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## INTERACTION OF FOREIGN DIRECT INVESTMENT, INTERNATIONAL TRADE AND REMITTANCES WITH EMIGRATION AND IMMIGRATION

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**ABSTRACT.** *This paper studies the international mobility of capital and labour. Using a panel data we analyse how relevant mobility factors, i.e. foreign direct investment, international remittances, exports and imports explain emigration and immigration flows. The sample comprises 112 countries with which Spain had close links between 1998 and 2016 in terms of migration, trade, remittances and investment flows. The results show that there is a positive association between foreign direct investment (FDI), remittances sent and received, Spanish imports and the number of immigrants in Spain.*

*Contrary to what has often been acknowledged in many studies, this relationship has been sustained in the long term. Also, we found a negative link between exports and migration flows. Our results lead us to recommend those strategies and policies that exploit and promote the interaction of mobility factors as they allow companies and employees to diversify their risks and find new trade and investment opportunities.*

**KEYWORDS:** emigration, immigration, foreign direct investment, exports, imports, remittances.

**JEL classification:** F10, F21, F22, F24.

## Introduction

Modern international economy is characterized by the interaction of capital and labour (Comolli, 2018; Xu, Silwester, 2016) and intense global changes in the mobility of these production factors (Ojeda-González *et al.*, 2018; Metelski, Mihi-Ramirez, 2015). Dicken (2003) made reference to the importance of international capital flows. Portes (1997), followed by Castles, Miller (2009), stressed the importance of international labour flows, i.e. migration flows. These are international foreign direct investment (FDI) flows and the associated workers, which directly determine the development of the world economy (Le, Tran-Nam 2018).

Moreover, according to Taylor (1999), migrants' remittances have the greatest direct positive impact on the economy, which depends both on the migrants' incomes and their willingness and motivation to share part of those incomes with their country of origin. If the migrants' work would be regarded as an export, remittances would be part of the compensation for the export of labour services that somehow return to their country of origin.

Despite cyclical economic fluctuations, international trade has been steadily growing in strength since the second half of the 20th century, and in terms of foreign direct investment, migration and remittances, the growth recorded has been even higher in recent years, bringing many positive consequences for the economy (World Bank, 2018; Mihi-Ramirez *et al.*, 2018; Aubry *et al.*, 2012; Sanderson, Kentor, 2008; UNCTAD, 2005; Kaigorodova *et al.*, 2019; Nikolenko *et al.*, 2019). However, there is an increase in the number of policies advocating changes that could hinder future liberalisation of international trade and labour and capital flows, and therefore the debate on this topic must be revived.

Migration flows result from the existence of certain links between destination countries and origin countries (Mihi-Ramirez *et al.*, 2017). Castles, Miller (2009) pointed to colonial ties, foreign trade and FDI as possible linkages of this type. Combes *et al.* (2005) showed that the number of immigrants in the destination country is also related to the FDI inflow to that particular country. Buch *et al.* (2006) and then Javorcik *et al.* (2011) showed the relationship between migration and FDI in the migrants' origin countries.

Aubry *et al.* (2012) showed that FDI growth results in immigration to the investing country and that FDI are of substitutive nature in this regard. It should also be noted that Metelski, Mihi-Ramirez (2015) observed that labour and capital flows are bi-directional, in that an investing country is also a country receiving migrants and sending remittances,

especially when migrants manage to establish contacts over time, which leads to a reduction in transnational costs (Jayet, Marchal, 2016; Flisi, Murat, 2011; Docquier, Lodigiani, 2010).

All these findings lead us to raise the fundamental question of how production factors interact between origin and destination countries? In other words, we want to know what these relationships are like in terms of immigration, emigration, trade, foreign direct investment and remittances. The aim of this study is therefore to examine the relationship between emigration, immigration, trade, FDI and remittances when conditions in origin and destination countries change over time. We focus on the case of Spain, a well-developed country with significant migration, trade and capital flows, which has consolidated its position with other countries over the years, and which has moved from a long-term expansion to a serious crisis that has affected this country during the recent severe recession.

The importance of the raised issues can be better understood if the problems and limitations indicated in the literature are examined in more detail. They can be briefly summarised as follows:

- Despite the importance of the topic, there is insufficient explanation of the link between emigration, immigration and other mobility-related factors. Some scientists observed that the inflow of FDI to origin countries only affects emigration during the first phase (Javorcik *et al.*, 2011; Buch *et al.*, 2006). Other authors refer to FDI, noting that it is important in the second phase and fills the wage gap between countries, thus also having a negative impact on migration (Aroca, Maloney 2005). In other studies, there is also highlighted a two-way relationship between FDI and migration flows, which in some cases show characteristics of complementarity (Malan, 2015; Schiff, 1994) and in others of substitutability (Sanderson, Kentor, 2008). But what happens when the migration process has already started? How do FDI flows affect migration then?

- Many theoretical approaches have been postulated in recent years, but there is little empirical evidence to confirm significantly and accurately the relationship between migratory flows (emigration and immigration) and other mobility factors, such as FDI, trade and remittances (Munir, Ameer, 2018; Karasoy, Akcay, 2019). As Sanderson, Kentor (2008) point out, the conceptual and empirical association between international migration and international capital flows remains relatively unexplored. Traditionally there is an interaction between migration and capital flows (Sanderson, Kentor, 2008). On the one hand, international capital movements in the form of remittances are a direct source of income and can serve to defray the costs of migration (Metelski, Mihi-Ramirez, 2015; Schiff, 1994). In turn, the FDI affects economic growth, which also has an indirect effect on migration flows (Xu, Silvester, 2016). However, it is worth examining what impact the remittances sent and received have on migration flows?

- The mobility of production factors is a very complex phenomenon which cannot be examined without taking into account international trade flows (Cogneau *et al.*, 2000). Several studies confirm the existence of links between trade, labour and capital flows, although more often than not they focus on the relationship between only two factors (e.g. trade and emigration; investment and remittances, etc.) (Murat, Pistorresi, 2006; Gould, 1994), and ignore the high level of their dynamics (Janotka *et al.*, 2013). Despite its importance, the empirical evidence is somewhat limited in this regard. However, understanding the interaction between international flows of goods, labour and capital is fundamental for any economy, especially in the context of internationalisation (Konya, 2000; Marr, Siklos, 1999). Therefore, our aim is to answer some pivotal

questions. What is the relationship between immigration, FDI and international trade? How do changes in trade, remittances and FDI affect migration flows?

- Our empirical study relies on longitudinal data analysis (i.e. panel data). It is believed that it is the most appropriate methodology to study the links between immigration, emigration, FDI, remittances and trade since we analyse the evolution of data for many countries over time (i.e. data points), and more specifically the period from 1998 to 2016. The results of the study allow to verify the following hypotheses, and facilitate the formulation of appropriate conclusions and practical recommendations.

