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Abstract

Due to the political unrest following the civil war in 2011, several million Syrians had to flee from their own country to save their lives. The mass migration movement of Syrians, first within the country and then towards neighboring countries, brought many socio-economic problems. One of the worst hit nations is Türkiye, because of forced migration from Syria, where there are roughly five million registered and unregistered migrations. Although it has been nine years since the process began that was initially established as a temporary solution, and as a resolution could not be found, the dream of returning Syrians has weakened over time. This study aims to reveal how Syrians, who are included in the labor market in an unplanned way, affect the Turkish labor market. Dynamic Panel data analysis was performed using the data from 26 regions in Türkiye. As a result, a 1% increase in the immigration rate, which represents the share of Syrian immigrants in the region's population, increases the employment rate by approximately 0.02%.

Introduction

Since the last decades of the previous century, several factors have affected the world by creating economic inadequacies, political deprivation, social conflict, social turmoil, and bloody wars on global level. These factors include the launch of neoliberal policies, the restructuring of the welfare state and the collapse of the Eastern Block and USSR in the early 1990s. These developments seriously transformed the direction, destination, and forms of migration flows. Some countries, such as Türkiye traditionally a migrant sending country, have become a destination for those coming from Central Asian counties, Afghanistan, Pakistan, and African countries, with a target of entering the EU.

The migration toward Türkiye can be divided into three main parts. The first is the refugees coming from neighboring countries with political turmoil and civil war who desire to seek refuge in countries that they find safe due to political uncertainty, conflicts, and civil war in neighboring countries. The second part sees Türkiye as a transit zone due to its geographical location. The third is that it is one of the best places for those migrations dreaming to get to Europe. Since the Europe provides more favorable living conditions and a better standard of living compared to neighboring countries.

Nevertheless, 2010 was the turning point in terms of the migration processes. Those migrants in search of a better standard of living increasingly began to settle and work in Türkiye rather than considering it a transit country. Shortly after a civil war broke out in Syria, the intensification of the civil war forced millions of people (some 7 million) to simply move or to take refuge in nearby countries such as Türkiye, Lebanon, and Jordan or change their place of living within Syria to escape the civil war. Yet Türkiye has been the most preferred country by Syrian refugees due to its better living standards, higher security, and job opportunities, as well as its geographical proximity to Western countries, which are the most popular destination for migrants. There are some other factors that make Türkiye the most preferred destination for Syrian refugees. One is that as Syria was a part of the Ottoman empire until the end of the First war world, many Syrians have either relatives or acquaintances in the provinces on the Syrian border. The others perhaps were relatively cheap and had plenty of opportunity to get to Türkiye, as well as Türkiye's open-door policy.

Soon after arriving in Türkiye, Syrians began to search for jobs in the local labor markets. Thanks to the abundantly high demand for unskilled labor and informal employment, many found informal employment in labor-intensive industries such as the garment and footwear industries. Numerous researchers have sought to work out the likely impact of refugees on Turkish labor markets and the economy by using both quantitate and qualitative methods. These studies have pointed out that the Syrian refugees have not taken over the jobs previously done by Turkish workers in the most of labor-intensive manufacturing industries. They simply filled the jobs that were already empty and not preferred by the Turkish workers. Thus, they have not any adverse impact on wages and working conditions for Turkish workers. Yet the competition between the Turkish and Syrian workers has been unavoidable in some industries and regions.

 Very few studies have been performed using panel data methods due to the lack of enough data covering sufficiently long periods. Nevertheless, some researchers have sought to work out the impact of Syrian migration on the labor market and employment by using econometric methods and panel data analysis in recent years because data became available. This study seeks to measure the impact of Syrians migrants on Turkish labor markets and employment in 26 provinces between 2015-2020. The time series was

determined annually. Syrians began to arrive in 2011 and the early comers were mostly settled in the refugee camps, situated in the provinces on the Syrian border between 2011 and 2014. These years are excluded because there was no data showing the distribution of Syrians migrants between provinces before 2015. The model was created using annual data between 2015-2020. In the study, the Syrian population in the 26 provinces is included as a dependent variable and the effect of many control variables is tested. This study seeks to develop a comprehensive analysis on the effect of migration on the labor markets, unemployment, and wages according to economic indicators.

