for not being adequately funded or reaching all those in need among neither informal nor formal workers.

In Georgia, formal workers are those who are employed in jobs that are regulated by the government and have a formal employment contract with their employer. These workers are entitled to various labor protections and benefits, such as minimum wage laws, social security contributions, paid leave, and access to healthcare. Examples of formal workers in Georgia

include employees in the public sector, employees in large private companies, and those who work as self-employed individuals and are registered with the tax authorities.

Informal workers in Georgia, on the other hand, are those who work in jobs that are not regulated or recognized by the government. These workers may operate in a variety of settings, such as street vending, home-based businesses, or temporary or seasonal work. Informal workers in Georgia often lack formal contracts or job protections and may be paid in cash without any legal documentation. As a result, they may have limited access to social protections, such as healthcare, and may be more vulnerable to exploitation and abuse.

It's worth noting that the line between formal and informal work in Georgia, as in other countries, can be blurry and can vary across different sectors and regions. Some workers may operate in a grey area where their work is technically legal but not fully recognized or regulated by the government. Additionally, some workers may move back and forth between formal and informal work over the course of their careers. However, in this work we analyze formal, informal and unemployed workers separately.

To sum up, the situation for IDPs in the labor market in Georgia remains challenging. While some progress has been made in terms of providing support and opportunities for IDPs to access employment, more needs to be done to ensure that all IDPs have access to meaningful employment opportunities and are able to fully participate in the country's economic life.

Chapter 3

LITERATURE REVIEW

2.1. General Studies

Over the past ten years, the topic of forced displacement in economic history has drawn more attention. There are many research works about forced displacement from one country to another but not inside one specific country. The reviewed literature has made significant progress in examining the effects of forced migration on recipient populations as well as migrants themselves (Becker 2022). At the same time, there are a few works considering the effects of forced migration on labor market. In this chapter we summarize some of such studies and approaches that authors use in their works to analyze the topic.

Many publications looking at the forced migrants' economic integration focus on the expulsions that occurred after World War II, when new boundaries were formed across Europe. The displacement impacts of new German immigrants on West German employees are estimated by Braun and Mahmoud (2014). According to the regression analysis the employment of locals has significantly decreased.

The interesting study by Kondylis (2009) researching post-conflict data from household surveys evaluates the effects of displacement on labor market outcomes of Bosnians who moved after the 1992-1995 war compared with those who did not leave their place. The author, using instrumental variable (IV) approach, shows that relocation has a significant negative impact on the employment of Bosnian males (16-29%) and women (17-19%). Such decrease in employment is caused by higher male unemployment (11-18%) and increasing female inactivity (11-18%), without an impact on female unemployment.

Calderon and Ibanez (2009) investigate the impact of a migration-related supply shock on the labor market in Columbia. Using an instrumental variables model with fixed effects, the authors show that causal influence of these migrations on the urban labor market have a statistically significant negative effect on wages and statistically significant positive effect on informal sector employment. In addition, a 10% rise in the proportion of migrants decreases earnings by 1.4 percentage points. During 2001-2005, the number of displaced employees increased by 200 percent, resulting in a 28.4 percentage point drop in total wages. In Colombia internal migrants compete for jobs with the most vulnerable sectors of the population (informal and female workers), resulting in a 60-percentage point drop in earnings in the informal economy. Although in this research the author don`t divide internal migrants on IDP`s and economic migrants, they use approach that we consider as suitable for our study.

One of the most important and relevant case is the full-scale war in Ukraine in 2022. Mykhnenko, Delahaye and Mehdi (2022) in their study consider forced internal displacement in Ukraine after the Russian-Ukrainian War had started in 2014. These authors take gravity modelling (Anderson, 2011) to find the impact of a distance in kilometers and minutes, destination's gross domestic product, population size and some other characteristics on IDP flows. Although the information on the specific characteristics of internally displaced people (IDPs) provided by Ukrainian Ministry of Social Policy is used in the study above, this data doesn`t have enough micro-level information about households to be taken for our analysis.