As to the novelty and theoretical importance of this study, it provides an in-depth bibliographic overview of migration and also reviews theoretical approaches and the most relevant aspects of migration, remittances, FDI and trade.

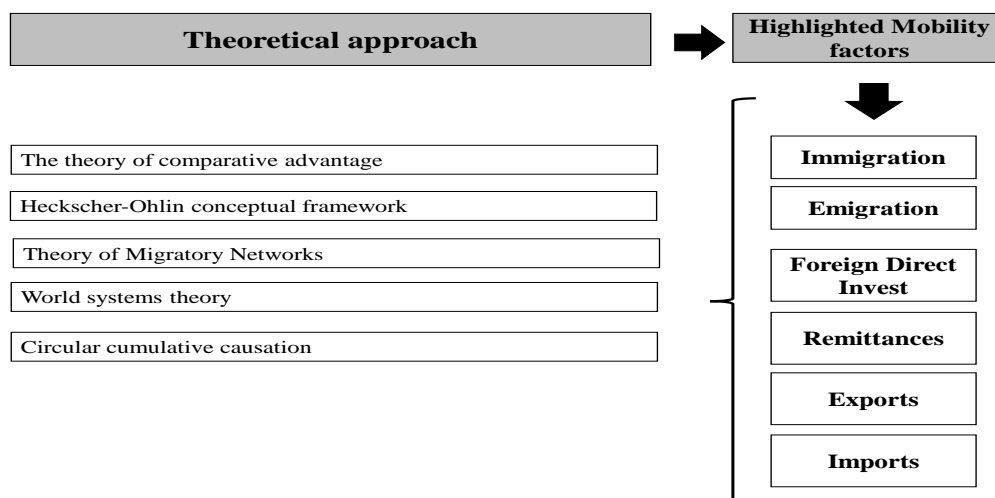
Also, there are many empirical studies exploring the impact of immigration on the economic and social background of different countries. What cannot be denied, however, is that there is a lack of specific evidence to measure migration and its relationship with other mobility factors, moreover, compared to previous empirical studies, which focus mainly on one or more countries and refer only to a limited time period (e.g. a specific economic period or phase), especially when FDI increases (Grogger, Hanson 2011).

In view of the above considerations, our empirical study covers many destinations (112 countries) and different phases of modern economy (i.e. 1998-2016).

Finally, this paper has a typical structure of scientific studies, consisting of introduction, background, methodology, discussions, conclusions and a list of references.

## 1. Theoretical Framework

The existing theoretical framework related to migration incorporates a variety of theories that allow us to identify and track its relationship with other relevant economic factors. Over time, there have been proposed a number of approaches to explain the international mobility of production factors and, while they are all aimed at explaining the same thing, they usually adopt different standpoints allowing us to formulate the hypotheses underpinning our study. *Figure 1* summarises this process.

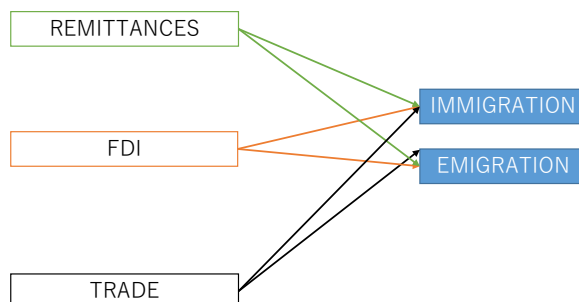


Source: own elaboration.

Figure 1. Mobility Factors Referred to within the Theoretical Considerations

The review of theoretical considerations allows us to select the most relevant variables in order to include them in an appropriate model so as to validate our research hypotheses.

Figure 2 shows some theoretical relationships between the studied variables. For this reason, a number of theoretical hypotheses are proposed in the next section, and they are empirically tested in the subsequent section 3.



Source: own elaboration.

Figure 2. Theoretical Model

### 1.1 Migration Flows and FDI

Capital mobility is a key factor in driving migration. In this regard, the World Systems Theory argues that the demand for basic resources in developed countries leads to a flow of capital to less developed countries, but also to increased migratory flows in the opposite direction (Massey *et al.*, 1993).

Under this theory, investment flows (i.e. FDI) constitute part of the interaction between different countries and often cause some discrepancies with regards to their economic situation. As a result, countries with more prosperous economies attract migrants from countries with less dynamic economies (Massey *et al.*, 1993).

This relationship is also studied from the FDI and migrant networks perspective (Javorcik *et al.*, 2011; Buch *et al.*, 2006; Schiff, 1994). The Theory of Migratory Networks examines to what extent migratory flows are influenced by the existence of certain links between destination and origin countries.

In this respect, Castles, Miller (2009) stress the colonial ties, trade and investment as potential interlinkages. Burns, Mohapatra (2008) argue that foreign direct investment and trade are also important channels for technology and knowledge transfer.

Moreover, Flisi, Murat (2011, p.797) show that the impact of immigrants on FDI from less developed countries is as strong as the impact of emigrants or immigrants from richer economies. According to these authors, migrant networks are expected to support FDI (Flisi, Murat, 2011).

Moreover, migrants from developing countries typically send remittances to their families, which can have an indirect impact on trade, investment and dissemination of technologies (Poot, Strutt, 2010; Hübler, 2016).

Breitenfellner, Cuaresma (2008) analysed the economic impact of the EU enlargements in 2004 and 2007 and in particular the increased flow of cross-border mobility factors (i.e. labour and capital).

Docquier, Lodigiani (2010) pointed to migrant networks (a.k.a. external diasporas) as a channel for attracting FDI in origin countries, especially for skilled migrants.

In a similar context, Tanaka (2017) studied the possible negative impact of immigration on the Japanese labour market (from 2001 to 2007) as a result of increased FDI. His research showed the presence of temporary workers in the initial phase, but in the long run it faded away.

Tomohara (2017) noted that over time immigration begins to have a negative impact on the inflow of FDI to origin countries, especially important in the short term; this was particularly significant in the short-term case, although higher immigration stocks, as well as ethnic networks, generally contribute to stimulating FDI inflows.

Kugler *et al.* (2018) demonstrated that migration networks facilitate the dissemination of information which is particularly relevant in the context of financial flows. Later, Cuadros *et al.* (2019) stressed that migration networks do not directly determine investment decisions, but rather facilitate the exchange of diverse information such as product preferences (in origin countries), legal requirements, business opportunities and potential risks. This is particularly relevant for migrants who are involved in their companies' investment decisions.

