

## Immigrants, Foreign Workers and Bilateral Trade: Evidence from Türkiye

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**Abstract:** *This study scrutinizes distinctively the impact of immigrants and foreign workers on Türkiye's bilateral trade with their countries of origin. For this purpose, we use data related to the total migration stock of the country and the foreign workers in Turkish firms from 2015 to 2021. Poisson Pseudo Maximum Likelihood (PPML) estimation results indicate a positive association between migration and trade in Türkiye in line with previous studies. The results show that a 10% growth in the immigrant stock from a country contributes to Türkiye's exports to that country by 1.8% and imports from that country by 1.4%. These effects are 1.6% and 2.4%, respectively, in the case of foreign workers per se. The findings partially confirm that the trade facilitating effects of foreign workers, which are assumed to be more qualified than the average in terms of education, skill, and experience, are larger than all immigrants. To put it differently, immigrants generally improve Türkiye's exports more than skilled immigrants who increase its imports less than immigrants overall.*

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### 1. Introduction

The total predictable number of people residing in a country other than their countries of birth increased from 153 million in 1990 to 281 million in 2020 (International Organization for Migration [IOM], 2021). The report also estimates that the vast majority of people worldwide migrate for work, family, and study reasons, while the few who remain come for compelling reasons such as political conflict, environmental disasters, and economic poverty. In line with these developments, the influence of migration on bilateral trade has since been the subject of extensive theoretical and empirical research.

Studies investigating the connection between migration and trade share a common topography, although their methodological approaches have changed significantly over time. The results confirm that the models measuring the effect of migrants on trade are both statistically positive and significant. However, the magnitude of this effect varies across studies, depending on nature of data, estimation method and country-specific policies (Gould, 1994; Head & Ries, 1998; Aleksynska & Peri, 2014; Hatzigeorgiou & Lodefalk, 2016; Andrews et al., 2017; Marchal & Nedoncelle, 2019; Erbahar & Gençosmanoğlu, 2021). Most studies tend to be at national or subnational level and concentrated in a few developed countries such as the U.S.A., Canada, and European or OECD countries. One reason for this could be that migration has become a key issue for these countries in various ways, in addition to trade.

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Migration is generally defined as any person who leaves his or her habitual residence, temporarily or permanently, staying in their home country or crossing the borders, for whatever reason (IOM, 2019). According to the definition, migration can be permanent or temporary as well as internal or international. Permanent migration occurs when a person moves to another place to live there for a long period. On the contrary, temporary migration is mostly associated with labor movement for a limited time period between origin and home countries such as seasonal employment. Therefore, a temporary migrant arrives in the destination country for a particular domestic employer or occupation and must return to his or her home country when the period expires. When a temporary stay in a host country is repeated, it is called circular migration and that's why it is regarded as a sort of temporary migration. There is a broad consensus that the duration of stay in the host country is a distinct feature of migrants that can be most effective in explaining the migration-trade relationship. For example, Hatzigeorgiou and Lodefalk (2016) suggest that skilled and recently arrived migrants have a clear positive impact on firm trade performance. Therefore, this study considers foreign workers separate from others as circular immigrants in Türkiye.

Türkiye is also a country that has become a major immigrant destination since 1990s instead of being mainly a distribution and a transit district, for both asylum seekers and migrant workforce heading to Europe (Hoffmann & Samuk, 2016). According to IOM estimates (IOM, 2021), there are presently more than 5 million immigrants staying in the country. This ranks Türkiye 12<sup>th</sup> among the countries that receive the most international immigrants. Due to political instability in the immediate area, many people have been forced to emigrate to Türkiye from countries such as Syria, Afghanistan, Iran, and Iraq. Despite the high population from its region and immediate surrounding, people from more than 70 countries reside in the country. In line with its export-oriented development model and open trade policy, it encourages foreign investment to increase employment and exports. Therefore, the country also issues work permits to employees from third countries. According to the Ministry of Labor and Social Security, these permits have increased about tenfold for the last 10 years (Ministry of Labor and Social Security [MLSS], 2021).

