

The Impact Of International Labor Force On Labor Force Participation, GDP And Productivity

Uluslararası İşgücünün Verimlilik, Milli Gelir Ve İşgücü Katılım Oranına Etkisi

Özlem TOPLU YILMAZ*, Hande ÖZEK**

* Dr. Öğr. Üyesi, İstanbul Yeni Yüzyıl Üniversitesi, ozlem.yilmaz@yeniyuzuyil.edu.tr, ORCID: 0000-0001-5335-8370

**Dr. Öğr. Üyesi, İstanbul Yeni Yüzyıl Üniversitesi, hande.ozek@yeniyuzuyil.edu.tr

Abstract

In today's world, there are many reasons behind labor migration, however, better living conditions are still the main motives. A new language, a new life in a foreign country, adaptation to the social and economic life, livelihood costs, loss of wages during a new job search are the main disadvantages that a migrant labor can experience. The aim of this study is to reveal the impact of the international labor force on labor force participation, gross domestic product (GDP), and productivity in Turkey. The importance of the study is to reveal the impact of the foreign labor force on the country's economy. The study both contributes to the literature as there are limited studies about the issue in Turkey, and contributes to the practice as it reveals the effect of foreign labor force on the productivity of organizations. The research method is a multivariate regression model, estimated in Stata. This method is used to estimate the relationship between one independent variable (predictors) and more than one dependent variable. The analysis comprises the years between 2003-2019. The number of foreign workers who are registered in the Foreigners Automation System and who have work permits is taken into account. According to the statistics, they are generally employed in low-skilled positions. The results provided that the foreign workers have a limited impact on the labor force participation, GDP, and productivity in the Turkish labor market. The foreign labor force in Turkey affected 0.015%, 0.0003%, and 0.00008% of GDP, productivity, and labor force participation, respectively in the observed years.

Keywords: Labor Force Participation, GDP, Productivity, International Labor Mobility, Labor Theory of Value

Öz

Günümüz dünyasında işgücü göçünün arkasında birçok neden vardır, ancak daha iyi yaşam standartları ve daha yüksek ücretler hala ana güdüler olarak sayılmaktadır. Ancak, yeni bir dil, yabancı bir ülkede yeni bir yaşam, sosyal ve ekonomik hayata uyum, geçim maliyetleri, yeni bir iş arama sırasında ücret kaybı, göçmen işçinin yaşayabileceği başlıca dezavantajlar olarak sayılabilir. Bu çalışmanın amacı, Türkiye'deki yabancı işgücünün gayrisafı yurt içi hasıla (GSYH), işgücüne katılım ve verimlilik üzerindeki etkisini araştırmaktır. Çalışmanın önemi yabancı işgücünün ülke ekonomisi açısından etkisini ortaya koymaktır. Çalışma, hem kaynak taramasında Türkiye'de sınırlı çalışmaya rastlandığından literatüre katkıda bulunmakta, hem de yabancı işgücünün organizasyonların verimliliğine etkisini ortaya koyduğundan uygulamaya katkı sağlamaktadır. Araştırma yöntemi çok değişkenli istatistik modeli olup, 2003-2019 yılları arasında kapsamaktadır. Çok değişkenli istatistik modeli birden fazla sonuç değişkeninin eşzamanlı gözlemini ve analizini kapsayan bir istatistik alt bölümüdür. Yabancılar Otomasyon Sistemine kayıtlı ve çalışma izni olan yabancı işçi sayısı dikkate alınmıştır. Kayıt dışı yabancı işçiler analize katılamamıştır. Elde edilen sonuçlara göre, yabancı işçilerin Türk işgücü piyasasında işgücüne katılım, GSYH ve verimlilik üzerinde sınırlı bir etkiye sahip olduğunu göstermiştir. Yabancı işgücü, izlenen yıllarda, GSYH'yi, verimliliği ve işgücüne katılımı sırasıyla %0,015, %0,0003 ve %0,0008 olarak etkilemiştir.

Anahtar Kelimeler: İşgücüne Katılım Oranı, GSYH, Verimlilik, Uluslararası İşgücü Hareketliliği, Emek-değer Teorisi

Introduction

The demand for a foreign-born workforce has been recognized as a draw factor for labor flows (Castles, 2000; Piore, 1980; Sassen, 1988). Combining the dual and segmented labor market theories with the migration phenomenon (Massey et al., 1998; Piore, 1979), it is supposed that international labor movements are driven by motivations (a labor shortage in the secondary labor market) like foreign-born manpower fills the gaps for low-skilled labor that native workers reject (Fellini et al., 2007). The importance of labor skills has a long history in economics, and this history serves to explain a variety of topics that are relevant to today's economic growth analyses.