In general, taking into account the foregoing considerations, hypothesis H1 is presented below, taking Spain as the immigrants' destination country:

***Hypothesis 1 (H1): FDI sent from Spain affects the number of immigrants coming from countries that are recipients and beneficiaries of FDI.***

Although there is a large number of studies analysing the relationship between FDI and immigration, migration flows require more in-depth and specific analysis, covering their main components, i. e. immigration and emigration.

With regard to emigration and FDI, Aroca, Maloney (2005) examined Mexico's exposure to FDI inflows and its response to migration flows. Their findings indicate that increased exposure to FDI mitigates the effects of Mexican emigration. The aim of the study conducted by Aroca, Maloney (2005) was to provide an empirical measurement (in a quantifiable form) of the impact of increased FDI on migration processes between Mexico and the United States. They found that on average an increase in FDI inflow to Mexico by 100 per cent leads to a decrease in emigration of 1.5 to 2 per cent.

Migration can stimulate business links leading to the implementation of FDI projects. The mere presence of migrant workers in a given country can provide an incentive for trade, enabling efficient distribution, procurement (supplies), transportation and compliance with regulations. On the other hand, FDI can trigger migration to investing countries (through trainings, education and awareness of new opportunities in origin countries) (Aubry *et al.*, 2012).

Moreover, it has been observed that the dynamics of international flows are bi-directional (Metelski, Mihi-Ramirez, 2015), so over time FDI can lead both to a higher level of development in origin countries and to greater business opportunities for foreign investors. As a result, foreign workers often continue to migrate for several reasons, such as the existence of multinational subsidiaries, new opportunities for business creation, reduced transaction costs, better knowledge and dissemination of information related to migration networks in destination countries, etc. (Munemo, 2017). In this case, emigration is likely to complement rather than substitute FDI.

Wang *et al.* (2013) showed that in a long-term perspective FDI acts as a disincentive to emigration, since it also leads to an increase in national income. Wang *et al.* (2013) stated that the inflow of FDI to non-OECD countries impacts the emigration of highly skilled people from those OECD countries that are sources of investment. Gheasi *et al.* (2013) noted the importance of highly skilled migrants for FDI flows.

Xu, Sylwester (2016) showed also that FDI drives emigration, partly due to the role played by international companies, namely through provision of information about less developed countries. FDI also reduces transaction costs for potential migrants. Therefore FDI acts as a factor attracting migrants to less developed countries.

In the same way, the Cumulative Circular Causation theory indicates different stages of migration waves and reveals several reasons explaining emigration to other countries: 1) One of these reasons is the growing gap in living standards between returnees and non-migrants, which contributes yet again to the re-emigration of returnees. 2) Another reason is the decline in demand for rural land caused by excessive purchase of land, mainly by emigrants. Moreover, the land that migrants buy is rarely cultivated by themselves and is treated rather as a capital investment or leased to professional farmers, which often leads to increased competition in the agricultural labour force through intensified agricultural activity. As a result, small agricultural producers discontinue these activities in search for additional sources of income because they can no longer compete (Massey *et al.*, 1993). 3) The third reason is the desire to maintain a higher standard of living by returnees, what makes them even more inclined towards re-emigration. 4) The fourth reason is the development of networks facilitating emigration for less entrepreneurial people, who initially remain reluctant to migrate and are not eager to leave their homes. 5) The final explanation for emigration is the stigmatisation of some commercial activities in destination countries, which encourages employers to seek for workers in other countries (Massey *et al.*, 1993).

De Haas (2010) noted that Cumulative Circular Causation theory and World Systems theory have much in common. Both these theories treat the origin and the destination as constitutive parts of the social and developmental context. In this sense, both origin and destination countries influence the dynamics of migration.

With respect to emigration, Ricketts (1987) argued that the Caribbean countries that had received the highest level of FDI from the United States (in the 1970s) as a result also experienced higher emigration rates. In turn, Groznik (2003) studying FDI and American migration flows in 1950-1997, concluded that labour and capital not only move in the same direction, but also that investment brings about greater emigration.

FDI can induce short-term movements in the form of business trips and temporary or permanent relocations through corporate transfers of labour (Poot, Strutt, 2010). Emigration and FDI are alternative ways of bringing together workers and employers from different countries (Aubry *et al.*, 2012).

Aroca, Maloney (2005) analysed bilateral flows between the United States and Mexico and observed that while FDI and immigration are positively linked, international investment flows are often favoured, followed by migration flows of skilled human capital (Gera, Songsakul, 2007).

In view of the above mentioned evidence, we pose the question of the existence of a link between FDI and emigration, which, although not necessarily fading away in the long term, is likely to change over time.

***Hypothesis 2 (H2): FDI sent from Spain affects the number of Spanish migrants in the countries where such FDI are present.***

### ***1.2 Remittances and Migration Flows***

Schiff (1994) showed that remittances received by a country serve to finance emigration costs, ultimately leading to a further increase in remittances. Moreover, not only



transfers of funds, but also knowledge is gained through better communication and improved information flow between sending and receiving countries.

Also, labour market performance in sending countries is affected by fluctuations in remittances. According to Rapoport, Docquier (2006), the level of remittances varies according to migrants' income and the purchasing power of their families.

McKenzie, Sasin (2007) argue that migration impacts cannot be studied in isolation from remittances and vice versa.

People migrating to developing countries often send remittances to their families, which can have an indirect impact on other capital flows (Poot, Strutt, 2010).

Cooray (2014) provides evidence in support of the hypothesis that migrants with primary and secondary education make a positive and significant contribution to remittances sent to their origin countries. However, when this model is estimated separately for men and women, the evidence indicates that women migrants tend to remit more than men.

Hübler (2016) noted that knowledge (education) and financial flows contribute to the dissemination of technology in rural areas. In particular, his study shows that remittances play a very important role as regards migration from rural to urban areas due to poverty.

Metelski, Mihi-Ramirez (2015) analysed the impact that net migration exerts on remittances and the external balance and vice versa. Their results show that as net migration increases (immigration minus emigration), remittances sent to origin countries also increase and vice versa.

Silverstein (2015) also explored the history and social consequences of emigration from the southeaster oases of Morocco, which since the 1940s have been the origin of migratory flows to cities in the north and the Mediterranean. He examined the close links between physical and social mobility, noting that as remittances increase, there is a transformation of hierarchies based on ownership, irrigation rights and economic independence.

On the other hand, Di Giovanni *et al.* (2015) provide a quantitative assessment of the overall welfare impact of the observed levels of migration in both the origin and destination countries, explicitly exploring the consequences of international trade and remittances. In this regard, for the countries with the highest rates of emigration, the locals who stay in their country are better off as a result of remittances. Moreover, their findings also indicate that, if the role of remittances is not taken into account, there will be a very biased assessment of the social situation in a number of emigration-related countries.

