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International Migration & Economic Development: The Case of EU Countries

Международная миграция & экономическое развитие: случай стран Европейского Союза

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Written by:

Svetlana V. Tolmacheva⁴¹

ORCID: 0000-0002-7808-0050

SPIN-ID <https://elibrary.ru/2076-2154>

Abstract

The globalization of the modern world strengthens the role of migration flows in the socio-economic development of countries and regions. The European Union, and Italy in particular, are among the main centers attracting migrants due to their geopolitical transit position and relatively favorable environment. The consequences of the explosive growth in migration flows are ambiguous. To clarify the direction and power of such effects, we perform correlation and regression analysis according to a number of parameters. The paper presents relevant data on the demographic and socio-economic situation in Italy for 2001–2017. In the literature review section, we examine the substance of international migration and identify the factors affecting the trends in economic dynamics as well as changes in migration flows. The research results confirm that the most significant determinants are employment, the GDP growth rate and the labor cost index. The study also finds that there is a positive correlation between GDP growth and inflow of remittances. The empirical data provided indicate the coherence between migration and particular macroeconomic indicators. A comprehensive analysis of the factors presents a promising pathway for improving migration policy.

Key Words: migration, labor market, European Union, Italy, economic development, globalization, GDP, sustainability.

Аннотация

Глобализация современного мира предопределила возрастающую роль миграционных потоков в социально-экономическом развитии стран и регионов. Одним из центров притяжения мигрантов стал Европейский союз и в частности Италия благодаря своему геополитическому транзитному положению и сравнительно благоприятными условиями. Последствия стремительного роста миграционных потоков являются неоднозначными, для уточнения направления и силы таких эффектов нами проведен корреляционно-регрессионный анализ по ряду параметров. Для этого в статье приводятся актуальные данные по демографической и социально-экономической ситуации в Италии за период 2001-2017 гг. В ходе обзора литературы рассмотрена сущность международной миграции, выделены факторы, которые оказывают воздействие как в отношении изменения тенденций экономической динамики, так и в части изменения миграционных потоков. В результате нашего исследования подтвердилось, что наиболее значимыми детерминантами являются занятость населения, темп роста ВВП и рост индекса затрат на рабочую силу. Также установлена положительная связь роста ВВП и притока денежных трансфертов мигрантов. Представленные эмпирические данные говорят о согласованности миграции с конкретными макроэкономическими показателями. Комплексный анализ обозначенных факторов представляется перспективным для совершенствования миграционной политики.

Ключевые слова: миграция, рынок труда, Европейский союз, Италия, экономическое развитие, глобализация, ВВП, устойчивость.

⁴¹ Dr.Sci. (Sociology), Professor, Department of Marketing and Municipal Administration. Tyumen Industrial University, Russian Federation.

Introduction

Geopolitical changes and uneven development of individual states and regions begin new trends in migration movements. These processes have stimulated a considerable increase in international migration in the EU territory. Over the past few decades, Europe has increasingly become a destination for intensive migration flows. This fact has prompted the EU leading institutions to recognize migration as a global phenomenon that plays a decisive role in ensuring security, social and political stability.

Studies on migration in the EU member states are of significant scientific and practical interest (Balkyte & Tvaronavičiene, 2011; Čajka, Olejárová & Čajková, 2018; Škuflić, Krpan & Žmuk, 2018; Todorov, Kalinina & Rybakova, 2018; Lincényi, 2017). The events of recent years clearly demonstrate a rather serious problem arising in the territory of the European Union, i.e. an influx of a significant number of refugees and labor migrants. Among the EU member states, Italy is a regional immigration leader with highly massive migration flows from the Balkan and Eastern Europe. The special position of the Italian peninsula in the Mediterranean Sea and the political situation in neighboring countries (primarily in Libya, as well as in Egypt and the Maghreb countries) make Italy a country of paramount importance in regional migration flows.

The reasons behind international migration in Italy and its consequences are investigated in (Golini et al., 2015; Kreminskaya, 2014; Popova & Kutsov, 2018; Tsareva, 2014). The analysis of the abovementioned works shows that the special feature of migration processes in Italy is their multi-ethnic nature with close economic, political and cultural ties. In the context of globalization, this situation further aggravates economic differentiation of EU nations. Consequently, modern migration processes pose unprecedented civilization challenges to society that have to be thoroughly analyzed, and this determines the relevance of the research.