Forced Migration and Syrian Refugees in Türkiye

Although there is no commonly accepted definition of migration, International Labour Organization's (ILO) description of migration is crossing an international border or relocating within a state. Regardless of its duration, structure, and reason, it is defined as the change of place of people (IOM, 2009: 22). Migration may be either "voluntary" or "forced", and either permanently or temporarily (Chomsk, 2007, pg. 7). Voluntary migration is migration shaped by the demand of individual migrants and communities with their consent for better living standards and based on economic intentions in general (Esen, 2016, pg. 11). In general a country that accepts migration with economic considerations is expected to encourage and invite migrants in order to benefit from the labor or contributions of these migrants (Castles & Miller, 2008). With forced migration, on the other hand, some factors compel people to migrate unwillingly. These factors may include natural disasters, wars and social unrest, and suppurations on political affinity or faith at the national level (Duruel, 2017). The Forced Migration Review proposes a more comprehensive definition by describing forced migration as the migration movement of people displaced for reasons such as natural or environmental disasters, chemical or nuclear threats, famine, political turmoil or war (Forced Migration Review, 10.04.2020).

Regarding Türkiye, it is possible to argue that two different irregular migration flows exist currently. One of them is the flow of migrants from former socialist countries. This migrant flow was unleashed by the collapse of the Soviet Union in the 1990s. The other migration flow is made up of the Middle Eastern migrants and was unchecked by the Arab Spring in 2010. In addition to this development, those migrants in search of better standard of living began to increasingly consider Türkiye as a place to settle rather than seeing just a transit country, from 2010 onwards (Erder, 2015).

Starting in 2010 in Tunisia, the Arab Spring affected many Arab countries including Egypt, Yemen, Syria, Libya, and Jordan in the following period. Syria was one of the worst cases along with Libya. Both are considered "failed states," where the entire state apparatus collapsed and prolonged civil war broke out. The indiscriminate bombing and

killing of civilians and the use of a chemical weapon by the Syrian regime were enough to instigate irregular mass migration influxes from Syria to neighboring countries including Türkiye, Jordan, and Lebanon. It should be mentioned that about 12 million people were displaced within the country and of these 7 million had to take refuge in the neighboring countries in order to save their lives. This is the worst humanitarian crisis in modern history, with the highest number of displaced people globally since the World Wars. This humanitarian tragedy experienced by Syrians was described by the United Nations High Commissioner for Refugees (UNHCR) as "the biggest migration wave in recent history" (Erdoğan, 2016). Nevertheless, Türkiye had the largest share of this refugee influx; 3.7 million Syrian refugees have already relocated to Türkiye (Reliefweb, 2002). Consequently, it is argued that Türkiye has become a high immigration country in the last decade (İçduygu & Aksel, 2012). Among the countries hosting Syrian refugees, Türkiye ranks first with 3.7 million people. It is followed by Lebanon with 914,648 people, Jordan with 654,692 people, Iraq with 245,810 refugees (UNCHR, 2022).

Due to this sudden influx of Syrians, Türkiye has become "the world's the largest refugee-hosting country". Since April 2011 3,761,267 Syrians settled in Türkiye. This figure is equal to 4% of its population (Erdoğan, 2016).

Table 1. Syrians Under the Temporary Protection by Years

Years	Number of Syrians
2012	14,237
2013	224,655
2014	1,519,286
2015	2,503,549
2016	2,834,441
2017	3,426,786
2018	3,623,192
2019	3,576,370
2020	3,661,995
2021	3,373,369
2022	3,761,267

Source: Directorate General of Migration Management, https://www.goc.gov.tr/gecici-koruma5638. 07.04.2022.

In April 2011 the first refugee group with 252 persons entered Türkiye from Syria. Some 7,000 refugees crossed the border in June 2011, and 6 refugee camps were

established in border cities. From November 2011 onwards, the arrival of the Syrian refugees accelerated, reaching 24,000 in April 2012. At the end of that year 80,000 Syrians had settled in border cities. In May 2013, there were 156,000 refugees and they were all accommodated in 15 camps (Özden, 2013: 1-2; GİB, 31.12.2020)

Initially, it was thought that the civil war in Syria would not last long. The view was epitomized in the words of Türkiye's ministry of foreign affairs, "we will have the Friday prayer in the Umayyad Mosque within 3 months." Türkiye embarked on an open-door policy as to the Syrian refugees due to having historical, religious, cultural, and ethnic ties with Türkiye as well as being a neighbor. Nevertheless, as the clashes intensified and spread all over the country, signaling the prolongation of the war, the number of refugees gathered on the border gates of Türkiye, increased swiftly. The number of the Syrian refugees reached a million in 2014, 2.5 million in 2015 and 3.5 million in 2017. There are currently 3,761,267.