Studies for Türkiye on the migration and trade nexus, however, exist very rarely. They mainly interested in the economic impact of migrants on the labor market from specific countries (Icduygu, 2006). In contrast to other studies, Shinna and Nayir (2019) find that immigrant entrepreneurs may tend to have more permanent economic activities in host countries depending on their common language, culture, and religious advantages. Pursuant to an unprecedented rise in the number of Syrian refugees, their impact on prices, internal migration and regional multilateral trade (Bahcekapili & Cetin, 2015), consumer prices (Balkan & Tumen, 2016), and the labor market (Ceritoglu et al., 2017) has been the focus of various studies.

In this context, one objective of the study is to analyze the influence of immigrants on bilateral trade between Türkiye and their origin countries. The literature suggest that immigrants are expected to increase imports from their origin countries to Türkiye and likewise exports from Türkiye to these countries. To test this expectation, Poisson Pseudo Maximum Likelihood (PPML) estimation method with fixed effects is employed for the model with the dependent variables of immigrant stock and issued number of work permits.

The second objective is to contribute to the current literature by examining whether immigrant workers employed by Turkish companies have an impact on bilateral trade. Apart from the number of immigrants, Türkiye has also experienced a rapid growth of the work permits in recent years. Work permits are issued to workers from nearly the same origin countries. Fortunately, information on immigrants and those who received work permits during 2015-2021 allow us to conduct such a study. This also makes it possible to compare the potential impact of all immigrants with foreign workers on Turkish exports and imports.

The paper has important contributions to the literature in many ways with its findings. First of all, in parallel with the literature, it shows that immigrants improve both Türkiye's exports and imports. PPML estimations expose that a 10% growth in the stock of immigrants from a country rises Türkiye's exports to that country by 1.8% and imports from that country by 1.4%. These effects are expected as 1.6% and 2.4%, respectively, for foreign workers. Despite the mostly positive effects, the influence on bilateral trade is

different for foreign workers and other immigrants. The findings indicate that immigrants generally improve Türkiye's exports more than skilled immigrant workers who increase Türkiye's imports less than all immigrants.

The paper has the following sections: Section 2 reviews the related literature; Section 3 explains the development of foreign population in Türkiye; Section 4 presents data with the applied methodology; Section 5 provides the estimation results and the final section includes conclusion.

## 2. Literature Review

Trade theory suggests that migration can affect trade in several ways. In a direct way, immigrants could boost exports of domestic firms by improving their total factor productivity (Gandal et al 2004; Bandyopadhyay & Wall, 2008; Hiller, 2013; Marchal & Nedoncelle 2019). Mitaritonna et al. (2017) advocate that migration might both increase the number of foreign workers hired by domestic firms and create productivity gains through specialization, complementarity, and optimal task allocation. The productivity gains for each domestic producer at different levels can allow them to export their products, as the more productive firms are those that market globally and export more. However, there is no sufficient findings which indicate negative effect of migrant workers on the overall efficiency of domestic firms (Parrotta et al., 2014).

The other possible effect is related to ethnic groups' preferences for their origin country's goods. This effect is relatively obvious and could mainly increase the demand for ethnic goods from their respective home countries. However, the preference effect is likely to be insignificant if the stock of migrants is very small compared to natives. Even if the effect is large enough initially, this could induce domestic firms to invest in the production of identical goods domestically (Dunlevy & Hutchinson, 1999; Girma & Yu, 2002; Hatzigeorgiou, 2010).

Many studies show that immigrants who have market knowledge as well as business and social contacts with their origin country are able not only to reduce the transaction expenses of trade but also to take advantage of business opportunities abroad (Gould 1994; Head & Ries, 1998; Girma & Yu, 2002; Peri & Requena-Silvento, 2010). These advantages could help migrants build trust between trading partners, conduct negotiations, and conclude business contracts. Rauch and Trindade (2002) point to Chinese coethnic networks that could promote trade by enabling the use of sanctions in a weak international or legal environment and by brokering services between traders. A common language and border could be other means of increasing international trade (Steingress, 2018). This migration effect on trade is relatively large and important, as it could improve both exports and imports.