Thus, the purpose of the current study is to assess the effect of international migration on economic development of EU countries using the case of Italy. The objectives of the study are: to clarify the essence of international migration; to identify the factors that form a deterministic relationship between migration and economic development of the country; to develop an econometric model of the relationship between the flow of migrants and socio-economic indicators.

Literature Review

Economic effect of migration is widely debated in scientific society. The central statement is that any sustained manifestation of migration results in a number of both positive and negative phenomena. For immigrant countries, the primary emphasis is placed on short-term consequences, primarily for the labor market and budget expenditures associated with the financing of migrants, as well as economic growth caused by an additional influx of labor force. In the long run, the special attention is paid to the immigration effects related to balancing the labor market considering socio-demographic trends (Trofimov, 2017; Orazbayev, 2017).

The effect of migration on the labor market is largely dependent on the extent to which qualifications of migrants correspond to the structure of economy and meet its needs (Clark & Drinkwater, 2008; Akberdina, Tretyakova & Vlasov, 2017; Guseva, Arbenina & Chernova, 2017). Ho and Shirono (2015) argue convincingly that migrants' wages and employment level tend to equalize with those of local residents over time as newcomers gain better language expertise and education. Varzhapetyan et al. (2019) highlight the effectiveness of continuing professional education. However, Aiyar et al. (2016) note that such gaps can persist. The key factor determining the consequences of migration is the ability of migrants to integrate into the local labor market as quickly as possible. Failed integration may freeze migrants' participation in the labor market at lower rates than the average level among the local population, even if migrants demonstrate positive demographic characteristics and are economically active (Chernova et al., 2019).

In general, international labor migration is affected by economic and non-economic factors (Korovkin, 2018). Numerous researchers have painstakingly explored migration. Using panel data for 2001–2008, Vakulenko (2015) and Vakulenko, Mkrchan and Furmanov (2011) evaluate the significance of the gravity model of migration between Russia's regions. The authors establish that, despite rather stable migration flows, their determinants change notably.

Zaychikova and Lyubimova (2018) address the problem of international migration applying factor econometric analysis. The researchers assume that the gross national income and crime index are among the factors exerting a profound effect on the output indicator. Using regression models, Inglehart, Ponarin and Ravlik (2014) and

Belotelov (2012) juxtapose country-related factors affecting the influx of migrants. The studies confirm that non-economic factors (education, in particular) strongly influence global migration processes.

International migration is known to have both direct and indirect impact on economic growth. For example, Van Der Mensbrugge and Roland-Holst (2009) argue that the positive effect of migration can be observed by increasing the efficiency of distribution of international resources. Dustmann and Frattini (2014) claim that immigration can produce positive financial results in accepting countries. Gagnon (2014) shows that migration reduces dependency ratios. Chellaraj, Maskus and Mattoo (2008), Toomsalu et al. (2019), Ponomarev and Petrov (2019) conclude that migration can stimulate innovations. Bove and Elia (2017) and Collier (2013) find that the most important impact of migration on economic development is a change in heterogeneity of the accepting country.

Kane and Rutledge (2018) analyze the correlation between immigration and economic performance across fifty U.S. states from 1980 to 2015. The study shows that, although the overall correlation between immigration and performance variables is positive, analysis of regional and time variation demonstrates a negative growth relationship between the foreign-born share of the labor force and GDP, per-capita GDP, employment, native employment and per-capita income.

Palat (2012) believes that migration policy is essentially a distributive tool aimed at reducing negative effects of migration on wages and unemployment among natives. According to Palat, the correlation between the crude rate of net migration and the GDP per capita is very low. Immigration can positively influence economic growth through various channels. In recent years, scholars devote careful attention to the assessment of the effects that the influx of migration capital exerts on the welfare of population. Transfers in the form of remittances are a significant source of foreign currency for most developing countries: the share of these countries in overall global remittance accounts for about 74% (Mohapatra, Ratha & Silwal, 2010); a significant proportion of households (approximately 10% of the total population) receive similar support from abroad.

