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Interaction of emigration and immigration with foreign direct investment, international trade and remittances

Antonio Mihi-Ramirez, Janusz Sobierajc, and Yolanda Garcia-Rodriguez

Abstract

This paper studies the international mobility of capital and labour. Using a Mixed Linear Model (MMA) the authors analyse the interaction of emigration and immigration with foreign direct investment, exports and imports, and international remittances. The sample comprises 112 countries with which Spain has closely interconnected migratory, commercial and investment exchanges, and they focus both on the period prior to the great recession, 1998–2007, and on the subsequent period, 2008–2016. The results show that a greater number of immigrants in Spain boost foreign direct investment (FDI), remittances sent and received and Spanish imports and exports to the immigrants' countries of origin. In contrast to what was often stated in the classical approaches, this relationship is maintained in the long term and also has effects on emigration. Thus, an inverse relationship of emigration from Spain with the FDI and remittances sent is confirmed. With the economic downturn, the FDI declines and the number of migrants from Spain and remittances received began to increase. In a sense, FDI and migration could also be seen as a kind of risk aversion strategy. In fact, when looking at the behaviour of these variables together across a wide sample of countries and years, it is observed that immigration and emigration act as two sides of the same coin. The results lead the authors to recommend those strategies and policies that serve to take advantage of and promote the interaction of mobility factors, since it allows diversifying risks of companies and workers and finding new commercial and investment opportunities.

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1 Introduction

Today international economics is characterized by the interaction of capital and labour (Xu and Sylwester 2016) and by the intense changes taking place globally in the mobility of these factors of production (Ojeda-González et al., 2018; Metelski and Mihi-Ramírez, 2015). Dicken (2003) addressed the relevance of international capital flows (see also Wallerstein 1974). On his behalf, Portes (1997) and later Castles and Miller (2009) highlighted the importance of international labour flows, i.e. migratory flows. These are international movements of foreign direct investment (FDI) and linked workers that directly determine the development of the world economy (Le and Tran-Nam 2018).

Furthermore, according to Taylor (1999), migrants' remittances represent the greatest direct positive impact of migration on the economy, which depends both on the earnings of the migrant and on their willingness and motivation to share part of these earnings with their home of origin. If the work done by migrants were considered an export, remittances would be the part of the payment for the export of labor services that somehow returns to the country of origin.

Despite economic fluctuations, international trade has gradually increased since the second half of the twentieth century, and in terms of foreign direct investment, migration and remittances, growth has been even higher, with numerous benefits in recent years (UNCTAD 2005; Sanderson and Kentor, 2009; Aubry et al. 2012; Mihi-Ramirez et al. 2018; World Bank, 2018). However, we are witnessing an increase in policies advocating changes that could hinder future international trade liberalization and labour and capital movements, so this debate needs to be revived again.

The migratory flow arises from the existence of certain links between countries of destination and countries of origin (Mihi-Ramírez et al., 2017). Castles and Miller (2009) pointed to colonial ties, foreign trade and the FDI as possible links of this kind. Combes et al (2005) showed that when the number of immigrants increases in a destination country, it is also associated with an increase in FDI inflows to that country. Buch et al (2006), and later Javorcik et al (2011), noted that when immigration increases the flow of FDI to the countries of origin of these immigrants also increases.

Aubry and others (2012) showed that the increase in the FDI is the cause of immigration to the investing country and that they could be perceived as substitutes. It should also be noted that Metelski and Mihi-Ramirez (2015) observed that labour and capital flows are two-way and that, therefore, an "investor country" is also the country that receives migrants and sends remittances, especially when migrants manage to network over time, leading simultaneously to a reduction in transnational costs (Jayet and Marchal 2016; Flisi and Murat 2011).

All these revelations lead us to a fundamental question: how do the factors of production interact between the countries of origin and the countries of destination? In other words, we want to know how this relationship is in terms of immigration, emigration, trade, FDI and remittances. Thus, the purpose of **the aim** of this research is to examine the relationship between emigration, immigration, trade, FDI and remittances when the conditions of the countries of origin and destination change over time. We focus on the case of Spain, a well-developed country with significant migratory, trade and capital flows well established with other countries over the years, which has gone from prolonged expansion to being severely hit by the last major recession.

The relevance of the problem posed can be better understood if the issues and limitations highlighted in the literature are further explored, and can be briefly summarized in the following contributions:

- Despite the importance of the subject, explanations on the relationship between emigration and immigration with other mobility factors are scarce. Some scholars observed that FDI inflows to migrants' countries of origin have an impact on emigration only in the first stage (Javorcik et al. 2011; Buch et al. 2006). Other authors refer to the FDI, pointing out that it is significant in the second stage, and bridges the wage gap between countries, which also has a negative impact on migration (Aroca and Maloney 2005). Other studies also indicate that

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there is a two-way association between the FDI and migratory flows, which may have the behaviour of complementary goods (Schiff, 1994) or substitute goods (Sanderson and Kentor, 2008). But what happens when a migration process has already started? Does the increase in the number of migrants in the destination country mean an increase in the FDI flow to the migrants' countries of origin?

- 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 and remittances. As Sanderson and 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 and 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 (Schiff (1994; Metelski and Mihi-Ramirez, 2015). In turn, the FDI affects economic growth, which also has an indirect effect on migration flows (Xu and Silwester 2016). What is more relevant for emigration and greater immigration, FDI or remittances?

- Factors of production mobility is a very complex process that should not be studied without including international trade flows (Cogneau et al., 2000). Several studies confirm the existence of connections between trade, labour and capital flows, although they usually focus on the relationships of only two factors (trade and emigration; investment and remittances, etc.) Gould 1994; Head and Reis 1998; Dunlevy and Hutchinson 1999; Girma and Yu 2002; Murat and Pistoresi 2006), nor do they take into account their high degree of dynamism (Kim and Cohen, 2010; Janotka et al., 2013). It can be said that, despite its importance, empirical evidence is in this case limited. Nevertheless, understanding the interaction between international flows of goods, workers and capital is fundamental for any economy, especially in a context of internationalization (Marr and Siklos, 1994; 1999; Konya, 2000; Feridun 2007). Therefore, we attempt to answer several questions. What is the relationship between immigration, FDI and International Trade? Does the trade of the destination country increase towards the countries of the immigrants? Do the emigrants of the host country choose as destinations those countries where the international trade of their country is greater?

The research is based on a Linear Mixed Model to test the associations between immigration, emigration, FDI, remittances and trade in the period 1998 - 2016. The results of the study will allow the following hypotheses to be verified and will facilitate the establishment 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.

Similarly, at the empirical level there are many studies dealing, for example, with the impact of immigration on the situation (economic, social, etc.) of different countries, or studies related to the impact of the FDI on net migration, remittances, etc. However, it cannot be overlooked that there is a lack of studies measuring migration and its relationship to other mobility factors. Moreover, compared to previous empirical studies, which focuses mainly on FDI and immigration for a single country or for several countries, and refers only to a limited time period (e.g., a specific economic period or phase), especially when FDI increases (Grogger and Hanson 2011; Clark and Pearson 2007).