On the other hand, studies follow different approaches when investigating the functioning of market knowledge and business contacts. This is mainly due to different assumptions on the initial level of knowledge and the ability to use it, which vary according to the type of trade goods, the origin or size of the immigrants, and the particular circumstances in the home countries. Gould (1994) suggests that educational level, length of staying in the host country, and size and diversity of immigrant groups should be considered when assessing the connection between migration and trade. Head and Ries (1998) examine whether the purpose of arrival could be a reason for differences in the magnitude of the effect by dividing immigrants into investors, family members, and refugees. Girma and Yu (2002) find that additional knowledge (non-universal or non-individual information), depending on home country circumstances such as different social institutions, could be a factor that changes the magnitude of the effect on trading costs. Gould (1994) and Rauch and Trindade (2002) examine the relative importance of differentiated and homogeneous goods in the migration and trade relationship. Herander and Saavedra (2005) emphasize the importance of spatial proximity, which allows for the diffusion of knowledge about trade opportunities in the host country and about local culture and business practices, acquired either from locals (sales agents of the domestic exporter) or from compatriots who already possess such information.

Wagner et al. (2003) evaluate previous studies on the migration and trade nexus in comparison to the relevant theory. They briefly explain that the knowledge effect on trade should be larger than the

preference effect, while the preference effect on imports should be larger than on exports. The information channel effect should also be more important for differentiated goods, so the effects are probably larger than for homogeneous goods. The empirical evidence since the 1990s generally confirms the connection between migration and trade, both statistically and economically. The results regarding the influence of migration on trade across different kinds of goods, immigrant skills, and trade partners are also consistent with the theory. However, Wagner et al. (2003) highlight the fact that the preference effect is not always present, as in some studies the influence on exports is larger than on imports.

Later and more refined studies have added extensively to the literature. Bandyopadhyay and Wall (2008) examine whether immigrants' network effects differ by ethnic group and find that trade effects are likely to be larger when host and home country differences in institutions, languages, and cultures are greater. Felbermayr and Jung (2009) show that low- and high-skilled migrants strongly increase mutual trade in contrast to medium-skilled migrants. Dunlevy (2006) finds that the importance of immigrants increases when source countries have corrupted political systems, while it decreases when their native language is English or Spanish. Steingress (2018) finds new evidence that immigrants reduce transaction costs for exporters and that common official languages and borders increase imports.

Most research uses panel data and a gravity model by regressing bilateral merchandise trade flows on traditional independent variables (i.e., economic performance, common language, distance, etc.) along with the immigrant stock from selected partner countries (Andrew et al., 2017). For this reason, in addition to the extensive research, important concerns about the specifications used in the studies have been discussed. Wagner et al. (2003) emphasize the importance of using an appropriate functional form, apart from problems with unobserved and omitted variables. Moreover, the most commonly used log-linear specifications based on the basic gravity equation assuming constant elasticity may not be consistent with the relevant theory, since immigrants should have a decreasing marginal effect as their utilization rate decreases.

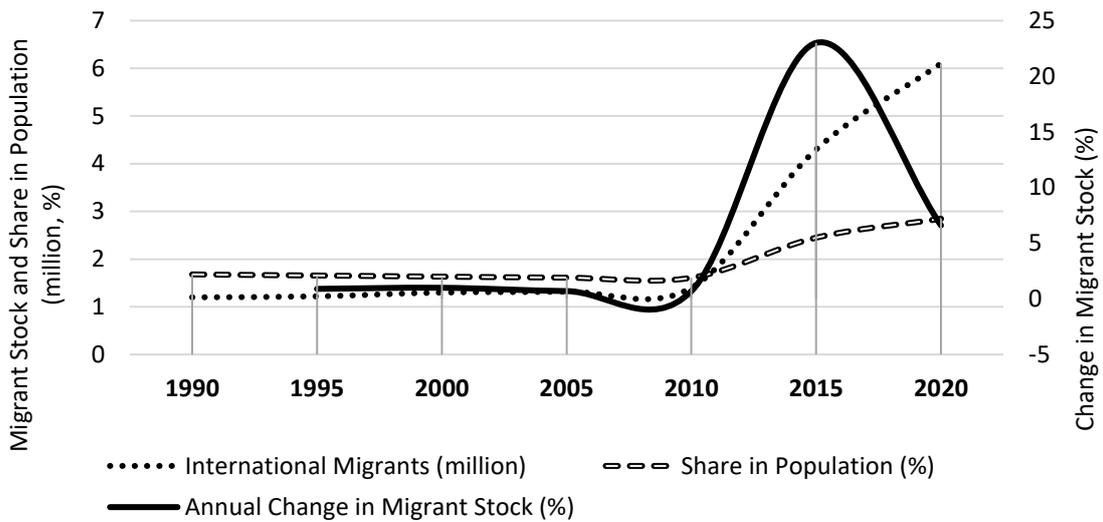
An important issue raised in a number of studies is the question of spurious correlations. These concerns are mainly due to confounding factors such as distance, common language, historical and cultural ties that could simultaneously affect the immigrant stock and trade flows. Wagner et al. (2003), Bandyopadhyay and Wall (2008), and Felbermayr and Jung (2009) suggest using control variables in the specifications for unobserved components of the independent variables to avoid overestimating the true impact of migration on trade. Accordingly, they suggest the use of appropriate fixed effects based on a broad empirical literature, such as country, province and time fixed effects.