Since 2000, the top remittance recipients have been Latin America and the Caribbean (25% of the total amount). However, the leading positions

were later occupied by the countries of East Asia and the Pacific, which receive an average of 23% of the total amount of remittances each year. For some developing countries, migration capital makes up a significant share of GDP (World Bank, 2017), the influence of remittances on these economies, therefore, is tremendous. According to the estimates (UNFPA, 2016), a 10% increase in the share of remittances in total GDP reduces poverty by 1.2%.

The fiscal effect is closely related to remittances. Determining net fiscal effects of migration is a serious challenge. It depends on real and potential income of migrants, as well as specific factors, such as the structure of the tax system, social assistance and entrepreneurship support (IMF, 2015; Litau, 2017; Sabatini et al., 2017; Watanabe, Miyake & Yasuoka, 2018). Empirical studies on the average net effects of migrants in developed countries on the fiscal balance show that it is positive (OECD, 2013). The fiscal effect of migration is variable and volatile. Migrants mostly have a negative net fiscal balance at young and old age, and a positive contribution in-between (IMF, 2015). Given the existing patterns, we can conclude that employment is the single most important factor determining the net fiscal contribution of migrants, especially in countries with a high level of welfare (Makreshanska-Mladenovska & Petrevski, 2017).

The literature review shows that international migration affects not only global and national labor markets, but also the socio-economic position of the states. Migration is a multifaceted phenomenon, however, in our opinion, economic grounds should be regarded as fundamental determinants of migration processes. Obviously, the interaction between migration and economic indicators is rather complex, and the returns go far beyond the benefits of just population gain (Migration Council Australia, 2015). At the same time, numerous empirical studies confirm that there are some stable trends and patterns to be studied in detail. For instance, it is necessary to check if there is a correlation between migration and the population growth rate, unemployment rate, wages and overall incomes, and labor productivity.

Materials and Methods

Studying modern migration processes implies analyzing their qualitative and quantitative characteristics, the dynamics of socio-economic indicators, and forecasting directions of migration flows and their intensity. In our

opinion, international migration should be viewed as a socio-economic process determined by numerous factors. The key indicators of a country's economic development are GDP (in absolute and relative terms), the number of economically active population, and the employment rate. Hence, it is assumed that labor migration flow affects GDP, as well as the indicators describing the state of the labor market.

When constructing the econometric model, we consider the following factors: the labor cost index, the number of economically active population, employment, GDP, and the GDP growth rate.

The empirical base of the research is statistical data from Eurostat, the United Nations Global Migration Database (UNGMD) and data from the World Bank. The database presents indicators for the period of 2001–2017 on Italy as an important center attracting migrants in the EU. Migration flow refers to the number of migrants entering or leaving a given country during a given period of time. The number of migrants is the total number of people living in a country other than that of their usual residence during a given period of time. The core difference between these indicators is that the number of migrants is a cumulative indicator, whereas the statistics on migration flows shows the fact of

immigration or emigration. In our study, we use data on migration flows as the output indicator. To examine the correlation, we apply correlation and regression analysis:

$$Y_i = \beta_1 + \beta_2 X_i + e, \quad (1)$$

where Y_i is a dependent variable; X_i is an independent variable; $\beta_1, \beta_2, \beta_n$ are coefficients; e is deviations not explained by the model.

Graphically, the relationship between the two quantitative attributes is studied through the correlation field. The closeness of the relationship between different phenomena is determined using the empirical correlation ratio. According to Chaddock's scale, the correlation is weak at $|r| > 0.3$, moderate at $0.3 \leq |r| \leq 0.7$, strong at $0.7 \leq |r| \leq 0.9$, and very strong at $|r| > 0.9$.

Multicollinearity of factors is checked using F -test; the calculated value of F -test is a ratio of the variance of the initial series of observations of the studied indicators and the unbiased estimate of the variance of the residual sequence for this model:

$$F_k = (d_{kk} - 1) \frac{n - m}{m - 1} \quad (2)$$

Table 1 presents initial data for constructing the model.