At the onset, refugees were settled in refugee camps (the temporary accommodation centers) in border cities. These camps provided shelter, food, and access to health services. Nonetheless, owing to the arrival of more refugees and the prolongation of their stay, the number the Syrian refugees soon exceeded the capacity of the refugee camps. They were allowed to settle outside the camps in the provinces on the Syrian border, where many locals were not only ethnically close to them but also their blood relatives (Düzenli, 2022, pg. 161). For them, it was relatively easy to live and look for jobs in these cities as they spoke the language and knew the way of life. Yet, shortly after Syrian refugees came to constitute nearly 50 percent of the population in these cities. As the competition heightened for resources such as food, shelter, and jobs, the prices doubled and the tension between the refugees and the locals deepened. Thus, the locals accused Syrian refugees of these price increases. In some provinces, this tension culminated in social unrest and even xenophobia. It was the time for the Syrian refugees to move to metropolitan cities such as İstanbul, Ankara, and Izmir to find jobs to survive in Türkiye (IHD, 2013). As of April 2022, the number of Syrians staying at the temporary accommodation centers is 50,736, while those outside the temporary accommodation center are 3,710,531 (http://www.ihd.org.tr/images/pdf/2013/YokSayilanlar.pdf. 20.01.2021).

Table 2. Syrians Staying Inside and Outside of Temporary Shelters (Refugee Camps)

Residents Staying in the Temporary Shelter Centres	50,736
Those staying outside the Temporary Shelter Centres	3,710,531
Total	3,761,267

Source: Directorate General of Migration Management, https://www,goc,gov,tr/gecici-koruma5638, 07.04.2022.

According the UNHCR records, there are about 5 million (3.7 million registered and some 1.5 million unregistered) Syrians are living in Türkiye due to Due to the "Open Door Policy" (UNHCR, https://www.unhcr.org/figures-at-a-glance.html) Thus, the Open-door policy in the condensation of Syrians in Türkiye is viewed as one of the main determinants (Neccar, 2016).

Table 3. Age and Gender Distribution of Syrians Under Temporary Protection

Age Range	Male	Female	Total
0-4	259,016	241,793	500,809
5-9	288,643	271,094	559,737
10-14	216,943	203,799	420,742
15-18	137,006	117,337	254,343
19-24	281,378	211,986	493,364
25-29	219,382	159,215	378,597
30-34	165,434	120,066	285,500
35-39	124,132	97,211	221,343
40-44	84,824	73,954	158,778
45-49	57,496	56,209	113,705
50-54	45,611	44,489	90,100
55-59	34,705	34,756	69,461
60-64	22,879	23,623	46,502
65-69	14,902	15,732	30,634
70-74	8,806	9,700	18,506
75-79	4,331	5,367	9,698
80-84	2,373	3,166	5,539
85-89	1,129	1,667	2,796
90+	772	1,069	1,841
Total	**1,969,762**	**1,692,233**	**3,661,995**

Source: Directorate General of Migration Management, https://www,goc,gov,tr/geci-ci-koruma5638, 10.03.2021.

The Table 3 demonstrates the age and gender distribution of registered Syrians in Türkiye. According to this, of the Syrians, 1,969,762 are men and 1,692,233 are women. It means that the number of women is more than men. Regarding the age distribution, 500,809 people in the 0-4 age while 559,737 people in the 5-9 age range, and 493,364

people in the 19-24 age range. Those who are in the prime age, in the age 25-55 groups are the majority of Syrians in Türkiye, where the time has come to life, childhood or youth here represents the masses. Many Syrian children in the 0-4 age range were born in Türkiye.

Table 4. Distribution of Syrians Under Temporary Protection by Top 10 Cities

No	Provinces Name	Number of People Registered
1.	İstanbul	540,618
2.	Gaziantep	462,680
3.	Hatay	432,707
4.	Şanlıurfa	429,421
5.	Adana	256,348
6.	Mersin	242,439
7.	Bursa	184,249
8.	İzmir	149,804
9.	Konya	123,376
10.	Kilis	107,213

Source: Directorate General of Migration Management, https://www,goc,gov,tr/geci-ci-koruma5638, 07.04.2022.

Table 4, showing the ranking of 10 cities with the highest number of Syrian refugees excludes the border provinces. It can be notice that Istanbul, Gaziantep, and Hatay hosted the highest number of Syrians. According to the data provided by the Directorate General of Migration Management (DGMM), the ranking it the three most popular refugee destinations are as follows: Istanbul ranks first with 540,618; Gaziantep second with 462,680; and Hatay third with 432,707 refugees.

In recent years, mass migration flows at a global scale have compelled many states to develop policies, regulations and institutions to overcome such complex processes. Skilled migration and international capital flow are now considered important elements of migration organizations. When the mass refugee flow commenced, Türkiye lacked the necessary institutions and measures to deal with the imminent mass influx displaced of people in 2011. Initially, the Syrian refugees were not given any legal statute but called guests, as indicated above. Tt was assumed this was a temporary situation that would last no more than three months. At the same time, Türkiye was unable to provide them with refugee status, since it had "the geographical reservation" on the 1951 Resolutions, only those coming from Europe were granted refugee status. Yet, those coming from outside Europe would either be given temporary protection or provided with the opportunity to

travel to third countries. Nevertheless, for Syrians a piece of regulation was issued by the Ministry of Interior proving Syrian refugees with temporary protection, as an exceptional and temporary measure (Yılmaz & Güler, 2019).