Researching the positive connection between immigrants and trade assumes the direction of influence from immigrants to trade and provides a wide range of evidences that immigrants could contribute to the trade between their host and origin countries. This relationship is explained either by firm-level productivity and cost advantages as a result of hiring immigrants (Mitaritonna et al., 2017; Ariu, 2022; Erbahar & Gençosmanoğlu, 2023) or facilitating trade through the superior market knowledge that they have related with their countries of origin (Andrews et al., 2017; Steingress, 2018; Egger et al., 2019; Orefice et al., 2021). Likewise, it is also possible for immigrants to cause an additional demand for the importation of ethnic products from their countries of origin, depending on their preferences of consumption (Gould, 1994; Head & Ries 1998; Dunlevy & Hutchinson, 1999; Zhang, 2020; Hatzigeorgiou & Lodefalk, 2021).

### 3. Foreign Population in Türkiye

Figure 1 reveals that the stock of international migrants in Türkiye grew about fivefold from 1.2 million in 1990 to 6.1 million in 2020 whereas the increase in the immigrant stock has accelerated since 2010 (IOM, 2021). The period after 2010 reflects the significant portion of the increase from 1.4 million to 6.1 million immigrants over the past 30 years. This expansion provides a good basis for a study on the influence of immigrants on Turkish trade.