There is also a direct interconnection between diasporas and economic transactions, stemming from the willingness of diaspora members to interact with their origin countries, whether through remittances, investments or the exchange of ideas and information (Miguélez, 2016).

Le Goff, Salomone (2016) using a database of bilateral remittances from 89 countries to 46 remittance-receiving countries over the period 1985-2005, show a positive association between remittances and the proportion of university-educated migrants.

Kikuta (2016) showed that migrants' remittances had caused some damage in the practices of mutual aid and had led to the emergence of a sense of economic inequality among the population. Reliance on migrant labour and related remittances in Central Asia considerably affected people' lifestyles.

In contrast, Chirila, Chirila (2017) analysed the impact of remittances in Romania. It appears that remittances are treated there as an important income contributor filling temporary



cash flow shortfalls related to job losses, as well as the main factor influencing relations with developed countries.

Indeed, there is evidence showing how an increase in the number of immigrants can translate into more people sending money to their origin countries in the form of remittances. Such income tends to have different uses, i.e. consumption, productive investments, savings, etc. In a certain way, they affect the living conditions in destination countries and, once emigration is underway, facilitate its continuation by financing migration costs.

For all these reasons we propose the following hypotheses concerning the relationship between immigration and remittances:

***Hypothesis 3, H3: Remittances have an impact on the number of immigrants in Spain***

***Hypothesis 4, H4: Remittances have an impact on the number of emigrants from Spain***

### ***1.3 Migration Flows and Trade***

In terms of migration, investment and trade flows, FDI, trade and migration were considered substitutes in terms of the Heckscher-Ohlin conceptual framework (Mundell, 1957; Markusen, 1983). Mundell (1957, p.4) argued that „movements of goods are at least to some extent substitutes for factor movements”. However, despite the significant development of this approach, Heckscher-Ohlin’s view on the flow of international mobility factors (i.e. FDI, trade, remittances and migration) is controversial, although many researchers argue that such flows are likely to reduce migration between rich and poor countries in the long term. This approach assumes that countries typically import labour-intensive goods, thereby increasing the employment of unskilled workers in poor countries. It also implies some initial direct investment in these poor countries so as to adapt their production capacity to growing demand for goods (Schiff, 1994). Increased demand for goods and increased FDI ultimately reduce or discontinue the outflow of migrant workers. However, the results of Schiff (1994) showed that the increase in international migration is of a long-term nature (both for origin and destination countries), which can be interpreted in an ambiguous way. Moreover, Russell, Teitelbaum (1992) show that migration and trade are not substitutes, but they can complement each other.

According to Aleksynska, Peri (2014), a positive immigration–trade relation is motivated by networks. Similarly as in the case of FDI, immigrants boost trade with their origin countries, by reducing information barriers and costs. Indeed, the greater the differences between countries, the greater the importance of these networks.

Also, more recently Metelski, Mihi-Ramirez (2015) confirmed that substitutability occurs only in some specific short-term circumstances. In turn, Jayet, Marchal (2016) noted that substitutability or complementarity depends on country envelopes.

Whether as a relationship of substitution or complementarity, what is clear in the literature is the existence of a relationship between mobility factors. For example, Lipsey, Weiss (1984) argue that FDI of American companies to foreign countries is positively related to their exports to these countries. Fontagné (1999) shows that the relationship between FDI and trade is not static but rather reacts dynamically to changing conditions. FDI would serve companies to overcome transaction costs and increase their efficiency.

Given the favourable conditions and policies, in most cases the evidence indicates that in a long run there is a complementary relationship between mobility factors. Increased immigration is likely to lead to higher investment in origin, which usually translates into

higher production and higher exports from destination countries (Metelski, Mihi-Ramirez, 2015; Melchor-Ferrer *et al.*, 2017).

Taking into account the above considerations, we propose hypothesis H5 to determine whether exports affect migration flows.

***Hypothesis 5, H5: Exports affects the number of immigrants to Spain and emigrants from Spain***

The theory of comparative advantage implies that if countries specialise in the production of those goods in which they have comparative advantages, then all countries that trade or exchange goods will be better off (Widgren, Martin, 2002). In this respect, mobility factors can be considered as substitutes.

A strictly mercantile interpretation of this approach is that international mobility centres on international trade as the only way to make profits. This provides an incentive for exports, coupled with protectionist policies that limit imports and migration. Trade activities could be used as a mechanism for controlling migration, i.e. by reducing foreign labour and emigration of domestic workers and replacing them with exports, which would create more wealth and new employment opportunities, thereby discouraging emigration (Cogneau *et al.*, 2000).

It is common for the immigrant to continue the relationships he or she had in the country of origin. It appears that migrants often prefer certain goods (particularly, but not exclusively, food) from their origin countries (Gould, 1994). According to Genc *et al.* (2011), from a macroeconomic perspective, population growth caused by immigration increases demand and production, thereby creating demand for imports from origin countries.

Bahar, Rapoport (2018) examined bilateral trade, foreign direct investment and migration flows of a sample of 135 countries over two 10-year periods, and showed that migrant stocks provide a comparative advantage when exporting certain goods.

This leads us to analyse also the influence of imports on migration flows, and therefore we put forward the following hypothesis:

***Hypothesis 6, H6: Imports affects the number of immigrants to Spain and emigrants from Spain.***

## **2. Methodology**

### ***2.1 Information about Data and Variables***

For the purpose of this research, Spain (as a country of destination) and the countries with which this country presents migratory flows, investment and commercial exchanges (112 countries) according to the sources used are considered.

In the *Table 1* you will find a description of individual variables that have been used to perform the study/analysis.

**Table 1. Description of individual variables that are subject of the analysis**

VARIABLES	
EVRA	Immigration to Spain. Source: The Residential Variations Statistic (denoted RVS) is compiled by Data from 2002 to 2018
EVRB	Emigration from Spain. Source: RVS, 2002 -2018
FDI sent	Foreign Direct Investment (FDI), outflows from Spain. Source: the Spanish Ministry of Economy and Finance, Datainvox (2019), 2002 -2018
Personal remittances, paid, RS	Remittances outflows from Spain. Source: World Bank, Bilateral remittances 2010 -2015 (based on national balance of payments statistics produced by central banks and compiled by the IMF).
Personal remittances, received, RR	Remittances inflows to Spain. Source: World Bank, Bilateral remittances 2010 -2015 (based on national balance of payments statistics produced by central banks and compiled by the IMF).
EXP (Export from Spain)	Exports from Spain (EXP) Source: World Bank, 2002 -2018
IMP (Import to Spain)	Imports to Spain (IMP) Source: World Bank, 2002 -2018

Source: own elaboration.

To envision the characteristics of the data, see the *Table 2*.