Taking this it account, our empirical study is different in the sense that it thoroughly examines emigration and immigration with multiple destinations (112 countries), with detailed attention to the processes of change of various mobility factors relevant to any economy, such as immigration, emigration, FDI, remittances and international trade, and as they evolve during the different stages of the contemporary economy (i.e. 1998-2016). This let us, in any case, a greater control of the

factors specific to the destination countries, identifying the impact of the variables analysed before and after the last world economic crisis.

Finally, this document follows a typical scientific research structure, consisting of an introduction, background, methodology, discussion, conclusions and list of references.

2 Theoretical Framework

Capital mobility is a key factor in driving migration. In this connection, the Global Systems Theory explains that migration plays a key role in altering society as a whole. The demand for basic resources in developed countries leads to a flow of capital to less developed countries, but also to increased migration in the opposite direction (Massey et al. 1993).

Investment flows (i.e. the FDI) are part of an interaction between different countries and often cause some discrepancies in their economic conditions. As a result, countries with more prosperous economies attract migrants from countries with less dynamic economies (Massey et al. 1993).

There is also a link between FDI, remittances and migrant networks (Schiff 1994; Buch et al. 2006; Javorcik et al. 2011). The Theory of Migratory Networks studies how the migratory flow arises from the existence of certain links between countries of destination and countries of origin. In this regard, Castles and Miller (2009) highlighted colonial ties, trade and investment as likely links. Burns and Mohapatra (2008) argue that FDI and trade are also an important channel for the transfer of technology and knowledge. In addition, Flisi and Murat (2011:797) showed that the influence of immigrants on the FDI from less developed countries is as strong as that of emigrants or immigrants from wealthier economies. According to these authors, networks would support the FDI, but not the other way around (Flisi and Murat 2011). Also, people moving from developing countries often send remittances to their families and this can have an indirect impact on trade, investment and technology diffusion (Portes et al., 1989; Poot and Strutt, 2010; Hübler, 2016).

Breitenfellner and Lent (2008) assessed the economic effects of the 2004 and 2007 EU enlargements and more specifically the increased flow of cross-border mobility factors (i.e. labour and capital).

In this sense, Tanaka (2017) examined the possible negative impact of immigration on the Japanese labour market (from 2001 to 2007) as a result of higher FDI. His research showed the presence of temporary workers at an early stage, but in the long run their presence faded.

Tomohara (2017) observed that, after some time, immigration begins to have a negative impact on FDI inflows into the country of origin; this was particularly significant in the short-term case, although higher immigration stocks, as well as ethnic networks, generally contribute to stimulating FDI inflows.

In general, taking into account the foregoing considerations, hypothesis 1 is presented below, taking Spain as the country of destination of the immigrants:

Hypothesis 1 (H1): Immigration from Spain is positively associated with Spain's FDI destined for immigrants' countries of origin.

Although there are a large number of studies analysing the association between the FDI and immigration, migration flows require a more in-depth and detailed analysis, including their main elements: immigration and emigration.

In terms of emigration and FDI, Aroca and Maloney (2005) investigated Mexico's exposure to FDI entry and its response in terms of migratory flows. Their findings indicated that greater exposure to FDI attenuates the effect of Mexican emigration. The intention of Aroca and Maloney's (2005) study was to provide an empirical measure (in 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 flow to Mexico of 100 percent leads to a decrease in emigration of 1.5 to 2 percent.

Aubry et al. (2012) showed that the FDI stimulates emigration to host countries at an early stage, but later there is wage matching in countries of origin, and labour market pressures to emigrate are reduced.

In addition, it has been observed that the dynamics of international flows tend to be two-way (Metelski and Mihi-Ramirez, 2015), so that over time the FDI can lead both to a higher level of development in home countries and to greater business opportunities for foreign investors. As a result, foreign workers may continue to migrate for several reasons: the existence of multinational subsidiaries; new business creation opportunities; reduced transaction costs; better knowledge and dissemination of information associated with migrant networks in the host country (Munemo 2017). In this case, emigration will result in complementing rather than replacing the FDI.

Wang et al (2013) indicated that, in the long term, the FDI acts as a deterrent to emigration, as it also leads to an increase in national income. Wang et al (2013) found that FDI inflows into non-OECD countries influenced the emigration of highly skilled people from OECD countries that originated the investments. But Xu and Sylwester (2016) also showed that the FDI increases emigration, not least because of the role played by multinational companies, i.e. providing information on less developed countries. The FDI also reduces transaction costs for potential migrants. That FDI would then act as a pull factor that would attract migrants to less developed countries.

Likewise, the theory of cumulative causality shows different stages of the migratory waves, and several causes are exposed: 1) One of these causes is the growing disparity in living standards between returnees and non-migrants, which is once again contributing to the re-emigration of returnees. 2) Another cause is the decrease in the demand for rural land due to the excessive purchase of land, mainly by emigrants. In addition, the land that migrants buy is rarely cultivated by themselves and is treated rather as a capital investment or rented to professional farmers, which often leads to increased competition in the agricultural labour force through intensified agricultural operations. As a result, smallholders turn away in search of additional sources of income because they can no longer compete (Massey et al. 1993). 3) The third cause is the desire to maintain a higher standard of living for returnees, which further encourages them to emigrate again. 4) And the fourth cause is the development of networks that facilitate emigration even in the case of less entrepreneurial people, who are initially unwilling to undertake migration and leave their places of residence. 5) The ultimate explanation for emigration is the stigmatization of some commercial activities in receiving countries, which induces employers to seek workers in other countries (Massey et al. 1993).

De Haas (2010) noted that the theory of cumulative circular causation and the theory of migration systems have much in common. Both see origin and destination as constitutive parts of a social and development context. In that sense, both the sending and receiving sides contribute to the dynamics of migration.

Taking all this into account, we then raise the existence of a relationship between the FDI and emigration, which, while not disappearing in the long term, may vary over time.

Hypothesis 2 (H2): The FDI sent from Spain influences the number of migrants received in the countries where this investment is made.

Schiff (1994) demonstrated that remittances received by a country serve to finance the costs of emigration, ultimately leading to an increase in remittances. In addition to money transfers, knowledge is also received through improved communications and information flows between sending and receiving countries are encouraged and improved.

Labour market performance in sending countries is also affected by the variation in remittances. Following Rapoport and Docquier (2006), the rate of remittances varies according to the income of migrants and the purchasing power of their families.

McKenzie and Sasin (2007) stress that the impact of migration cannot be studied separately from the impact of remittances, and vice versa.

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

Cooray (2014) provides evidence in favour of the hypothesis that immigrants with primary and secondary education contribute positively and significantly to the sending of remittances to the country of origin. However, when the model is estimated for men and women separately, the evidence suggests that women remit more compared to men.

Hübler (2016) stressed that knowledge (education) and financial flows are relevant vehicles for the diffusion of rural technology. In particular, in his study, in rural-urban migration due to poverty, remittances play a very important role.

Also, Metelski and Mihi-Ramírez (2015) analysed the impact that net migration has on remittances and the foreign balance, and vice versa. The results indicated that when the level of net migration increases (immigration minus emigration), remittances sent to the country of origin 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 observed levels of migration in both origin and destination countries, explicitly taking into account the consequences of international trade and remittances. In this sense, for countries with the highest emigration rates, the natives who stay are better off because of remittances. Their findings also suggest that, if the role of remittances is not taken into account, there would be a welfare assessment that would be severely biased for several migration-issuing countries.