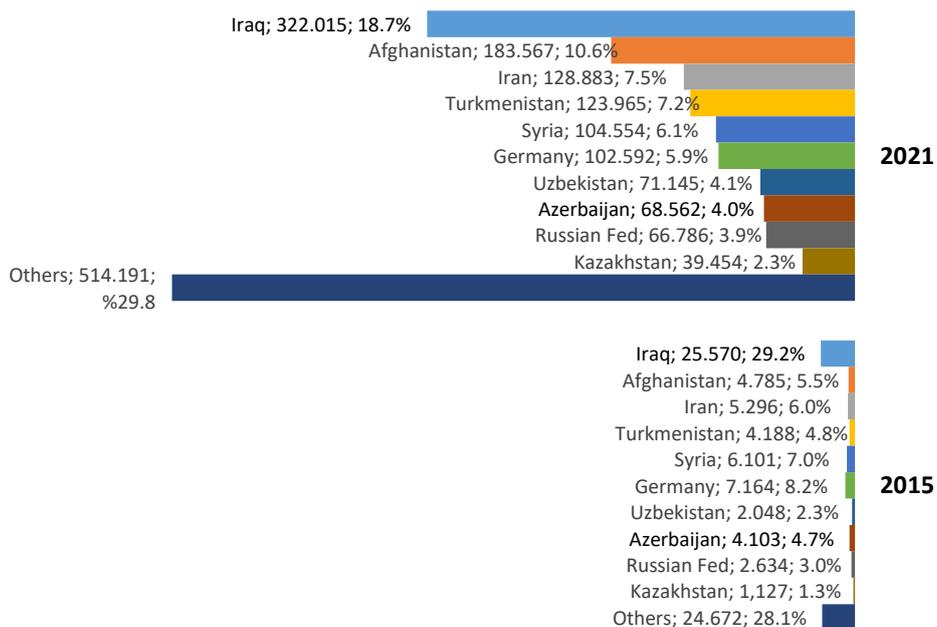
**Figure 1. Migrants in Türkiye**



Source: IOM

TURKSTAT statistics make available more precise information on the development of the foreign population in Türkiye. First, their number grew from 87,688 in 2015 to 1,725,714 in 2021 by increasing more than twenty-fold and exceeding 1.7 million. Germany is the only exception to the countries in the Asia and Middle East region, which are among the main countries constituting Türkiye's foreign population. Moreover, the share of the top 10 countries listed in Figure 2 remain above 70% of the foreign population. However, there are significant changes in the shares of the mentioned countries in total foreign population from 2015 to 2021. For instance, the share of immigrants from Iraq, Syria, Germany, and Azerbaijan in the total decreased, unlike the stock of foreign populations from other leading countries as Afghanistan, Iran, Turkmenistan, Uzbekistan, Kazakhstan, and the Russian Federation.

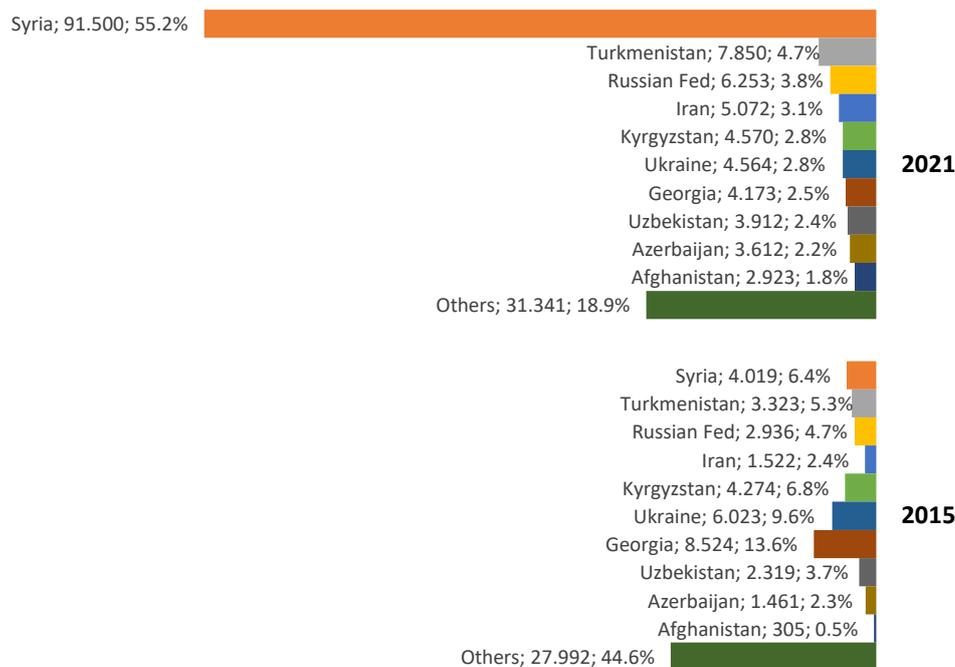
**Figure 2. Foreign Population by Origin Countries (no of people and % share)**



Source: Author's calculations from TURKSTAT data

The chief reason for the rapid growth in the number of immigrants in the following period in 2010 is the civil war in Syria. The Syrian Civil War that broke out in 2011 confronted Türkiye with an unexpected and massive influx of refugees. As a result, the country had to accept 2 million refugees in a short period of 3 years, as never before (Hoffmann & Samuk, 2016). According to the official data of the Presidency of Migration Management, the number of Syrians with “temporary protection” status reached 3.6 million by the end of 2020. As a result of this huge expansion, their number who obtained a residence permit reached 104,554 in 2021 (Figure 2).