Petty (1676 [1899]) analysed the economics of war and of immigration in terms of skills (and wages) of individuals. Although concepts about labor specialization dominated thoughts about human capital, Smith (1776 [1776]) incorporated them in *The Wealth of Nations*. Education and training are frequently the keys to a career, however many people in developing countries stay jobless despite their high education levels. Because the majority of Asians are engaged in subsistence occupations such as farming, the least educated often have the lowest documented unemployment rates (Choi, Jeong-Gil, 2000).

Generally, in the international economics literature, there is limited research about the international flow of labor. One of the main reasons for this research is that classical theory assumes that labor is mobile within the country but immobile between the countries (Seyidoğlu, 2013: 704). The other assumptions about labor in the classical economy are: labor is the only production factor and labor is homogeneous.

These assumptions about labor in the classical theories do not correspond to real life. Firstly, the theory does not consider the other production factors. Labor is considered as the only key resource, or labor is used in the same set proportion in all commodities' production (Salvatore, 1996: 37). Classical economic theories are based on the labor theory of value which defines the cost of a commodity as a measure of the amount of labor used for the production of that commodity. Secondly, in real life, labor is not homogeneous thus some factors like training, education, productivity differentiate labor. Also, labor is not perfectly mobile within the country. This is the third critic. Working in another city of the nation is also difficult because of the separation from family and friends. The Assumption about the international immobility of labor was crucial in the classical theories. If the international mobility of labor was accepted, productivity differences would disappear, when workers migrate from higher productivity countries to lower regions. This would mean that the explanations of the comparative advantage model regarding foreign trade would be inconsistent.

Heckscher-Ohlin Theory goes beyond the Comparative Advantage Theory and assumes that there are two production factors (labor, capital), but still, in the theory, there is no international labor mobility (i.e. wages differ from country to country). According to the Heckscher-Ohlin-Samuelson Theory (Factor Price Equalization Theorem), international trade will cause the wages of homogenous labor to be the same in all trading nations and labor mobility would continue from the nation with low wages to the nation with high wages and this flow would go on until wages in two nations become equal (Salvatore, 1996: 124 - 126).

Although labor is accepted as immobile between the countries, in those years there were also migrant workers in Europe, and the USA. The desire to flee from political and religious repression in Europe drove international migrations in the 19th century and earlier. On the other hand, after World War II, international migration was driven by economic factors such as greater wages and income in other countries.

The majority of people relocate for economic reasons; they relocate to get better-paying jobs or to look for work in a new place (WTTC, 1995). Others relocate in order to pursue personal goals. Migrants, for whatever reason, are generally looking for a better life. There are two types of variables that cause migration in the hotel industry: "push" and "pull" forces. Poor pay, lengthy or unsociable hours, highly personalized job duties, fierce rivalry, sexual discrimination, inconvenient shifts, and a lack of public respect are all push factors in the hospitality business. Flexible hours, opportunities for women and minorities, opportunities to develop a skill, and so on are all pull factors. It is often assumed that labor emigration from a country might result in a number of possible advantages. It can, for example, alleviate unemployment and underemployment, provide foreign exchange, contribute to the acquisition of skills, and, in general, promote material welfare by raising national per capita income. Labor immigration has the potential to provide significant advantages. It can, for example, enable hospitality firms to achieve economies of scale, prevent wage inflation in a labor-short industry, ease investment by providing that new capacity can be adequately staffed, and, more broadly, makes labor services available without the need to fund the formation of the human capital (Choi, Jeong-Gil, 2000).

It has been seen that the faster pace of internationalization and globalization directs companies Human Resource departments to a more strategic role (Novicevic & Harvey, 2001; Scullion & Starkey, 2000). The topic of global talent management (GTM) has been increasing its importance day by day for several reasons. In the international arena, particularly in the context of the multinational corporation (MNC) and its attempts to manage talent on a global scale, creates competition among employers in the global levels rather than country level (Ashton & Morton, 2005; Sparrow, Brewster, & Harris, 2004). The reasons for this competition can be broken into two primary drivers. The first one is supply factors. These are the factors that have increased the level of international mobility and the opportunities for new forms of mobility, such as shift skill-based immigration systems (Salt & Millar, 2006; Sparrow et al., 2004); and the globalization of a number of professional labor markets, such as healthcare and information technology (Clark, Stewart, & Clark, 2006). The second one is demand factors. An increase in demand for skilled expatriates to help build emerging international markets, temporary and short-term access to specialized talent to assist

the management of the projects; and the need for highly mobile executives to perform cross-border tasks and to enable the knowledge sharing necessary to support globalization (Farndale, Scullion, Sparrow, 2010).