A direct relationship between diasporas and economic transactions has also been confirmed, linked to the willingness of diaspora members to interact individually with their countries of origin, in the form of remittances, investments or exchange of ideas and information (Miguélez, 2016).

Le Goff and 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.

For Kikuta (2016) migrant remittances have caused some damage to the practice of providing mutual aid and have led to a sense of economic inequality among the population. Dependence on migrant labour and associated remittances in Central Asia have significantly affected lifestyles.

On the contrary, according to Chirila and Chirila (2017), in their study on the impact of remittances in Romania, they observed how migration developed remittance flows to that country. These remittances represent for the country the main gain after the loss of its workforce, as well as the main factor influencing the relationship between developed and developing countries.

In any case, it is observed how the increase in immigrants can translate into a greater number of people sending money to their countries of origin in the form of remittances. These incomes tend to have different uses: consumption, productive investment, savings. In a certain way they impact on the living conditions of the receiving areas, and once the emigration has begun, they allow it to continue by financing the costs of emigrating.

For all of these reasons, we propose the following hypotheses regarding the relationship between immigration and remittances:

Hypothesis 3, H3: The number of immigrants (in the country of destination) positively influences the remittances sent to the countries of origin.

Hypothesis 4, H4: Remittances received in countries of origin of immigrants' favour emigration to these countries of origin.

Hypothesis 5, H5: The amount of remittances sent from the country of destination of the migrants influences the number of migrants received by the country of origin.

Furthermore, when considering relationships between immigration, FDI and remittances it is also logical to study the relationship between FDI and remittances, as well as to know which of these factors is most relevant for emigration and immigration. We pose hypothesis 6 taking into account the perspective of cumulative causality theory, which considers that the remittances received (or part of them) are used to make investments in the country of origin.

Hypothesis 6, H6: Remittances received by the immigrants' country of origin stimulate the FDI sent from the country of destination.

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: 4) argued that "goods movements are, at least to some extent, a substitute for factor movements". However, despite the great 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 scholars argue that this flow can reduce migration between rich and poor countries in the long run. This approach claims that countries traditionally import labour-intensive goods, leading to increased employment of unskilled workers in poor countries. This also implies some initial direct investment in these poor countries to adjust their production capacity to the growing demand for goods (Schiff, 1994). Increased demand for goods and increased FDI would eventually lead to a reduction or extinction of migrant worker outflows. However, the results of Schiff (1994) actually showed that the increase in international migration is long term (for both origin and destination countries), which could be interpreted in an ambiguous way. Moreover, Russell and Teitelbaum (1992) and Gheasi et al. (2013) show that migration and FDI are not substitutes but can complement each other.

Also, more recently Metelski and Mihi-Ramirez (2015) confirmed that substitutability occurs only in some specific short-term circumstances. And Jayet and 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 and Weiss (1984) find that the FDI of U.S. firms to a foreign area is positively associated with their exports to that foreign area. Fontagné (1999) shows that the relationship between FDI and trade is not static, it evolves and responds to changing conditions in a dynamic way. The FDI would serve as a means for companies to overcome transaction costs and become more efficient.

In most cases, and given the favourable conditions and policies, the evidence suggests that in the long term a complementary relationship is reached between mobility factors. Greater immigration may lead to greater investment in the country of origin, which tends to translate into greater production and more exports from the receiving country (Metelski and Mihi-Ramirez, 2015; Melchor-Ferrer et al., 2017).

For this reason, we pose hypothesis 7, to know if immigration has effects on imports from the country of destination.

H7: Immigration positively affects imports by the country of destination of the immigrants' countries of origin.

The Economic theory suggests that, if countries specialize in producing those goods in which the country has a comparative advantage, the residents of all countries that trade or exchange goods will be better off (Widgren and Martin, 2002).

Also, Harding and Javorcik (2012) through the study of the exports of 105 countries during the period 1984-2000, obtained as a result a positive relationship between the FDI and the unit values of exports in developing countries.

According to Harding and Javorcik (2012), through indirect effects of productivity, FDI can potentially improve the export performance of firms located in developing countries. This

empirical work shows that FDI can also lead to improved export quality. Using data on Romanian firms, they suggest that domestic firms that supply inputs to multinational firms are more likely to enter the export market. In this sense, Zhu and Fu (2013) argue that the FDI can contribute to export sophistication.

Trade and FDI are increasingly becoming the main drivers of economic development and technology transfer (Omri and Kahouli, 2014). Metulini et al. (2017), these authors investigate the effects of FDI on trade from a network perspective. They find that, in general, corporate control (as a measure of FDI stock) has a positive effect on trade both directly and indirectly. This result is solid with respect to different specifications and estimation strategies, thus providing strong empirical evidence of the indirect effects of FDI on trade. In addition, they emphasize that indirect effects are more pronounced for manufacturing sectors than for primary sectors, such as oil extraction and agriculture.

In terms of emigration, Ricketts (1987) found that the Caribbean countries that received the most direct investment from the United States had higher emigration rates during the 1970s. Groznik (2003) also examines FDI and U.S. migration flows between 1950 and 1997, finding that labour and capital not only move in the same direction, but that investment leads to greater emigration.

For their part, Aroca and Maloney (2005), when looking at bilateral flows between the United States and Mexico, observed that while FDI and immigration are positively related, international investment flows are often facilitated and followed by migratory flows of skilled human capital (Freeman, 2006; Gera et al., 2004).

The FDI can trigger short-term movements in the form of business trips and temporary or permanent movements in the form of corporate work transfers (Poot and Strutt, 2010). Emigration and FDI are alternative ways of matching workers and employers located in different countries (Aubry et al, 2012).

This leads us to analyse also the influence of trade and FDI on migrants from the destination country, and therefore we put forward the following hypothesis on the relationship between FDI, international trade and emigration.

Hypothesis 8, H8: The FDI sent from the destination country influences its exports and imports.

Hypothesis 9, H9: Increasing exports to countries of origin encourages emigration to countries with which trade is conducted.
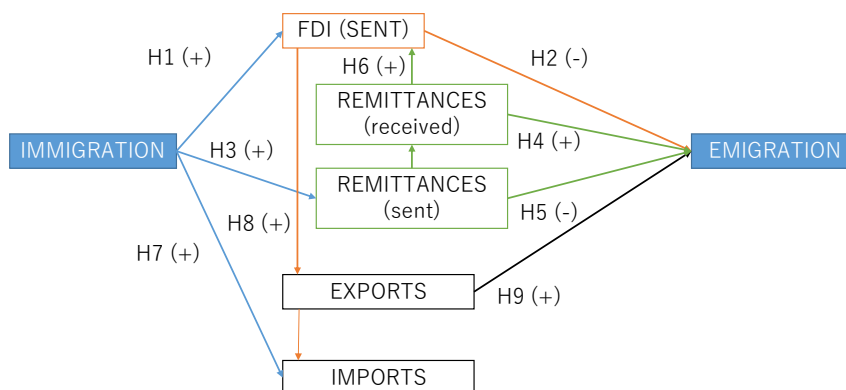
Figure 1 summarizes the hypotheses raised.

