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Essays on the Macroeconomic Implications of International Migration

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Η έγκριση διδακτορικής διατριβής από το Τμήμα Διεθνών και Ευρωπαϊκών Σπουδών του Πανεπιστημίου Μακεδονίας, δεν υποδηλώνει την αποδοχή των απόψεων του συγγραφέα (ν. 5343/1932, άρθρο 202, παράγραφος 2).
Δηλώνω υπευθύνως ότι όλα τα στοιχεία σε αυτήν την εργασία τα απέκτησα, τα επεξεργάσθηκα και τα παρουσιάζω σύμφωνα με τους κανόνες και τις αρχές της ακαδημαϊκής δεοντολογίας, καθώς και τους νόμους που διέπουν την έρευνα και την πνευματική ιδιοκτησία. Δηλώνω επίσης υπευθύνως ότι, όπως απαιτείται από αυτούς τους κανόνες, αναφέρομαι και παραπέμπω στις πηγές όλων των στοιχείων που χρησιμοποιώ και τα οποία δεν συνιστούν πρωτότυπη δημιουργία μου.

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To my husband

“The best way to predict the future is to create it”
Willy Brandt (1913-1992)
Former German Chancellor and Nobel Peace Prize Laureate

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Περίληψη

Η παρούσα διδακτορική διατριβή επικεντρώνεται στο να ξεκαθαρίσει, να περιγράψει και να επιβεβαιώσει τις μακροοικονομικές επιπτώσεις της μετανάστευσης σε συγκεκριμένες χώρες προέλευσης και προορισμού μεταναστών. Συγκεκριμένα, επιλέχθηκαν τέσσερις χώρες, η Αλβανία, η Βουλγαρία, η Ρουμανία και η Μολδαβία, συνιστώντας μία ομάδα οικονομιών υπό μετάβαση, που εξετάστηκαν ως χώρες καταγωγής μεταναστών όσον αφορά τον αντίκτυπο που είχαν οι εισροές εμβασμάτων στην κατανάλωση, τις εισαγωγές και τις επενδύσεις τους. Τα εμβάσματα θεωρούνται ως μία από τις σημαντικότερες συνέπειες της μετανάστευσης εξαιτίας της δυνητικής συνεισφοράς τους στην οικονομική ανάπτυξη των αναπτυσσόμενων χωρών. Με βάση τα ευρήματα της οικονομετρικής έρευνας, τα εμβάσματα φαίνεται να έχουν χρηματοδοτήσει τις εισαγωγές σε πολύ μεγάλο βαθμό ενώ ταυτόχρονα είχαν σημαντικό αντίκτυπο τόσο στην κατανάλωση όσο και στις επενδύσεις των υπό εξέταση χωρών. Επιπλέον, η Αλβανία και η Μολδαβία, οι οποίες έχει υποστηριχθεί ότι πάσχουν από την "Ολλανδική Ασθένεια", εξετάστηκαν ως ομάδα χωρών για να προσδιοριστεί εάν οι εισροές εμβασμάτων που ακολούθησαν τις μαζικές μεταναστευτικές εκροές έχουν μακροχρόνια σχέση με την ανατίμηση της πραγματικής συναλλαγματικής ισοτιμίας τους. Τα ευρήματα της οικονομετρικής έρευνας δείχνουν ότι η σχέση μεταξύ της πραγματικής συναλλαγματικής ισοτιμίας και των εισροών εμβασμάτων στην ομάδα των δύο χωρών είναι αρνητική και σημαντική, δίδοντας έμφαση σε μια τάση υποτίμησης παρά ανατίμησης. Η μέθοδος με την οποία εξετάστηκαν τα δεδομένα πάνελ είναι η δυναμική μέθοδος ελαχίστων τετραγώνων εξαιτίας της μικρής χρονικής περιόδου από την αρχή της μετάβασης αυτών των οικονομιών σε οικονομίες της αγοράς και της μη διαθεσιμότητας μεγάλου μεγέθους δείγματος.

Στο δεύτερο μέρος της διατριβής εξετάστηκε η Ελλάδα, ως χώρα υποδοχής μεταναστών, αναζητώντας τη σχέση της μετανάστευσης με την οικονομική ανάπτυξη. Η Ελλάδα από χώρα προέλευσης μεταναστών μεταμορφώθηκε σταδιακά σε χώρα υποδοχής μεταναστών. Εντούτοις, το κενό όσον αφορά τη συμβολή των μεταναστών στην ανάπτυξη της χώρας παραμένει.

Επιπλέον, η δεκαετής οικονομική ύφεση που αντιμετώπισε η χώρα ανέδειξε τη σημασία του αντίκτυπου της αύξησης του ΑΕΠ στην ανεργία των μεταναστών, καθώς πολλοί από τους μετανάστες που είχαν ενταχθεί στην ελληνική κοινωνία επανεξέτασαν τον επαναπατρισμό. Ο στόχος ήταν να αποδειχθεί, αφενός, ο αντίκτυπος της αύξησης του ΑΕΠ στην ανεργία των μεταναστών, που σύμφωνα με τα αποτελέσματα εκτιμάται σε αναλογία 1,56: 1 σε αντίθεση με την αναλογία των γηγενών που εκτιμάται σε 2,62: 1 και αφετέρου τα καθαρά κέρδη της μετανάστευσης για τον εγχώριο πληθυσμό που υπολογίζεται ότι θα μπορούσαν να κυμανθούν από 0,02% έως 0,12% του ΑΕΠ. Επιπροσθέτως, εξετάστηκε η ύπαρξη μακροχρόνιας σχέσης μεταξύ της μετανάστευσης και της ανάπτυξης. Σύμφωνα με τα ευρήματα η αύξηση κατά 10% των μεταναστών που συμμετέχουν στο εργατικό δυναμικό αυξάνει το ΑΕΠ κατά 1,5% προσφέροντας περαιτέρω στοιχεία στην υπάρχουσα βιβλιογραφία ότι η μετανάστευση θα μπορούσε να είναι επωφελής για την οικονομική ανάπτυξη της χώρας υποδοχής. Τέλος, προσδιορίσθηκε η θέση της Ελλάδας μεταξύ των 28 κρατών μελών της ΕΕ στην κατάταξη για την ένταξη των μεταναστών στην αγορά εργασίας αναζητώντας τις αποτελεσματικές πρακτικές ένταξης τους και περιγράφοντας την εξέλιξη των δεικτών ένταξης τους στα 28 κράτη μέλη της ΕΕ μέσα σε μία δεκαετία. Αν και οι Σκανδιναβικές χώρες ή ορισμένες χώρες της Κεντρικής Ευρώπης φαίνεται να εφαρμόζουν μια καινοτόμο πολιτική ένταξης στην αγορά εργασίας, τα αποτελέσματα όσον αφορά τους δείκτες απασχόλησης, ανεργίας, δραστηριότητας και αυτοαπασχόλησης των μεταναστών στις χώρες αυτές δεν το επιβεβαιώνουν. Από την άλλη πλευρά, οι Μεσογειακές χώρες, που αντιμετώπισαν διάφορα οικονομικά προβλήματα, ενέτασσαν με επιτυχία τον μεταναστευτικό πληθυσμό στις κοινωνίες τους μέχρι το αποκορύφωμα της ύφεσης. Για το σκοπό της ανάλυσης χρησιμοποιήθηκαν διάφορες προσεγγίσεις στο δεύτερο μέρος της εργασίας. Εκτός από την ανάλυση διαχρονικών δεδομένων, η δυναμική μέθοδος ελαχίστων τετραγώνων χρησιμοποιήθηκε για να καθορίσει τη σχέση μετανάστευσης και ανάπτυξης στην Ελλάδα. Η επίδραση της αύξησης του ΑΕΠ στην ανεργία των μεταναστών εξετάσθηκε με τη χρήση ενός αυτοπαλίνδρομου υποδείγματος κατανεμημένων χρονικών υστερήσεων και η κατάταξη των κρατών μελών της ΕΕ28 για την

ένταξη των μεταναστών στην αγορά εργασίας προήλθε με τη μέθοδο της πολυκριτηριακής ανάλυσης αποφάσεων «PROMETHEE».

Abstract

This thesis focuses on illuminating, describing and validating the macroeconomic impact of migration in specific countries of origin and destination of migrants. In particular, four transition countries which used to be under the communist sphere, namely Albania, Bulgaria, Romania and Moldova were selected to form a panel of developing transition economies that were examined with regard to the impact of the remittances inflows on their consumption, imports and investment patterns. The economic theory identifies remittances as the most important implication of migration on the basis of their potential role for the economic development of the emigration-remittance receiving countries. The findings of the econometric investigation support that remittances have financed these countries' imports to a very large extent but they have had a substantial impact on both their consumption and their investment patterns as well. Moreover, the two small transition countries in the panel, namely Albania and Moldova, which have been considered to suffer from the "Dutch Disease" effect, were examined to demonstrate whether remittances inflows which followed the massive migrant outflows have a long run relationship with the appreciation of the real exchange rate. The findings of the econometric investigation indicate that the relationship between the real effective exchange rate and the remittances inflows in the panel of the two countries is negative and significant giving prominence to a depreciation trend rather than an appreciation one. The aforementioned panels have been examined with the dynamic ordinary least squares approach to cointegration due to the short time period since the beginning of transition of these economies to market ones and the unavailability of a large sample size.

In the second part of the thesis, Greece, as a host country of migrants, is tested, searching for the relationship between migration and economic growth. Greece used to be a sending country of migrants, but experienced two massive migrant inflows which transformed it to a receiving country of migrants as well. However, the void with regard to the immigrants' contribution to the country's development remains. Moreover, the ten year economic recession the country

faced spotlighted the importance of the impact of GDP growth on the unemployment of immigrants, since many of them reconsidered repatriation. The target was to demonstrate on the one hand the impact of GDP growth on the immigrants' unemployment which was estimated on the order of 1.56:1 contrary to the 2.62:1 natives' ratio and on the other hand the net gains of immigration for the native population which according to the findings could have reached a level between 0.02% to 0.12% of GDP. In addition, the long run estimator of immigration in the production function was searched for, concluding that an increase of 10% in the immigrant labour force boosts GDP growth by 1,5%. Last but not least, Greece's place in the 28 EU member states' ranking for the immigrants' labour market integration has been unveiled while portraying effective immigrant labour market integration practices and describing the evolution of immigrants' labour market integration indicators in the EU 28 member states during a decade. Although the Nordic or some Central European countries seem to implement an innovative labour market integration policy, the outcomes as regards the employment, unemployment, activity and self-employment indicators of immigrants in these countries do not follow. On the other hand, the Mediterranean countries, dealing with various economic problems, used to include the immigrant population in their societies quite successfully until the peak of the recession. Several approaches were utilized for the purpose of the analysis in the second part of the thesis. Apart from the longitudinal statistical data analysis, the dynamic ordinary least squares method determined the relationship between immigration and growth in Greece. The effect of growth on the immigrants' unemployment was examined using an autoregressive distributed lag model and the immigrants' labour market integration ranking of the EU28 member states was produced by the multi-criteria decision analysis method "Preference Ranking Organization Method for Enrichment Evaluations".

Chapter 1. Introduction

"It is a good rule of thumb to ask of a
country: are people trying to get into it or out of it? "
(Tony Blair's Speech, 2003).

Back in 1990 the international migrant stock was estimated at 152.5 million people while in 2017 the number increased in 257.7 million (United Nations Department of Economic and Social Affairs Population Division 2017). The value of the remittances paid from migrants to their countries of origin increased from 65.2 billion to 412.3 billion USD accordingly (World Bank 2019). Migration remains a global challenge in need of a global solution so that it becomes a success. Hence, the management of migration is an issue bothering most states, since they experience it either from the perspective of the country of migrants' origin, the transit country or the host country.

Migration is an interdisciplinary field of study combining history, sociology, economics, law and anthropology as well as various other sciences. The economic impact of migration on the countries involved in the migration process is considered as one of its most debated aspects. Even more, its macroeconomic consequences and its relationship with other macroeconomic variables, especially in the case of the developing countries, constitute an intense issue for the scholars of migration. Nevertheless, there is no single coherent migration theory. Different case studies using various approaches provide with diverse and controversial evidence on the macroeconomic effects of migration. As a result, the power of migration remains an unknown territory for the policymakers. As Antonio Guterres (2018), Secretary-General of the United Nations mentioned: "Migration powers economic growth, reduces inequalities, and connects diverse societies. Yet it is also a source of political tensions and human tragedies."