In the literature, the impact of foreign labor on the destination countries is analysed by considering different factors. This study makes the first attempt to address the issue international labor force by analysing the questions of relatedness with GDP and productivity. Furthermore, it is also analysed the relatedness with the laborforce participation. We think that either from a human resource perspective or economic perspective labor force participation is a key factor for growth and productivity. The relevant literature research shows that there are quite a few researches that discussed the International labor force in this perspective. So we wanted to add value to the literature by pointing out the potential impact of recruiting foreign labor force on countries' economies. Our case study involves foreign workers in Turkey. In the first section, the studies about the impacts of international labor mobility which consider the factors related to this research are summarised. Data about the foreign workers and methodology are summarised in the second section. The third section gives the results and findings of the analysis. Finally, the last section concludes the study.

Literature Review

The policies adopted by industrialized countries in order to recruit immigrants are an important factor that encourages workforce mobility. These initiatives are economically conceivable and are intended to close labor market gaps. These policies are designed at recruiting highly qualified immigrants (brain drain), as well as foreigners working in industries that are not popular among the host country's inhabitants (Popescu et al., 2020). Human capital is important in explaining productivity inequalities, according to labor economists (John M. Abowd et al. 2005 and Jeremy T. Fox and Valérie Smeets, 2011). The effects of incentive pay on productivity (Edward P. Lazear 2000), other human resource practices (Casey Ichniowski and Kathryn Shaw 2003), managerial talent and practices (Bloom and Van Reenen 2007), organizational form (Luis Garicano and Paul Heaton 2007), and social connections among coworkers (Bloom and Van Reenen 2007), (Oriana Bandiera, Iwan Barankay, and Imran Rasul 2009). The impact of productivity-driven reallocation on labor market dynamics via employment creation and destruction has also been highlighted by the authors (Haltiwanger, Scarpetta, and Helena Schweiger 2008).

The necessity for manpower in some economic sectors of industrialized countries remains a primary cause, while the desire for a job is the major purpose of newcomers. During the periods of economic expansion, deficits occur, and they are not always compensated by the local workforce (Chernyak & Chernyak, 2019). As a result, appealing to immigrants emerges to be a must for preserving economic development, profit, and productivity in a world of competition.

The International labor force contributes to job creation in several ways, ranging from entrepreneurship to increasing domestic demand for goods and services and improving the efficiency of labor markets (International Labour Organisation, 2010: 60). The International labor force has both direct and indirect effects on economic growth. Given the age structure of inflows, migration tends to expand the workforce thereby contributing to aggregate GDP growth (ILO, OECD and World Bank 2015: 12). The International labor force contributes to economic growth in numerous ways – by filling labor market needs in high-skill and low-skill segments of the market, improving labor market efficiency, promoting entrepreneurship, and injecting dynamism and diversity into destination countries and societies (International Labour Organisation, 2010: 57).

Foreign worker employment is related to economic performance and productivity in destination countries (International Labour Organisation, 2010: 63). Immigrants bring talents and abilities with them, adding to the host country's human capital base (ILO, OECD, and World Bank (2015: 12).

In this study, the impact of immigrant workers on Turkish GDP, labor force participation and productivity is analysed. The literature is around the issues of labor mobility impact on the host country. The studies related with the impact of labor on the productivity, labour force participation and GDP are summarised as follows:

Isa et al. (2021) evaluated the relationship between economic variables and the foreign labor force in Malaysia from 2001 to 2018. According to the data, the GDP and foreign exchange rate have a positive association with Malaysia's foreign labor force, however, the unemployment rate and labor productivity have a negative link. Engin and Konuk (2020) analysed the effect of the international migration on unemployment and economic growth in Turkey in the period of 1995-2019. The authors found a long term relation between the variables. According to their findings, the increase in the migration rate affect both unemployment and economic growth positively. Tipayalai (2020) investigated the influence of international labor migration on Thailand's regional economic growth from 2003 to 2015. The author came to the conclusion that high-skilled immigrants have a statistically significant and positive impact on Thailand's regional economy and labor productivity. Noor, Isa, Said, and Jalil (2011) examined the foreign workers and their contribution to Malaysian Manufacturing sector growth. According to the findings of the study, foreign labor has a beneficial and considerable impact on labor productivity. Additionally, foreign workers are neither alternatives nor complement for domestic workers, according to the study. For instance; Friedberg and Hunt (1995) discussed the theoretical and empirical research on immigration's impact on the income growth and labor market outcomes of natives in the United States. According to the authors, the influence of immigrants on natives' income growth is highly dependent on the immigrants' human capital levels.