Figure 1. Hypotheses

3 Methodology

3.1 Methods and sample

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In this paper we have used linear mixed models (LMM) (R Core team 2017; West et al. 2007), statistical tools appropriate to evaluate repeated measures over time and that take into account the correlation and variability of the responses of the variables analyzed. In particular, random interception (RIM) models were applied, considering intra-country variability; these models take into account the variability of the responses. A polynomial function of time was implemented in the model, allowing changes in curves to be adjusted over time (Gardiner et al. 2009).

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. Data on emigration and immigration have been collected from the National Statistics Institute of Spain, INE, ("Residential Variations Statistics"); data on the FDI sent from Spain to these countries are from the Spanish Ministry of Economy and Finance, Datainvex (2018); and data on international trade (exports and imports) are from the world bank and for the period 1998 to 2016. Data on international remittances sent and received from Spain with these countries for the period 2010 to 2015 from the World Bank have also been used.

Two-tail testing was performed at the 5% significance level and 95% confidence intervals were obtained for the estimates. In applying the LMM, the model assumption, residual graphs and goodness-of-fit were checked to ensure that the model results were appropriate. The marginal and conditional R-square are analyzed for each model.

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

For the analysis it has been considered that there are n independent observations. For each individual i, there is a response variable Yi and p covariates xi = (xi1, ..., xip) t, where xi is a vector column of dimension p <n. In the classical linear model, it is assumed that $Yi = xti\beta + \varepsilon i$, (1) where β is a vector column with p parameters, while εi satisfies that εii.id~N (0, σ2), where "iid" means "Distributed independently and identically". The above equation picks up the regression model in the following way:

Equation (1)

y= (a Fixed + a Random_by_site) + (b Fixed + b Random_by_site) x

it means *y=* *(fixed-effect intercept + by-Site random variation in the intercept)*

﹢(fixed-effect slope + by-Site random variation in the slope） *× x*

3.2 Results and Discussion

Association of immigration and FDI

In the appendix, table 1 shows the descriptive results for migration, immigration and FDI, and table 2 for remittances, for all countries in the sample from 1998 to 2016.

A mixed linear model was adjusted to the FDI values in order to measure the potential association between the number of immigrants and the FDI. The specification of the model included a random intra-country effect and an adjustment by means of polynomial function in function of time and absolute number of immigrants. The results show a significant positive association of the number of immigrants with the FDI (p-value=0.0054), so that the increase in the number of immigrants increases the FDI values, confirming hypothesis 1. More specifically, we can say that for every one-unit increase in the absolute number of immigrants, the FDI increases by $12.7 (3.7, 21.6). The marginal R-square was 0.012 and the conditional R-square was 0.285. Marginal R2 represents the variance explained by fixed factors and conditional R2 is interpreted as the variance explained by fixed and random factors. In this sense, figure 2 shows the evolution of the number of immigrants and foreign direct investment from Spain, FDI.
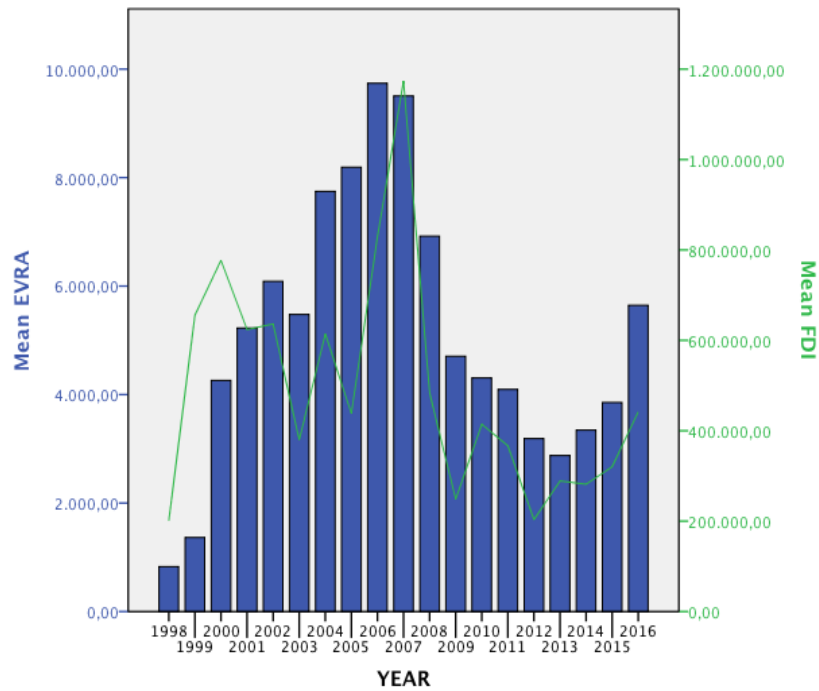
Figure 2. Evolution of the number of immigrants and foreign direct investment, FDI, sent from Spain to the countries of these immigrants, 1998-2016. INE [1] and Datainvex (2018).

Perhaps in a number of cases the purpose of the FDI is to ensure a certain initial production capacity in the countries where the companies are located that allows the correct flow of supplies. However, it cannot be overlooked that the exchanges established with these countries of origin end up developing. The countries of destination accumulate a stock of immigrants that also promotes the FDI in their countries of origin. In the long run the benefits are for both origin and destination countries, in terms of technology and knowledge sharing, cost reduction, new business opportunities, increased labour market participation and more skilled human capital (Castles and Miller 2009; Burns and Mohapatra 2008; Mihi-Ramirez 2013).

In this sense, the processes of integration and the proliferation of trade agreements involving investment activities have enabled an unprecedented FDI expansion (Devadason and Subramaniam (2016). These agreements represent an excellent opportunity to include issues relating not only to the mobility of capital, but also to the mobility of workers. However, if we consider, for example, the evolution of migration policy in Spain, it can be observed that it deals independently, and has essentially focused on regularization programs for immigrants based on internal demand for labour (Mihi-Ramírez 2013). Thus, hardly any attention has been paid to the impact that immigration can have as an investment facilitator with Spain's commercial partners. Immigrants invest in their countries of origin because they have better information on business opportunities, contacts and knowledge that facilitate the investment process.

Similarly, investment in new markets requires knowledge of local markets, but also of intermediaries as key facilitators in investment decisions and their implementation. At the European level something similar is happening, and after the fiscal pressures of the economic recession it seems that the debate on these issues has come to a standstill.

Considering our results, it would be very advantageous to encourage and generalise all migration policies that favour integration in the host countries, but also the return of migrants to their countries of origin, in order to ensure that these countries have sufficient qualified human

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[1] EVRA, ("Residential Variations Statistics"), A.k.a RVS, it is a national compilation by the National Statistics Institute of Spain, INE, of registrations and cancellations due to changes of residence registered in the Municipal Registers. INE (2018).

capital that can receive and disseminate new technologies, knowledge and innovation. There are already some successful examples in countries such as Australia, Canada and China, where international students and expatriates have taken advantage of new business opportunities (Hawthorne 2010).