**Figure 3. Work Permits by Origin Countries (no of people and % share)**



Source: Ministry of Labor and Social Security

In the 2015-2021 period when the data is available, a rapid increase is also recorded in the work permits given to foreigners. The number of permits issued grew from 62,698 to 165,770, increasing by 164.4%. As of 2021, the most work permits are granted to Asian and Middle Eastern countries. In the same year, the share of the top 10 countries with the most work permits in the total improved from 55.4% to 81.1%. There have been some serious changes in the distribution of these countries according to the number of work permits in the relevant period. For example, Syria's share increased from 6.4% to 55.2% mainly due to their arrival after the Civil War, while Georgia's share decreased from 13.6% to 2.5%.

**Table 1. Exports and Imports of Türkiye (Million USD)**

Years	Exports			Imports		
	Sample Countries <sup>a</sup>	Total	% Share	Sample Countries <sup>1</sup>	Total	% Share
2015	122.6	151.0	81.2	184.1	213.6	86.2
2016	123.8	149.2	83.0	175.0	202.2	86.5
2017	134.5	164.5	81.8	200.3	238.7	83.9
2018	149.0	177.2	84.1	195.9	231.2	84.7
2019	150.8	180.8	83.4	173.4	210.3	82.4
2020	142.6	169.6	84.1	177.5	219.5	80.9
2021	190.6	225.2	84.6	220.0	271.4	81.1

a: The list of countries is presented in Appendix (Table 1A).

Source: TURKSTAT

Türkiye's exports improved from 151.0 billion USD in 2015 to 225.2 billion USD in 2021, representing an overall growth of 49.2% and an annual average increase of 8.2%. Imports, on the other hand, recorded a limited increase from 213.6 billion USD to 271.4 billion USD (Table 1). In other words, the overall increase in imports was 27.1% while experiencing 4.5% of yearly average growth. Compared to more than 200 trading partners, the number of countries for which work permits are issued is only 75. These countries are included in the sample and their export and import volumes, account for more than 80% of the total. In other words, the sample is large enough to explore the influence of both immigrants and foreign workers on Turkish bilateral trade.

#### 4. Data and Methodology

The study uses various yearly data sets for the period 2015-2021 due to their availability. Export and import values in USD are taken from the Foreign Trade Statistics database published by Turkish Statistical Institute (TURKSTAT). The Institute also provides the yearly stock and flow indicators of immigrants by origin countries. Work permits issued to foreigners are obtained from the statistics on "Work Permits of Foreigners" available annually by the Ministry of Labor and Social Security.

Finally, Table 2 presents the descriptive statistics of the final sample generated for the period 2015-2021 in relation to the data explained above. The sample consists of 525 observations and Table 2 also includes the mean, standard deviation, minimum and maximum values for the variables. There are no missing observations in the sample.

**Table 2.** Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
exports (USD)	525	1,805,033	123,071.3	0.0	17,982,230.3
Imports (USD)	525	2,424,627.0	201,243.4	21.0	30,952,738.3
permits (no of people)	525	1,453.32	261.6	0.0	91,500.0
Migrants (no of people)	525	8,784.43	1,214.6	0.0	322,015.0

Among the dependent variables, export values range between 0 and 18 million USD and import values vary between 21 USD and 31 million USD. The minimum values of work permit and immigrant stock for the independent variables are zero. In short, there are zero value problems that are commonly detected in trade data. This fact is considered in the selection of the estimation method.

Consistent with the theoretical background explained earlier, we consider the following linear regression model to study the effect of migration on bilateral trade:

$$y_{it} = \beta_0 + \beta_1 x_{it} + \delta_{it} + \mu_{it} + \varepsilon_{it} \tag{1}$$

where  $y_{it}$  represents Türkiye's exports to or imports from country  $i$  (in USD), while  $x_{it}$  represents the number of work permits issued to immigrants or immigrant stock from country " $i$ " in year  $t$ . The year and country fixed effects are specified by  $\delta_{it}$  and  $\mu_{it}$ , respectively, while  $\varepsilon_{it}$  is an error term. Fixed effects are also included in the model to absorb unobserved shocks from possible sources of omitted variables.

The model allows us to pay particular attention to the direct effects of immigrant labor or stock on bilateral trade. We estimate Equation-1 with PPML to account for zeros and avoid the potential bias due to heteroscedasticity in the error terms in line with the work of Silva and Tenreiro (2006).