2.2. Key Studies for the Research

Another example is a problem of forced internal displacement which has been raised after Russian invasion in Georgia in 2008. According to empirical research of the Georgian case provided by Torosyan, Pignatti and Obrizan

(2018), IDPs face considerable disadvantages on the job market compared to locals and voluntary migrants who share the same observable qualities. Using regression analysis of labor market outcomes, this paper states that IDPs continue to have trouble finding jobs and that their results on the job market are incomparable to those of locals or voluntarily moving people. Moreover, depending on the length and period of IDP status, they are 3.9 to 11.2 percentage points less likely to participate in the labor market. The study shows that IDPs who have lived in a receiving region for more than 5 years earn consistently lower incomes than native population with identical characteristics, with the gap expanding over time and reaching 16 percentage points in the most recent period under consideration.

The next important research is "The impact of Syrian refugees on natives' labor market outcomes in Turkey" (Certoglu et al., 2017). The involuntary influx of Syrian refugees into Turkey as a result of the intense civil conflict in Syria offers another natural scenario for studying the impact of immigration on the labor market outcomes of Turkish natives. Employing a difference-in-differences approach that draws from the variations in the distribution of refugee settlements across regions in Turkey, the researchers discovered that the inflow of refugees has significantly affected the employment outcomes of Turkish locals. However, the impact on wages is not statistically significant. Additionally, they observed that the inflow of refugees has led to a decline in the ratio of informal employment to the population, with reductions of roughly 2.2%, 1.9%, and 2.6% for the male and female populations, respectively.

Another study with similar approach (Fallah B et al., 2019) investigates how the arrival of refugees affected the labor market outcomes of local individuals. By analyzing panel data at the individual level in Jordan both before and after the influx of Syrian refugees, the study employed different statistical models to determine the impact of labor market shocks on the employment situation of native workers. In 2016, the Syrian population of working age was approximately

16% of the size of the Jordanian population. However, the Syrian labor force in the same year accounted for approximately 9% of the Jordanian labor force. Comparatively, there were 1.3 million employed Jordanians in 2016, while the number of employed Syrians was 117,000. Considering the composition and characteristics of the refugee population, which primarily consisted of children and women with lower average education levels compared to the native population, their participation in the labor market was limited. As a result, the impact of refugees on the labor market outcomes of native workers has been relatively modest.

In our study we also use a difference-in-differences approach to find out how IDP's influence the Georgian labor market after Russo – Georgian war in 2008. In our work we focus on the consequences for different groups of locals as in the previous mentioned research.

Chapter 4

METHODOLOGY

The conventional method of evaluating the influence of immigration on the labor market effects of native workers involves running a statistical analysis that correlates the desired labor market outcomes with the percentage of refugees residing in the corresponding area, along with other controls.

In our case we will use the same approach but for IDPs instead of refugees. Coefficient of the IDPs share is then interpreted as the impact of internal displacement on locals' labor market outcomes. The existence of regional variation in IDP`s shares is the source of identification.

We use the DID regression which includes a full set of region and year fixed effects denoted by fj and ft, respectively. So, the DID equation is written as follows:

$$y_{i,j,t} = \alpha + \beta \cdot (R_i \times T_i) + \ə \cdot X_{i,j,t} + \varkappa \cdot Z_{j,t} + \gamma \cdot R_i + \varphi \cdot T_i + E_{i,j,t}. \quad (1)$$

The variables i, j, and t correspond to individuals, regions, and years, respectively. The labor market outcome of interest is represented by y. X is a collection of characteristics that pertain to individuals, while Zj,t is a proxy that pertains to the economic activity of a specific region during a specific time period. E represents an error term.

The key parameter that is being examined is represented by β, which reflects the alterations in the labor market outcomes of native workers in response to the influx of internally displaced persons (IDPs) in the designated area. The variables that are specific to each individual are included to capture the differences in labor

market outcomes that arise from their unique characteristics. The proxy that pertains to the sectors of economic activity of individuals is also added.

Refugee effect (R x T) is utilized to determine the cause-and-effect relationship between immigration and labor market outcomes of native individuals. The cross product is utilized in a difference-in-differences approach.

Treatment period (T = 1) is defined to be 2008 (IV quarter) –2009. This is the period right after the entrance of IDPs into the new region.

Control period (T = 0) is defined as 2007–2008 (I - III quarters). This is the period right before the massive internal displacement.

Treatment area (R = 1) consists of 6 regions with numbers 1, 2, 3, 9, 10| and 11 based on the NUTS2 system (Appendix A, provides the details of the NUTS2 regional categorization for Georgia). This is the area in which the Georgian IDPs have been densely accommodated.