Association of emigration and FDI

In this case, Figure 3 shows intuitively that the number of migrants has increased over the years, having lower values when the FDI was higher. A general increase in emigrants is observed after 2008, when the FDI declined. In sum, when the FDI.
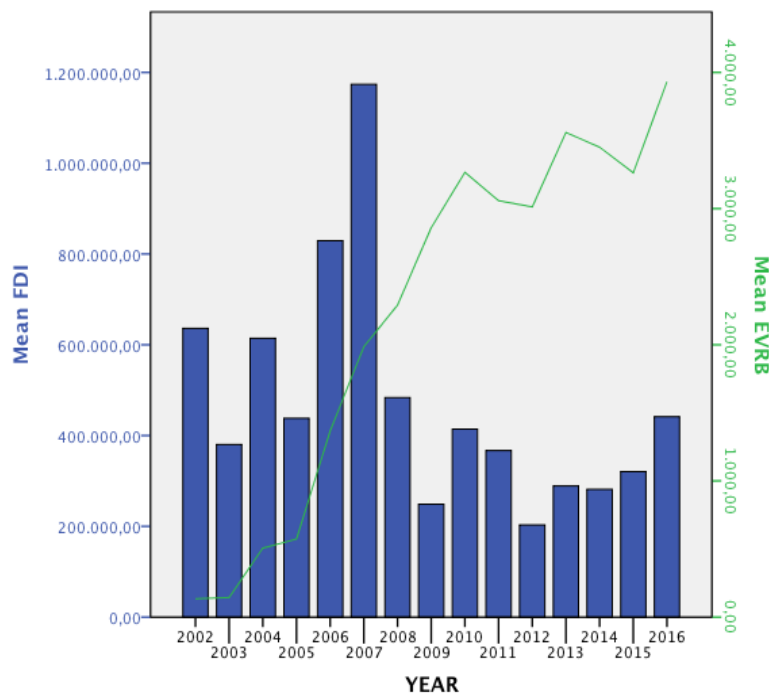

Figure 3. Evolution of the number of emigrants and foreign direct investment, FDI, sent from Spain to the countries of destination.

In order to analyse whether there is a significant association of FDI with migrants, a mixed linear model was used for migrants with a random intra-country effect and a fixed effect for FDI adjusted by a polynomial function of time.

The annual interaction between both variables was found to be significant and negative (p value <0.001), confirming hypothesis 2. Overall, for every $100,000 increase in the FDI a decrease in emigrants was found by 73 (-94, -52), but this effect of the FDI on emigrants was reduced by 10 (7,13) emigrants per year. During the economic expansion, 1998 to 2007, in Spain the same increase of $100,000 in a country 7 years later had no effect on migrants, and 10 years later, with the recession (2008 to 2016), migrants increase by about 30. In other words, the effect of the FDI on migrants has changed over the years, initially having during the expansion a decreasing effect on migrants and in recent years, with the crisis, an increasing effect on the number of migrants. The marginal R-square was 0.14 and the conditional R-square was 0.69.

Migration has traditionally been understood as the 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, as shown, for example, by the case of Spain during the recent great recession, which led to an internal devaluation, and which has worsened the situation of the FDI and has again led to the beginning of emigration of Spanish workers, something that had not happened since the 1980s. That is why it is particularly important to analyse mobility factors over time.

These are increasing migratory flows that go in the opposite direction to the traditional direction. Thus, from the perspective of migrants from countries that traditionally have investments and companies abroad, it may be considered as a good strategy to migrate to countries that have received these investments, since the possible risks are reduced by having previous agreements on business, companies of the country itself, infrastructure and all kinds of links. It is also a good strategy for companies, since diversification in different countries helps these companies to readjust their human and capital resources in difficult times or when new opportunities arise.

3.3 Association of the FDI and Remittances with emigration and immigration

Remittances data, received and sent, were provided from 2010 to 2015 by World Bank, so for this section we analyzed the subset of those years. Table 2 shows the remittances data for each country.

The effect of immigration in the remittances, received and sent, is tested using linear mixed models for remittances variables fitted with immigration, and adjusted by time and with an intra-country random effect. An effect of immigrants in the remittances received was not significant (p-value=0.797, marginal R-squared <0.0001), indicating an almost total independent relation. However, immigrants are significantly associated with Remittances sent, with an increasing of 0.008 units per each immigrant increase (C.I (0.006, 0.011), p-value<0.001, marginal R-squared 0.029), confirming hypothesis 3. When comparing the immigrant association with FDI for that period of time, an association of immigrants with FDI was found (17.7 CI (0.29, 35.04), p=0.046, marginal R-squared 0.015). Furthermore, no association of FDI with Remittances sent is observed (p-value= 0.359). Immigrants are related to an increase in FDI and Remittances sent, having a higher effect in the remittance sent.

The effect of FDI and Remittances with emigration is tested using linear mixed models for the emigration fitted with FDI and Remittances received and sent, with an adjustment of time and intra-country random effect. All variables were significantly associated with change in the emigration, in particular, for that period, higher FDI increases emigration (19.43 CI (2.79, 36.07), p-value =0.022, R2=0.002), as posed by hypothesis 2. In addition, increase remittances received increases significantly the emigration (6.02 CI (3.35, 8.68), p-value<0.001, R2=0.09), confirming hypothesis 4. On the other hand, increase remittances sent decreases significantly the emigration (-4.64 CI (-6.64, -2.64), p<0.001, R2=0.05), as posed by hypothesis 5.

When checking a multivariate model including all covariates, the effect of the FDI is not significant p=0.815, indicating that its relation with the emigration is directly explained by the remittances and not by the FDI. However, higher remittance received is associated with higher FDI (p=0.007), confirming hypothesis 6.

Taylor (1999) highlighted the positive impact of migrants' remittances and our results allow us to precisely quantify this impact (0.008 remittance units per immigrant).

In addition, these results add evidence to Markusen's (1983) approach to Heckscher-Ohlin's model regarding emigration and remittances. Both factors can be complementary. Thus, migratory flows would 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 country via remittances. As Schiff (1994) indicated, these remittances serve to finance the costs of emigration, which leads to a more massive stock of immigrants the more the migratory networks develop in the destination, and finally to an increase in the sending of remittances. But the impact of migration cannot be studied separately from the impact of remittances or the FDI.

Subsequently, as the systems migration theory points out, emigration and remittances stabilize or slow down, but do not disappear, as the persistence of imbalances or migrant networks continue to favour migration. Network theory also helps explain this continuity. As migratory networks develop, the costs of migration tend to decrease. It is observed that immigrants choose their destinations especially with the countries with the highest remittance flows. These remittances

are mainly for consumption (Mamun and Nath, 2010; Zhua et al., 2014; Piras et al., 2018), but a part is also for investment in the countries of origin, increasing the total amount of FDI to the countries of origin.

In a nutshell, it was observed that immigration is directly associated with the remittance sent, a direct increase in the immigration implies an increase in remittances sent, which is in association with an increase in remittance received. Higher remittance received is associated with higher FDI. On the other hand, an increasing in the remittances sent decrease the emigration, while an increase in the remittances received (which implies an increase in the FDI) increase the emigration during the last period from 2010 to 2015. For all the models with immigration and emigration the conditional R2 was higher than 0.9. Models between FDI and Remittances had conditional R2 values around 0.4.