Table 1. Dynamics of the socio-economic indicators and the number of migrants in Italy for 2001–2017

Year	Number of migrants, people (Y)	Labor cost index (X ₁)	Number of economically active population, thousands people (X ₂)	Employment, % (X ₃)	GDP of Italy, billion dollars (X ₄)	Italian GDP growth rate, % (X ₅)
2001	172836	71.4	21169	54.8	1700.0	104.01
2002	161914	73.8	21478	55.5	1731.2	101.84
2003	424856	75.7	21710	56.1	1766.0	102.01
2004	394756	77.9	22020	57.7	1842.2	104.31
2005	282780	80.9	22060	57.6	1917.6	104.09
2006	254588	82.6	22388	58.3	2015.3	105.09
2007	515201	84.2	22517	58.6	2099.9	104.20
2008	496549	87.8	22699	58.6	2118.3	100.88
2009	406725	91.9	22324	57.4	2017.4	95.24
2010	424499	93.9	221552	56.8	2075.4	102.87
2011	354327	96.4	22215	56.8	2130.9	102.67
2012	321305	98.3	22149	56.6	2110.6	99.05
2013	279021	100.4	21755	55.5	2110.5	100.00
2014	248360	101.1	21810	55.7	2152.9	102.01
2015	250465	100.8	21973	56.3	2196.0	102.00
2016	262929	100.0	22241	57.2	2244.8	102.22
2017	301053	100.6	22444	58.0	2324.1	103.53

Source: (OECD.Stat, 2018; Eurostat, 2018).

The study also assesses the extent to which remittances affect Italian GDP (Table 2).

Table 2. Inflow and outflow of remittances in Italy for 2001–2017

Year	Inflow of remittances, million U.S. dollars	Outflow of remittances, million U.S. dollars
2001	2271	2716
2002	2262	3582
2003	2144	4367
2004	2176	5513
2005	4094	2588
2006	4074	2463
2007	4596	2871
2008	7355	14445
2009	7036	14390
2010	7977	12886
2011	8726	14501
2012	9169	11826
2013	9436	11566
2014	10096	11133
2015	9606	9443
2016	9514	9173
2017	9759	9256

Source: (World Bank, 2017).

Results and Discussion

The number of international migrants worldwide has been growing for the past 17 years and reached 258 million in 2017, compared to 248 million in 2015, 220 million in 2010, 191 million in 2005 and 173 million in the year 2000. According to the report of the United Nations Secretary-General (In safety and dignity, 2016), the increase in the global number of international migrants continues to outpace the growth of the world's population. Between 2000 and 2005, the international migrant stock grew by an average of 2% per year. During the period 2005–2010,

the annual growth rate accelerated, reaching 2.9%. Since then, however, it has slowed, falling to around 2.4% per year during the period 2010–2015 and to 2.0% per year during the period 2015–2017.

Analysis of regional data provides extra information on current trends in the distribution of migration flows. Over 60% of all international migrants worldwide live in Asia or Europe (Fig. 1).

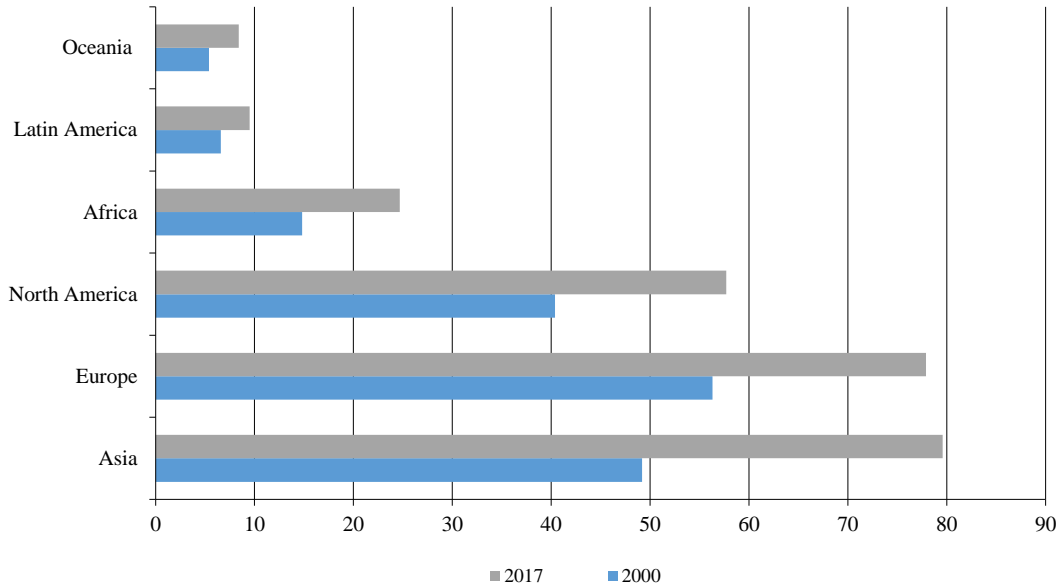


Fig. 1. Regional distribution of international migrants in 2000 and 2017, million people
Source: (International Migration Report, 2017).