Şahin and Şen (2021) investigated the effects of international workforce migration on unemployment, tax revenues, and productivity between the years 2008-2018. The authors found that the international workforce migration increased unemployment by 0.02% while increasing productivity by 0.002%. In the following study, Jordaán (2017) examined the

emigrant-induced productivity effects in the emerging economy of Malaysia for the period 2005 to 2009. According to the author, in Malaysian manufacturing industries, both high and low-skilled expatriates have favorable productivity effects. Peri (2010) looked at the influence of immigration in the United States on labor market outcomes such as employment, average hours worked, and average skill intensity, as well as productivity and income per worker. The author discovered no proof that immigrants are displacing natives in terms of employment. Second, we discover that immigration has a strong relationship with total factor productivity increase. Third, such efficiency improvements are unskilled biased, in other words, they are higher for workers with less education. Foster, Haltiwanger, and Krizan (2001) discuss how reallocations of economic activity toward higher-productivity producers (both within existing plants and through entry and exit) play a significant role in determining total productivity growth. Hsieh and Klenow (2009) speculate on how much bigger the Chinese and Indian economies might be if they were as efficient at the allocation of inputs among industrial units as the US. Reallocation of organisations can also have an effect on labor markets.

Lordođlu (2007) analysed the labor force migration in Turkey. According to the results, foreign workers concentrate in unskilled jobs and labor-intensive sectors. As there is considerable uncertainty about the impact of unauthorized employees on labor markets in Turkey it is hard to indicate the impact of the international labor force on Turkish labor markets either numerically or qualitatively. Longhi, Nijkamp, and Poot (2006) analysed the impact of immigration on the labor force of destination countries for various OECD countries to find out whether immigration leads to job displacement among native workers. The authors found that a one percent increase in the number of immigrants leads to a 0.024 percent decrease in native-born employment. Juhn and Potter (2006) interpret the labor force participation rate as the percentage of the working-age population who is either employed or unemployed but actively searching for work. This issue is mostly discussed by gender differences in most of the articles. For instance, Jacobsen (1999) in his article mentioned that the increased engagement of women in the labor force reflects the huge structural changes that have happened in the United States economy. Note that between 1948 and 1997, there were 46 million more women workers. Putting it in another way, during the course of 50 years, the economy acquired the population of a country the size of South Africa or South Korea. Male employment increased by 30 million during the same years, indicating population growth, although men's labor force participation rate fell from 87 percent in 1948 to 77 percent in 1997. Women's increasing labor force participation is clearly one of the causes for the huge growth in the reported gross domestic product throughout this era.

Measures And Analysis

This research starts from the hypothesis of the relatedness and the effect of the international labor force with labor force participation, GDP, and productivity. Our hypotheses are formulated as follows:

H1a: International labor force is related to labor force participation

H1b: International labor force effects positively labor force participation

H2a: International labor force is related to GDP

H2b: International labor force effects positively GDP

H3a: International labor force is related to Productivity

H3b: International labor force effects positively Productivity

Firstly, examination of the foreign labor data in Turkey gives a highlight of the foreign labor force participation, education level, and their nationalities provided by the OECD and Turkish labor organisation. Then these data ensure statistics for the model estimation in the following part.

Foreign Labor Mobility in Turkey

The foreign-born employment and unemployment rates are given in Table 1. These indicators are calculated as a share of the foreign-born labor force (aged 15-64) of that same age. Immigrant workers are affected to a greater extent by unemployment than native-born workers in European countries that have traditionally received migrants. In Turkey, more than 45% of migrants are employed and the unemployment rate of the migrants is appr. 11%.

Table 1. Foreign born employment and unemployment rate

Years	Foreign born employment rate (%)	Foreign born unemployment rate (%)
2009	47,2	14,7
2010	49,5	12,4
2011	49,7	10,3

2012	46,1	10,6
2013	46,6	10,6
2014	46,3	11,6
2015	44,4	12,1
2016	43,9	12,2
2017	46,2	11,2
2018	47,4	11,1
2019	65,5	13,9

Source: OECD, 2021a.