Control area (R = 0) of 4 regions with numbers 0, 5, 7, 8 and 11 (Appendix A below for the descriptions of these numbers.) The control region is highly comparable to the treatment area with regards to their socio-demographic characteristics and economic development status. (Chapter 4).

The term "informal employment" refers to a situation where a worker is not registered with the social security institution in their current job. This is indicated by a dummy variable which takes a value of 1 if the worker is not registered and 0 if they are registered. The relevant population for this variable is the "native worker population" as previously defined.

"Formal employment" is a term used to describe a situation where a worker is registered with the social security authority in their current job. This is indicated by a dummy variable that takes a value of 1 if the worker is registered, and 0 if they are not registered. The "native worker population" as previously defined is also the relevant population for this variable.

The concept of "Unemployment" refers to a scenario where an individual is not engaged in any employment but is actively searching for work. This is represented by a binary variable that assumes a value of 1 if the person is actively seeking employment, and 0 if they are not. The "native worker population" as defined earlier is also the relevant population for this variable. It's essential to emphasize that this variable denotes the proportion of unemployed people in the population, as opposed to the conventional unemployment rate.

The variable for "Labor force participation" is determined by a binary variable that takes on a value of 1 if the worker is currently unemployed, formally employed, or informally employed, and 0 if they are not part of the labor force. The "native worker population" defined previously is also the relevant population for this variable.

The variable for "Job separation indicator" is determined by a binary variable that takes on a value of 1 if the worker was employed one year prior to the current date, but is currently not employed, and 0 if they are still employed. The only information gathered from the survey concerning the employment history of the worker is based on the question that asks about their employment status precisely one year before the interview.

The variable for real earnings reflects the worker's monthly pay, including salary, bonuses, and any other additional payments made during that month. To obtain real earnings, the nominal earnings figure is adjusted for inflation using official CPI figures, with 2010 serving as the base year.

Description of control variables can be seen in Appendix B.

Chapter 5

DATA

4.1 Data Preparation

Data on the individual characteristics of internally displaced persons (IDPs) is taken from the National Statistics Office of Georgia (GeoStat)[1]. Also, the general labor force data was taken from this source.

Although the dataset from GeoStat has around 10000 observations for each year, we choose individuals from 15 to 65 years old which are considered as labor force in Georgia. (Figure 1).

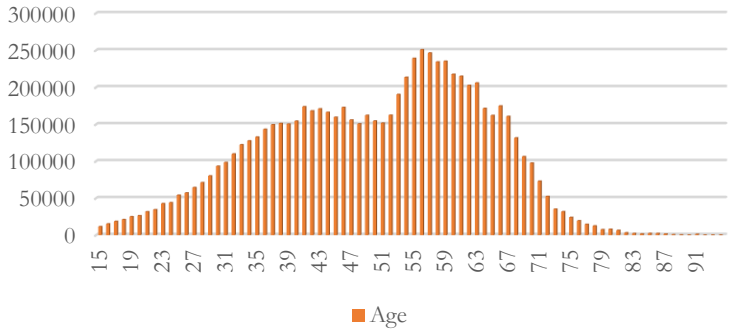

Figure 2 Distribution of the sample by age

The overall size of the sample is restricted to 2795 individuals for period 2007-2009. The period from the fourth quarter of 2008 onwards is considered as post-displacement period. This wartime conflict produced a new generation of Georgian internally Displaced Persons (IDPs). This time also coincides with the

[1] National Statistics Office of Georgia. 2022. Georgia Household Integrated Survey. https://www.geostat.ge/en/modules/categories/127/databases

worldwide economic crisis, which, along with geopolitical shocks experienced by Georgia, resulted in a major decline of the country's economic state.

To analyze labor market outcomes, we need to have the information about individuals' real income from formal or informal employment, but the data from Geostat includes the information about the income of whole household. To deal with this problem we pick up the personal characteristics of the heads of the households. In addition, we add variable that indicates the amount of working age persons in the household and use it in the model as control variable.

The set of dummies that pertains to the sectors of economic activity of individuals is also added. Figure 3 shows which kinds of economic activity we have in the data and how many individuals are referred to each kind.