All the essential needs of the person's temporary protection are provided by the state that accepted them. According to Article 26 of the Temporary Protection Regulation, those under the temporary protection are provided with services such as shelter, health, social, cultural, education, employment, and access to the labor market. In addition to that, they are also given 'unconditional acceptance, denial forcibly returned, and response to urgent needs' such as aid including access to regulations, protection, and support. Apart from this, opportunities such as shelter, food, education, health, and access to clean water are provided to those living in the camps (ORSAM, 2015).

The "hospitality", set out in 2011, has continued for more than 11 years and has now evolved into permanency. This is because nobody believes that after staying more than a decade in Türkiye, Syrians will go back to their own country when the civil war comes to a halt. Within a short time, Syrians began to take a place in social and economic life because the conflict in Syria still has not ended. Although the Turkish people were extremely receptive and welcomed Syrians in the very first years, they started to express their dissatisfaction as they saw themselves as rivals in the labor force. Since most of Syrians did not have a work permit in the first years, they had to work for low wages under unstable, irregular, insecure and heavy working conditions, generally without job security and social security, state protection or an organized life (Özkul & Kanyılmaz, 2012).

In addition to the issue of the "TPR" in 2014, the "Regulation on Granting Work Permits (RGWP) to Foreigners Under Temporary Protection" was issued in January 2016 and the "International Labour Force Act No 6735 was enacted in August 2016. This Act and regulations have been the most concrete steps taken in this area. These laws and regulations enabled Syrian refugees with residence permits to exercise their right to work. The RGWP stipulates that a person under temporary protection will be issued work permit in the province where he is given a residence permit. For this, all that is needed is the person's temporary protection identity document. They are subject to Turkish labor legislation in terms of their rights and obligations in working life. In the first place, the work permit is issued for a year and may be renewed if required (Korkmaz, 2017, pg. 58). The regulation limits the employment of Syrians to 10 percent of the local workers for each workplace (Özpınar, Çilingir & Düşündere, 2016). The only condition for employing Syrian refugees is that the employer must prove that no local workers was found for this job in the last 4 weeks before applying for a work permit. The regulation states that the employer has to pay a Syrian who obtained a work permit under temporary protection status no less than the minimum wage (Demir, 2016).

From the date when the Temporary Protection Regulation entered in force until

October 2015, those Syrians, granted temporary protection status, were not allowed to undertake any employment, and applications on this matter were closed. During this period very few Syrians managed to receive work permits. After the lifting of the working bans of Syrians under temporary protection in 2015, the number of the Syrian with work permits increased slowly. Only 4,019 work permits were issued in 2015; 13,290 in 2016; 20,966 in 2017; 34,573 in 2018; 63,789 in 2019; and 62,369 in 2020. A limited number of Syrians were issued official work permits allowing them to integrate into the in the labor market. While 3,641,370 people were under temporary protection status in 2020, only 62,369 Syrians were given work permits. This means that most Syrians are active in the informal sector. Many of them are in paid employment while some of them are self-employed or have business for their employers or their account.

Syrians are usually employed in labor-intensive and low-skilled jobs in the informal sector. They are mainly employed in agriculture, textile, manufacturing, and construction sectors. They also work in some crafts sectors such as shoemaking and hairdressing. Some Syrian women, who intend to contribute to the family economy, work in textile workshops or as a helper in household services. The children, on the other hand, predominantly sell handkerchiefs in the streets or simply beg (İNGEV, 2017).

It is not surprising that unemployment started to increase shortly after Syrians settled in the border regions. The low skilled and uneducated Syrians, in search of jobs, has increased competition in the labor markets and created downward pressure on the wages in some industries. Many Turkish people living in this region typically work as seasonal workers in agriculture and migrate to neighboring provinces during the harvesting season. Numerous Syrians, settled in this region, also working as seasonal labor and were ready to accept lower wages. In addition, many Syrians work in the construction industry with much lower wages than Turkish workers. Syrians carry out basically unskilled and rough labor in construction while the Turkish workers perform fine and tough works (Boyraz, 2015). Nevertheless, some Syrians who have skills and capital preferred to establish their own businesses and are self-employed small tradesmen such as barbers, grocery stores and jewelers.