This thesis contributes to the general discussion on the macroeconomic consequences of migration. In particular, the aim of this thesis is to illuminate

the developmental potentials of migration from the perspective of the country of origin of migrants and the host country as well. In particular, four transition countries which used to be under the communist sphere, namely Albania, Bulgaria, Romania and Moldova have been selected to form a panel of developing transition economies that are going to be examined as countries of migrants' origin with regard to the impact of migration and especially remittances on them. Two of the four countries are small in size with large emigrant outflows and massive remittances inflows which constitute a great part of their GDP. The other two managed to overcome most of their transition obstacles and join the European Union. So, the countries forming the panel share some homogeneous and some heterogeneous features which are expected to provide with interesting and valuable econometric results that could enrich the knowledge on the migration's impact on the countries of the migrants' origin.

In detail, the focus of the first part of the thesis will be set on the impact of the remittances inflows on the consumption, imports and investment patterns for a panel of the four aforementioned transition economies. The economic theory identifies remittances as the most important implication of migration on the basis of their potential role for the economic development of the emigration-remittance receiving countries. The research on whether remittances are actually related in the long run to the household consumption expenditure, the imports of goods and services and the gross capital formation of the aforementioned transition countries is going to provide some feedback on their use and the importance of the implementation of developmental policies that could direct them towards growth enhancing productive activities. Moreover, the two small transition countries in the panel, namely Albania and Moldova, which have been considered to suffer from the "Dutch Disease" effect, will be examined to demonstrate whether remittances inflows which followed the massive migrant outflows have a long run relationship with the appreciation of the real effective exchange rate.

Hence, a specific gap related to the effect of the remittances in these countries as a panel case study will be covered. The panel is going to be

examined with the dynamic ordinary least squares approach to cointegration due to the short time period since the beginning of transition of these economies to market ones and the unavailability of a large sample size. The method provides with pooled, pooled weighted and grouped estimation. The pooled estimation performs the standard DOLS on the pooled sample of the data. The pooled weighted allows for heterogeneity by using cross-section specific estimates, while the grouped mean estimations computes the cross-section average of the individual cross-section DOLS estimates. An advantage of this method is that it doesn't require exogeneity assumptions or the use of instruments but rather produces unbiased estimates for variables that cointegrate even with endogenous regressors. Moreover, the DOLS estimator is robust when variables that do not form part of the cointegration relationship are omitted.

In the second part of the thesis, Greece, as a host country of migrants, is going to be tested, searching for the relationship between migration and economic growth. The target is to demonstrate on the one hand the impact of GDP growth on the immigrants' unemployment, and on the other hand the net gains of immigration on the native population and the long run estimators of the immigrant labour force in the production function. Greece used to be a sending country of migrants, but experienced two massive migrant inflows which transformed it to a receiving country of migrants as well. However, the void with regard to the immigrants' contribution to the country's development remains. Moreover, the ten year economic recession the country faced spotlighted the importance of the impact of GDP growth on the unemployment of immigrants, since many of them reconsidered repatriation. Last but not least, Greece's place in the 28 EU member states' ranking for immigrants' labour market integration is going to be unveiled while portraying effective immigrant labour market integration practices and describing the evolution of immigrants' labour market integration indicators in the EU 28 member states during a decade.

In the second part of the thesis, several approaches are going to be utilized for the purpose of the analysis. Apart from analysing the longitudinal statistical data, the dynamic ordinary least squares method will determine the

relationship between immigration and growth in Greece. The effect of growth on the immigrants' unemployment will be searched with an autoregressive distributed lag model which is more efficient with a small sample size and it doesn't require stationarity pretesting. The immigrants' labour market integration ranking of the EU 28 member states is going to be produced by the multi-criteria decision analysis method "Preference Ranking Organization Method for Enrichment Evaluations". The decision maker, using PROMETHEE, ends up with a final ranking of the selected alternatives, which are based on the computation of preference degrees, and he/she has a single choice or a choice over alternatives as to the best solution of the set group of alternatives and their preference degrees.

The main research questions which my intention is to answer in this thesis are summarized as follows:

- Do remittances affect the consumption patterns in the panel of the receiving economies of Albania, Bulgaria, Romania and Moldova?
- Have remittances contributed positively in the increase of imports in the aforementioned countries?
- Are remittances spent on productive investments or they are exclusively channeled to consumption expenditures by Albanian, Bulgarian, Romanian and Moldovan recipients?
- Have remittances harmed the receiving economies of Albania and Moldova with the "Dutch Disease" phenomenon?
- Does immigration affect the long run economic growth in Greece?
- Does economic growth affect immigration through unemployment in Greece?
- What is the current status in the effectiveness of the labour market integration policies in the EU member states?

By collecting and synthesizing the various contributions to the issue and by offering relevant quantitative evidence on each of the research questions, the contribution of this thesis is outlined as follows:

- it extends the current literature on the impact of migration and remittances and their relationship with other macroeconomic variables,
- it merges in a panel case study two small with two bigger transition countries providing with pooled and grouped results,
- it introduces estimators for the aforementioned relationships based on econometric approaches that haven't been widely utilized in such case studies,
- it stimulates further research and warms up the debate on specific beneficial and harmful consequences of migration and remittances,
- it supports the policymakers in the planning and implementation of the appropriate policies to capitalise on migration and remittances,
- it describes the current situation with regard to migration and remittances in specific countries,
- it synthesizes various good practices in the labour market integration of migrants and assesses the effectiveness of EU member states towards their implementation.

The rest of the thesis is divided in six chapters. In the second chapter, the impact of remittances on three basic macroeconomic variables namely consumption, investment and imports for a panel of 4 transition economies, Romania, Bulgaria, Albania and Moldova, is examined in order to define the spending patterns and illuminate whether these transition economies implement policies which capitalise on the remittances inflows. During the initial (and most painful) phase of the transition of these economies to market ones (1989-1994), four million people moved from Eastern to Western Europe (Kosher and Lutz, 1998, p 1). As a result, migration determines a series of factors directly or indirectly related to their economic growth, among which the inflow of foreign exchange in the form of emigrants' remittances. The inflow of emigrants' remittances is considered as the main compensation for the emigration country in return for the loss of a considerable part of its labour force and its human capital. The econometric analysis is based on the panel dynamic ordinary least

squares approach which provides with pooled, pooled weighted and grouped estimates for the remittances coefficient.

The third chapter deals with the applicability of the "Dutch Disease" for a panel of two small transition economies under a free floating exchange rate regime, namely Albania and Moldova. The "Dutch Disease" is an economic phenomenon related to the real exchange rate appreciation and the loss of competitiveness of a country receiving large capital inflows or discovering a significant amount of natural resources. Since many transition countries have been recipients of remittances, this chapter presents specifically the remittances – "Dutch Disease" hypothesis relationship in the countries under transition.

The fourth chapter focuses on displaying the potential gains of immigration for Greece by presenting the "immigration surplus", that is the economic benefits due to immigration from the perspective of the host country. A neoclassical growth model is used assuming a competitive, market-clearing framework to measure the impact of immigrants in natives' earnings during the last twenty years. Moreover, my aim is to explore whether there is a long run relationship between immigration and growth in Greece and estimate it using the dynamic ordinary least squares method.

In the fifth chapter, the development of employment and unemployment levels in Greece by citizenship and by sector of economic activity is presented trying to answer whether immigrants have been more flexible and consequently less vulnerable to changes in the labour market or less competitive and more vulnerable to lose their jobs. Furthermore, Okun's law validity in the case of the native and the immigrant population is tested to relate immigration with growth in Greece.

The sixth section is dedicated to give prominence to the various measures identified in policy documents as good practices towards an effective labour market integration of immigrants and unveil the labour market integration outcomes of the immigrant population in the 28 EU member states during a decade (2008-2017), emphasizing on the position of Greece. The results of the PROMETHEE multi-criteria analysis method combined with the identified good practices implemented for the labour market integration of third-

country nationals in each EU member state, reveal the efficiency of the various approaches attempted to address the issue and illustrate the challenges that have arisen for Greece.

The final chapter sums up the findings of the thesis and forms the basic conclusions stimulating further research on these issues.

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Chapter 2. On the Macroeconomic Implications of Emigrants' Remittances: The Case of Romania, Bulgaria, Albania and Moldova

Abstract

The process of transition in the case of the Balkan and the Eastern European economies was accompanied by large scale emigration. The employment of a considerable part of their labour force abroad was followed by a massive inflow of remittances. Remittances are considered as the basic gain of migration for the emigration countries and their main "compensation" for losing (temporarily or more permanently) a part of their labour force. Whether remittances contribute to the economic development of the country receiving them depends on how they are used, that is which activities they finance. Their exclusive use for consumption and imports for example is considered less development-stimulating than their use for financing productive investments. This chapter investigates the impact of remittances on three basic macroeconomic variables namely consumption, investment and imports for a panel of 4 transition economies Romania, Bulgaria, Albania and Moldova. The econometric analysis is based on the panel dynamic ordinary least squares approach which provides with pooled, pooled weighted and grouped estimates for the remittances coefficient.

Key words: remittances, migration, macroeconomic impact, Albania, Romania, Bulgaria, Moldova, DOLS, panel data

2.1 Introduction

Emigration and remittances are hot issues in the international research literature, especially after the outburst of emigration flows that followed the developments in Eastern Europe in the late 1980s. The collapse of the Eastern European economies followed the breakdown of the socialist system and led to negative growth rates and, in some cases, a decline of up to 40% in their GDP. Consequently, unemployment increased dramatically and along with the poor prospects for economic recovery at the time, it led to enormous pressures for large-scale emigration from these countries (Castles and Miller 1998, 105).

During the initial phase of transition from the socialist system to market economies (1989-1994), four million people moved from Eastern to Western Europe (Kosher and Lutz 1998, 1). Almost all the Eastern European countries had a negative migration balance (inflows minus outflows of migrants) during the 1990s. Albania for example lost one third of its labour force and Bulgaria one tenth of its population. Other countries, including those that emerged from the breakdown of the Soviet Union, as well as Romania and Poland, also contributed considerably to the intra-European migration of that period. On the other hand, Germany, Austria, Greece and Italy were the ones to accept the main bulk of these movements (Kotzamanis 2000, 137-138).

Emigration continues to be a very challenging issue for the developing countries, since it determines a series of factors directly or indirectly related to their economic growth such as the inflow of foreign exchange in the form of emigrants' remittances. Although there have been almost thirty years after the beginning of the transition process, there are still some Balkan and Eastern European countries which continue to rely on the remittances inflows and have not been able to capitalise on them in order to develop their economies. For example, Albania and Moldova appear on the top of the remittances recipients' list but they remain between the poorest countries in Europe.

Economic theory identifies remittances as the most important implication of migration on the basis of their potential positive impact on the economic development of the countries of the migrants' origin. The inflow of emigrants' remittances is considered as the main compensation for the emigration country in return for the loss of a considerable part of its labour force and its human capital upon which it had invested. This is the main reason why remittances are considered even more important than the foreign aid for the alleviation of domestic poverty in the developing countries (Nikas 1991). Furthermore, remittances have another important feature, namely their counter-cyclical nature, in the sense that they are less vulnerable to economic fluctuations than other sources of external financing for developing countries such as the foreign direct investment or the official development aid (Buch and Kuckulenz 2004).

The inflow of remittances affects the developing countries' economies considerably and there are cases in which these amounts of money represent the main source of income. Moreover, they are sources of the foreign exchange developing countries desperately need in order to build reserves in a strong foreign currency. These reserves are essential for financing their imports and supporting the capacity of their banks to provide loans. Hence, remittances could offer a lot to the economic development and growth of the countries that receive them and this is the main reason they have recently attracted so much attention as a subject of the international research literature.

Albania, Moldova, Bulgaria and Romania have been major origins of the migration flow which characterized the process of transition and major destinations for the consequent remittances flows. A clear indication of the size and the relative importance of remittances for these countries is that according to the World Bank as depicted in Table 1, remittances as a percentage of GDP reached 8.2% for Bulgaria, 2% for Romania, 28% (the size of a key sector such as manufacturing) for Albania and 34,5% for Moldova. The basic question still

is how these amounts of money were used in the receiving countries and this is what this chapter aims to examine.