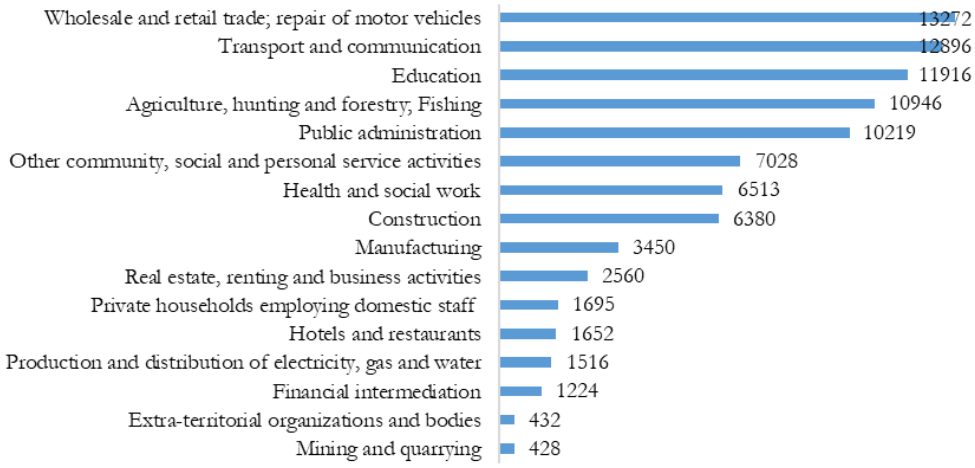

Figure 3. Distribution of the sample by kinds of economic activities according to NACE Rev. 1.1

4.2 Descriptive Statistics

First, it is important to briefly describe general personal characteristics of individuals. Table 1 shows the mean values for the corresponding individual-level characteristic.

The average age of the population is slightly higher in the Control region than in the Treatment region for both periods. The percentage of males is marginally higher in the Treatment region than in the Control region for both periods. Moreover, the percentage of males is higher in the Treatment period than in the Control period for both regions. The percentage of people living in urban areas is higher in the Treatment region than in the Control region for both periods. Furthermore, the percentage of people living in urban areas is higher in the Treatment period than in the Control period for both regions. The percentage of married people is higher in the Treatment region than in the Control region for both periods. Also, the percentage of married people is higher in the Treatment period than in the Control period for both regions. The percentage of people with high school and above education is higher in the Treatment region than in the Control region for both periods. Additionally, the percentage of people with high school and above education is higher in the Treatment period than in the Control period for both regions. To capture all these differences, we use control variables that was mentioned in the previous chapter.

Table 1. The mean values for the individual-level characteristics

Region	Period	Age	Male	Urban	Married	High school and above`	n
Control	Control	51.2	0.755	0.142	0.705	0.347	4885
Control	Treatment	50.5	0.818	0.323	0.810	0.555	5795
Treatment	Control	50.6	0.672	0.310	0.650	0.387	6707
Treatment	Treatment	49.5	0.767	0.672	0.784	0.624	10653

The next Table 2 shows data on income and employment for two regions, Control and Treatment, over three years, 2007-2009. The table shows that the Treatment region generally had higher real incomes and a higher proportion of

formal employed individuals compared to the Control region over the three-year period. This is explained by the fact that the treatment period contains Tbilisi where the average real wage is significantly higher than in other regions (Geostat).

Table 2. Summary statistics: labor market outcomes for natives

Region `	Year	Real income	Informal employed	Formal employed	Unemployed	Labor force	Separation prob
Control	2007	242.	0.466	0.356	0.101	0.923	0.0575
Control	2008	280.	0.441	0.405	0.0870	0.933	0.0405
Control	2009	288.	0.438	0.420	0.0789	0.937	0.0358
Treatment	2007	374.	0.324	0.496	0.119	0.939	0.0466
Treatment	2008	441.	0.333	0.474	0.121	0.928	0.0399
Treatment	2009	457.	0.344	0.474	0.106	0.925	0.0420

Note: Real income refers to income adjusted for inflation and is reported in $. Informal employed and Formal employed refer to the proportion of employed individuals working in informal and formal sectors, respectively. Unemployed refers to the proportion of individuals in the labor force who are unemployed. Labor force refers to the total number of individuals who are either employed or actively seeking employment. Separation prob refers to the probability of an employed individual losing their job

However, the unemployment rate in the Treatment region was higher in 2007 and 2008, but lower in 2009 compared to the Control region. region having slightly lower participation rates compared to the Control region. The separation probability was generally higher in the Control region compared to the Treatment region.