Table 2. Number of work permit given to foreigners by nationalities, 2018-2019

Countries	2018	2019	% change
Syria	34573	63789	0,46
Kyrgyzstan	13452	11003	-0,22
Ukranian	6394	6197	-0,03
Turkmenistan	5547	6128	0,09
Georgia	7321	5220	-0,4
Uzbekistan	3969	4480	0,11
Iran	2689	3935	0,32
Russian Federation	2944	3922	0,25
Azerbaijan	2997	2977	-0,01
Kazakhstan	1799	2860	0,37
Indonesia	2356	2704	0,13
Nepal	3186	2404	-0,33
China	2992	2357	-0,27
Phillippines	2076	1917	-0,08
Afghanistan	891	1466	0,39
Moldova	1370	1386	0,01
Germany	895	977	0,08
Egypt	1235	867	-0,42
United States of America	823	857	0,04

Other	17845	19365	0,08
Total	115837	145232	0,2

Source: Minister of Family, Labour and Social Services of Republic of Turkey, 2021. <https://www.aile.gov.tr/istatistikler/calisma-hayati-istatistikleri/resmi-istatistik-programi/yabancilarin-calisma-izinleri/>

Turkey mostly receives applications from Syria. In the ranking, countries following Syria, foreigners receiving work permits in Turkey come from Georgia, Kyrgyzstan, and Ukraine (Table 1). Applications are generally coming from the neighbour countries. Turkey is close to the Middle East, mostly receives applications from this region.

In the past years, the foreign labor force had generally low education levels. But in recent years, highly educated foreign workers have been coming to Turkey. Most of the foreign workers have high school degrees.

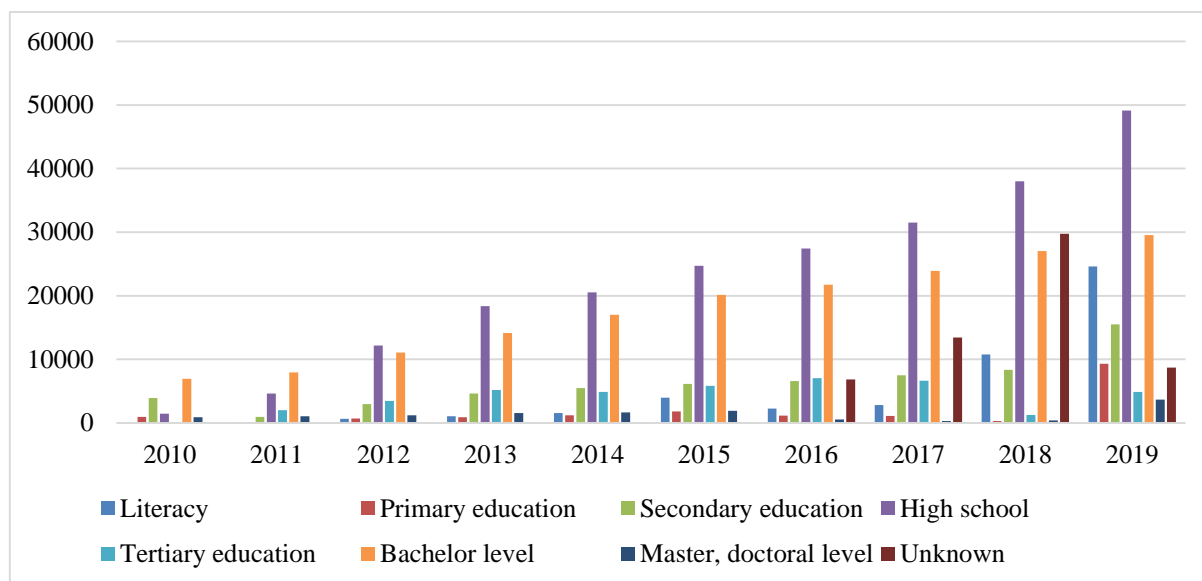


Figure 1. Number of work permit given to foreigners by education status, 2010-2019 (Minister of Family, Labour and Social Services of Republic of Turkey, 2021. <https://www.aile.gov.tr/istatistikler/calisma-hayati-istatistikleri/resmi-istatistik-programi/yabancilarin-calisma-izinleri/>)

Foreign labor forces in Turkey generally are replaced in the accommodation, household activities and wholesale trade. Generally, they are replaced in the low-skilled positions.