Literature Review

In the study conducted by Borjas (2001), the effects of immigration on the labor market were examined by using the census data of the USA for the years 1950-1990. He claims that immigrants are moving from one state to another within the USA with expectations that they will earn high wages. He also points out that along with high wages, the education and qualification levels of immigrants are important. Consequently, migration has a positive effect on production and wages (Borjas, 2001). Bonin (2005) attempts to examine the impact of immigration on the German labor markets between 1975-1997 by elucidating immigrants with similar education and different work experience

by using Regression analyses. The findings of his research demonstrate that the entry of immigrants into the labor markets does not affect the earnings and employment opportunities of the domestic labor force, and a 10% increase in the number of immigrants in the labor market reduces wages by less than 1% and does not increase unemployment (Bonin, 2005). Lewer and Berg (2008) carried out a panel data analysis in 16 OECD countries between 1991-2001. Their study showed that distance in migration process is an important factor. Migrants can easily cross the border, compared to the achievement of the other factors. In addition, among the samples those with higher education in the selected OECD countries, they are more likely to migrate than the others (Lewer & Berg, 2008).

In a study carried out by Islam (2007) the relationship between migration, unemployment, real GDP and real wages was investigated in Canada by using the Granger causality analysis and co-integration test on data between 1961-2002. Forecasting of multivariate VEC, a one-way causality relationship between unemployment and migration in the short run was found. Islam argues that while migration does not cause unemployment in the long term, unemployment, that occurs in the short term, will not last long (Islam, 2007). A study by Ortega and Peri (2009) explains the relationship between per capita income, employment, and investment in 14 OECD migration destination countries and 74 non-OECD migrant-sending countries between 1980 and 2005. They use the migration model targeting more than one destination, developed by Grogger and Hanson in 2008. They argue that the strict immigration policies have a deterrent effect on migration. The increasing income difference between the source and the destination country constitutes an attractive factor for migration. They also point out that in the two-way migration flow, widening income difference between the source and destination countries results in an increase out-migration. They underline finally that migration has positive effects on employment and investment and leads to an increase in income in the short term (Ortega & Peri, 2009).

In the study carried out by Longhi, Nijkamp, and Poot (2010), the effects of migration to the USA, Europe, and Israel on the labor market were examined by using the three-stage least squares estimation method (3SLS) from the simultaneous equation systems. The writers discerned that the effects of immigrant labor on the general level of wages and employment are very low. According to the research, a 1% increase in immigrants in the labor market decreases domestic labor wages by 0.029% and decreases domestic labor employment by 0.011% (Longhi, Nijkamp & Poot, 2010).

A study, conducted by Jean and Jimenez (2011), aimed to elucidate whether migration to the OECD countries between 1984 and 2003 caused unemployment among the local workers by using the impulse-response analysis method. They concluded that out-migration does not cause unemployment in the long term and migrant labor does

not displace domestic labor. In the short term, they argued that if the skill level of migrant workers were close to domestic workers, the substitution effect could be mentioned. Yet. it would only be possible within a very short time (Jean & Jimenez, 2011).

Ortega and Verdugo (2014) study the effect of immigration on the labor market in France between 1968-1999. They use the data obtained from the consecutive census and labor force surveys. They point out that the impact of migration on wages and employment varies by region. Migrants had a positive impact on the local workforce in some regions while had negative effects in some regions (Ortega & Verdugo, 2014).

Del Carpio and Wagner (2015) seek to examine the impact of the Syrian labor market made in Türkiye with a panel data analysis. The data was obtained from Turkish Statistical Institute and AFAD for 2011 and 2014. Their result demonstrates that a 1% increase in the number of Syrians led to a decrease in employment between -1.1 and -1,4 percent. Yet the results vary among the regions (Del Carpio & Wagner, 2015).

Akgündüz, Berg and Hassan (2015), attempt to understand how the advent of the Syrians had an impact on food and shelter in the first place in the south of Türkiye, then the rate of unemployment and finally internal migration. They used the Turkish Statistical Institute's data on net migration, employment, and unemployment rate data between 2008-2013 and analyzed in on a regional and provincial basis (Akgündüz, Berg & Hassink, 2015).

In a study carried out by Bove and Elia (2017), they divided the dual migration stock data into two groups 1960-2010 and 1970-2010. The new data was used on the number of people living and working outside their country of birth. This data was calculated by using fractionation and polarization indices. They argue that migration had a positive effect on the GDP of the destination countries (Bove & Elia, 2017).

Bahçekapılı and Cetin (2015) examine the impact of Syrians unemployment, inflation, foreign trade, and the effects of internal migration on the basis of their tax payments between two different periods including 2010-2012 and 2013-2014 in Türkiye. The main reason for choosing these years is that between 2010-2012 Syrians began to the enter Türkiye and the years between 2013-2014 the highest number of migrants come to Türkiye. The findings of the study claimed that Syrians increased unemployment and lowered prices, especially in border provinces (Bahçekapılı & Çetin, 2015).