Overall, we can see that individual and demographic characteristics are quite similar for treatment and control regions.

Chapter 6

ESTIMATION RESULTS

5.1 Non-monetary labor market outcomes

The next tables in this subchapter provides regression results for the labor market indicator, with the IDP effect (R × T) as the key independent variable, along with controls for gender, marital status, age, education, age-education interactions, and urban versus rural area dummy. The analysis is limited to the age group 15-64.

As can be seen from Table 3 the informal employment-to-population ratio is regressed against various independent variables. The dependent binary variable takes a value of 1 to indicate that an individual holds an informal job, and a value of 0 otherwise.

The regression results indicate that the IDP effect (R × T) has a statistically significant positive association with the informal employment-to-population ratio for all groups (Total, Men, Women, High Ed., and Low Ed.). This suggests that as the IDP effect increases, so does the likelihood of individuals engaging in informal employment.

Table 3. Informal employment-to-population ratio

	Total	Men	Women	High Ed.	Low Ed.
IDP effect (R × T)	0.078***	0.053***	0.114***	0.127***	0.066***
	(0.011)	(0.013)	(0.021)	(0.016)	(0.015)
Num.Obs.	27950	21035	6915	14109	13841
R2	0.246	0.216	0.328	0.232	0.197

***, **, *, and + refer to 0.1%, 1%, 5%, and 10%. Sample is restricted to the age group 15–64. Controls include: gender, marital status, age dummies, education dummies, a full set of age-education interactions, and urban versus rural area dummy. High education refers to high school degree and above. Low education refers to high school dropouts and below

Table 4 presents the results of a regression analysis of the formal employment-to-population ratio on the IDP effect (R × T), along with controls for gender, marital status, age, education, age-education interactions, and urban versus rural area dummy, separately for different groups, including Total, Men, Women, High Ed., and Low Ed. The variable that is being measured is binary and serves as an indicator. It takes a value of 1 to indicate that an individual holds a formal job, and a value of 0 otherwise.

The IDP effect (R × T) coefficient is statistically significant at less than 1% level for the High Ed., the Total and Men groups and at the 10% level for Low Ed. group. This indicates that a one standard deviation increase in the IDP effect is associated with a 5.2 percentage points increase in the formal employment-to-population ratio for the Total group, a 5.3 percentage points increase for the Men group, and a 6.3 percentage points increase for the High Ed. group. However, the result for women is insignificant.

Table 4. Formal employment-to-population ratio

	Total	Men	Women	High Ed.	Low Ed.
IDP effect (R × T)	0.052***	0.053***	0.028	0.063***	0.022+
	(0.010)	(0.013)	(0.019)	(0.016)	(0.012)
Num.Obs.	27950	21035	6915	14109	13841
R2	0.263	0.216	0.323	0.248	0.212

***, **, * and + refer to 0.1%, 1%, 5%, and 10%. Sample is restricted to the age group 15–64. Controls include: gender, marital status, age dummies, education dummies, a full set of age-education interactions, and urban versus rural area dummy. High education refers to high school degree and above. Low education refers to high school dropouts and below

Table 5 presents the regression results of the unemployment-to-population ratio on the interaction between IDP effect (R × T) and different demographic and educational variables. The dependent variable is a binary indicator that takes the value 1 if an individual has a formal job and 0 otherwise. The coefficient for the IDP effect (R × T) is negative and statistically significant for all subgroups, indicating that the flow of IDPs has a negative effect on the unemployment rate. In terms of gender, the effect is stronger for women than for men. However, the effect is stronger for individuals with high education compared to those with low education.

Table 5. Unemployment-to-population ratio

	Total	Men	Women	High Ed.	Low Ed.
IDP effect (R × T)	-0.082***	-0.084***	-0.070***	-0.120***	-0.048***
	(0.008)	(0.009)	(0.015)	(0.012)	(0.011)
Num.Obs.	27950	21035	6915	14109	13841
R2	0.099	0.096	0.124	0.117	0.092

***, **, * and + refer to 0.1%, 1%, 5%, and 10%. Sample is restricted to the age group 15–64. Controls include: gender, marital status, age dummies, education dummies, a full set of age-education interactions, and urban versus rural area dummy. High education refers to high school degree and above. Low education refers to high school dropouts and below

Table 6 shows the impact of the flow of internally displaced persons (IDPs) on the labor force participation rate for different demographic and educational groups of locals. The results indicate that IDPs have a positive effect on the labor force participation rate, with an increase of 4.8 percentage points for every unit increase in IDP effect (R × T). This effect is statistically significant at the 0,01% level.