In detail, the purpose of this chapter is to examine and compare the impact of remittances on three key sectors of the economy, consumption, imports and investment, in these countries, so as to map the direction and the use of these financial inflows. The analysis in the following paragraphs is organised as follows: First, the historical background on emigration from the countries under examination and the remittance behavior of the emigrants is introduced. Then, a theoretical approach on the potential contribution of remittances to the economic development of the receiving economies follows. Upon that, the main economic indicators, the characteristics of the remittances inflows as well as their contribution in the four aforementioned receiving economies is fully analysed. The econometric investigation tests the hypotheses on the relationship of remittances with some key macroeconomic variables. The findings of the empirical part serve as the basis for the policy recommendations and the conclusions.

2.2 Migration History and Remittance Behavior

The postwar history of Albania and Moldova is marked by the Communist rule. Moldova was part of the Soviet Union while Albania was its ally. After the fall of the communist regime, these countries found themselves in a complete decomposition with economic stagnation, poverty and unemployment pushing people to emigrate.

Albania was a unique case of a socialist state due to its geographical position, with no borders with other socialist allies. Its emigration history is long

and starts even from the 15th century continuing with the outburst of 1990s, when after the fall of the Iron Curtain about 250,000 Albanians left their country (King et al. 2006, 413). Moreover, following the pyramid scheme's failure (De Zwager et al. 2005, 9-10) and the Kosovo crisis, the number of emigrants exceeded one million people (King et al. 2006, 413). Given that the population of this country is almost three million people, the Albanian emigration is considered one of the largest ever in relative terms.

Statistically, the majority of emigrants from Albania have been male, Muslims, married, educated with Albanian ethnicity (Gedeshi et al. 2003, 28). According to Arrehag et al. (2006, 397), the males have been young in age and they have come from urban as well as rural areas, while women have been slightly older and they have come from urban areas. The Albanian emigration was characterized as intense, dynamically evolving, with a lot of movements from and towards the country and irregular or illegal from the perspective of the the host countries (King and Vullnetari 2009, 21). The main countries of destination for the Albanian emigrants have been Greece and Italy (King et al. 2006, 413).

Greece and Italy have been the countries from which the higher amounts of remittances have been sent to Albania. The senders used to be mostly male in gender. The size of the remittances has been identified to be affected by the personal features of the emigrants but also by factors inherent to the countries and the economies involved in the migration process. In particular, the size of the emigrant population and other features such as the age of the emigrants, their civil status, their qualifications, their legal status, the family reunification prospect and the place of residence of the emigrant population have defined the amount of the remittances Albania received. For example, the emigrants in steady jobs remit less money than those in unsteady ones, while the deprivation of the family relatives does not affect the size of the remittances (Lianos and Cavounidis 2008, 137). In addition, the labour conditions in the host country, the speed and the safety of money transfers, the political, economic and social

situation in the country of origin and in the country of destination as well as the type of emigration (temporary, permanent, circular) have all also influenced the size of the financial transfers of this kind (Gedeshi 2002, 52). The performance of the domestic banking sector which usually leads to higher remittances when it is low, the increasing international integration and the better quality of institutions which help the inflow of monetary transfers, have also played a role in the remittances sent to Albania (Schrooten 2006, 24). As Tsitouras et al. (2018) suggest building effective institutions should be part of the regulatory reform of the governments in post-communist countries to achieve their goal of a long run economic growth.

Moldova, due to its complete dependence on Russia (Pantiru et al. 2007, 4) before the breakdown of the Soviet Union and its geographical position among other Soviet states, is, even more than Albania, a typical case of emigration country. Moldova faced a sustained recession during the 1990s when poverty, unemployment, corruption and underdevelopment pushed people to emigrate. The sharp decline in its GDP in the late 1990s, its few natural resources and its trade dependence due to the energy imports from Russia, made Moldova the poorest country in Europe (Borodak 2007, 3). Moreover, the 1998 Russian economic crisis affected deeply the Moldovan economy, since 60% of its exports used to be absorbed by Russia (Pantiru et al. 2007, 4). As a result, the Moldovan government had to find alternative trade partners. It was also harsh for the government to overcome the conflicts with the separatist province of Transnistria, because it lost control over 55% of the industry and 11% of the population who lived there (Munteanu 2005, 41). Despite the weak recovery of the economy, the main motive for emigration persisted. In 1998, 80% of the Moldovans used to live below the poverty threshold (Pantiru et al. 2007, 5). By the late 1990s, it was clear that remittances were the main, if not the only, mechanism for poverty alleviation in the country (Marandici 2008, 1).

Moldova's emigration has been mostly seasonal and the main group of migrants as well as remittance senders have been temporary ones (Hagen-

Zanker and Siegel 2008, 3). The latter remit 30% larger amounts than the permanent ones (Pinger 2009, 167). The majority of the emigrants have been male in gender but the females send larger amounts to their country of origin (Hagen-Zanker and Siegel 2008, 13). Most of the males have been married, young in age and they have had secondary education (Görlich and Trebesch 2008, 116-117).

The largest amounts of the remittances in Moldova have come from the European countries while the origin of the smallest ones is the Commonwealth of Independent States (CIS), where most of the temporary migrants have headed for. In fact, the construction sector of the CIS absorbs a significant part of the temporary migrants in the region (Luecke et al. 2009, 22). According to Marandici (2008, 2), migrants from the CIS send larger portions of their income back home. It has been suggested that the migration towards the CIS is needs-driven, while the migrants that choose to go to the European countries look for better employment opportunities (IOM and SIDA 2007a, 9). This, as well as the migration cost, partially explains why the better educated and richer migrants choose European destinations while the less educated and poorer ones or the heads of the households head for the CIS and mostly for Russia (IOM and SIDA 2007b, 17).

Bulgaria and Romania have been found after 1945 in the soviet influence sphere. They were among the top five countries of origin of the migrants in the EU (SOPEMI 2006). With regard to Bulgaria, the fall of the Bulgarian communist regime in 1989 triggered 218,000 emigrants to leave the country heading mainly towards Turkey (Markova 2010). The political and economic crisis (1996 inflation rate: 310.8%) that followed, defined by the growing unemployment rates and the deteriorating GDP growth rates, pushed thousands of Bulgarians to search for better employment opportunities abroad. Massive emigration from the ethnically mixed regions led to the depopulation of the regions in the South and the West of the country (Markova 2006). During

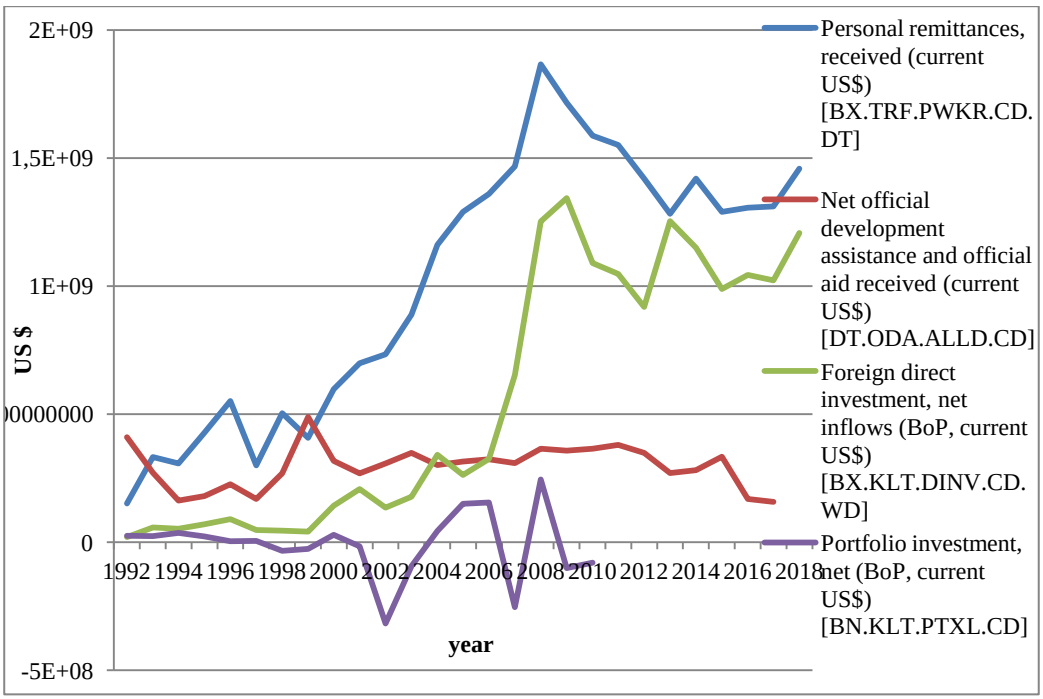
1996 and 2011 the population of Bulgaria was reduced by 6% and 1/3 of this decrease was owed to emigration (National Statistical Institute 2004).

Bulgaria apart from the low-skilled emigration faced a brain drain as well, since 50-60% of the emigrants were high-skilled (Tomiuc 2002). Women and urban environment emigrants have consisted the main part of the emigrant population (Haller et al. 2018). In spite of the accession of Bulgaria in the European Union in 2007, Bulgaria remains one of the poorest countries in the European Union. However, the EU membership changed the Bulgarian migration patterns towards the temporary and seasonal migration which is usually undocumented or semi-documented (Markova 2010). Remittances have consistently increased in Bulgaria reaching over 8% of its GDP including only the official money transfers. The seasonal and undocumented migrants seem to remit more and more often, while the official legal status changes the remitting behavior of the Bulgarian emigrants. Moreover, research evidence supports that female Bulgarian emigrants remit more than the males (Markova 2010).

The Romanian migration has been characterized by self-organization. Apart from the first migratory outflows of the Romanian and ethnic minorities in the early 1990s, the restructuring of the Romanian economy in 1997 pushed also the natives to leave the country. The main destination for the Romanians in the late 1990s was Italy, where more than half of the Romanian immigrant population still remains. Moreover, the EU accession increased the migratory outflows towards the EU host countries (Horváth and Gabriel Anghel 2009). A large share of the temporary emigration has been made up by the short-term circular migration (Roman et al. 2010) and there has been an increasing tendency towards the female and young migration over the years (Roman and Voicu 2010). Residents of the urban areas that migrated exceeded those that came from the rural areas (Haller et al. 2018). As far as the remittances inflows are concerned, Romania received the largest amount in the European Union in 2008 according to the World Bank statistical data (World Bank 2011).

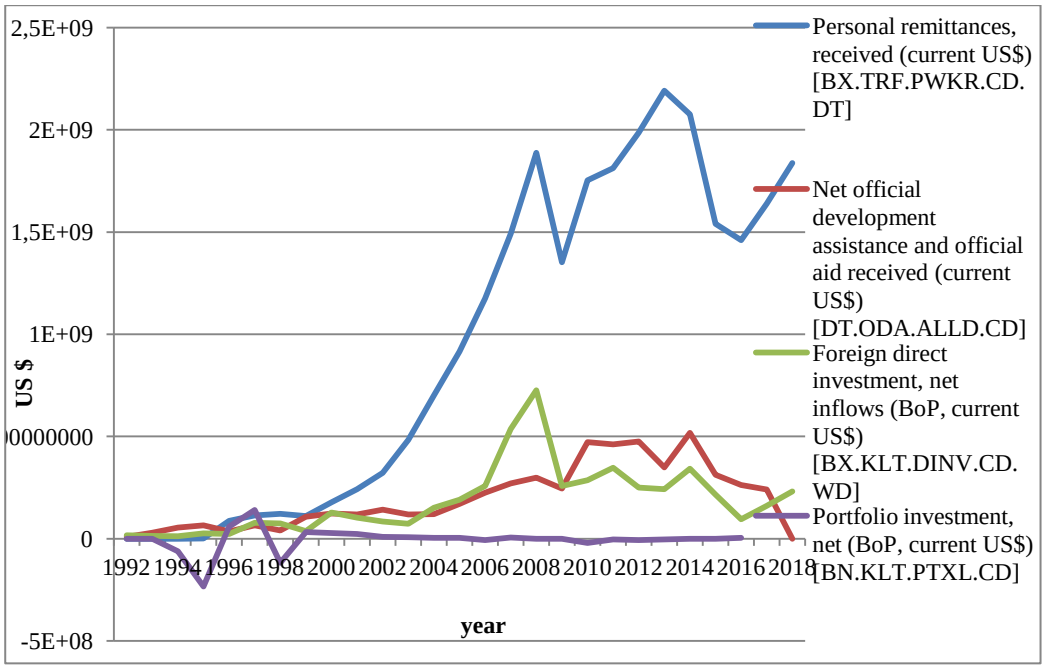
The following graphs which depict the inflows of the remittances, the official development assistance and aid, the foreign direct investment and the portfolio investment in the countries under examination, are indicative of the importance and the magnitude of the remittances compared to the other financial flows. Particularly in the two small states of Albania and Moldova, the sum of the remittances used to exceed by far the other inflows, while in Bulgaria and Romania, the remittances inflows were coming second in size after the foreign direct investment flows.