3.4 Association of the immigrants and FDI with the imports and exports in Spain

This section shows the study of the association of immigration and FDI with imports and exports using data from 1998 to 2015.

An LMM for the imports were fitted using the immigrant and FDI variables and adjusted by time and an intra-country random effect. The multivariate results show a significant association of the immigration in the imports results, as hypothesis 7 stated. In particular, for each unit increase of immigration there is an increase in the import of 16.74 (CI (3.51, 29.96), p=0.013). The association of the FDI in the imports was found to be significant (0.17 CI (0.10, 0.233), p<0.0001). The marginal R2 was 0.022 and the conditional R2 0.89.

For the exports, an increase in immigration does not directly implies a significant increase in exports (10.4 CI (-0.67, 21.4), p=0.065). However, a direct increase in the exports are observed with the FDI increase 0.1 CI (0.02, 0.13), p=0.010). The marginal R2 was 0.021 and the conditional R2 0.90.

We can say that an increase in immigrant workers and the FDI of the country of destination leads to greater international trade exchanges, which in turn leads to boost their trade balance and gives way to greater migration to the countries of origin. According to Genc et al., 2011, at the macroeconomic level, and following the same line of Gould (1994), it can be argued that population growth induced by immigration increases demand and production, which in turn increases the demand for imports of goods from the countries of origin.

At the microeconomic level, it is common for the immigrant to continue with the relations he had in the country of origin, which can help the companies in the country of destination to create networks that contribute to international trade between the host country and the country of origin.

Together, migrants tend to prefer certain goods (notably, but not exclusively, food) from the country of origin (Gould, 1994). Over time, the destination population may demand such goods for the so-called "demonstration effect" (e.g. ethnic restaurants).

The circular cumulative causality migration theory points out that these changes occur gradually. So, once migration becomes operational, the whole process tends to perpetuate itself (King, 2012). Likewise, the countries most studied in the literature are those which, due to their level of development, attract immigrants the most, as is the case in Spain (Peri, 2016).

3. 5 Association of the FDI, imports and exports in Spain with emigrants

An LMM was applied to the emigrant's response fitted by imports, exports, FDI adjusted by period from 2002 to 2015 and with an intra-country random effect.

No significant association of imports with emigrants was found (p=0.101). A significant effect of the exports was found; emigrants increase in 0.28 units for 100.000 $ export increase (CI (0.19, 0.38); p<0.0001), as proposed by hypothesis 8. In addition, the interaction effect of FDI and year was found to be significant with a similar effect as previously described. The marginal R2 is 0.17 and the conditional R2 is 0.69.

In this sense, the evidence found makes it possible to argue that the establishment of more restrictive trade policies to control migration is futile. Differences between countries make it unlikely that additional obstacles in the form of trade barriers will reduce the potential for migration between these countries.

On the other hand, promoting trade and investment in the countries of origin will make it possible to promote and preserve long-term economic development and also to reduce the gap between countries. Such measures, if sustained over time, would reduce the pressure to migrate, although in line with De Haas (2010) and network theory, this situation would not lead to a disappearance of migratory flows.

Therefore, the best long-term strategy is the combination of common policies aimed at reducing obstacles to the mobility of goods and workers, together with national policies that address country-specific differences.

4 Conclusions

The purpose of this paper is to better explain the dynamic relationship between international immigration, emigration, FDI, remittances and trade.

Our research provides new empirical evidence to explain the interaction of mobility factors. As for the relationship between the number of immigrants and the FDI, it has been confirmed that the increase in the number of immigrants has a positive impact on the increase in the FDI to the immigrants' countries of origin. Several works show the FDI as a facilitator of early-stage immigration. The findings for the period analyzed allow us to talk about the fact that these flows are not only short-term, but that they evolve according to economic cycles and through the development of migratory networks.

With regard to the relationship between the FDI and remittances, the relevance of international remittances can be seen, as they not only have an impact on migration flows, but also reinforce that of the FDI. Our results explain the interaction between migration, investment and remittance flows as a chain process.

In addition, the relationship of migratory flows with exports and imports has been analyzed. Our results show that immigration positively influences the trade relations of the countries analyzed.

On the one hand, the increase in the number of immigrants entails an increase in the demand for imports from the countries of origin, but also the emigrants from the country of destination choose destinations with which there are trade and remittance flows.

The observation of these interactions between mobility factors suggests that the establishment of new obstacles in the form of trade barriers will not serve to reduce migratory flows between the countries analyzed, although they may limit the benefits generated, such as a reduction in investment, income through remittances or an improvement in the trade balance.

On the other hand, strategies that allow to take advantage of this interaction can be a great option, since it allows to diversify risks, to make readjustments in the staff of the companies and to find new commercial and investment opportunities, which favours the economic development in the long term.

5 Limitations and future research lines:

With regard to FDI, the literature distinguishes between 'vertical' and 'horizontal' foreign investments models. This paper we do not make such a distinction to cover several theoretical approaches to the subject and also because we focus exclusively on the case of Spain. At the same time, we propose this as a future line of research which could boil down to analysing of a sample of a subgroup, relying on a relative factor endowment differences and similarities in migrants' origin countries.

Another important distinction in the literature on migration concerns the level of education. Studies so far have shown that such an analysis could produce more precise results, showing significant differences. However, it should be remembered that out analysis was carried out on a large sample of 120 countries. Therefore, as another future line of research we propose to study the level of educational achievements.

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Appendix[2]

Table 1. Descriptors of emigration, immigration and FDI. N- Number of years with information, Mean of the results along period and SD standard deviation.