Table 3. Work permit given to foreigners by economic activities, 2018-2019 (%)

Economic Activities	2018	2019
Accomodation	0,17	0,16
Activities of households	0,03	0,12
Wholesale trade	0,07	0,08
Manufacture of wearing apparel	0,03	0,06
Office support activities	0,05	0,05
Retail trade	0,03	0,04
Food and beverage servce activities	0,03	0,04
Manufacture of textiles	0,03	0,04
Human health activities	0,04	0,03

Education	0,03	0,03
-----------	------	------

Source: Minister of Family, Labour and Social Services of Republic of Turkey, 2021. <https://www.aile.gov.tr/istatistikler/calisma-hayati-istatistikleri/resmi-istatistik-programi/yabancilarin-calisma-izinleri/>

Methodology

The research methodology is based on an econometric model. For estimating the impact of foreign workers on the related macro indicators in Turkey, Multivariate Regression (mvreg) model is estimated in Stata. This model is used to estimate a regression model when there is more than one dependent variable and more than one independent variable. The data are times series and represent 17 years, from 2003 to 2019, and collected from the OECD (OECD 2021b, OECD 2021c, OECD 2021d, OECD 2021e).

The number of foreign workers (number of work permits from all countries) is selected as the independent variable. The number of foreign workers (fworker) indicates the number of work permits given to foreigners. Dependent variables are GDP, labour productivity (GDP per hour worked), and labor force participation rate.

GDP is Turkey’s Gross Domestic Product in million US dollars. Participation shows the labour force participation rate in Turkey (25-64 years old, % in same age group). Productivity is the expression of the average cost of labour per unit of output produced. It is defined as the ratio of total labour compensation per hour worked to output per hour. This indicator is measured in percentage changes and indices.

Results And Findings

To conduct a multivariate regression in Stata, two commands are used: manova and mvreg. The manova command indicates whether all the equations are statistically significant. In Manova, there are four different tests (Şen, 2016: 9): As a result of these tests, it is decided whether Manova is significant or not. These tests are: Wilks' lambda (W), Roy's greatest characteristic root (R), Hotelling's trace (L), and Pillai's trace (P).

Table 4. Manova Test

Source	Statistic	df	F(df1)	F(df2)	F	Prob(F)	
fworker	W	0.1062	1	3.0	12.0	33.67	0.000
	P	0.8939		3.0	12.0	33.67	0.000
	L	0.4181		3.0	12.0	33.67	0.000
	R	0.4181		3.0	12.0	33.67	0.000
Residual		14					
Total		15					

Number of observations = 16

If there are no violations, Wilk's lambda is recommended. Wilks' lambda is the most used statistic. Small lambda values indicate a large distribution in groups. The F-ratios and p-values of these tests are summarised in the table. The model is statistically significant, (i.e. all of the p-values are less than 0.0001).

Next, the mvreg command is used to obtain the coefficients, standard errors for each of the variables in the model. The table gives the number of observations, R-squared, F-ratio, and p-values of the model.

Table 5: Multivarite Regression Model

Equation	Obs	R-sq	F	P
GDP	16	0.8864	109.20	0.0000
Productivity	16	0.8143	61.400	0.0000
Participation	16	0.8400	73.514	0.0000

	Coeff.	Std.Err.	t	P> t
GDP				
fworker	0.0153	0.0014	10.45	0.0000
cons	888.08	71.018	12.51	0.0000
Productivity				
fworker	0.0003	0.00004	7.84	0.0000
cons	93.142	2.168	42.95	0.0000
Participation				
fworker	0.00008	9.45	8.57	0.0000
cons	54.815	0.458	119.68	0.0000

The table contains the coefficients, their standard errors, test statistic (t), and p-values, for each variable in the model, grouped by the outcome. According to the column labeled P, it is seen that the model is statistically significant. The model explains the impact of foreign workers on the related macro indicators. However, the impacts are very low. In the column labeled R-sq, the predictor variables explain 0.015%, 0.0003%, and 0.00008% of the variance in the outcome variables GDP, productivity, and participation, respectively. A one unit increase in fworker is associated with a 0.00008 unit increase in the predicted value of participation rate. The hypothesis H1b is accepted; international labor force is positively related with the labor force participation. A one-unit increase in fworker is associated with a 0.015 unit increase in the predicted value of GDP. In this case, H2b is accepted that international labor force is positively related with GDP. A one-unit increase in fworker is associated with a 0.0003 unit increase in the predicted value of productivity which shows the acceptance of H3b that international labor force effects positively productivity.

Conclusion

In this study, we aimed to reveal the importance of foreign workers in countries' economies. So that, we analysed the subject from a macro level and we studied the impact of foreign workers on GDP, productivity, and labor force participation. In most of the studies, labor force mobility has been studied from a different perspective. For instance, in the World Bank report, in 2013, the main economic reason for international labor mobility is the possibility of better living conditions. These conditions in the working-age group are likely to depend heavily on their education level, age, gender, occupation and sector of work, and employment status (World Bank: Brief on the impact of migration and development in the MDGs (Washington DC, 2013)).