**Table 2. Variables Characteristics (data description)**

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
EVRA	2128	2.85	0.87	2.80	2.85	0.92	0.00	5.29	5.29	0.00	-0.32	0.02
EVRB	1680	2.43	0.99	2.43	2.45	0.98	0.00	4.77	4.77	-0.16	-0.43	0.02
FDI	2021	3.60	1.96	3.91	3.70	1.98	0.00	7.50	7.50	-0.46	-0.77	0.04
RS	636	1.37	0.90	1.36	1.33	1.07	0.00	3.45	3.45	0.29	-0.89	0.04
RR	586	0.92	0.97	0.61	0.80	0.90	0.00	3.49	3.49	0.71	-0.73	0.04
EXP	2482	5.32	0.93	5.34	5.33	0.93	2.14	7.73	5.58	-0.17	0.27	0.02
IMP	2484	5.32	1.15	5.37	5.38	1.16	0.43	7.78	7.35	-0.56	0.41	0.02

Source: own elaboration.

## 2.2 Model Specifications

To conduct the subsequent empirical part of this article, a longitudinal data study is assumed to be the most proper methodology that will allow for studying migration flows (EVRA & EVRB) at the level of 112 countries (Guanyi *et al.*, 2018).

Statistical analysis was performed using the statistical software R-project (R Core Team 2017).

The results serve for the assessment and contrasting of the main hypotheses which assume that there is a relationship between migration flows (EVRA & EVRB) – proxy variables approximating immigration and emigration –, FDI sent, Remittances (both Received and Sent) and both Export from Spain (EXP) and Import to Spain (IMP).

In all models (which form part of the empirical study) migration flows (EVRA & EVRB) are estimated using panel regressions. Countries are represented as panels and years as times. Three alternative specifications, using pooled (OLS), fixed effects (FE) and random effects (RE) modeling have been adopted and the most appropriate is selected (Gardiner *et al.*, 2009). The first specification (pooled OLS) posits that there is no heterogeneity across countries and is expressed as follows:

$$EVRA_{it} = \alpha + \beta X'_{it} + e_{it} \quad (1) \text{ [pooled OLS model]}$$

where  $EVRA_{it}$  is the immigration which corresponds with 112 countries (from all continents) and is calculated in absolute terms (amounts in thousands). Put differently,

$i=1...112$  and  $t=1998...2016$  refer to 112 countries and the time spans from 1998 to 2016. The term  $\alpha$  is the common intercept,  $X'$  is the vector containing the explanatory variables, meaning that a specific set of control variables is employed to produce the results. In all models the same explanatory variables are employed i.e.: FDI sent, Remittances (both Received and Sent) and both Export from Spain (EXP) and Import to Spain (IMP), all with the log transformation.

Further, the term  $e_{it}$  that is included in the above-presented model is the error term i.i.d.

In turn, the FE specification with fixed individual effects is expressed as follows:

$$EVRA_{it} = \alpha_i + \beta X'_{it} + e_{it} \quad (2) \text{ [fixed individual effects model]}$$

In the above equation  $\alpha_i$  denotes the individual country fixed effects (which is country-specific). Thus  $\alpha_i$  represents ignorance about all of the other systematic factors that predict residential variation statistics (EVRA & EVRB), other than  $X'$ . It controls for heterogeneity among countries. That change is addressed in the intercept parameter that varies among countries. Put differently, the intercept is country-specific.

It is much alike the specification above (1) and the only difference is that it reflects country effects what is addressed in the term:  $\alpha_i$ . It corresponds to country-specific characteristics and denotes the fixed effects. It can be perceived as a dummy for particular country to see whether different countries have different characteristics in terms of influencing the regressand i.e. EVRA & EVRB. Therefore,  $\alpha_i$  represents the ignorance about all of the other systematic factors that predict the residential variation statistics (EVRA & EVRB), other than  $X$ .

The last specification refers to random effects<sup>1</sup> and treats the heterogeneity across countries as random component. It is expressed as follows:

$$EVRA_{it} = \alpha + \beta X'_{it} + u_{it} + e_{it} \quad (3) \text{ [random effects model]}$$

where  $u_{it}$  is the individual specific error or the between-entity error and  $e_{it}$  is the usual regression error or the within-entity error.

### 2.3 Results

To have a first look at the data, the correlation matrix has been computed at the level of all 112 countries, see *Table 3*.

**Table 3. Pairs' correlations for all 112 countries**

	EVRA	EVRB	FDI	RS	RR	EXP	IMP
EVRA	1.0000000	0.8657506	0.1283902	0.5610064	0.1846994	0.2276691	0.2523071
EVRB	0.8657506	1.0000000	0.1488543	0.5523156	0.2060042	0.2210015	0.2073825
FDI	0.1283902	0.1488543	1.0000000	0.1018938	0.2380789	0.2659739	0.2897684
RS	0.5610064	0.5523156	0.1018938	1.0000000	0.6823780	0.6610623	0.6264755
RR	0.1846994	0.2060042	0.2380789	0.6823780	1.0000000	0.8306324	0.7123689
EXP	0.2276691	0.2210015	0.2659739	0.6610623	0.8306324	1.0000000	0.8882161
IMP	0.2523071	0.2073825	0.2897684	0.6264755	0.7123689	0.8882161	1.0000000

Source: *own elaboration*.

The only pairs of exploratory variables that are highly correlated are the Export from Spain (EXP) and Import to Spain (IMP), and though they do not produce multicollinearity

<sup>1</sup> It employs the FGLS method (there actually different methods for RE models).

problems (VIF <5 for all studied exploratory variables, see *Table 4*).

To see whether there is no collinearity in our model we check the VIF<sup>2</sup> for every particular model. Collinearity occurs when two explanatory variables (e.g., x1 and x2) in a multiple regression have a non-zero correlation. Multicollinearity occurs when more than two predictor variables (e.g., x1, x2 and x3) are inter-correlated (Guanyi *et al.*, 2018).

The VIF is the variance inflation factor and in a regression analysis it reflects the severity of multicollinearity. VIF is an index that tells researchers whether and how much the variance of estimated regression coefficients is affected because of collinearity problem. Multicollinearity is not good when building econometric models because it means that there is a strong relation between predictors (i.e. regressors) included in the model, see *Table 4*.

**Table 4. Variance Inflation Factor (VIF) for selected variables**

	FDI	RS	RR	EXP	IMP
VIF	1.9685	1.5484	2.2242	4.9580	4.1472

Source: own elaboration.

All the VIFs are below the value of 5 which means that there is no collinearity between exogenous variables in question (as selected predictors).