Country	N(Mean)			Country	N(Mean)		
	FDI	Immigrants	Emigrants		FDI	Immigrants	Emigrants
ALBANIA	6 (236.4)	19 (236.4)	15 (126.2)	IRELAND	19 (725633.4)	19 (1259.4)	15 (566.07)
GERMANY	19 (1905720.2)	19 (10859.2)	15 (5639.93)	ICELAND	12 (15802.5)	19 (122.6)	15 (63.27)
ANDORRA	19 (17344.9)	19 (265.3)	15 (130.13)	ISRAEL	19 (5252.6)	19 (281.7)	15 (169.2)
ANGOLA	13 (1763.7)	19 (281)	15 (194.67)	ITALY	19 (1261328.2)	19 (8729.7)	15 (3332.2)
SAUDI ARABIA	14 (40303.5)	19 (129.6)	15 (90.4)	JAPAN	18 (186238.6)	19 (641.7)	15 (466.87)
ALGERIA	18 (19949.8)	19 (5433.4)	15 (3207.2)	JORDAN	14 (5382.6)	19 (140.4)	15 (82.2)
ARGENTINA	19 (2480283.7)	19 (17845.8)	15 (9401.6)	KAZAJSTAN	12 (959.4)	19 (191.7)	15 (74.53)
ARMENIA	5 (1)	19 (997.6)	15 (502.47)	KENYA	15 (174.7)	19 (116.5)	15 (47.27)
AUSTRALIA	19 (158163)	19 (382.7)	15 (233.33)	LATVIA	15 (283.6)	19 (368.9)	15 (162.8)
AUSTRIA	19 (228102.1)	19 (648.3)	15 (347.93)	LEBANON	12 (707.9)	19 (236.8)	15 (130.33)
BANGLADESH	12 (538.3)	19 (1397.1)	15 (864.6)	LIBERIA	14 (2953)	19 (63.1)	15 (38.6)
BELGIUM	19 (418241.7)	19 (2460.4)	15 (1036.13)	LIETCHTENSTEIN	15 (5749.6)	19 (6.6)	15 (2.8)
BENIN	9 (1.5)	19 (39.3)	15 (24.87)	LITHUANIA	12 (693.3)	19 (1560.1)	15 (920.47)
BELARUS	6 (3.3)	19 (372.3)	15 (152.67)	LUXEMBOURG	19 (2382130.6)	19 (66.9)	15 (33.67)
BOLIVIA	19 (37999.3)	19 (17320.4)	15 (10382.53)	MKD	10 (23.9)	19 (65.1)	15 (39.47)
BIH	13 (426.8)	19 (129.6)	15 (88.4)	MALI	11 (1.9)	19 (2144.1)	15 (1234.47)
BOURKINA_FASO	9 (7.4)	19 (106.7)	15 (50.27)	MALT	15 (56305.3)	19 (23.3)	15 (11)
BRAZIL	19 (3444184.6)	19 (13605.1)	15 (9035.73)	MOROCCO	19 (195196.4)	19 (49423.8)	15 (23561.4)
BULGARIA	19 (12788.8)	19 (11660.5)	15 (5344.93)	MAURITANIA	18 (342)	19 (1016.6)	15 (726.47)
CAMEROON	8 (353.5)	19 (586.3)	15 (343.2)	MEXICO	19 (2242827.2)	19 (4612.9)	15 (2876.6)
GLEN	19 (837084.7)	19 (518.7)	15 (322.07)	MOLDOVA	13 (3722.7)	19 (1480.8)	15 (625.87)
CHILE	19 (1150509.3)	19 (4854.8)	15 (3267.2)	NEPAL	5 (0)	19 (379.3)	15 (192.67)
CHINA	19 (247921.8)	19 (13393.5)	15 (6466.47)	NICARAGUA	19 (11370.2)	19 (2151.6)	15 (642.8)
CYPRUS	16 (5899.7)	19 (30.6)	15 (13.07)	NIGERIA	11 (1357.9)	19 (3430.6)	15 (2081.2)
COLOMBIA	19 (433411.8)	19 (26188)	15 (10544.93)	NORWAY	19 (125160)	19 (1327.4)	15 (624)
SOUTH KOREA	19 (31824.1)	19 (434.9)	15 (310.4)	NEW ZEALAND	13 (5766.9)	19 (115.7)	15 (78.07)
IVORY COAST	15 (3911.5)	19 (311.7)	15 (168.67)	NETHERLANDS	19 (4704613.7)	19 (3219.4)	15 (1591.67)
COSTA RICA	19 (79438.9)	19 (369.3)	15 (210.27)	PAKISTAN	10 (124.8)	19 (8533.5)	15 (5826.13)
CROATIA	17 (4312.8)	19 (195.3)	15 (117.8)	PANAMA	19 (123050.8)	19 (382.1)	15 (238.67)
CUBA	19 (47094.6)	19 (8216)	15 (2427.07)	PARAGUAY	18 (13806.9)	19 (8583.2)	15 (4783.33)
DENMARK	19 (253198.3)	19 (762.9)	15 (402.13)	PERU	19 (535663.8)	19 (12815.9)	15 (5412.73)
DOMINICA	1 (0)	19 (66.8)	15 (15.33)	POLAND	19 (405720.5)	19 (5373.8)	15 (2989.33)
ECUADOR	19 (98405.6)	19 (29610.2)	15 (13566.53)	PORTUGAL	19 (1243393.6)	19 (7814.8)	15 (4875.27)
EGYPT	18 (54606)	19 (444.4)	15 (268.4)	UNITED KINGDOM	19 (6741949.7)	19 (22736.1)	15 (9471.33)

THE SAVIOR	19 (47253.3)	19 (916.7)	15 (336.87)	CZECH REPUBLIC	19 (245102.6)	19 (733.6)	15 (390.93)
SLOVENIA	17 (575.7)	19 (137.9)	15 (57.73)	COD	2 (30.3)	19 (177.4)	15 (109.93)
USES	19 (3909515.9)	19 (4124.4)	15 (2630.2)	DRC (ZAIRE)	5 (618.1)	19 (90.4)	15 (60.8)
ESTONIA	11 (1288.2)	19 (186.1)	15 (65.33)	SUN	19 (81052.8)	19 (10261.9)	15 (3393.13)
ETHIOPIA	6 (41.4)	19 (226.1)	15 (45.13)	SVK	17 (10516.9)	19 (582.9)	15 (329.47)
PHILIPPINES	19 (51376.9)	19 (2519.8)	15 (977.07)	ROMANIA	19 (57432.4)	19 (58654.1)	15 (25749.47)
FINLAND	18 (21614.2)	19 (909.5)	15 (362.07)	RUSSIA	19 (107627.3)	19 (6842.8)	15 (2864)
FRANCE	19 (1732079.1)	19 (8082.1)	15 (4497.07)	SENEGAL	16 (1915.3)	19 (5079.8)	15 (2347.87)
GAMBIA	11 (1231.7)	19 (1547.1)	15 (872.47)	SCG	6 (778.1)	19 (365.5)	15 (210)
GEORGIA	4 (92.4)	19 (1171.2)	15 (621.93)	SIERRA LEONE	10 (7556.6)	19 (109.9)	15 (50.6)
GHANA	16 (2991.2)	19 (1499.5)	15 (941.47)	SYRIA	11 (61.1)	19 (476.7)	15 (191.6)
GREECE	19 (203603.1)	19 (397.4)	15 (224.33)	SOUTH AFRICA	19 (42852.9)	19 (202.4)	15 (97.6)
GUATEMALA	19 (63040.1)	19 (719)	15 (337.93)	SWEDEN	19 (134404.6)	19 (1515.2)	15 (813.93)
GUINEA	10 (2407.1)	19 (1042.6)	15 (667.2)	SWITZERLAND	19 (894530.7)	19 (1667.9)	15 (908)
E.G.	13 (234.9)	19 (1712.6)	15 (1118.87)	THAILAND	19 (20200.7)	19 (190.8)	15 (70.13)
GUINEA-BISSAU	2 (457)	19 (608.9)	15 (410.93)	TOGO	11 (1567.4)	19 (47)	15 (26.87)
HONDURAS	19 (7217.9)	19 (4584.3)	15 (1386)	TUNISIA	19 (24618.9)	19 (230.5)	15 (130.87)
HUNGARY	19 (1018940.3)	19 (842.6)	15 (368.27)	TURKEY	19 (527487.4)	19 (477.2)	15 (277.93)
INDIA	19 (53000.5)	19 (3590.9)	15 (1982.8)	UKRAINE	18 (3315.6)	19 (7589)	15 (2925.6)
INDONESIA	19 (3659.8)	19 (173.7)	15 (91.13)	URUGUAY	19 (326925.2)	19 (5148.6)	15 (2571.4)
IRAN	11 (2474.6)	19 (470.7)	15 (231.73)	VENEZUELA	19 (358362.9)	19 (12243.1)	15 (4523.6)
IRAQ	5 (9173.8)	19 (172.1)	15 (86.67)	VIETNAM	11 (762.9)	19 (142.6)	15 (49.87)

Table 2. Descriptive results for the Remittances, received and sent per country. N- Number of years with information, Mean of the results along period and SD standard deviation[3].