The positive effect of IDPs on the labor force participation rate is more pronounced for women than for men, with an increase of 7.2 percentage points for women compared to 2.5 percentage points for men. The effect is also stronger for individuals with high education (an increase of 7 percentage points) compared to those with low education (an increase of 4 percentage points).

Table 6. Labor force participation

	Total	Men	Women	High Ed.	Low Ed.
IDP effect (R × T)	0.048***	0.025***	0.072*	0.070***	0.040***
	(0.007)	(0.007)	(0.020)	(0.011)	(0.010)
Num.Obs.	27950	21035	6915	14109	13841
R2	0.115	0.040	0.132	0.121	0.116

***, **, * and + refer to 0.1%, 1%, 5%, and 10%. Sample is restricted to the age group 15–64. Controls include: gender, marital status, age dummies, education dummies, a full set of age-education interactions, and urban versus rural area dummy. High education refers to high school degree and above. Low education refers to high school dropouts and below

The next Table 7 presents the regression results for the impact of IDP on job separation probability for locals, which is the likelihood that an individual leaf his/her current job. The results are also presented for different subgroups of the population (total, men, women, high educated, and low educated).

The focus of the table is the IDP effect (R x T), which is statistically significant for all subgroups except for women in this case. The negative coefficient suggests that IDP has a negative impact on job separation probability, meaning that locals are less likely to leave their current job.

Table 7. Job separation probability

	Total	Men	Women	High Ed.	Low Ed.
IDP effect (R × T)	-0.028***	-0.035***	-0.005	-0.042***	-0.016*
	(0.005)	(0.006)	(0.008)	(0.007)	(0.007)
Num.Obs.	27950	21035	6915	14109	13841
R2	0.020	0.021	0.019	0.021	0.024

***, **, * and + refer to 0.1%, 1%, 5%, and 10%. Sample is restricted to the age group 15–64. Controls include: gender, marital status, age dummies, education dummies, a full set of age-education interactions, and urban versus rural area dummy. High education refers to high school degree and above. Low education refers to high school dropouts and below

To sum up this subchapter, the IDPs flow slightly increase some labor market outcomes such as probability of being formal or informal employed and to participate in labor force. In addition, unemployment to population ratio has decreased, as well as job separation indicator. It is important to understand that the result cannot be perceived so directly and should be explained very carefully.

5.2 Monetary labor market outcomes

We include informal and real monthly earnings to monetary labor market outcomes. The regression models control for several individual characteristics, including gender, marital status, age, education, job status, area of residence, and industry. The sample is limited to salaried workers within the age range of 15-64 years.

Based on the results from Table 8 it appears to be a regression analysis that examines the effect of IDP on informal real monthly earnings (natural logs) for different groups of locals.

The results suggest that IDPs have a significant positive effect on informal real

monthly earnings for Total group of natives at 10% level of significance, with the effect being strong for women and low-educated individuals. At the same time, the effect is not significant for men and high educated locals.

Table 8. Informal real monthly earnings (natural logs)

	Total	Men	Women	High Ed.	Low Ed.
IDP effect (R × T)	0.130+	0.160*	0.291*	0.223*	0.251**
	(0.075)	(0.067)	(0.127)	(0.093)	(0.077)
Num.Obs.	6424	5337	1087	3228	3196
R2	0.473	0.472	0.515	0.476	0.456

***, **, and + refer to 1%, 5%, and 10%. Real wages are deflated with the CPI taking 2007 as the base year. Sample is restricted to the age group 15–64. Controls include: gender, marital status, age dummies, education dummies, a full set of age-education interactions, full-time vs part-time job status dummy, urban versus rural area dummy, and industry dummies. High education refers to high school degree and above. Low education refers to high school dropouts and below. The sample includes the salaried workers only

The study, representing in Table 9, also controls for several individual factors that may impact earnings, such as gender, marital status, age, education, job status, area of residence, and industry. The sample is limited to salaried workers aged 15-64 years, and the real wages are adjusted for inflation using the CPI with 2007 as the base year.