This study examined the effect of the registered foreign labor force on gross domestic product, productivity, and labor force participation rate in Turkey. According to the analysis, it has been observed that the effect of foreign labor on the selected indicators is very limited. Our study has shown that the foreign labor force is mostly employed in low-skilled positions, and thus the contribution of the labor force to the productivity and national income is negligible. In recent years the foreign workers with higher education levels prefer to work in Turkey. We think that their employment in higher-qualified jobs will contribute to productivity and national income in the following years.

The result of this study has shown that the impact of labor force mobility on GDP, productivity, and labor force participation is low. This outcome, direct us to think about the limitations of this study. There could be many diferent factors that are affecting labor force mobility. So that, the next researches can be done with a more micro point of view, trying to reveal these factors. We think that these factors can be analysed in two differrent subdimension: one is the economic dimension. Economic difficulties, better living conditions, better welfare. For example, further researches can include an analysis of the relationship between foreign labor force participation and the wages in the domestic market. The second dimension is about the Human Resource policies of multinational corporations which creates international career paths with global talent management. So that, the following researches could analyse the impact of HR policies such as global talent management on labor force mobility and other macro factors. Furthermore, another limitation of the study is that there are unregistered foreign workers that could not be analysed.

In this study, we assessed the relation between the international labor force and labor force participation. Hence, labor force participation shows the real or the potential working-age population. In addition to this, we also revealed the relationship between the GDP and productivity. The hypotheses H1b, H2b, H3b are accepted; the international labor force is related positively with GDP, labor force participation and productivity. With this study we aimed to add value to the literature by pointing out the

importance of labor force mobility on GDP and productivity of the countries. Moreover, we also aimed to add value to the practice by pointing out the importance of foreign human capital in the economies of countries.

References

- Ashton, C., & Morton, L. (2005). Managing talent for competitive advantage. *Strategic HR Review*, 4(5): 28–31.
- Castles, S. (2000). *Ethnicity and Globalisation*. London: Sage.
- Chernyak, O. & Chernyak Y, (2019), Modern trends of the international labor force migration. In SHS Web of Conferences, 65, 09001.
- Chinhui, J. and Simon Potter (2006). Changes in Labor Force Participation in the United States. *Journal of Economic Perspectives*, 20(3), 27–46.
- Choi, J.G., Woods, R.H. & Murrmann, S. K. (2000). International labor markets and the migration of labor forces as an alternative solution for labor shortages in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 12(1), 61–67.
- Clark, P. F., Stewart, J. B., & Clark, D. A. (2006). The globalization of the labor market for health-care professionals. *International Labor Review*, 145: 37–64.
- Engin, C. & Konuk, T. (2020). Türkiye Ekonomisinde Uluslararası Göçün İşsizlik ve Ekonomik Büyüme Üzerindeki etkisi: Ekonometrik Bir Analiz. *Kahramanmaraş Sütçü İmam Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 10(1), 103-123.
- Farndale, E., Scullion, H., & Sparrow, P. (2010). The role of the corporate HR function in global talent management. *Journal of World Business*, 45(2), 161–168. doi:10.1016/j.jwb.2009.09.012
- Fellini, I.; Ferro, A.; & Fullin, G. (2007). Recruitment processes and labour mobility: the construction industry in Europe. *Work, Employment & Society*, 21(2), 277–298.
- Friedberg, R.M. & Hunt, J. (1995). The Impact of Immigrants on Host Country Wages, Employment and Growth. *The Journal of Economic Perspectives*, 9(2), 23-44.
- International Labour Office (2010). *International labour migration: A rights-based approach*. Switzerland. ILO Publications.
- ILO, OECD & World Bank (2015). Joint paper for G20 Labour and Employment Ministers’ Meeting Ankara, Turkey, 3-4 September 2015.
- Isa, M. A. M., Razak, M. F. A., Mohamed, S., Ibrahim, W. M. F. W., Noh, M. K. A., Nasrul, F., & Hassan, S. S. (2021). Economic Determinants and Foreign Labour Force: Evidence from Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 11(13), 1023-1034.
- Joyce P. J. (1999). Labor force participation. *The Quarterly Review of Economics and Finance*, 39, 597–610.
- Jordaan, J.A. (2017). Foreign workers and productivity in an emerging economy: The case of Malaysia. *Rev Dev Econ*. 2017;1–26. DOI: 10.1111/rode.12334
- Juhn, C., Potter, S. (2006). Changes in Labor Force Participation in the United States. *Journal of Economic Perspectives*, 20(3), 27–46.
- Lordoğlu, K. (2007). Türkiye’deki Çalışma Hayatının bir parçası olarak Yabancı Çalışanlar. *Çalışma ve Toplum*, 3, 11-31.
- Longhi, S., Nijkamp, P. & Poot, J. (2006). The Impact of Immigration on the Employment of Natives in Regional Labour Markets: A Meta-Analysis. *IZA Discussion Paper*, 2044.
- Maria Loredana Popescu, Ovidiu Andrei Cristian Buzoianu, Victor Troaca & Valentin Lazar (2020). Analysis of the Impact of Globalization on the Global Labor Force SHS Web of Conferences 9, 2 (2021), Globalization and its Socio-Economic Consequences 2020 7051 <https://doi.org/10.1051/shsconf/20219207051>.
- Massey, D.S. (1998). Contemporary Theories of International Migration, in D.S. Massey et al. (Ed). *Worlds in Motion: Understanding International Migration*.
- Minister of Family, Labour and Social Services of Republic of Turkey (2021). Work Permits of Foreigners. (Accessed on 10 December 2020). <https://data.oecd.org/migration/foreign-born-unemployment.htm>
- OECD (2021b), Labour force participation rate (indicator). doi: 10.1787/8a801325-en (Accessed on 07 September 2020) <https://data.oecd.org/emp/labour-force.htm#indicator-chart>
- OECD (2021c), Gross domestic product (GDP) (indicator). doi: 10.1787/dc2f7aec-en (Accessed on 07 September 2020) <https://data.oecd.org/gdp/gross-domestic-product-gdp.htm>