Figure 1. Financial Flows in Albania (1992-2018)



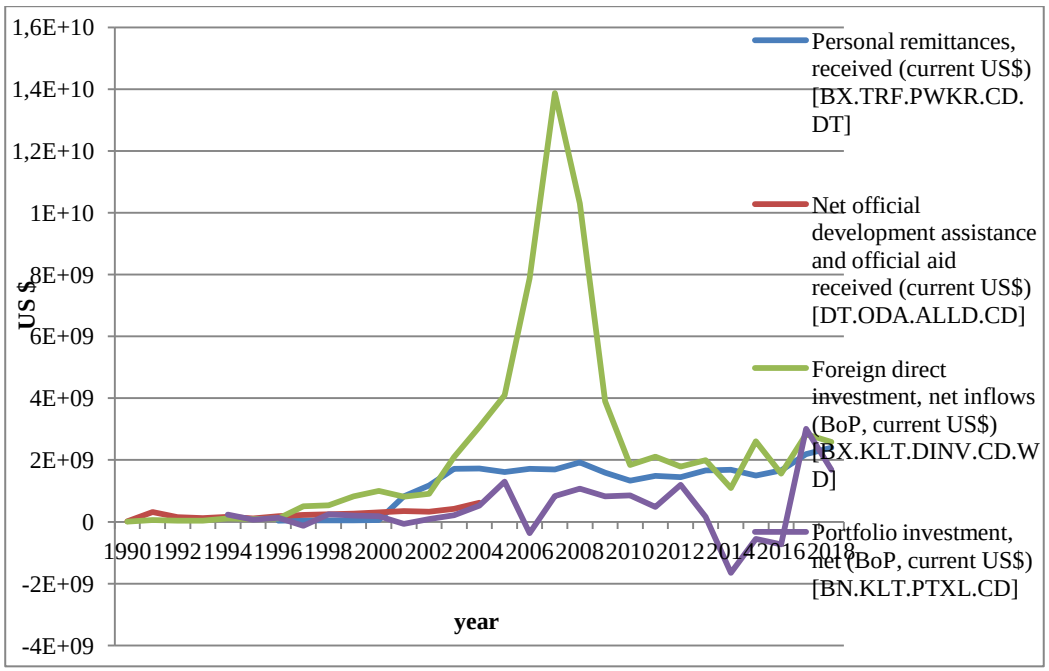
Source: World Bank 2019

Figure 2. Financial Flows in Moldova (1992-2018)



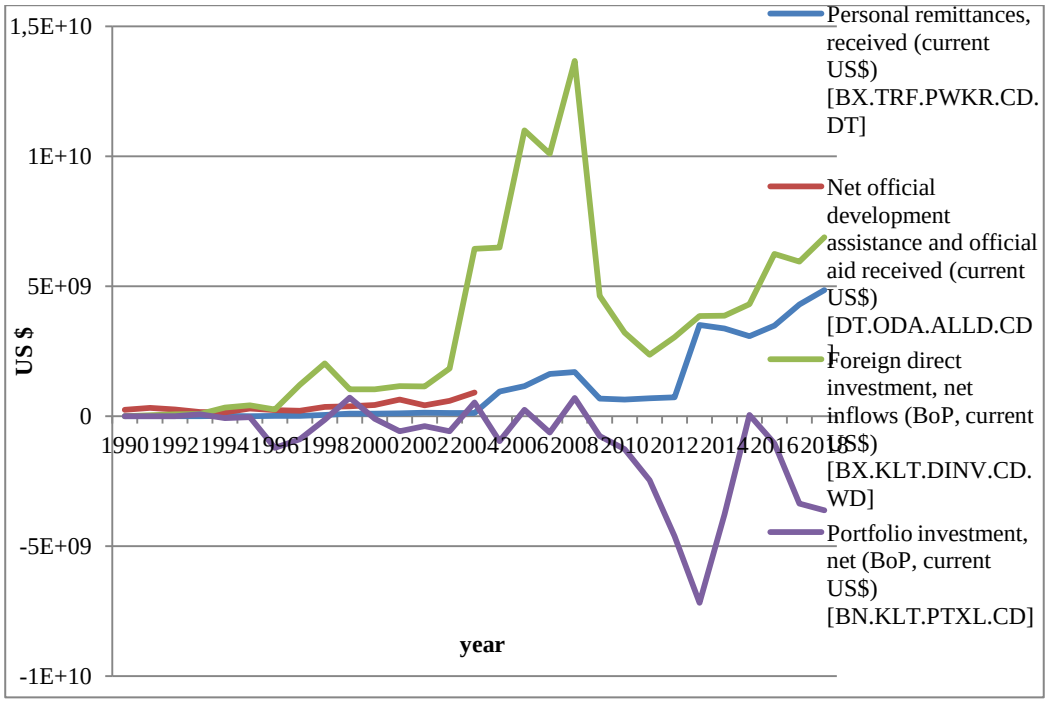
Source: World Bank 2019

Figure 3. Financial Flows in Bulgaria (1990- 2018)



Source: World Bank 2019

Figure 4. Financial Flows in Romania (1990-2018)



Source: World Bank 2019

2.3 Remittances and Economic Development: A Theoretical Approach

There is a lot of literature dedicated to the remittance recipients' spending patterns, the positive and the negative impact of the remittances from a microeconomic and a macroeconomic point of view. Altruism, exchange motives, strategic ones, insurance purposes or moral hazard issues, investment targets, inheritance reasons or a mixture of the above have been identified as the most significant motives to remit (Rapoport and Docquier 2006, 1143-1170).

Whether the overall assessment of the economic consequences of migration provides a positive or a negative sign for the countries involved

largely depends on the remittances and how the emigrants choose to use their savings. Remittances represent a net gain for the receiving countries (Nikas and King 2005, 242; Bourguignon et al. 2009, 1) similar to the development assistance. In fact, on many occasions, remittances proved to be the solution to the problem described by the "dual gap model". They are necessary that is, for the covering of the Balance of Payments deficit when capital goods are imported or when there are no sufficient savings for the financing of investment in order to achieve economic development (Nikas and King 2005, 242). According to Olesen (2002, 139-141), they constitute one of the elements in the development equation, along with the foreign direct investment, the trade liberalization, the aid and the improved governance.

The inflow of remittances increases the supply of foreign currency and reduces the pressures imposed by the trade deficit of the less developed countries. Their contribution to the receiving economies is more evident when estimating them as a percentage of the total international payments, the GDP or the inflows of foreign currency (Bracking 2003, 635). On the E.U. level for example, they exceed by far the private capital flows, the foreign direct investment that is, and the official development aid representing the main source of foreign financing for many developing countries (Eurostat 2007, 7).

Remittances portray additional advantages compared to the other sources of financing. According to King et al. (2006, 11), remittances are more stable than the private capital flows, less vulnerable to the economic cyclical fluctuations and more widely distributed than the external aid. Furthermore the remittance multiplier is greater than the exports one, especially if the emigrant used to be unemployed in his country of origin (Nikas 1991, 138).

The government's budget and consequently the general public are also benefited by the remittances inflows because of the higher tax revenues and government spending that result from the higher tax collections on imports and the higher real wages (Luecke et al. 2009, 40). The national savings are enhanced while the public debt is served due to the appreciation of the real

exchange rate (Culiuc 2006, 8). The country's creditworthiness for external borrowing is favored (Sharma 2010, 559-560) enabling it to borrow money at lower interest rates (European Social Watch Report 2009, 11). In addition, when countries receive remittances, it is easier to sustain higher fiscal deficits (Ghencea and Gudumac 2004, 27). Remittances also increase the stock of international reserves and promote the financial stability by reducing the possibility of current account reversals, especially when they reach 3-4% of GDP (Bugamelli and Paterno 2009, 1821).

Remittances' recipients increase their savings through these financial inflows. As long as they use the bank system and they hold a bank account, they can also contribute to the financial sector development (Rios Avila and Schlarb 2008, 17) and provide some relief from the financial constraints (Luecke et al. 2009, 31). Remittances, that is, are positively associated with the bank deposits and credit (Aggarwal et al. 2010, 8). They play an insurance or risk avoidance role, especially in countries with a less developed financial sector and even more, in the case when the private credit ratio exceeds 20% of GDP and remittances exceed 6% of it (Combes and Ebeke 2010, 11).

The decision on the use of the remittances is part of the wider life-cycle considerations (Nikas and King 2005, 241) and immigrants face the dilemma of accumulating savings or purchasing consumer or capital goods. In essence, assuming that savings could be seen as retarded consumption or future investment, an emigrant is expected to decide how he/she will use his/her savings, spending them on consumption or investment. At this point, it is noteworthy to mention that an important share of the remittances covers the migration costs, that is the loans migrants use to pay for their transport, as well as their first expenses (Hagen-Zanker and Siegel 2008, 30). Furthermore, they usually fund the migration costs of other family members (Ghencea and Gudumac 2004, 64).

Gallina (2006, 7), investigating the emigration from the Mediterranean countries, found that the lack of infrastructure and of access to financing and the

absence of a developed market, play a crucial role on the decision to invest. If the motives are insufficient and the economic institutions weak, remittances might not substantially benefit the receiving country. Turkey is reported in the literature as a country quite successful in establishing an institutional framework that proved to be very effective in attracting and making the best out of the remittances received (mainly from Germany).

Straubhaar (1985) concluded that only under specific circumstances, remittances provide substantial benefits for the balance of payments and the output produced by a country. He related the potential impact on the GDP growth of the remittance receiving country to its overall level of development. According to his findings, the impact of remittances on GDP is substantial only for the less developed emigration/remittance receiving countries. What is more important though, is the relationship between remittances and the capital returns. The lower these returns are (for example in the case of the less developed countries), the faster the country develops and converges to the developed ones as capital inputs increase due to the inflow of remittances (Pradhan et al. 2008, 501).

The contribution of remittances to the economic development of the receiving countries depends on the kind of consumption they finance, that is whether they finance the purchase of domestic or imported goods, durables or non-durables, necessities or luxury goods. In other words, it depends on the extent the productive sector of the receiving country's economy benefits from their inflow. It has been reported that the capital inflows and the domestic savings are negatively related. This could be interpreted as a sign that the foreign aid, even in the form of remittances, substitutes investment (Glytsos 2002, 14).

The financial markets contribute significantly to the channelling of the remittances towards financing new productive activities by reducing the transaction costs and the substitution effect (Giuliano and Ruiz-Arranz 2009, 4). It has been found that the positive implications of remittances on development

are more important for countries with a primitive or well structured financial system and less substantial for countries at an intermediate level (Catrinescu et al. 2009, 92).

The counter argument is that no matter how remittances are spent, there is always a positive outcome. In particular, Chami et al. (2003, 8-9) examined the effects of the remittances and making specific assumptions concluded that the bulk of remittances is spent on consumption and a smaller part is saved or invested thus used for productive purposes. Nevertheless, even the remittances spent on consumption can improve the national economy provided that they are spent on domestic rather than imported goods.

Through the consumption pattern, development and growth can be promoted, because even if migrants and their families do not choose to get involved with entrepreneurship, others may do, due to the increased demand (Mosneaga 2007, 14). Moreover, through the multiplier effect, part of the increased disposable income is spent on the consumption of domestically provided goods and services, instead of the imported ones (Culiuc 2006, 9). Thus, it can be said that remittances represent a large share of the private consumption expenditure motivated GDP growth (Pinger 2009, 146). They also reduce the household consumption instability by dampening the effects of other sources responsible for it, such as the natural resources or agricultural shocks.