**Table 5. Panel regression model. Immigration (EVRA) is regressed on FDI, RS, RR, EXP and IMP**

Variables	Model		
	OLS (pooling)	FE (fixed effects)	RE (random effects)
FDI	0.021 (0.013)	-0.003 (0.004)	0.0004 (0.004)
RS	0.621*** (0.026)	-0.002 (0.03)	0.1721*** (0.029)
RR	0.028 (0.027)	-0.004 (0.015)	0.015 (0.016)
EXP	-0.137* (0.053)	-0.116** (0.037)	-0.0227 (0.038)
IMP	0.146*** (0.04)	-0.035 (0.027)	0.0296 (0.028)
CONSTANT	1.994*** (0.174)		2.755*** (0.222)
F test for i.e.* p-value	132.416 0.000†		
Hausman Test p-value			29.3272 0.000††
F-statistic	198.874 0.000	3.1374 0.008	22.106 0.000
Adjusted R-squared	0.6588	0.029	0.1828

Notes: † If the p-value is < 0.05 then the **fixed effects model is a better choice**; †† If this number is > 0.05 then we use random effects; Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1; \*\*\*, \*\*, \*, · indicates coefficient is significant at 0,1%, 1% , 5% and <10% level of significance respectively. Endogenous variable/regressand) is the immigration (denoted as EVRA). Hausman test is used to assess whether Fixed Effects (FE) model is better that Random Effects (RE) model. F test for individual effects F-statistic is used to test the overall model fit. p-value <0.05 means that all variables (jointly) explain variability of the response variable. Numbers in parentheses are standard errors.

Source: own elaboration in R-Studio.

<sup>2</sup> In statistics, the variance inflation factor (VIF) quantifies the severity of multicollinearity in an ordinary least squares regression analysis. It provides an index that measures how much the variance (the square of the estimate's standard deviation) of an estimated regression coefficient is increased because of collinearity.

Further, the regression coefficients for the pooled model specification (1), the fixed effects model specification (2), and the random effects model specification (3) are derived. Set out below is the

*Table 3* and *Table 6* which summarize the results of the performed panel regressions for both EVRA and EVRB, respectively. Please find in the appendix full results about the models.

The following is the same study for EVRB.

**Table 6. Panel regression model. Emigration (EVRB) is regressed on FDI, RS, RR, EXP and IMP**

Variables	Model		
	OLS (pooling <sup>4</sup> )	FE (fixed effects)	RE (random effects)
FDI	0.026 <sup>*</sup> (0.013)	-0.008 (0.005)	-0.005 (0.005)
RS	0.656*** (0.028)	-0.006 (0.039)	0.2003*** (0.034)
RR	0.077* (0.03)	0.088*** (0.02)	0.107*** (0.02)
EXP	-0.148** (0.057)	0.154** (0.048)	0.172*** (0.046)
IMP	0.134** (0.042)	-0.014 (0.035)	0.021 (0.033)
CONSTANT	1.877*** (0.185)		1.449*** (0.253)
F test for i.e.* p-value	86.6812 0.000†		
Hausman Test p-value			111.2007 0.000††
F-statistic	209.973 0.000	7.9289 0.000	35.4716 0.000
Adjusted R-squared <sup>5</sup>	0.6706	0.0716	0.2606

*Notes:* † If the p-value is < 0.05 then the fixed effects model is a better choice; †† If this number is > 0.05 then we use random effects; \*\*\*, \*\*, \*, · indicates coefficient is significant at 0.1%, 1% , 5% and <10% level of significance respectively. Endogenous variable/regressand) is the emigration (denoted as EVRB). Hausman test is used to assess whether Fixed Effects (FE) model is better than Random Effects (RE) model. F test for individual effects F-statistic is used to test the overall model fit. p-value <0.05 means that all variables (jointly) explain variability of the response variable. Numbers in parentheses are standard error.

*Source: own elaboration in R-Studio.*

For all models the coefficients are jointly significant as showed the F-stat (Prob > F = 0.0000).

To select the best model, three steps have been carried out. First the F test (for individual effects) following the pooling OLS and the fixed effects estimations has been considered to verify whether the fixed panel specification is superior to the pooled OLS (i.e. to check which one is a better choice). If the p-value is < 0.05 then the fixed effects model specification is a better choice.

<sup>3</sup> Driscoll and Kraay make up standard errors and coefficients estimates in order to address some of the econometric problems that appeared in the model. We explain that issue in this paper.

<sup>4</sup> Grouped regression.

<sup>5</sup> goodness of the model.



The **Hausman (1978)** test is also applied to decide between fixed (FE) or random effects (RE) models' specifications, where the null hypothesis says that the preferred model is the random effects vs. the alternative being the fixed effects (Gardiner *et al.*, 2009). It essentially provides an answer whether the unique errors are correlated with the regressors, with the null hypothesis (H0) assuming that they are not correlated, see *Table 7*.

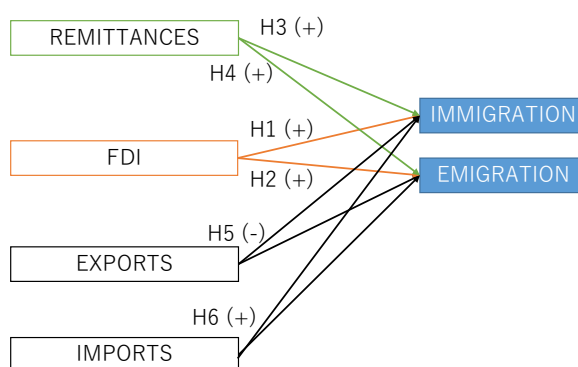
**Table 7. Results of the tests for determining proper models' specifications**

	Pooled vs. Fixed; F test	Pooled vs. Random LM test	Fixed vs. Random Hausman test
ALL 112 (EVRA)	Prob>F = 0.000;	chibar2(1) = 57.343 Prob>chibar2 = 0.0000	chi2(5) = 29.3272 Prob>chi2 = 0.000
ALL 112 (EVRB)	Prob>F = 0.000;	chibar2(1) = 56.241 Prob>chibar2 = 0.0000	chi2(5) = 111.2007 Prob>chi2 = 0.000

Source: *own elaboration*.

The Fixed Effects (FE) models turned out to be superior choices. However, the pooling model can also be used for the appropriate interpretation of the results, because from a statistical standpoint it meets the typical assumptions of modelling (i.e. lack of endogeneity and multicollinearity, and p-value associated with F-statistic <.05, etc.). The main difference is that the pooled model (grouped regression) gives us a big picture i.e. more general notion, and fixed effects model strips out part of explanatory power as reflected in values of general predictors' coefficients and assigns it to countries' specific terms (hidden in each country's specific characteristics). Therefore, we address the pooled model to come up with general observations and inference.

Finally, the results and hypotheses are discussed in the following section. The *Figure 3* summarizes them.



Source: *own elaboration*.