The results of the analysis are reported using natural logarithms, and the regression model provides estimates of the IDP effect (R x T) on formal real monthly earnings for each group, along with standard errors and significance levels.

Overall, the results suggest that IDPs may have a positive impact on formal real monthly earnings of locals, particularly for men and those with higher education.

However, the effect may not be as significant for women with low education.

Table 9. Formal real monthly earnings (natural logs)

	Total	Men	Women	High Ed.	Low Ed.
IDP effect (R × T)	0.317***	0.358***	0.307+	0.239+	0.294**
	(0.085)	(0.101)	(0.170)	(0.142)	(0.102)
Num.Obs.	10706	8071	2635	6921	3785
R2	0.395	0.411	0.370	0.313	0.445

***, **, and + refer to 1%, 5%, and 10%. Real wages are deflated with the CPI taking 2007 as the base year. Sample is restricted to the age group 15–64. Controls include: gender, marital status, age dummies, education dummies, a full set of age-education interactions, full-time vs part-time job status dummy, urban versus rural area dummy, and industry dummies. High education refers to high school degree and above. Low education refers to high school dropouts and below. The sample includes the salaried workers only

Overall, the results of the analysis of monetary outcomes for locals suggest that IDPs inflow may have a positive impact on formal and informal real monthly earnings, particularly for women and those with low education with informal monthly earnings. However, the effect may not be as significant for women with high education in terms of formal monthly earnings, but very significant considering men and low educated locals.

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Chapter 7

CONCLUSIONS

The main goal of the work is to estimate the impact of Georgian IDP`s on the labor market outcomes of locals in Georgia. This country was selected because it also like Ukraine suffered from Russian aggression and had a large wave of IDPs in 2008.

It is important to because due to statistics from IDMC more than 8 million people in Ukraine have been internally displayed since the war has started and the country should be prepared to these new challenges. The experience of such country as Georgia is very important for our government and social organizations to help better regulate labor market not only during wartime but also after that.

One of the main problems is how to protect labor market from potential shocks. There are some works that provide evidence that IDPs have lower labor market outcomes in terms of wages, but there are slightly less works that try to find the answer for the question about the impact of IDP on locals labor market outcomes.

The analysis shows us that IDPs wave might have positive effect on labor market outcomes. However, key studies (Certoglu et al., 2017) and (Torosyan et al., 2018) have other results as well as some other works. The first one indicates that the arrival of refugees has significantly influenced the employment outcomes of Turkish locals. However, there is no statistically significant evidence to indicate that it has affected wages. On the other hand, the second study focus more on comparison of IDPs and locals and says that IDPs face considerable disadvantages on the job market compared to locals and voluntary migrants who share the same observable qualities

Moreover, this research shows that the wave of IDP may have positive impact

on probability to get informal or formal job among locals. In terms of formal employment, it could be explained by the fact that more people want to have official job to protect themselves, because with increasing of IDP, the competition also rises. Explaining positive changes in informal labor market is not easy task.

IDPs inflow may also have a positive impact on formal and informal real monthly earnings, particularly for men and those with higher education.

All these factors can help policy makers to take important decision connecting with IDP. For example, one potential strategy would be to provide targeted training and education programs that could help IDPs develop the skills and knowledge necessary to access higher-paying jobs in the formal sector. This could include vocational training, adult education programs, and support for higher education, particularly for women and those with low education.

Another potential strategy would be to develop policies that could incentivize employers to hire IDPs, particularly in industries with labor shortages. This could include tax incentives, subsidies, and other forms of support to encourage employers to hire and train IDPs.

Additionally, policies that could promote the growth of the informal sector could also be considered. This could include providing support for small and medium-sized enterprises, microfinance programs, and other forms of support that could help IDPs start their own businesses and become self-employed.

Overall, the information that IDPs inflow may have a positive impact on formal and informal real monthly earnings could be used to inform policies that aim to support the economic integration and inclusion of IDPs, particularly those with higher education and skills. By doing so, policy makers could help to reduce poverty, promote economic growth, and improve the well-being of IDPs and their host communities.