Regarding the use of the remittances for investments, one should take into account that according to Mundaca (2008, 25-26) the channeling of the remittances to high technology and capital equipment is the one bringing the most important benefits. However, it should be taken into account that there is a lack of stability in the remittance flows. Besides their significant potential benefits, remittances are influenced by clearly exogenous factors (from the receiving countries' point of view), thus making the economy vulnerable to their changes. This is probably one of the main reasons the issue of their smooth decline rather than their growth has been mainly analysed (Glytsos 2005, 483).

With regard to the social impact of the remittances, there are also potential gains since the emigrants usually donate money to improve the social facilities and the services in their homeland. Migration and remittances relieve from the internal unemployment, they reduce the intensity of the social conflicts, they help in the formation of a middle class (Mosneaga 2007, 10) and the recipients feel that their well-being and the general socio-economic conditions improve thanks to the remittances inflows (Luecke et al. 2009, 7). They have, that is, a positive implication on economic indicators like the satisfaction on current circumstances, the adequacy of food consumption and the number of expenditures within people's means (Duval and Wolff 2010, 95). In addition, remittances help older people to overcome their loneliness and isolation as well as the loss of practical and economic support when their families migrate (Grant et al. 2009, 3). Overall, remittances can be seen as a kind of social protection (Kapur 2004, 11) especially when the one provided by the government is inadequate (Hagen-Zanker and Siegel 2007, 172). There are views in the literature on a positive correlation between the remittances and a higher political participation (Krilova 2008, 45) and also on the potential of remittances to support sustainable development (Heilmann 2006, 234-235).

"Dutch Disease" is an important negative implication of remittances. The inflow of remittances improves the balance of the current account which leads to an appreciation of the domestic currency, a loss of competitiveness and a fall in exports combined with an increase in imports (Acosta et al. 2007, 22), which can happen when the increased demand causes the augmentation of imports instead of pushing the domestic production (Marandici 2008, 3). In this way, the trade deficit problem deteriorates. The real exchange rate is appreciated and the current account deficit also worsens. In addition, inflation rises, real estate appreciates, the balance of payments deteriorates (Timus and Timus 2008, 72) and productivity in industry and agriculture further declines. It is very possible that besides the problem of absorbing and using them productively, the receiving countries may prove unable to produce the proper macroeconomic policies and measures for handling the remittances inflows

(Catrinescu et al. 2009, 81). In such a case, remittances may prove to be a great macroeconomic risk by increasing instability and imbalances during the economic cycles.

Another important negative implication of migration and remittances is that migrants do not contribute to the pension system and sometimes the recipients, as well as migrants who repatriate, prefer not to work but live with their earnings. There is a reduction of labour supply that can produce the "Dutch Disease" effect (Chami et al. 2003). Nonetheless, there is still the opinion that migration manifests economic activity (Hristev et al. 2009, 8). At this point, it is noteworthy to mention that according to the findings of Borodak and Piracha (2010, 3), the recipients of monetary remittances are more likely to be wage employees than self-employed or non participants in the labour market.

As far as the social costs of migration are concerned, highly qualified and young people usually abandon the country, brain and skill drain takes place and as a result there are misbalances in the social structure and low levels of entrepreneurial initiative (Mosneaga 2007, 14-15). Upon that, migrants usually work in lower positions abroad and they do not practice their skills (Grant et al. 2009, 23-24). A decline of the rural communities and the abandonment of farmland could also be considered as negative consequences of migration, which can lead to the degradation of land and the augmentation of food imports (King 2005, 148). There is the opinion that the exclusive use of remittances for consumption purposes deepens income inequality and brings a number of social consequences (Munteanu 2005, 42). The abandonment of the old people (King 2005, 148) as well as the fact that migrants' children raise without the presence of their parents have also been mentioned in the literature as a negative impact of migration (Pantiru et al. 2007, 20).

The positive and negative economic implications of remittances could be summarized as follows:

- They facilitate the transactions with other countries and they finance the balance of current account deficits by providing foreign exchange.
- They provide foreign exchange for the imports of capital equipment and raw materials for the industry.
- They are a potential pool of savings and investment capital for future investment and capital formation.
- They facilitate the investment on education and the human capital creation.
- They raise the standard of living since they represent a net income gain for households and decrease poverty and inequalities. On the other hand, they press governments to implement reforms and reduce the external imbalances (a moral hazard problem).
- They increase the aggregate demand and consequently the inflation and the wages.
- They reduce the savings and the work effort and therefore the growth in the longer run.
- They increase the level of dependence and the inequalities and they are often accompanied by money laundering (De Zwager et al. 2005, 37).

2.4 Main Economic Indicators and the Inflow of Remittances

The lack of strong institutions and the weak diversification of production hindered economic development in the transition countries. However, Albania, Moldova, Bulgaria and Romania as emigration countries, benefited substantially from the inflow of remittances in the last 30 years. The magnitude and the relative importance of these flows can be seen in Table 1 in which remittances in current US $, remittances as a percentage of GDP and the remittances' growth are presented .

Table 1. Remittances (R) to Albania, Bulgaria, Moldova and Romania in current $ US (R), Remittances' Growth Rate (RG) and Remittances as a percentage of GDP (R % GDP) (1992-2018)

Time	R %GDP	R	RG	R %GDP	R	RG	R %GDP	R	RG	R %GDP	R	RG
	Albania			Bulgaria			Moldova			Romania		
1992	23.28	151,800,000.00										
1993	28.01	332,000,000.00	118.71									
1994	16.33	307,100,000.00	-7.50							0.04	11,000,000.00	
1995	17.86	427,300,000.00	39.14				0.06	1,020,000.00		0.02	9,000,000.00	-18.18
1996	17.22	550,900,000.00	28.93	0.34	41,500,000.00		5.14	87,080,000.00	84.37	0.05	18,000,000.00	100.00
1997	13.30	300,300,000.00	-45.49	0.45	50,600,000.00	21.93	5.92	114,320,000.00	31.28	0.04	16,000,000.00	-11.11
1998	19.80	504,140,000.00	67.88	0.34	50,675,833.24	0.15	7.19	122,170,000.00	6.87	0.12	49,000,000.00	206.25
1999	12.68	407,200,000.00	-19.23	0.31	42,528,019.77	-16.08	9.43	110,410,000.00	-9.63	0.27	96,000,000.00	95.92
2000	17.18	597,8	46.81	0.44	58,23	36.93	13.78	177,5	60.84	0.26	96,00	0.00

		00,000.00			5,451.,35			80,000.00			0,000.00	
2001	17.83	699,300,000.00	16.98	5.87	826,200,309.56	1.318.72	16.36	242,210,000.00	36.39	0.29	116,000,000.00	20.83
2002	16.87	733,570.000.00	4.90	7.23	1,176,951,496.86	42.45	19.41	322,590,000.00	33.19	0.31	143,000,000.00	23.28
2003	15.84	888,748,582.31	21.15	8.19	1,718,485,429.28	46.01	24.43	484,020,000.00	50.04	0.21	124,000,000.00	-13.29
2004	16.15	1,160,672,105.02	30.60	6.64	1,722,769,584.63	0.25	26.99	701,370,000.00	44.91	0.17	131,000,000.00	5.65
2005	16.02	1,289,704,315.93	11.12	5.44	1,612,912,427.01	-6.38	30.62	915,080,000.00	30.47	0.97	951,783,338.19	626.55
2006	15.28	1,359.467,324.66	5.41	5.03	1,716,435,980.57	6.42	34.50	1,175,820,000.00	28.49	0.95	1,160,464,157.61	21.93
2007	13.75	1,468,020,000.00	7.98	3.81	1,693,553,171.14	-1.33	33.88	1,491,260,000.00	26.83	0.93	1,624,282,412.09	39.97
2008	14.48	1,865,574,187.99	27.08	3.53	1,918,650,334.47	13.29	31.18	1,888,020,000.00	26.61	0.79	1,702,335,817.56	4.81
2009	14.25	1,716,130,	-8.01	3.07	1,591,794,	-17.04	24.86	1,352,350,	-28.37	0.39	682,463,49	-59.91

		304.12			627.64			000.00			1.15	
2010	13.31	1,586,925,580.49	-7.53	2.63	1,332,910,000.00	-16.26	25.13	1,752,830,000.00	29.61	0.39	641,386,614.54	-6.02
2011	12.03	1,551,123,785.69	-2.26	2.58	1,483,190,000.00	11.27	21.55	1,813,110,000.00	3.44	0.38	694,116,383.39	8.22
2012	11.53	1,420,282,798.15	-8.44	2.69	1,448,880,000.00	-2.31	22.81	1,986,440,000.00	9.56	0.43	733,218,617.54	5.63
2013	10.03	1,281,914,066.36	-9.74	3.00	1,666,960,000.00	15.05	23.08	2,191,540,000.00	10.33	1.84	3,518,842,652.16	379.92
2014	10.74	1,420,535,452.78	10.81	2.97	1,684,740,000.00	1.07	21.83	2,075,920,000.00	-5.28	1.69	3,381,251,954.73	-3.91
2015	11.33	1,290,350,891.32	-9.16	2.98	1,494,740,000.00	-11.28	19.88	1,540,120,000.00	-25.81	1.73	3,085,453,944.71	-8.75
2016	11.01	1,305,750,160.70	1.19	3.13	1,665,570,000.00	11.43	18.09	1,460,220,000.00	-5.19	1.85	3,488,810,336.32	13.07
2017	10.06	1,310,873,388.35	0.39	3.77	2,193,590,000.00	31.70	16.95	1,638,890,000.00	12.24	2.03	4,299,105,930.11	23.23
2018	9.68	1,458	11.24	3.68	2,395	9.20	16.25	1,837	12.11	2.03	4,856	12.96

		,272,003.45			,410,000.00			,430,000.00			,429,481.03	

Sources: a) World Bank 2019 b) Author's calculations

According to the World Bank estimates, Albania faces smaller poverty rate than Moldova, its GDP is almost twice the Moldovan one in current US $ despite the fact that its gross capital formation and its exports as a percentage of GDP are smaller. Albania's current account balance as a percentage of GDP in 2018 was -6.30%, while for Moldova it was -9.90%. Both the size of imports and the household final consumption expenditure as percentages of GDP are larger in Moldova.

As far as the structure of the economy is concerned, the services sector dominates in both countries while the agricultural sector constitutes 20% of GDP in Albania, twice as much as in Moldova. The market reform in the transition economies, is believed to have a positive impact on both the traditional and the newer types of infrastructure with the stronger one on the latter (Feinberg and Meurs 2008, 245).

Regarding the inflow of remittances, they increased in Albania between 1992 and 2008 at very high rates, but they were affected by the financial crisis in 2009. In particular, the emigrants' remittances in the 1993-2003 period were five times higher than the inflow of the foreign investment as it is presented in Figure 1 and represented 64.3% of the country's imports (Nikas in IOM 2005, 58). For the 1992-2009 period, remittances represented on average 17% of the Albanian GDP but according to the World Bank, they reached even 28% of GDP, which is the size of a key sector of the economy, such as manufacturing. These comparisons and estimations however are based on official data. Given that a considerable part of the remittances was transferred through the informal channels (DeZwager et al. 2005), the official data on the remittances to Albania underestimate the real figures. One could therefore safely conclude that during

the period of transition, Albania's main exportable was its labour force. It should also be noted that these amounts as a percentage of imports or exports are also considerable (Buch and Kuckulenz 2004, 7).

Remittances have been important for the country's balance of payments. The current account deficit is much smaller than the trade one as a result of the contribution of the remittances (Germenji 2005, 58). This however strengthened the domestic currency and undermined the competitiveness of the Albanian exportables (the "Dutch Disease" problem already referred to). It is indicative that only during 2004 the Albanian currency, Lek appreciated by 7.2% vis-à-vis the Euro and 15.7% vis-à-vis the USD (op.cit, 49). Furthermore, a comparison between the Albanian per capita GDP and the amounts invested in the pyramid scheme leads to the conclusion that a large proportion of these amounts probably came from the remittances received (Korovilas 1999, 409).