- OECD (2021d), Labour productivity and utilisation (indicator). doi: 10.1787/02c02f63-en (Accessed on 07 September 2020). <https://data.oecd.org/lprdy/labour-productivity-and-utilisation.htm>
- OECD (2021e), Labour force (indicator). doi: 10.1787/ef2e7159-en (Accessed on 07 September 2020). <https://data.oecd.org/emp/labour-force.htm#indicator-chart>
- Peri, G. (2010). The Effect of Immigration on Productivity: Evidence from US States. *National Bureau of Economic Research (NBER) Working Paper No. 15507* online.
- Petty, S. W. (1676 [1899]). Political arithmetic. In C. Henry Hull (Ed.). *The economic writings of Sir William Petty* (pp. 233–313). Cambridge, UK: Cambridge University Press.
- Piore, M. (1979). *Birds of Passage: Migrant Labour and Industrial Societies*. Cambridge: Cambridge University Press.
- Piore, M. (1980). United States Immigration Policy and Unsanctioned Migrants: Comment. *Industrial and Labor Relations Review*, 33(3), 312–14.
- Salt, J., & Millar, J. (2006). International migration in interesting times: The case of the UK. *People and Place*, 14: 14–25.
- Salvatore, D. (1996). *International Economics*. 6th Ed. New Jersey: Prentice Hall.
- Sassen, S. (1988). *The Mobility of Labour and Capital: A Study in International Investment and Labour Flow*. Cambridge: Cambridge University Press.
- Scullion, H., & Starkey, K. (2000). In search of the changing role of the corporate human resource function in the international firm. *International Journal of Human Resource Management*, 11: 1061–1081.
- Seyidođlu, H. (2013). *Uluslararası İktisat*. 19th Ed. İstanbul: Güzem Can Yayınları.
- Smith, A. (1776 [1776]). *An inquiry into the nature and causes of the wealth of nations*. Oxford: Clarendon Press.
- Sparrow, P. R., Brewster, C., & Harris, H. (2004). *Globalizing human resource management*. London, UK: Routledge.
- Şahin, L. & Şen, A. (2021). Uluslararası İşgücü Göçlerinin Ekonomik Etkileri: İşsizlik, Vergi Gelirleri, Verimlilik. *Yönetim Bilimleri Dergisi*, 19(40), 375-394.
- Şen, S. (2016). Multivariate Anova (Manova). <https://sedatsen.files.wordpress.com/2016/11/11-sunum.pdf>
- Tipayalai, K. (2020). Impact of international labor migration on regional economic growth in Thailand. *Journal of Economic Structures*, 9(15), 1-9.
- World Travel and Tourism Council (WTCC) (1995). *Travel and Tourism, Progress and Priorities*.