#### 5. Results

The PPML estimation results presented here aim to measure the influence of the immigrant stock and the foreign workforce granted work permits on exports and imports separately. Accordingly, it is possible to compare their effects on Turkish bilateral trade.

For the estimation results given in Table 3, we consider time and country fixed effects. The results show that the estimated coefficients are both positive and statistically significant. In columns I and III of the table, the effects of immigrants with work permits on exports and imports are estimated, respectively. The estimation coefficient in column I indicates that if the number of work permits issued to the immigrants from a particular country rises by 10%, Türkiye's exports to that country would grow by 1.6%. This effect, however, would be 2.4% import growth from that country. Therefore, the work permits granted to foreigners increase Türkiye's imports more than its exports.

**Table 3.** PPML Estimation Results for Exports and Imports

Dependent Variables	Exports		Imports	
	(I)	(II)	(III)	(IV)
$\ln permits_{it}$	0.1624** (0.0171)		0.2435** (0.0329)	
$\ln migrants_{it}$		0.1813** (0.0268)		0.1431** (0.0307)
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Pseudo-R2	0.0918	0.1137	0.1352	0.0546
N	525	525	525	525

Note: The dependent variables are the log of exports to or imports from country  $i$  in year  $t$ . The independent variables are the log number of foreign workers (+1) from country  $i$ . The significance levels are \*\*\*%1, \*\*%5 and \*%10.

Columns II and IV in Table indicate the effect of all foreigners who migrated into Türkiye for any reason on bilateral trade. The estimation coefficient given in column II reveals that a 10% growth in the number of immigrants from a particular country rises Türkiye's exports to that country by 1.8%. The estimation coefficient in column IV, on the other hand, reflects that Türkiye's imports increase by 1.4% with the same expansion in the number of immigrants. These results indicate that immigrants overall increase Türkiye's exports more than its imports, unlike immigrants who come to the country only to work.

The above results support earlier studies indicating positive association between immigrants and bilateral trade. They show that immigrants coming to Türkiye for work or other reasons might improve bilateral trade. However, the trade effects vary according to the reasons for the arrival of immigrants and the direction of trade (export or import). We find that foreigners who come to the country only to work increase exports less than all immigrants.

The finding that immigrants in Türkiye generally increase exports more than imports is consistent with the results found in previous studies. Based on the results of 48 empirical studies, Genç et al. (2012) suggest that the migrant elasticity of imports is greater than that of exports in approximately half of the countries considered, but the publication bias and heterogeneity-corrected elasticity is slightly higher for exports than for imports. The reason for this finding is the possible decrease in immigrants' demand for ethnic products. As discussed in the literature section, immigrants' direct import demand for ethnic products is initially high but may become insignificant depending on the size of domestic production or immigrant stock. In addition, some common characteristics of the countries that form the source of the main immigrant groups coming from Türkiye's nearby geography may cause restrictive effects on the development of imports. For example, the political instability experienced by countries such as Syria and Afghanistan may have negatively affected imports from these countries. In addition, the common culture and history between these countries and Türkiye may have facilitated the procurement of ethnic products from within the country. Finally, the wider range of products that the relatively more developed Turkish economy can offer to these countries in bilateral trade may have caused immigrants to increase their exports to their own countries.

On the other hand, the direct import demand effect is greater for foreign workers. The fact that their stay in Türkiye is limited compared to other immigrants may direct them to their origin countries to attain ethnic products. This may cause the demand for ethnic products to remain high. As explained in the literature

section, the impact of foreign workers on trade is also realized through the productivity and cost advantages they provide to companies. In other words, their impact on imports occurs indirectly through the company. The fact that their impact on imports is greater than exports suggests that the companies they work for are companies that supply products from abroad and sell mostly domestically. In other words, companies employ migrant workers in order to supply the products they need for domestic production and sales.

## 6. Conclusion

This paper explores the influence of immigrants on Turkish bilateral trade. For this purpose, we focus on the motivation of the immigrants' arrival in the country since there is no detailed data on their qualifications. Within the scope of the analysis, we use data covering the total migration stock in the country and the immigrants who come to the country to work in a Turkish company in the period of 2015-2021. According to the IOM, the immigrant stock in Türkiye increased rapidly after 2010, reaching approximately 7% of the total population in 2020. In the same period work permits granted to foreigners increased more than threefold.