According to the United Nations, during 2017–2019 Mediterranean Sea arrivals markedly declined to an average of 150,000 migrants a year (UNHCR, 2020). However, the number of migrants arriving to the South of Italy has remained constant since 2014. These flows are closely connected with reported cases of illegal border crossings. In 2015, 48.6% of illegal border crossings occurred at the Eastern Mediterranean route into the European Union.

From 2016 onwards however, there was a significant rise in the percentage of border crossings through the Central Mediterranean route into Italy, and in 2017 this route had the majority of illegal border-crossings (58.1%) (Statista, 2019).

Figure 2 shows the trend in international migration in Italy over the past 16 years.

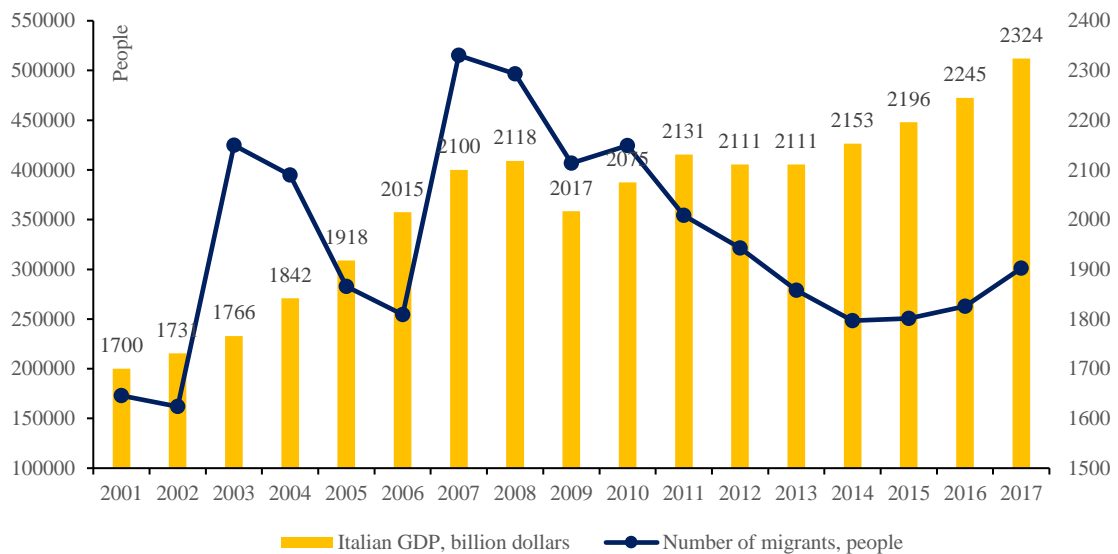


Fig. 2. Dynamics of international migration in Italy in 2001–2017
Source: (OECD.Stat, 2018).

Considering the strength of migration flows, it is necessary to highlight their contribution to GDP. According to the Leone Moressa Foundation, in 2014, foreign workers added 123 billion euros to the Italian economy, or 8% of the national GDP. Moreover, migrants brought in 16.6 billion euros in tax revenues; this compares to the expenditure by the state of 13.5 billion euros in the same year on foreigners' behalf. Thus, the positive balance was 3.1 billion euros (Fondazione Leone Moressa, 2015; Visco, 2008; Frattini, 2012). In recent years, there has also been an increase in the number of employed migrants from EU countries, while the number of Italians employed has been in a decline. The share of economically active migrants from the EU is 75.4%, and the share of locals employed is 62.9% (Monti, 2012). Experts estimate that the Italian labor market has benefited from migrant arrivals, as foreign and national labor force complement each other. Migrants tend to have jobs in the economic sectors that require the least skilled labor force, whereas the country's citizens are concentrated in high-tech industries. Similar trends are observed in other countries that are local centers of attraction for migrants, such as Russia for the EAEU (Romanova, Korovin & Kuzmin, 2017).