Moreover, the Albania's imports of both capital and building goods necessary for the reconstruction of its infrastructure became possible thanks to the remittances and the foreign exchange they offered, as well as the country's low inflation rates and the stability of its currency during the period 1993-1996, which were a result of the remittances' balancing of the current account (Korovilas 1999, 407). It is also important to note that remittances contributed considerably to the anti-inflation program in Albania by affecting directly the exchange rates and the foreign reserves and stabilizing the nominal exchange rate which led to lower inflationary expectations (Haderi et al. 1999, 135).

There are surveys that found remittances' coefficients to be statistically significant in the reduction of poverty in Albania, though smaller than the ones attributed to the other welfare transfers, highlighting the importance of the country's institutions and socioeconomic conditions for such an outcome (Giannetti et al. 2009, 302). Albania managed to reduce its poverty rate between 2002 and 2008, from 25% to 12%, and it is one of the few countries that avoided recession during 2009, maintaining positive growth rates. This could be considered as contradictory, taking into consideration that the poor households

are less likely to have migrant members, due to their restricted access to the welfare pentagon (family, markets, social networks, membership institutions and public authorities) (Hagen-Zanker et al. 2009, 475) and to the necessary money to fund migration costs.

As to Moldova, it figures between the first places of the world's top remittances' recipients list (World Bank 2010). Specifically, between 2004 and 2008, the size of the remittances as a percentage of GDP was on average 31% while the size of the foreign direct investment reached 8.14% (World Bank 2010). Moreover, the size of the remittances to Moldova in 2003 outreached the size of the Moldovan government's social assistance and pensions (European Social Watch Report 2009, 12). It is about 40% of the Moldovan households that receive remittances, out of which 26% are monetary and 15% of them are in-kind ones (Orozco 2007, 7). One out of five households depend completely on these amounts while for 44.5% of them, remittances represent their main source of income (IOM 2009, 18). It has been found that the remittances' impact on poverty in Moldova is greater than the foreign direct investment's one (Marandici 2008, 2). It is indicative that a Moldovan household with a member working abroad is on average 30% richer per member of the household compared to a household without an emigrant and without remittances (Luecke et al. 2009, 30). Moreover, it has been found that remittances in Moldova reduced the absolute poverty rate in 2007 in the rural areas, where 70% of the poor and 81% of the extremely poor Moldovans live, by 13.6% (Hristev et al. 2009, 12). It has also been stated by Macours and Swinnen (2008, 2174) that the rural rather than the urban poverty in Moldova is mainly influenced by the remittances.

At this point, it is important to note that in 2007 the remittances inflows as a percentage of GDP in Moldova reached a peak and started to decline afterwards (Luecke et al. 2009, 5). They fell even more in 2009, as in most of the remittances receiving countries during the global economic crisis which is believed to have affected more the migrant workers than the natives (European

Social Watch Report 2009, 12). Remittances' growth rate also decreased following the outbreak of the crisis (Luecke et al. 2009, 11). However, according to the World Bank data, the Moldovan economy started to recover from the financial crisis in the first half of 2010.

Comparing the remittances' size between Albania and Moldova, it can easily be concluded that Moldova is more dependent on remittances, since they reached even 34% of its GDP. The impact of the global economic crisis on the growth of the emigration countries is considered to have affected the poor countries through the remittances, the downturn of which promotes emigration, reduces savings, tax revenues and public expenditure on education (Ziesemer 2010, 1242-1243).

Most of the research findings for Albania converge to the conclusion that the remittances, particularly the initial flows, have been spent on the financing of basic needs, which can also be explained by the fact that more than one quarter of the Albanian population in the 1990s was living below the poverty line (Duval and Wolff 2010, 75). Under these circumstances, the remittances have mainly been used in the construction or the repairment of houses, the purchase of clothes, in medical care, in the acquisition of land and animal stock and in the financing of the everyday needs of people, even at the level of provision of electricity and water. As far as the house constructing is concerned, it has been pointed out that it has absorbed a large proportion of the remittances. Dalakoglou (2010, 774) supports that such a process is so widely popular in Albania, because it connects the migration experience, the transition one and the monetary or capital transfers from abroad, with one material ensemble. At a later stage still, remittances have financed the acquisition of gold, gems and luxury goods and they have been used as a means of hoarding and as signals of social upgrading (Gallina 2006, 6). It must be noted that the size of the remittances spent by the recipients in Albania on consumer durables has been much higher than on food, contrary to the non-recipients (Castaldo and Reilly 2007, 39). Remittances in Albania have also been used to continue

important social, cultural and family traditions (King 2005, 150). Consequently, many analysts concluded that they have been used for consumption purposes exclusively and not in a productive way in the form of productive investment. The research findings on the characteristics of the Albanian migration indicated that remittances have covered the gap between consumption and GDP (Gedeshi 2002, 49), instead of being invested, at least by the returning migrants, so as to reduce the exodus from that country (Gedeshi et al. 2003, 55 and 60-63). However, there are surveys which have found that remittances from the adult children to the head of the household have been on average higher when they head for investment purposes (Duval and Wolff 2010, 77).

Entrepreneurship in Albania is believed to be positively related to schooling, foreign language proficiency, better infrastructure and savings accumulated abroad (Piracha and Vadean 2010, 1153). Bitzenis and Nito (2005) included in the most important handicaps for entrepreneurs in Albania, apart from the lack of financial resources, the unfair competition, the changes in taxation procedures and the public order issues. Moreover, Nikas and Baklavas (2009, 482) found that the size as well as the investment potential of remittances is positively associated with the educational level, the stable character of employment, the existence and the use of a bank account and the intermediation of a medium to long-term investment plan. According to Germenji and Milo (2009, 505), the returnees invest their savings much more than the money of the remittances. However, a big proportion of those who repatriate do not work after their return. This is the case especially in rural areas where half of the returnees use their money to buy land, though only 24% of them are self-employed in agriculture.

When it comes to Moldova, the existing literature also converges to the conclusion that due to the inappropriate investment and business environment, most of the financial inflows have been spent on consumption. According to Lücke et al. (2007, 10), the Moldovan remittances' recipients use the income from the remittances in order to cover the expenses of their daily needs and buy

consumer durables. Moreover, they spend considerable parts of these amounts on their children's education but even on luxury goods and on health (Hristev et al. 2009, 32-33).

Migrants themselves show higher entrepreneurial activity than the members of the migrant families who receive remittances (IOM 2008, 16). Ghencea and Gudumac (2004, 64-65) found that the largest share of the remittances in Moldova is used for investments, such as the house procurement and the construction or the purchase of cars and other household expenses, while a substantial part is saved and only a small one is used for the financing of business activities. It should also be noted that the households with migrants show high levels of asset ownership, especially in urban areas such as Chisinau, the country's capital (Lücke et al. 2007, 36). Poppe (2007, 18) agrees since, according to his research, the temporary migrants are more likely to hold assets than the non-migrants.

Whether the recipients in Moldova choose to invest or consume the money they take, depends on a variety of factors. Ghencea and Gudumac (2004, 64) found for Moldova that emigrants' backgrounds and life experiences, their level of education, their future intentions, the qualifications of the heads of the family, the local cultural particularities, the socio-economic conditions, the family composition, its well-being's incomes and the way the remittances have been earned, all matter highly to their decision. Furthermore, the lack of infrastructure, the good governance, the access to banking services and the trust to financial institutions play an important role in the investment decision (Hristev et al. 2009, 9). Other factors, such as an increase in the migrant's income, lead to an increase in optimal invested remittances, while transaction or migration costs reduce them (Naiditch and Vranceanu, 2010, 469).

Moral hazard problems and the initial low rates of return also influence negatively the funding productive activities (Culiuc 2006, 11). IOM (2009, 20) for example, found that many of the Moldovan migrants' businesses fail soon after their establishment for a number of different reasons. The low skills, the

lack of professional experience, the low entrepreneurial skills, the vulnerability and definitely the overall investment environment led to these business failures (IOM 2009, 20). However, there are few who do choose to invest in the local financial and real assets but they pay significant set-up costs (Lücke et al. 2007, 50-51). The decision to use the remittances for the financement of investments also depends on the potential investor's perception on factors such as the availability of skilled labour, the investment opportunities and the country's socio-economic situation. It should come as no surprise that the majority does not think very highly of the business environment in their homeland because of the corruption, the inflation, the inefficient governance and the lack of skilled labour (IOM 2009, 9).

Remittances, as it was mentioned above, cover to a large extent the foreign currency shortages of the emigration countries. Whether they contribute to a more permanent equilibrium on the balance of payments depends on whether they cause a shift of the production from the non-tradable to the tradable goods, which are exported, or they substitute imports (Glytsos 2002, 6). Remittances could also finance investment through the imports of the intermediate products (Brown 2006, 65). In Albania, though, the research findings indicate that both the imports and the exports of the industrial consumer goods have increased faster than the ones for the capital equipment, the exports represent less than 50% of the imports and they are not positively related with the inflow of the remittances (IOM 2005, 53).

It has been argued that in the case of Albania, the invested remittances were mainly used in the tertiary and the construction sectors of the economy, rather than in agriculture and in manufacturing. The latter have failed to fully restructure in the long run period since the fall of the communist regime (Nikas and King 2005, 254). Some people believe that labour migration and micro-enterprises are interrelated (Nicholson 2001, 39). That is, the setting up of 17% of the Albanian businesses has considerably been contributed by the migrant's income (Kule et al. 2002, 236). Bars and fast food outlets are the most common

micro-enterprises, but there are also a lot of grocery shops, specialist shops, small workshops and trading enterprises (Nicholson 2001, 40). Moreover, domestic private investment gradually increased especially in the construction sector which along with the services one represented more than 60% of the GDP. Albania, that is, after a big structural makeover has started to shift its output from the agriculture to the non-tradable sectors and this can also be attributed to the remittances, apart from the ODA (World Bank 2010). According to Kilic et al. (2007, 23), the role of the remittances in providing liquidity and capital is very important, so as to encourage their investment on microenterprises and there is a positive impact of past migration on the non-farm business ownership in Albania, besides the fact that the return migration in this country was also associated in the past with business failures (Labrianidis and Kazazi 2006, 61).

On the other hand, the most attractive spheres for business investments in Moldova according to Mosneaga (2006, 6) have been the agriculture, the entrepreneurship, the transports, the restaurants or bars, the purchase of equipment, the entertainment and the real estate. The business activities have to do mainly with the services sector such as the trade, the transports, the communications, the food, the hospitality or the public services. Besides the fact that the agriculture and the industry failed to recover in this country after the collapse of the Soviet Union and that unemployment exists hidden in the former due to the low wages, there are many people who choose to invest in farming. Moreover, in Moldova, there is a lack of diversity in products exported that do not conform to the international standards and they are exported only seasonally, there are some existent barriers in the exports and there are raw goods exported to be imported as final goods, facts that all aggravate the economic situation of the country (Timus and Timus 2008, 71).

It could be suggested that since the disposable income of the recipients rises due to the remittances especially for the poor families which manage to ensure a decent material welfare in this way (Ghencea and Gudumac 2004, 67),

the effect of the Moldovan remittances on poverty is probably positive. However, the effect on inequality differs, since Hristev et al. (2009, 49) proved that 75% of the household recipients get only the 25% of the amounts sent to the country. Taking into consideration that there are findings for transition economies which show that the effect of inequality on growth is strong and negative, no matter how robust they may be, it can easily be concluded that the inequality problems can degrade the growth effect of the remittances (Sukiassyan 2007, 54-55).

With regard to Bulgaria and Romania, they are upper middle income countries according to the World Bank and they attract substantial flows of foreign investment. The main economic sectors are the services sector, the industrial sector and the agricultural sector, though in Bulgaria the latter employs far less proportion of the labour force than in Romania. Both countries dispose positive growth rates mostly driven by the private consumption, the high productivity levels and the considerable real wage increases. These wage increases were partly attributed to the remittances in spite of the fact that in Romania the labour force flexibility is much lower than in the other E.U. member-states.

Remittances were increasing in Bulgaria and Romania until 2008, they had a slight decrease in 2009 and 2010 but they continued to increase afterwards. As it is presented in Table 1, the inflow of remittances (or the book keeping on remittances) began later relatively to Albania (in 1994 for Romania and in 1996 for Bulgaria), but it accelerated rapidly after 2000. The growth rates of the remittances inflows were impressive in specific years. Although remittances flows to these two countries exceed the ones to Albania in absolute figures, they are much lower as percentages of the GDP. In the case of Bulgaria, the increase of wealth and the poverty alleviation of many households due to the remittances has been obvious, even if their overall contribution to the narrowing of income disparities is quite ambiguous (Dimova and Wolff 2008, 595).