*Figure 3. Results and Hypotheses*

## 2.4 Discussion of Results

### *Association of immigration and FDI*

The results of our study support the hypothesis 1, in that FDI positively affects EVRA (at the level of all countries). Insofar as the pooling model specification is concerned, it can be concluded that an increase of one per cent in the average annual value of foreign direct



investment sent (from Spain) leads to an increase in immigration to Spain (denoted as EVRA) of 0.021%.

As opposed to Aubry *et al.* (2012), the results show FDI and migration are complementary flows.

Comolli (2018) noted that immigration is reinforced by capital movements (FDI). This result is also consistent with the Heckscher-Ohlin model in the short term. As a result, in many cases the aim of FDI may be to provide some initial production capacity in the countries where there are businesses allowing a proper flow of supplies. However, it cannot be ignored that, as a rule, the exchanges established with these origin countries tend to produce a developmental outcome. In the long term, both countries of origin and destination benefit from the exchange of technology and knowledge, cost reduction, new business opportunities, greater labour market participation and more skilled human capital (Mihi-Ramirez, 2013; Castles, Miller, 2009; Burns, Mohapatra, 2008).

In this context, processes of integration and the proliferation of trade agreements involving investment activities have enabled an unprecedented FDI expansion (Devadason, Subramaniam, 2016). [These agreements provide an excellent opportunity to address](#) the issues related not only to the mobility of capital but also to the mobility of workers.

However, if we take into account, for example, the evolution of migration policy in Spain, we can notice that it is concentrated on immigration regularisation programmes and is based on internal labour demand (Mihi-Ramirez, 2013). Something similar is taking place at European level, but following the fiscal pressure of the economic recession, the debate on these issues seems to have stalled.

However, it should be noted that hardly any attention has been paid to the links between investment and migration to trading partner countries. It is worth noting that immigrants are the driving force behind investments in their origin countries, since they have better information on business opportunities, contacts and market knowledge. Similarly, investing in new markets requires knowledge not only about local markets, but also about intermediaries since they are a key factor in facilitating investment decisions and their implementation.

In view of our results, it would be very useful to support and generalise all migration policies that foster integration in destination countries, but also the return of migrants to their origin countries, so as to provide those countries with sufficient qualified human capital to absorb and disseminate new technologies, knowledge and innovation. There is already a number of successful examples showing how international students and expatriates have taken advantage of new business opportunities, e.g. in countries such as Australia, Canada and China (Hawthorne, 2010).

#### *Association of emigration and FDI*

Our results show that FDI leads to a rise in emigration (denoted as EVRB) by 0.026%. It confirms the hypothesis H2.

Migration has traditionally been understood as a movement of people from less developed countries to more developed countries, but it must also be remembered that the economic situation is never static and changes constantly according to socio-economic conditions. The case of Spain shows us, what can happen if a country is exposed to severe economic conditions such as those that took place during the last great recession, which led to the internal devaluation and worsened the situation of FDI, and eventually resulted in another wave of emigration of Spanish workers, not occurring since the 1980s. It is therefore

particularly important to analyse the factors of mobility over time. In particular, there is an increase in migratory flows that go in the opposite direction to traditional ones.

Therefore, from the perspective of migrants from countries that traditionally have already established investments and companies abroad, migration to the countries that are beneficiaries of these investments can be considered the right strategy, since it reduces potential risks through prior contractual agreements concerning businesses, companies, infrastructure and all kinds of relations. Moreover, it is also a good strategy for companies because diversification in different countries allows them to adapt their human and capital resources in difficult times or when there are new opportunities emerging (Cuadros *et al.*, 2019).

In this sense, FDI sent to a country triggers sort of intensified migration processes, which can be perceived as a catalyst that strengthens networks (emigration to Spain from these countries, but also re-emigration/return migration).

#### *Association of Remittances with immigration and emigration*

The amount of remittances sent (from Spain) to a given country and received from that country (RR) has positive impact on migrant flows to and from Spain, and more to the point, contributes to increased migration processes. It confirms the hypotheses H3 and H4. The results show that remittances sent and received positively affect both EVRA & EVRB, though in the case of the former the effects seem to be more pronounced. Furthermore, in the case of the former, the result turned out to be statistically significant, which was not found in the case of the latter.

Since in the case of the Fixed Effects model specification, the regression coefficients are slightly negative (as opposed to the pooling model), this means that the results of individual countries differ significantly (and it would be more appropriate to assess the results not necessarily at an all-country level, but rather on a separate basis). In other words, the main conclusion is that the effects of the impact of remittances (both sent and received) should be considered, at a more detailed level of each country separately, because the responsiveness of the results for each country differs from one another. Therefore, there will likely be countries whose responsiveness is much greater and more pronounced, and countries whose responsiveness will be lower. This may depend on various factors, one of which may be the size of the country, its economic situation, or its distance from Spain, etc.

More to the point, the results show that, at the all-country level, one per cent increase in average annual Remittance Sent (RS) leads to an increase in EVRA by 0.621 per cent, and to an increase in EVRB by 0.656 per cent, respectively. In turn, one per cent increase in the average annual RR leads to a rise in EVRA by 0.028 per cent, and to a rise in EVRB by 0.077 per cent, respectively. Note that the effect of both Remittance Sent & Remittance Received is more pronounced in the case of emigration rather than immigration, meaning that net effect is slightly negative (=net outflow of individuals or put differently, both Remittance Sent and Remittance Received stimulate inflow and outflow yet the net outcome favours outflow rather than inflow processes).

Against the backdrop of [the Taylor's study \(1999\)](#) that showed a positive impact of migrant remittances, our study and results constitute an extension of his work, and provide a quantitative assessment of the scale of the studied phenomenon in the context of Spain and other countries.

Furthermore, these results supplement Markusen's (1983) approach to the Heckscher-Ohlin model in the context of migration and remittances in that they demonstrate that both

studied factors are complementary. Therefore, migration flows can be explained as a chain process through the impact of remittances and FDI.

Capital flows, in the form of remittances sent by immigrants, could be perceived as promoters of emigration. The higher the number of immigrants, the higher the income in the destination countries as a result of remittances. According to Schiff (1994), these remittances are used to finance the costs of emigration, which leads to an increase in the stock of immigrants, especially when migration networks in the destination country expand and, and finally it results in an increase in remittances sent. However, the impact of migration cannot be studied in isolation from the effects of remittances or FDI.

Subsequently, as the World Systems migration theory indicates, migration and remittances flows stabilise or slow down, but do not fade away, because remaining inequalities (imbalances) and migrant networks continue to favour migration. Network theory also helps explain this continuity. As migratory networks develop, the costs of migration tend to decrease. Unlike international investment decisions, economic transactions in the form of remittances occur on an individual basis between immigrants and their origin countries, and also involve the exchange of ideas and information (Miguelez, 2016). Such context also constitutes good investment opportunities for companies and institutions in these origin countries. Moreover, we observe that immigrants choose their destinations especially in the countries with the highest volumes of remittances. These remittances are mainly destined for consumption (Piras *et al.*, 2018), but part of them is also allocated to investments in origin countries, thereby increasing the total amount of FDI towards origin countries.