Only 40% of Italian employees are laborers, but the share of this category among migrants from EU states makes up 83%; 54% of migrants are employed in such sectors of economy as the services sector (mainly catering, cleaning, trade, and transport) and construction (Primakova, 2014; Istat, 2012).

Based on data from Table 1, we construct the equation of the regression relationship of the economic factors and the number of migrants:

$$Y = -1597663.09 - 1469.87X_1 - 3.17X_2 + 62347.45X_3 - 1024.24X_4 - 14558.81X_5,$$

where X_1 is the labor cost index; X_2 is the number of economically active population; X_3 is employment; X_4 is Italian GDP; X_5 is Italian GDP growth rate.

Table 3 presents a matrix of paired correlation coefficients for the model. There is an average positive correlation between the number of migrants and employment rate in Italy. There is also a high correlation between the labor cost index and Italian GDP. The correlation pairing between Italian GDP and the number of migrants is 0.179, that is there is practically no correlation.

Table 3. Matrix of paired correlation coefficients

	Y	X ₁	X ₂	X ₃	X ₄	X ₅
Y	1					
X ₁	0.019	1				
X ₂	0.248	0.115	1			
X ₃	0.624	0.056	-0.018	1		
X ₄	0.179	0.914	0.066	0.395	1	
X ₅	-0.150	-0.358	0.080	0.166	-0.143	1

Next, we calculate F -test. The calculated values of the criteria are compared with the tabulated values under $v_1=n-m$ (13) and $v_2=m-1$ (5) degrees of freedom and the significance level α . If $F_k > F_{Table}$ (4,62), then k -variable is multicollinear with the others.

$F_1 = 3,36$. $F_1 \leq F_{Table}$, variable Y is non-multicollinear with the others.

$F_2 = 86,48$. $F_2 > F_{Table}$, variable X₁ is multicollinear with the others.

$F_3 = 0,89$. $F_3 \leq F_{Table}$, variable X₂ is non-multicollinear with the others.

$F_4 = 12,45$. $F_4 > F_{Table}$, variable X₃ is multicollinear with the others.

$F_5 = 91,4$. $F_5 > F_{Table}$, variable X₄ is multicollinear with the others.

The model's parameters can be interpreted as follows: an increase in the labor cost index by 1 unit leads to a decrease in the number of migrants by an average of 1469.87 people; a rise in the number of economically active population by 1,000 people causes a decrease in the number of migrants by an average of 3.17 people; an increase in the employment rate by 1% results in an increase in the number of migrants by an average of 62,347.45 people; a rise in Italian

GDP by 1 billion dollars reduces the number of migrants by an average of 1,024.24 people; an increase in the Italian GDP growth rate by 1% leads to a decline in the number of migrants by an average of 14,558.81 people. Based on the maximum coefficient β_3 , we conclude that the employment rate has the greatest impact on the number of migrants.

Next, we evaluate the impact of remittances on the volume of Italian GDP by building a model that characterizes the relationship between these indicators. The analysis is performed in two directions: inflow (Fig. 3) and outflow (Fig. 4) of remittances.