Country	N(Mean)		Country	N(Mean)	
	Remittence Received	Remittence Sent		Remittence Received	Remittence Sent
ALBANIA	4 (0)	6 (1,6)	IRLANDA	6 (68,1)	6 (15,5)
GERMANY	6 (1162,2)	6 (990,4)	ISLANDIA	6 (2,8)	6 (3,8)
ANDORRA	6 (228,9)	1 (0)	ISRAEL	6 (7,8)	6 (5)
ANGOLA	4 (0)	6 (0,1)	ITALIA	6 (213,4)	6 (220,2)
SAUDI ARABIA	4 (0)	6 (0,9)	JAPON	6 (14,8)	6 (17,9)
ALGERIA	6 (0,7)	6 (81,9)	JORDANIA	6 (10,7)	6 (12,1)
ARGENTINA	6 (891,9)	6 (180,4)	KAZAJSTAN	4 (0)	6 (0,1)
ARMENIA	4 (0)	6 (23)	KENIA	6 (0,6)	6 (4,2)
AUSTRALIA	6 (132,1)	6 (24)	LETONIA	6 (0,4)	6 (9)
AUSTRIA	6 (27,7)	6 (53,7)	LIBANO	4 (0)	6 (33,1)
BANGLADESH	4 (0)	6 (26,4)	LIBERIA	6 (0,5)	6 (1,6)
BELGIUM	6 (327,9)	6 (1073,4)	LIETCHTENSTEIN	6 (3,1)	1 (0)
BENIN	4 (0)	6 (0,3)	LITUANIA	6 (2,4)	6 (76,4)
BELARUS	4 (0)	6 (2)	LUXEMBURGO	6 (26,2)	6 (43,6)
BOLIVIA	6 (50,9)	6 (346,9)	R.M.	4 (0)	6 (0,4)
BIH	4 (0)	6 (2,6)	MALI	4 (0)	6 (30,8)
BOURKINA_FASO	4 (0)	6 (0,2)	MALTA	6 (0,3)	6 (0,6)
BRAZIL	6 (295,1)	6 (361,3)	MARRUECOS	4 (0)	6 (1727,9)
BULGARIA	6 (6,7)	6 (197,2)	MAURITANIA	6 (1,3)	1 (0)
CAMEROON	4 (0)	6 (3,5)	MEXICO	6 (205,6)	6 (84,2)
GLEN	6 (98,7)	3 (5,3)	MOLDAVIA	4 (0)	6 (40,3)
CHILE	6 (108,9)	6 (4,6)	NEPAL	4 (0)	6 (6)
CHINA	6 (13,9)	6 (992,8)	NICARAGUA	6 (4,5)	6 (24,3)
CYPRUS	6 (1,3)	6 (0,3)	NIGERIA	4 (0)	6 (813,2)
COLOMBIA	6 (46,7)	6 (698,6)	NORUEGA	6 (34,4)	6 (71)
SOUTH KOREA	4 (0)	6 (13,2)	NUEVA ZELANDA	4 (3)	6 (1)
IVORY COAST	4 (0)	6 (1,5)	PAISES BAJOS	6 (164,2)	6 (92,5)
COSTA RICA	6 (12,4)	6 (13,8)	PAKISTAN	4 (0)	6 (173,4)
CROATIA	4 (0)	6 (3,2)	PANAMA	6 (26,9)	6 (15,4)
CUBA	6 (38,5)	1 (0)	PARAGUAY	6 (7,8)	6 (97,5)
DENMARK	6 (40,1)	6 (61,6)	PERU	6 (33,7)	6 (405,1)

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[3] BIH: BOSNIA-HERZEGOVINA, USA: UNITED STATES OF AMERICA, E.G.: EQUATORIAL GUINEA, MKD: REPUBLIC OF MACEDONIA, COD: REPUBLIC OF THE CONGO, DRC (ZAIRE): DEMOCRATIC REPUBLIC OF CONGO (ZAIRE), DOM: DOMINICAN REPUBLIC, SVK: SLOVAK REPUBLIC, SCG: SERBIA AND MONTENEGRO.

DOMINICA	4 (0)	6 (0,4)	POLONIA	6 (24,2)	6 (164,5)
ECUADOR	6 (83,7)	6 (1045,4)	PORTUGAL	6 (142,1)	6 (270,7)
EGYPT	6 (2,2)	6 (19,9)	REINO UNIDO	6 (628,2)	6 (449,9)
THE SAVIOR	6 (4,1)	6 (21,8)	REPUBLICA CHECA	6 (6,2)	6 (44,2)
SLOVENIA	6 (3,3)	6 (4,2)	R.C.	4 (0)	1 (0)
USES	6 (773,7)	6 (80,7)	D.R.C.(ZAIRE)	4 (0)	3 (0)
ESTONIA	6 (0,6)	6 (3,4)	DOM	6 (83,4)	6 (469,2)
ETHIOPIA	4 (0)	6 (1,8)	S.R.	6 (3,2)	6 (27,5)
PHILIPPINES	6 (5,7)	6 (174,3)	RUMANIA	6 (58,9)	6 (939,4)
FINLAND	6 (14,3)	6 (36,1)	RUSIA	6 (5,5)	6 (36,9)
FRANCE	6 (2730,8)	6 (2671)	SENEGAL	4 (0)	6 (187)
GAMBIA	4 (0)	6 (40,4)	SRB/MNE	4 (0)	6 (5,4)
GEORGIA	4 (0)	6 (19,1)	SIERRA LEONA	4 (0)	6 (0,5)
GHANA	4 (0)	6 (10,6)	SIRIA	4 (0)	6 (7,6)
GREECE	6 (0,8)	6 (3,3)	SUDAFRICA	6 (4,4)	6 (3,1)
GUATEMALA	6 (9,1)	6 (34,2)	SUECIA	6 (62,6)	6 (146,9)
GUINEA	6 (0,2)	6 (4,6)	SUIZA	6 (547,4)	6 (407,9)
E.G.	6 (8,1)	1 (0)	TAILANDIA	4 (0)	6 (9,2)
GUINEA-BISSAU	4 (0)	6 (4,9)	TOGO	4 (0)	6 (0,8)
HONDURAS	6 (2,8)	6 (141,3)	TUNEZ	4 (0)	6 (8,7)
HUNGARY	6 (7,6)	6 (52,2)	TURQUIA	6 (12,5)	6 (1,1)
INDIA	4 (0)	6 (177,5)	UCRANIA	6 (0,9)	6 (103,5)
INDONESIA	4 (0)	6 (6,1)	URUGUAY	6 (123,4)	6 (28,6)
IRAN	4 (0)	6 (4,6)	VENEZUELA	6 (539,3)	6 (35)
IRAQ	4 (0)	6 (0,3)	VIETNAM	4 (0)	6 (6,7)

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