The impact of the remittances on the balance of payments in Bulgaria and Romania was quite similar to the Albanian case. These two countries desperately needed a boosting in their foreign exchange earnings in order to balance their trade deficits and keep their external debt under control (Lane and Milesi-Ferretti 2007, 121). It is interesting to note that in the case of Romania, 80% of the remittances were originated from the E.U. member-states (Eurostat 2007, 11). The stability of the Bulgarian currency vis-à-vis the Deutschmark (initially) and the Euro (after 2004) following the devaluation in the late 1990s was largely attributed to the availability of the foreign currency reserves provided by the remittances. In general, the flow of remittances to Bulgaria and Romania seems to have been positively influenced by their accession to the E.U.

Research findings as mentioned above indicate that the Albanian remittances have generally financed consumption rather than investment, whereas in Bulgaria the implemented government policy has been successful in shifting part of them to the financing of investments as well (Karafolas and Sariannidis 2008, 675). Although the construction sector experienced an over-expansion due to the investment opportunities displayed by an emerging and developing economy, the largest part of the remittances has been spent on the purchase of durables and capital goods (Markova and Reilly 2007, 57). Guentcheva et al. (2003) confirmed the use of the remittances for consumption and the purchase of houses in Bulgaria too. Mintchev and Boshnakov (2005) found that although the majority of the remittances have been spent for consumption purposes, car and other property purchases, one in five households have used them for entrepreneurial activities too, such as transport, services, leasehold and trade. In the case of Romania which, very much like Bulgaria, faced an expansion of its current account deficits, the remittances have mainly been channelled to the commercial sector of the economy and particularly towards the transports, the constructions and the financial services (Rahman 2008, 25-26).

Nevertheless, there is an ongoing debate in the relative literature on whether a country can really rely on the remittances as a source of financing economic growth. Some authors stress that the people involved in the remittance management process are mostly elderly and rural, that remittances are irregular (Grant et al. 2009, 13) and they have seasonal variations (Sander et al. 2005, 6). Other authors stress that they are highly persistent (Schrooten 2006, 4) and they portray additional advantages compared to the other sources of financing (Ratha 2003, 160-163). At this point, it should also be noted that the relationship between the remittances and the economic cycle evolves similar to the changes in the situation of the migrants and their perception of the circumstances in the home country (Sharma 2010, 558).

2.5 The Econometric Investigation

The main problem for the researchers working on remittances, especially with regard to the developing countries, is the lack of a complete system for their recording. In transition economies, like the ones investigated in the present paper, it is true that a data collection and an assessment system does exist, mainly due to the pressure of their participation in the European institutions. However, the harmonization of these practices to the international standard ones is a rather recent project and reliable data can be found only for the years after 2000.

Although the issue of the economic implications of remittances has been thoroughly and intensively investigated by many researchers, neither a universal model, nor a specific economic theory has been formulated to this end. Most researchers investigated this issue on the basis of the existing literature and tailored their analyses to the specific characteristics of the country they studied.

The present chapter adopts the methodology used by Nikas (1991, 175-84) on the impact of the remittances inflows on the Greek economy, based on the Keynesian economic model and using three simple functions on consumption, investment and imports. According to this methodology, the disposable income is decomposed to wages, profits etc. plus the income from the remittances minus the direct taxes. However, in this chapter we will decompose it on the basis of the method used by Glytsos (2005, 471) who adds the remittances to the GDP in order to derive the disposable income. Furthermore, it should be stressed that Nikas was focusing on the investment by sector and the imports of consumer or capital goods. Interesting as this might have been, it is impossible to specify this model in a similar way because of the lack of statistical data. Finally, it should be stressed that a full investigation on the impact of remittances on the output, similar to the one carried out by Glytsos (2005), is beyond the reach of this chapter, besides the fact that it has been identified that including remittances to a growth function increases the contribution of the per capita investment simply because remittances directly influence investment (Mundaca 2008, 25-27).

The empirical analysis incorporates a panel of four countries which have received considerable remittances inflows since the early 1990s, Albania, Moldova, Bulgaria and Romania. The data are annual and the time period covered is from 1996 to 2018. The consumption function is a function of the disposable income derived to GDP and remittances:

$$lnC=f(lnGDP, lnR).$$

The investment function includes also the real interest rate variable:

$$lnI=f(lnGDP, lnR, RIR),$$

and the imports is a function of the disposable income and the real effective exchange rate:

$$lnM=f(lnGDP, lnR, REER).$$

Table 2 contains the descriptive statistics for the variables of the household final consumption expenditure (C), the imports of goods and services (M), the gross capital formation (I), the GDP, the personal remittances received (R), the real interest rate (RIR) and the real effective exchange rate (REER). The mean for the household consumption expenditure is higher than for the imports and the gross capital formation. A similar pattern is observed for the case of the standard deviation for these variables. Skewness and kurtosis are positive for all the variables, exept from the skewness of the real effective exchange rate, though they are not very close to zero and three respectively.

Table 2. Descriptive Statistics

	C	M	I	GDP	R	RIR	REER
Mean	3.43E+10	2.23E+10	1.32E+10	5.53E+10	1.33E+09	6.881943	91.74605
Median	1.61E+10	1.08E+10	3.88E+09	3.13E+10	1.34E+09	6.945920	98.19181
Maximum	1.52E+11	1.26E+10	5.92E+10	2.25E+11	4.07E+09	130.3450	122.3631
Minimum	2.56E+09	1.06E+10	84013131	4.14E+09	83625942	-64.40830	46.22114
StD. Dev.	3.97E+10	2.75E+10	1.64E+10	6.40E+10	8.18E+08	16.56655	15.63444
Skewness	1.407497	1.872927	1.441572	1.191534	0.792088	3.649507	-0.725295
Kurtosis	3.794775	6.111819	3.750431	3.039835	3.965051	39.22004	2.777255
Jarque-Bera	32.08445	88.93065	33.28374	21.30224	12.90351	5119.376	8.076852
Probability	0.000000	0.000000	0.000000	0.000024	0.001578	0.000000	0.017625
Sum	3.08E+12	2.00E+12	1.19E+12	4.98E+12	1.19E+11	6193749	8257.145
Sum S. Dev.	1.41E+23	6.75E+22	2.39E+22	3.65E+23	5.95E+19	24426.10	21754.77

Observations	90	90	90	90	90	90	90

The values of the variables are measured in constant 2010 US $ except for the real interest rate which is in percentage. The first step of the analysis is the unit root tests for the stationarity of the variables to avoid spurious regression problems. The summary unit root tests are performed with automatic selection of maximum lags based on the AIC criterion.

Table 3. Unit Root Tests

Statistics				
	Levin, Lin & Chu t	Im, Pesaran & Shin W-stat	ADF- Fisher Chi-square	PP- Fisher Chi-square
LC	-3.42020	-1.13536	10.8626	3.80241
ΔLC	-5.49077	-4.87816	39.9275	52.3184
LGDP	0.84481	2.76018	0.83525	0.86827
ΔLGDP	-5.70608	-5.99790	46.8947	44.8278
LR	-1.93718	-2.37944	21.5605	5.75289
ΔLR	-7.12817	-7.21230	59.0581	67.8606
LM	-1.94173	0.53068	6.27715	6.73786
ΔM	-5.88813	-5.11726	38.3068	39.1759

LI	0.71716	0.18108	6.68744	44.8785
ΔLI	-23.0525	-14.9913	288.102	293.272
RIR	-18.4774	-15.6622	211.289	124.010
REER	-4.67337	-2.74953	25.0517	18.8088

The variables for the real interest rate and the real effective exchange rate are stationary in levels while all the other variables are stationary in first differences. In order to perform the cointegration tests, we eliminate the stationary variables assuming that the equations can be properly estimated with the integrated regressors.

The next step of the empirical analysis is the Pedroni Engle-Granger based cointegration approach which estimates the cointegration regression separately for each country. The residuals are tested for stationarity using seven test statistics. The four panel statistics assume that the first-order autoregressive parameter is the same for all the countries. The rest three group statistics compute an average of the individually estimated autoregressive coefficients. The lag length is automatic based again on the AIC criterion.

Table 4. Cointegration Tests

	Panel v-statistic	Panel rho statistic	Panel PP-statistic	Panel ADF-statistic	Group-rho statistic	Group-PP statistic	Group ADF-statistic
LC	1.313198	-0.690443	-2.840429	-2.910766	0.037457	-3.308980	-2.145529

LM	1.455899	-2.322900	-4.348541	-3.300622	-1.498629	-4.514287	-3.132293
LI	0.517355	-2.799791	-6.931389	0.534550	-0.182598	-2.803017	0.071081

In Table 4, with regard to the consumption function, two of the four tests with the assumption of a common AR coefficient reject the null hypothesis of no cointegration. Moreover, two of the three cointegration tests with the assumption of individual AR coefficients also reject the null hypothesis. For the investment function, the hypothesis of no cointegration is rejected from two of the three panel statistics and one of the three group statistics. Last but not least, all the available Pedroni's test statistics reject the null hypothesis in the case of the imports function.

Having considerable evidence of cointegration, the dynamic ordinary least squares method is going to be utilized to estimate the cointegrating vector. The Tables 5-13 present the panel data model DOLS with pooled, pooled weighted and grouped estimation. The pooled estimation performs the standard DOLS on the pooled sample of the data. The pooled weighted allows for heterogeneity by using cross-sections specific estimates, while the grouped mean estimations computes the cross-section average of the individual cross-section DOLS estimates.

An advantage of this method is that it doesn't require exogeneity assumptions or the use of instruments but rather produces unbiased estimates for variables that cointegrate even with endogenous regressors. Moreover, the DOLS estimator is robust when variables that do not form part of the cointegration relationship are omitted. It outperforms bias-corrected OLS and Fully Modified OLS in small samples and has better sample properties (Kao and Chiang 2001).

The DOLS regressions are:

$$C_{it}=a_i+bY_{it}+\Sigma^{n}_{j=-m}c_{ij}\Delta Y_{it+j}+e_t$$

$$I_{it}=a_i+bY_{it}+\Sigma^{n}_{j=-m}c_{ij}\Delta Y_{it+j+}e_t$$

$$M_{it}=a_i+bY_{it}+\Sigma^{n}_{j=-m}c_{ij}\Delta Y_{it+j+}e_t$$

where: b= cointegrating vector representing the long-run cumulative multipliers

Y= disposable income (GDP plus remittances)

e= error term

n= lead length

m= lag length

Table 5. Panel Dynamic OLS Estimates of Long-Run Consumption-Pooled Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	1.308016	0.054039	24.20511	0.0000
LR	0.034653	0.014814	2.339292	0.0226

R Bar Squared: 0.999174, Automatic Leads and Lags based on AIC , 84 panel observations, Long-run variance (Bartlett Kernel, Newey-West fixed bandwith) used for coefficient covariances

Table 6. Panel Dynamic OLS Estimates of Long-Run Consumption-Pooled (Weighted) Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	1.243526	0.045725	27.19560	0.0000
LR	0.047327	0.012640	3.744133	0.0004

Table 7. Panel Dynamic OLS Estimates of Long-Run Consumption-Grouped Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	1.275555	0.034814	36.63925	0.0000
LR	0.080073	0.011967	6.691168	0.0000

Table 8. Panel Dynamic OLS Estimates of Long-Run Investment-Pooled Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	1.112699	0.198955	5.592711	0.0000
LR	0.116404	0.057374	2.028847	0.0470

R Bar Squared: 0.992100, Automatic Leads and Lags based on AIC , 83 panel observations, Long-run variance (Bartlett Kernel, Newey-West fixed bandwith) used for coefficient covariances

Table 9. Panel Dynamic OLS Estimates of Long-Run Investment –Pooled (Weighted) Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	0.967653	0.166386	5.815727	0.0000
LR	0.153955	0.054707	2.814187	0.0066

Table 10. Panel Dynamic OLS Estimates of Long-Run Investment -Grouped Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	1.056656	0.160738	6.573780	0.0000
LR	0.248243	0.048821	5.084773	0.0000

Table 11. Panel Dynamic OLS Estimates of Long-Run Imports-Pooled Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	1.842007	0.175458	10.49831	0.0000
LR	0.195564	0.052832	3.701645	0.0005

R Bar Squared: 0.993252, Automatic Leads and Lags based on AIC , 82 panel observations, Long-run variance (Bartlett Kernel, Newey-West fixed bandwith) used for coefficient covariances

Table 12. Panel Dynamic OLS Estimates of Long-Run Imports-Pooled (Weighted) Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	1.573847	0.120580	13.05233	0.0000
LR	0.204767	0.044781	4.572653	0.0000

Table 13. Panel Dynamic OLS Estimates of Long-Run Imports-Grouped Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
LGDP	2.033838	0.062131	32.73458	0.0000
LR	0.129049	0.019647	6.568391	0.0000

Lags and leads follow Akaike criterion. The DOLS test results portray that all variables have the right sign and are statistically significant. The methods produce similar results in terms of the sign and significance while the magnitudes of the estimated coefficients are slightly different.