The estimation results calculated to examine the connection between immigration and trade in Türkiye are statistically and economically significant in line with previous studies. In other words, immigrants contribute positively to the improvement of Türkiye's both exports and imports. However, it is not possible to use the variables representing the qualifications of these immigrants such as education, skills and experience in the study due to insufficient data. Instead, two separate estimates are made for the total immigrant stock and the number of foreign workers in order to compare their effects on trade separately. PPML estimations reveal that a 10% growth in the stock of immigrants from a country rises Türkiye's exports to that country by 1.8% and imports by 1.4%. These effects are expected as 1.6% and 2.4%, respectively, for immigrants coming to work in a particular Turkish firm. These estimates partially confirm the findings of previous studies. Evaluating the results of 48 empirical studies that yielded 300 observations, Genç et al. (2012) reveals that a rise in the number of immigrants by 10% is likely to expand the trade volume on average by approximately 1.5%.

In the literature, the influence of immigrants on international trade are discussed in two ways. The preferences of immigrants towards ethnic products increase their import demands from their origin countries. Immigrants, however, also lead to the expansion of bilateral trade through trade facilitating factors such as market knowledge, business and social environment, educational background and skills. Previous studies show that the effects through trade facilitation are greater than those through ethnic preferences. In this respect, we should expect that the trade-facilitating effects of foreign workers, which are assumed to be more qualified than the average immigrants in terms of education, skills and experience, should be greater than all immigrants. This study partially confirms these findings. Because, contrary to our expectations, the estimation results show that immigrants generally improve Türkiye's exports more than skilled foreign workers. On the contrary, they reveal that qualified foreign workers increase Türkiye's imports more than all immigrants, as expected.

The immigrants' length of stay in the country also determines their impact on trade. Therefore, foreign workers are assumed differently from permanent immigrants by being considered circular immigrants. The findings indicate that, in line with the literature, the effects of foreign workers and other immigrants with different lengths of stay on trade are at different levels.

There is an extensive consensus that immigrants and foreign workforce have distinct features such as levels of skill and education, diverse job positions in firms, duration of stay in host countries and reasons for migration which may have different effects in explaining migration-trade relationship. Therefore, decision makers should take these factors into account when granting residence permits to immigrants and foreign workers. At the same time, it would be beneficial to expand this study to include the mentioned factors as long as the data allow in order to shed light on the practices of decision makers.

In line with the earlier literature, this paper uses a broader definition of immigrant by assuming them as foreign-born residents which results in counting only their first generations. Hence, new studies on

migration-trade nexus should extend this definition so as to include next generations. We should expect that the of immigrants' level of knowledge which facilitates trade is likely to diminish over generations. It will not be possible for the second generation born in Türkiye to have the same level of knowledge as the first generation. That is more important for immigrant groups whose population is increasing very rapidly. For example, more than 415,000 Syrian babies have been born in Türkiye since the start of the Syrian crisis (Avundukluoğlu, 2019). This approach could help us to evaluate how the impact of immigrants on trade could be affected by subsequent generations.

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## Appendix

Table 1A. Sample Countries

Afghanistan	Greece	Palestine
Albania	Hungary	Philippines
Algeria	India	Poland
Argentina	Indonesia	Portugal
Armenia	Iran	Republic of South Africa
Australia	Iraq	Romania
Austria	Ireland	Russian Federation
Azerbaijan	Italy	Serbia
Belarus	Japan	Slovakia
Belgium	Jordan	Somalia
Bosnia and Herzegovina	Kazakhstan	South Korea
Brazil	Kenya	Spain
Bulgaria	Kosovo	Sweden
Canada	Kyrgyzstan	Syria
China	Lebanon	Tajikistan
Colombia	Libya	Thailand
Cuba	Mexico	Tunisia
Czechia	Moldova	Turkmenistan
Denmark	Mongolia	Uganda
Egypt	Morocco	Ukraine
Ethiopia	Nepal	United Kingdom
France	Netherlands	United States
Georgia	Nigeria	Uzbekistan
Germany	North Macedonia	Vietnam
Ghana	Pakistan	Yemen

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