WORKS CITED

Anderson. J. E. 2011. "The Gravity Model." *Annual Review in Economics* 3, no: 133–60

Bağır Y. K. 2018. "Impact of the Syrian refugee influx on Turkish native workers: An ethnic enclave approach." Central Bank Review 18, no 4: 129-147 https://doi.org/10.1016/j.cbrev.2018.11.001.

Becker S. O. 2022. "Forced Displacement in History: Some Recent Research." *Australian Economic History Review* 62, no. 1: 2-25

Braun S., Mahmoud O. T. 2014. "The Employment Effects of Immigration: Evidence from the Mass Arrival of German Expellees in Postwar Germany." *The Journal of Economic History* 74, no. 1: 69–108. http://www.jstor.org/stable/24550551.

Calderón-Mejía V., Ibáñez. A. M. 2016 "Labour market effects of migration-related supply shocks: evidence from internal refugees in Colombia." *Journal of Economic Geography* 16, no.3: 695–713, https://doi.org/10.1093/jeg/lbv030

Cengiz, Doruk, and Hasan Tekguc. 2017. "Is It Merely A Labor Supply Shock? Impacts of Syrian Migrants on Local Economies in Turkey." *ILR Review 75(3)*: 741–768. https://doi.org/10.1177/0019793920978365

Ceritoglu E., Yunculer H., Torun H. et al. 2017. "The impact of Syrian refugees on natives' labor market outcomes in Turkey: evidence from a quasi-experimental design." *IZA J Labor Policy* 6, no.5. https://doi.org/10.1186/s40173-017-0082-4

Fallah B., Krafft C., Wahba J. 2019. "The impact of refugees on employment and wages in Jordan" Journal of Development Economics 139, June 2019, Pages 203-216. https://doi.org/10.1016/j.jdeveco.2019.03.009.

Gimenez-Nadal J. I., Molina J. A., Quintero E. S. 2019. "How Forced Displacements Caused by a Violent Conflict Affect Wages in Colombia." *Journal of Development Studies* 55, no. 4: 473-489

Kondylis F. 2010. "Conflict displacement and labor market outcomes in post-war

Bosnia and Herzegovina." *Journal of Development Economics*, Elsevier 93, no. 2: 235-248

Mykhnenko V., Delahaye E., Mehdi N. 2022. "Understanding forced internal displacement in Ukraine: insights and lessons for today's crises." *Oxford Review of Economic Policy* 38, no. 3: 699–716, https://doi.org/10.1093/oxrep/grac020

Sichinava, D. D. 2017. "Cleavages, electoral geography, and the territorialization of political parties in the Republic of Georgia." *Eurasian Geography and Economics* 58: 670 - 690.

Torosyan K., Pignatti N., Obrizan M. 2018. "Job Market Outcomes of IDPs: The Case of Georgia." *Journal of Comparative Economics* 46, no. 3: 800-820

APPENDIX A

Table A-10 NUTS2 regional categorization for Georgia

0	Kakheti
1	Tbilisi
2	Shida Kartli
3	Kvemo Kartli
5	Samtskhe-Javakheti
7	Adjara A.R.
8	Guria
9	Samegrelo-Zemo Svaneti
10	Imereti, Racha-Lechkhumi and Kvemo Svaneti
11	Mtskheta-Mtianeti

APPENDIX B

Description of control variables

- **Marital status** is indicated by a dummy variable that takes the value of 1 if the worker is married, and 0 otherwise.

- **The education variables** in the is divided into 6 categories ranging from no degree to college or above. Workers with low education are defined as high school dropouts and are indicated by a dummy variable taking the value of 1 if the worker falls below category 4. On the other hand, workers with high education levels are indicated by a dummy variable taking the value of 1 if the worker has a high school degree or above, falling above category 4.

- **Urban or rural residency status** is described by a dummy variable taking the value of 1 if the worker resides in an urban area, defined in the survey as a residential area with a population size above 20,000, and 0 otherwise.

- **Part-time job**: The distinction between full-time and part-time work is indicated by a binary variable. If a job is full-time, the variable takes the value 0, while it takes the value 1 if the job is part-time.

- **Kind of economic activity:** The survey includes data on industry codes in two-digit format, which follows the NACE Rev.1 classification standard. The industry categories are included as distinct dummy variables in the regressions.

There are several other variables such as gender, age, region (NUTS2), and year dummies that are self-explanatory and do not require any further description.