Research

Research Methodology

The panel data, used in this study, is based on the time-series data of the individuals belonging to any time. Panel data observations consist of at least two dimensions and are shown as subscript "i" and time-series subscript "t" in the horizontal section aspect. Panel

data analysis is based on more complex clustering or hierarchical analysis. For this reason, it is possible to achieve reliable predictions through more detailed and informative data (Hsiao, 2003). It is widely accepted that more complex behaviors can be tested with less restrictive assumptions by panel data analysis. This analysis enables the identification and evaluation of the undetectable variables in the "cross-section or time series" data (Baltagi, 2005).

In the analysis method used in this study, panel data analysis will be preferred, which allows the use of "horizontal section data, which expresses data obtained from different units at one point in time, and time series data, which expresses only the data of a single unit at different time points" (Gujarati, 2004).

Panel data analysis is used to remove constraints in cases where the time dimension is short, the time series cannot be established properly or the error term is most likely biased (Yerdelen Tatoğlu, 2018). In addition, thanks to its two-dimensional structure in terms of space and time, it provides the opportunity to work with more data, higher free estimates can be made, it can prevent estimation stubs, contributes to the development and updating of the theoretical framework and estimation methods, eliminates the constraints and problems that may arise, and ıt provides other advantages, such as the possibility of installing models (Önder, 2017; Greene, 2003; Baltagi, 2005; Yerdelen Tatoğlu, 2012).

The general equation for linear panel data models is: (Yerdelen Tatoğlu, 2012, pg. 4)

$$Y_{it} = \alpha_{it} + \beta_{kit} X_{kit} + \varepsilon_{it} \tag{1}$$

$$i = 1, 2, \ldots, N$$

$$t = 1, 2, \ldots, T$$

In equation numbered (1), "i" corresponds to the cross-sections and "t" corresponds to time, "Y" stands for the dependent variable, "X" stands for the independent variable, "α" for the constant parameter. "β" for the slope parameter and "ε" for the error term. Dimension "i" subscript with cross-sections such as company, city, and country. The time dimension such as day, month, the year is defined as the "t" subscript (Hsiao, 2003).

Panel data, on the other hand, is a type of data that includes N units and T number of time observations in which these two dimensions are used together.

Panel data models are generally divided into two, which are distributed lagged panel data models and autoregressive panel data models. In the distributed lagged panel data models, the lagged values of the independent variables are included in the model as independent variables. In the autoregressive panel data models, the lagged values of the

dependent variable are included as independent variables in the model (Yerdelen Tatoğlu, 2012). In this study, since the lagged value of the dependent variable, the Gini coefficient will be included in the model as an independent variable, and the autoregressive panel data model will be preferred. The autoregressive panel data model can be expressed as (Yerdelen Tatoğlu, 2012b):

$$Y_{it} = \delta\, Y_{it-1} + \beta\, X_{it}' + \nu_{it} \tag{2}$$

In model 2 it is "$\nu_{it} = \mu_i + u_{it}$". In addition, a lagged value of the dependent variable Y is included in the model. According to the autoregressive panel data model, the model of the study can be shown as follows:

$$\text{Employment Rate}_{it} = C + \beta_0 \text{ Employment Rate}_{it-1} + \beta_1 \text{ Immigrant Rate}_{it} + \beta_2 \text{ Inflation Rate} + \beta_3 \text{ GDP} + \nu_{it} \tag{3}$$

The models in question are estimated using three different methods: the pooled classical model, the fixed effects model and the random-effects model (Sheytanova, 2014).

In this context, it can be determined whether the model is one-sided or two-sided in this research. Then it can also be determined which one of the estimation methods is suitable. Afterward, deviations from econometric assumptions will be tested using the appropriate model, and if there are such deviations, a model resistant to these deviations will be created and the final model will be obtained. Finally, economic evaluations will be made based on the estimated final model.

Data Set of the Study

Two variables, one dependent and one independent, will be used in the study. The dependent variable is the employment rate, and the independent variable is the Syrian population under temporary protection. While creating the panel data set, it was desired to use the data of 81 provinces. After 2014, Turkish Statistical Institute data was revised, and data was archived by dividing into 26 regions. For this reason, employment, unemployment, labor force and labor force participation rates and numbers of 26 Regions are included in the analysis. The number of Syrians given temporary protection and its ratio to the population of the province were obtained from the data of the Directorate General of Migration Management under the Ministry of Internal Affairs, In this study, as arranged in Turkish Statistical Institute. "Adana, Mersin-TR62, Ankara-TR51, Antalya, Isparta, Burdur-TR61, Aydın, Denizli, Muğla-TR32, Ağrı, Kars, Iğdır, Ardahan-TRA2, Balıkesir, Çanakkale-TR22, Bursa, Eskişehir, Bilecik-TR41, Erzurum, Erzincan, Bayburt-TRA1, Gaziantep, Adıyaman, Kilis-TRC1, Hatay, Kahramanmaraş, Osmaniye-TR63, Kastamonu, Çankırı, Sinop-TR82, Kayseri, Sivas, Yozgat-TR72, Kocaeli, Sakarya, Düzce, Bolu, Yalova-TR42, Konya, Karaman-TR52, Kırıkkale, Aksaray, Niğde,