To put it in simple terms, our study provides evidence that remittances explain migration flows. Of particular importance is also the result which concerns remittances. However, the impact of one mobility factor depends to some extent on other mobility factors. In other words, these factors complement each other. Finally, incentives for migration may be related to facilities and support for immigrants in the destination country (Massey *et al.*, 1993). This is a positive feedback mechanism (De Haas, 2010), since these networks reinforce migration process, which reduces costs and increases remittance sent out (Artal-Tur *et al.*, 2014; Cagatay *et al.*, 2014).

#### *Association of imports and exports of Spain with migration flows*

The results show that exports and imports affect migration flows in different ways. In general, exports have a negative impact on migration activity (both outflows and inflows approximated by EVRA & EVRB), while imports increase migration intensity.

More to the point, a one per cent increase in the average annual Exports from Spain (EXP) leads to a decline in immigration (denoted as EVRA) by 0.137%, and to a decline in emigration (denoted as EVRB) by 0.148%, respectively. It confirms the hypothesis H5, but in this case the association between both variables is negative.

In turn, a one per cent increase in the average annual Imports to Spain (IMP) leads to an increase in immigration (denoted as EVRA) by 0.146% and to a rise in emigration (denoted as EVRB) by 0.134%, respectively, thereby confirming the hypothesis H6.

Therefore, imports have a positive net effect (immigration outweighs emigration, although in absolute terms this might not necessarily be the case). Exports cause a decrease in both migration inflows and outflows, but the decrease in emigration is bigger in relative terms, hence the net effect is also positive (i.e. the decrease in immigration is smaller than the decrease in emigration).

With regard to the Heckscher-Ohlin model, the evidence confirms that there is a substitution effect for exports and migration flows, although the overall net effect is positive

and small. The evidence also confirms the complementarity between imports and migration flows.

The disparities between countries make it unlikely that additional barriers to trade will reduce the potential for migration between these countries. Thus, we argue that creating a more restrictive trade policy to control migration is futile.

On the other hand, the promotion of trade and investment in origin countries allows stimulating and preserving long-term economic development and reducing disparities between countries. Such measures, if maintained over time, would reduce migratory pressure, although, according to De Haas (2010) and the migration network theory, this situation would not result in a disappearance of migration flows.

Therefore, the best long-term strategy is to combine common policies aimed at reducing impediments to the mobility of goods and labour, together with national policies that address the disparities between countries.

According to Genc *et al.* (2011), and in reference to what Gould (1994) revealed in his study, we can argue that population growth due to immigration boosts demand and production, which in turn creates the demand for imports from origin countries.

In turn, at the microeconomic level, it is often the case that immigrants continue their relations with their origin countries, which can help businesses in destination countries to create networks that contribute to international trade flows between these countries. In this context, Aleksynska, Peri (2014) recommend promoting entrepreneurship among immigrants to increase the benefits of migration and trade.

Altogether, migrants tend to prefer certain goods (particularly, but not exclusively, food) from their origin countries (Gould, 1994). With time, local people in the destination country may demand such goods for the so-called „demonstration effect“ (e.g. ethnic restaurants).

The circular cumulative causation theory indicates that these changes occur gradually. Therefore, when the migration flow begins, the whole process tends to become perpetuated (King, 2012). Consequently, the countries that are most often the subject of research studies (as confirmed by the literature on the subject) are those that, due to their level of development, attract immigrants the most, as is the case in Spain.

## Conclusions

This paper aims to better explain the dynamic relationship between international immigration, emigration, foreign direct investment, remittances and trade.

With regard to the relationship between the number of immigrants and FDI, our study shows that the increase in the number of immigrants has a positive impact on the increase in FDI to origin countries. Several publications point to FDI as a factor facilitating immigration at an early stage of development. Our findings for the analysed period show that these flows are not only short-term, but also evolve in line with economic cycles and through the development of migration networks.

With respect to the role of international remittances, they have an important impact on migration flows. Our results explain the interaction between migration flows and remittance flows as a chain process.

Furthermore, we examined the relationship between migratory flows and exports and imports. The results show that there is a link between trade and migration flows.

On the one hand, an increase in imports leads to an increase in the number of immigrants, but also Spanish emigrants choose the destinations associated with trade flows and remittances.

The observation of the interactions between these mobility factors leads to the conclusion that establishing new impediments in the form of trade barriers will not serve to reduce migration flows between the countries in question, and they are likely to reduce the benefits generated, e.g. investments, remittances or can affect the trade balance.

On the other hand, strategies that exploit these interactions can be an excellent option, as they allow for risk diversification, adjustments within companies and new trade and investment opportunities to be found, which in the long run is conducive to economic development.

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## TIESIOGINIŲ UŽSIENIO INVESTICIJŲ, TARPTAUTINĖS PREKYBOS IR PERLAIDŲ SAŲEIKA SU EMIGRACIJA IR IMIGRACIJA

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### SANTRAUKA

Šiame straipsnyje yra nagrinėjamas tarptautinio kapitalo ir darbo jėgos mobilumas. Naudodamiesi duomenimis mes analizuojame mobilumo veiksnių svarbą, t. y. tiesiogines užsienio investicijas, tarptautines perlaidas; eksportas ir importas paaiškina emigracijos ir imigracijos srautus. Imtį sudaro 112 šalių, su kuriomis

Ispanija turėjo glaudžius ryšius tarp 1998 ir 2016 m. migracijos, prekybos, perlaidų ir investicijų srautų atžvilgiu. Rezultatai rodo, kad egzistuoja teigiamas ryšys tarp tiesioginių užsienio investicijų (TUI), išsiųstų ir gautų pinigų perlaidų, importo iš Ispanijos ir imigrantų skaičiaus Ispanijoje. Priešingai nei dažnai tvirtinama daugelyje tyrimų, šis ryšys išliko ilgalaikis. Taip pat nustatėme neigiamą ryšį tarp eksporto ir migracijos srautų. Rezultatai mus paskatino rekomenduoti tas strategijas ir veiklos kryptis, kurios išnaudoja ir skatina mobilumo veiksmų sąveiką, nes jos leidžia įmonėms ir darbuotojams diversifikuoti riziką ir rasti naujų prekybos ir investavimo galimybių.

*REIKŠMINIAI ŽODŽIAI:* emigracija, imigracija, tiesioginės užsienio investicijos, eksportas, importas, perlaidos.