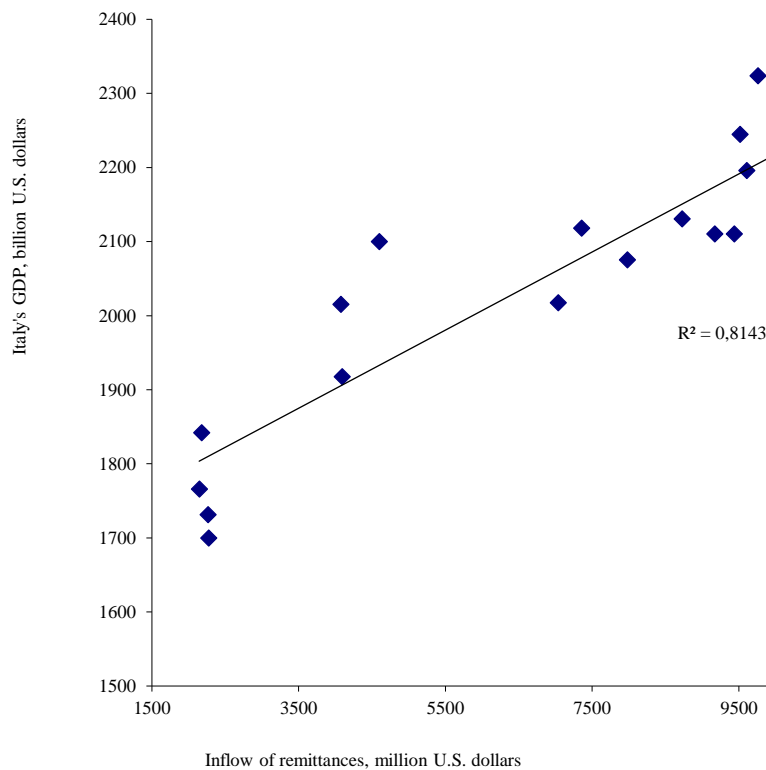


Fig. 3. Assessment of the effect of remittances inflow on Italy's GDP
Source: (World Bank, 2017).

In case of the ratio of GDP and inflow of remittances, the paired correlation coefficient amounts to 0.814, which signifies that there is a direct strong relationship between the parameters. The inflow of remittances can also positively affect economic growth through the mechanism of the multiplier effect. Remittances stimulate consumption and investments, which, in turn, increases incomes of other households that also boost consumption and investments.

Growing demand and investments create new jobs and enhance production capacity.

At the same time, migrants transfer a significant share of their savings abroad, to their homeland. The results of the analysis of how outflow of remittances influences Italy's GDP are given in Fig. 4.

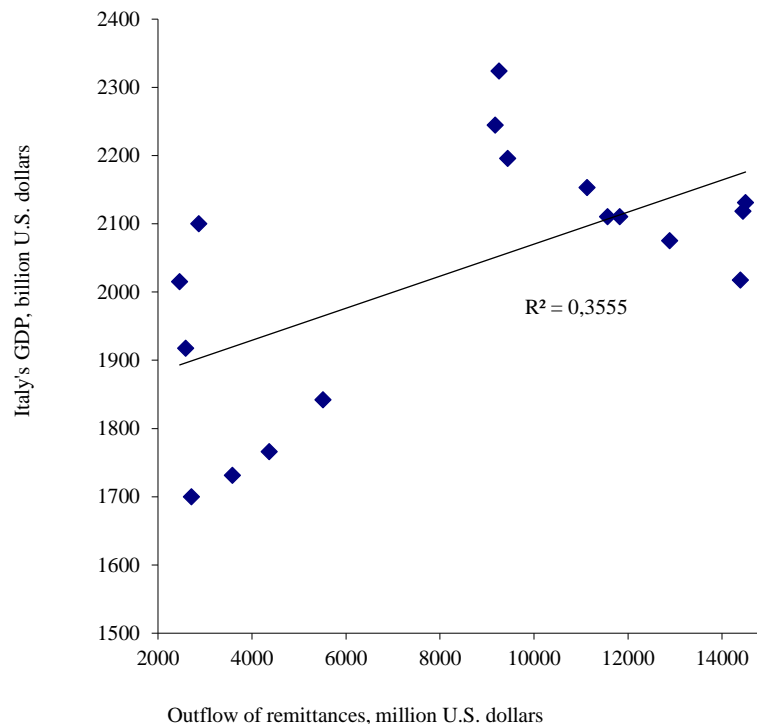


Fig. 4. Assessment of the effect of remittances outflow on Italy's GDP
Source: (World Bank, 2017).

As shown in Fig. 4, there is a direct average correlation between outflow of remittances and Italy's GDP. The paired correlation coefficient is 0.355. Thus, Italy's GDP is more dependent on inflow of remittances, rather than their outflow.

Conclusions

The role of international migration and its influence on socio-economic processes are growing every day. The case of Italy, as a regional immigrant center among EU states, clearly confirms that. The paper established that migration could positively affect economic growth of the host country through the increasing volume of workforce, investment promotion and growing labor productivity. The research confirmed that there was an average positive correlation between the number of migrants and the employment rate in Italy, the labor cost index and the country's GDP, and GDP and inflow of remittances. At the same time, there is practically no correlation pairing between Italian GDP and the number of migrants, that is migration does not increase total GDP. According to the constructed regression model, the employment rate in Italy has the most powerful effect on the number of migrants. Thus, the current study confirmed the findings of numerous academic

publications revealing that migration expanded the workforce.

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