Nevşehir, Kırşehir-TR71, Malatya, Elazığ, Bingöl, Tunceli-TRB1, Manisa, Afyonkarahisar, Kütahya, Uşak-TR33, Mardin, Batman, Şırnak, Siirt-TRC3, Samsun, Tokat, Çorum, Amasya-TR83, Tekirdağ, Edirne, Kırklareli-TR21, Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane-TR90, Van, Muş, Bitlis, Hakkari-TRB2, Zonguldak, Karabük, Bartın-TR81, İstanbul-TR10, İzmir-TR31, Şanlıurfa, Diyarbakır-TRC2" 26 regions were used. The data of these 26 regions cover the period 2015-2020 and the time series has been determined annually. Syrians in Türkiye after 2011 began to make entry. Since Syrians mostly lived in camp centers between 2011 and 2014, these years were excluded because there was no distribution data of Syrians by provinces before 2015. In addition, the balanced panel data probably set will be worked on, since the data of each unit in the selected year interval are collected completely.

The dependent variable employment rate was obtained from the TurkStat Central Distribution System database. The age range referenced in the variable is 15-64, which constitutes the working-age population. Therefore, the dependent variable employment rate is obtained by dividing the employed population in the 15-64 age range by the total population. Data from 81 provinces has been converted into data from 26 regions. The regional population data was obtained from the Turkish Statistical Institute Central Distribution System database. Therefore, the immigrant rate is a variable obtained by the authors by calculating the number of Syrian immigrants divided by the population of the region.

The inflation rate, one of the other independent variables of the model, reflects the consumer price index as of the end of the year. The gross domestic product data was calculated in Turkish lira, both data sets were obtained from the TurkStat Central Distribution System database, and all variables were included in the analysis with their logarithms taken. It is not safe and the world product data is calculated in Turkish lira, both sets are given from the Turkish Statistical Institute database, and the integrated logarithms are taken and included in the analysis.

Empirical Findings of the Study

In this part of the study, firstly, the assumptions of Arellano and Bover/Blundell and Bond's System Generalized Moments Method model, the absence of quadratic autocorrelation and the validity of instrumental variables will be tested. Whether there is an autocorrelation problem in the model will be examined with the help of the Arellano Bond Autocorrelation test, and the validity of the instrument variables will be examined with the help of the Sargan test. Then, the outputs of the model will be interpreted econometrically and all aspects of it economically and socially will be discussed in the conclusion part.

Table 6. Arellano Bond Autocorrelation Test and Validity of Instrumental Variables

Tests	Test Statistics (Probability Values)
Sargan Test	14.97752 (0.3088)
AR(1) Arellano Bond Autocorrelation Test	-1.4565 (0.1452)
AR(2) Arellano Bond Autocorrelation Test	0.43228 (0.6655)

According to the Sargan test results in Table 6 "over-identification restrictions are valid". H_0 hypothesis cannot be rejected because the probability value of the test is=0.3088>0.05. Therefore, it was concluded that the instrumental variables were valid. In the Arellano Bond autocorrelation test, on the other hand, the basic hypothesis is set as H_0: "There is no autocorrelation". According to this Table, the basic hypotheses regarding the absence of both first-order and second-order autocorrelation according to Arellano Bond Autocorrelation test results cannot be rejected. In other words, it can be said that there is no first-order and second-order autocorrelation in the model. However, the existence of first-order autocorrelation in the Generalized Method of Moments is not essential; but there should be no second-order autocorrelation (Yerdelen Tatoğlu, 2012). As a result, it can be safe to argue that the model is effective.

Table 7. Two-step System Generalized Moments Estimator Results by Arellano and Bover/Blundell and Bond

	Coefficients	Standard Errors	Z-Statistics	Probability Value	Confidence Interval (95%)	
Employment Rate (-1)	1.618984	0.1232264	13.14	0.000	1.377464	1.860503
Immigrant Rate	0.0230908	0.0042176	5.47	0.000	0.0148245	0.031357
Inflation rate	0.0413738	0.0101772	4.07	0.000	0.0214269	0.0613208
GDP	-0.1376456	0.013334	-10.32	0.000	-0.1637796	-0.1115115
Constant Coefficient	0.0725119	0.3782327	0.19	0.848	-0.6688106	0.8138343
Number of Observations	Wald-Test Statistic	Probability Value				
130	197.57	0.0000				

In Table 7. where the results of Arellano and Bover/Blundell and Bond's Two-step System Generalized Moments Estimator are presented above. It can be said that the

model is generally significant at the 95% confidence level since the probability value is =0.000<0.05 according to the Wald test results. It is seen that one lagged value of the employment rate, one of the independent variables in the model, is statistically significant at the 95% confidence level (probability value=0.000<0.05). Accordingly, a 1% increase in the one lagged value of the employment rate increases the employment rate by approximately 1.62%. This result shows that employment in the previous period increased the employment in the current period.

Among the independent variables in the model, it is seen that the immigrant rate is statistically significant at the 95% confidence level (probability value=0.000<0.05). Accordingly, a 1% increase in the immigrant rate increases the employment rate by approximately 0.02%. The inflation rate, another independent variable in the model is statistically significant at the 95% confidence level (probability value=0.000<0.05). Accordingly, a 1% increase in the inflation rate increases the employment rate by approximately 0.04%. This result confirms the Phillips Curve Analysis in the literature.

GDP, another independent variable in the model, is also seen to be statistically significant at the 95% confidence level (probability value=0.000<0.05). Accordingly, a 1% increase in GDP reduces the employment rate by approximately 0.14%. This result implies growth without employment. Finally, it is seen that the constant coefficient is statistically insignificant at the 95% confidence level (probability value=0.848>0.05). Therefore, the constant coefficient will not be interpreted.

Conclusion

The ignition of the civil war by the Arab Spring in Syria millions were forced to take refuge in the neighboring countries or change their place of living within the country to save their lives in 2011. This has been the largest influx of refugees since the World Wars. Türkiye received the largest part of this refugee influx. Initially, Syrians were considered guests and settled in refugee camps in the ten provinces on the Syrian border. As the civil war escalated in Syria, the flow of refugees intensified, and the capacity of the camps was exhausted. Syrians started moving to metropolitan cities. Soon after their status was determined to be temporary protection. Türkiye hosts about 3.7 million Syrians, the largest refugee population in the world.

Syrians, with a 2 million population that is working-age needed to have access to labor markets. The law and regulations enabling Syrian access to labor markets were enacted in 2016. The regulations stipulated that the work permits will be issued the Syrians in the place of their residence permits. Nevertheless, many provinces were unable to provide enough jobs for Syrians. Thus, very few Syrians found jobs through official channels in the formal labor markets. Many of them were economically weak, had language problems, had low educational levels, lack competitive power, and had no other

income-generating resources other than their labor, so they had no other choice but to work informally. As an increasing number of Syrian entered the labor markets, many people held Syrians responsible for unemployment, high inflation, and low wages.

On the contrary, many academic studies have pointed out that Syrian refugees have replaced domestic workers in the most labor-intensive manufacturing industries the industries. They simply filled the already vacant jobs. The present study has similar findings. According to the results obtained that were statistically significant, statistically significant results were obtained after the deviations were removed in the econometric model, in which the annual data of 5 years were examined in 26 regions of Türkiye between the years 2015-2020.

First of all, our study finds that statistically significant results were obtained after removing the deviations in the econometric model, in which the annual data of 5 years was analyzed in 26 regions of Türkiye between 2015 and 2020. As a result, a positive relationship was obtained between the increase in the number of Syrians and employment in the reference years when the Syrians began to live intensively. With the increase in the Syrian population, positive results were obtained both for the region and for the whole of Türkiye. The migration variable is also statistically significant at the 95% confidence level. Accordingly, every 1 unit increase in Syrian immigration increases employment by 0.81 units.

The current approach, which has been built with the perspective of "hospitality" towards Syrians, should be transformed into a comprehensive, structured policy based on a strong legal basis rather than the policies focused on temporary protection. While developing this comprehensive policy, it is of outmost importance to cooperate with the local actors and the public and to get their support, as well as the government. A comprehensive policy should be implemented to regulate the basic needs of Syrians such as shelter and nutrition, as well as areas such as education, working life, health, and municipal services. With this policy, contributions to social richness and multicultural structure benefit the social adaptation process.

For Syrians, it is extremely important to determine the attributes of the workforce in terms of the regions and sectors by analyzing and updating gender and age distribution, skill and education level. It is also important to provide support for language learning, and vocational education. Workers and employers should work to identify problems in the labor markets and need to decide to employ them in suitable jobs according to their qualifications and education, to prevent underemployment. New jobs and employment may be created by providing Syrian entrepreneurs with support and incentives and by removing obstacles for those seeking to establish new businesses. New regulation about Syrian women and children, the most vulnerable segment of the labor market is urgently required.

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