Remittances represent a positive and significant determinant of the household consumption expenditure in the receiving countries though the coefficient derived from the pooled DOLS is quite small and the grouped estimations gives the highest number. Remittances' coefficient in the imports function is quite higher than in the consumption function, positive and significant and indicative of the literature that supports that they have financed imports and determined their size. The most interesting and, to certain extent, unexpected findings are the ones in Tables 7, 8 and 9. Despite the pessimism regarding the contribution of remittances to the investment expenditure, the

findings suggest that remittances have indeed played an important role as sources of financing investments. In the case of the grouped estimation, remittances appear to have the largest coefficient suggesting that 1% increase in the remittances inflows pushes gross capital formation by 0.2%. With regard to the rest of the disposable income, its coefficient in the imports function is higher than in the consumption and the investment functions following the same pattern as the remittances variable. A 1% increase in the disposable income causes a 2% increase in the imports of goods and services. The coefficient in the consumption function is between 1.2 and 1.3 portraying that there are also important determinants of consumption other than income. In the investment function the disposable income's coefficient is 1.11 in the pooled estimation and 1.05 in the grouped estimation offering some evidence for the acceleration effect.

2.6 Policy Recommendations

Remittances' recipient countries should focus on finding the utilization patterns of remittances that can bring the best results in terms of productive investments and long-term growth. Morton et al. (2010, 9) revealed that Moldova faces a lower corruption perception index than others surveyed, higher literacy rate, its population growth falls and its capital formation grows, which can all improve business development and implement property rights. The econometric investigation presented above also supports the point that remittances have offered to the gross capital formation of the four transition countries examined and they could have a greater contribution with more targeted policies. The results of the econometric analysis show an unambiguous involvement of remittances in both the consumption and the investment patterns of these countries.

There is a variety of suggested policies and actions governments could follow to take advantage of the money that enter into their countries. First of all, the monitoring and the analysis of the exact size of transfers, of the way and the time of sending and receiving them as well as of their use, are necessary steps to be taken (Ratha 2007, 184). Reducing remittances' fees can affect the recipients too. Moreover, an important step is to promote the access of the individuals into financial markets as well as the access of the private sector banks to the international capital markets (Ratha and Mohapatra 2007, 8).

Transition countries need a boost of their domestic growth which according to the aforementioned findings, remittances seem to be able to offer. The positive effects of the remittances could be reinforced while the negative ones should be mitigated. This means that the countries could promote the rerouting of the remittances towards productive investments by removing the government's distortions and market failures. They could also sterilize the inflow of the foreign currency to prevent their economies from the Dutch Disease problems and implement an industrial policy and stabilization projects (Culiuc 2006, 17-21). Apart from the repatriation of such significant amounts of money, their taxation has also been proposed as an appropriate policy measure for the recipient countries (Angelache et al. 2017). Furthermore, it has been supported that the economic modernization of the developing countries needs to go beyond the national borders and they should cooperate with the neighboring countries, where most of the migrants head for, in order to develop a common strategy towards the protection of the migrants and the appropriate management of the remittances (Maroukis 2005, 233).

2.7 Conclusion

The conclusion that most authors seem to agree with, is that such inflows of money can help developing countries overcome a lot of problems they face and for this reason they are a development and growth asset they cannot afford to waste. Our findings support the mainstream view that there was and certainly still is (given that the flow has decelerated, but by no means died out) room for a targeted policy for the best use and exploitation of the remittances by the receiving countries. The fact that different countries display different levels of efficiency in the channeling and the use of remittances reveals the differences in the existing structures and institutions as well as the policies pursued. Even when an institutional and policy handicap exists, there is still room for intervention so as the interests of the emigrants and the society to be served. The emigrants and their relatives (who very often decide on the use of the remittances) are usually people who have experienced hardship in their living conditions and lack the necessary information on investment opportunities or they are simply very sceptical and conservative owing to their background. With the right guidance and with the provision of the appropriate institutional and structural framework, they could shift to a more efficient use of their savings to their benefit and to the benefit of their homeland. The emigration countries will have to realise the developmental potential of the remittances and act accordingly. Inertia and (a continuation of) the policy vacuum from the emigration countries will be perceived as disincentives to repatriation and will probably lead more people to emigrate.

Emigration has certainly influenced the economies of Albania, Moldova, Bulgaria and Romania during the last thirty years even though these economic implications have not been fully analysed and measured yet. The impact of the remittances in particular is difficult to assess mainly because of the lack of data. The outbreak of the economic crisis initially caused a deceleration of their growth and eventually a decline of their magnitude in 2009. However their

economic implications have been very important in a number of ways and for a number of sectors. They have contributed decisively to the shift of the consumption patterns towards western standards and the overall development of the receiving countries, they have financed imports from other countries and investments both by those sending and those receiving them. The task for the governments of these countries has been to capitalise on the benefits and minimize the costs that emigration produces. Transition economies usually lack the developmental tools and the experience needed for growth. But there are other successful examples of countries, which have taken advantage of the remittances inflows in order to improve their socio-economic conditions. The countries under examination should try to move towards this direction through spillover and imitation.

The policies followed have accomplished some progress but there is still a lot of way ahead to change the patterns of the remittances spending in favor of the country's development. There is a lack of trust and hope towards the governments' actions that affects people. On the basis of the findings of the econometric investigation, remittances seem to have financed imports to a very large extent, as economic theory and the existing evidence suggested. However they have had also a substantial impact on both the consumption expenditures and the investments financing. This positive and (strong as the econometric investigation suggests) correlation between the remittances and three of the key macroeconomic injections in the Keynesian sense, clearly implies that remittances have played a crucial role in the economic reconstruction of these countries and their overall growth performance. In this respect, the findings defy the pessimistic view that the lack of effective mechanisms for the management of the remittances flows and its channeling to priority uses and sectors has caused a complete loss of their developmental momentum.

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Chapter 3. Emigrants' Remittances and the "Dutch Disease" in Small Transition Economies: The Case of Albania and Moldova

Abstract

An exogenous inflow of foreign exchange can lead to the appreciation of the currency of the receiving country, the deterioration of its competitiveness and a fall in net exports. Economic theory identifies this as the "Dutch Disease" although it is more often observed in emerging economies. The origin of the real exchange rate appreciation can differ from country to country but the inflow of remittances, the main and clearer gain for the emigration countries, has been accused for such an outcome. This chapter tests the applicability of the "Dutch Disease" for a panel of two small transition economies under a free floating exchange rate regime, namely Albania and Moldova. In the last decades, these countries have experienced massive outflows of emigrants and impressive inflows of remittances. The econometric results though, based on the panel dynamic ordinary least squares approach do not confirm that the emigrants' remittances appreciate the real exchange rate of their home countries.

Key Words: "Dutch Disease", emigrants' remittances, transition Balkan countries, panel DOLS

3.1 Introduction

Most Balkan and Eastern European countries have been struggling to complete their transition to market economies. During this process, their governments had to surpass huge economic and structural obstacles while other, new ones, were turning up. Initially, they all experienced a substantial decline in their output. Later, they experienced growth rates higher than those corresponding to advanced economies.

Among the late reformers were Albania, Moldova, Bulgaria and Romania, though the last two actually managed not only to overcome their transition problems, but also to become members of the European Union. This fact shows that they carried out all the necessary reforms more decisively than the other transition Balkan countries. Besides, the more extended the structural reforms are and the earlier the macroeconomic stabilization is achieved, the more rapid the growth is (Fischer and Sahay 2000, 15).

One common obstacle for the transition countries was the appreciation of the exchange rate, which made the currencies overvalued and the exports of the countries non-competitive. The origin of this problem may differ from country to country. This chapter tries to explain the Dutch Disease part of the phenomenon. In Rutherford's dictionary of Economics the term determines the decline in traditional industries due to the rapid growth and prosperity of a new industry (Dobrynskaya and Turkisch 2009, 13). Moreover, "Dutch Disease" is the name used to express the procyclicality of capital flows in a country (Frankel 2009, 4). Generally, it is the reduction in the export performance of a country, on account of the appreciation of its exchange rate (Barder 2006, 4). The "Dutch Disease" hypothesis refers to the crowding out of the rest of the export sector exactly due to the large capital inflows caused by the booming one (Beja 2010, 2). As far as the capital inflows are concerned, they are the increases in net international indebtedness of the private and public sectors and

such increases are usually identified through wider current account deficits and/or reserve accumulation (Calvo et al. 1994, 54). The "Dutch Disease" economic phenomenon affects the emerging economies as well as the advanced ones (Bandara 1995, 312), especially when they are liable to shocks that trigger foreign exchange inflows such as the discovery of natural resources or the inflow of emigrants' remittances.

The chapter focuses on the analysis of the "Dutch Disease" phenomenon, starting with the origin of the expression, continuing with the detailed presentation of its causes and consequences as they are discussed in the literature and the relationship between the remittances and the real exchange rate distortion. We conclude with an empirical analysis of the relationship between the remittances and the real effective exchange rate in two transition countries namely Albania and Moldova. These two countries have been recipients of large amounts of remittances since the early 1990s. Furthermore, they both adopted floating exchange rates arrangements on their currencies during the transition process whereas Bulgaria (since the mid 1990s) and Romania after the accession to the E.U. pegged their currencies to stronger ones. The aim is to reveal the "Dutch Disease" symptoms in the countries under examination and their relationship with the emigrants' remittances.

3.2 "Dutch Disease": A Theoretical Survey with Particular Reference to Remittances

"Dutch Disease" was the title of an article published in the Economist (1977, 82-83) about the effect of the discovery of natural gas in the North Sea on the economy of the Netherlands. The gas exports led to large foreign exchange earnings. It is actually true, that the name initially referred to the situation in

Netherlands, after the discovery of natural gas deposits back in the 1960s. Due to this discovery, the wealth in the Netherlands increased, the Dutch currency, the guilder, appreciated and the country's non-oil exports became less competitive. Since then, "Dutch Disease", or else the "natural resource curse", has been used to describe every appreciation of a currency, caused by a significant capital or foreign exchange inflow that makes the tradable sector of an economy less competitive (Tuano-Amador et al. 2007, 5).

It has been supported that remittances, apart from their positive effects for the receiving economies have a few negative ones including the appreciation of the real exchange rate. However, as mentioned above, other factors such as the foreign aid, the grants, the foreign direct investment and all the kinds of capital inflows are also likely to cause such problems. The reason for deepening into the remittances – "Dutch Disease" relationship in transition countries is based on the fact that the Dutch Disease related problems are considered to be much worse in the case of a transition economy (Kuralbayeva et al. 2001, 6). Furthermore, many Balkan and Eastern European transition economies have received sizeable capital inflows in the form of remittances due to the large outflows of emigrants they experienced since the early 1990s.

The main task for the policy makers is to understand and control the way this phenomenon known as "Dutch Disease" takes place, so as to prevent the economy from undergoing it. There are two effects related to the capital inflows, that can both cause the real exchange rate to appreciate, making the country less competitive in the world market, the spending effect and the resource movement effect. When the disposable income increases due to the capital inflows, a spending effect occurs. The boost in the disposable income leads to a rise in the aggregate demand and the expenditure in the economy, both for tradable and non-tradable goods. This pushes the price of the non-tradable goods upwards and leads to the appreciation of the real exchange rate. The prices of the tradable goods will also tend to increase, but since they are determined in the world market and most countries are price takers, this cannot

happen. As a result, the real exchange rate (defined as the domestic relative price of the tradable to the non-tradable goods) will appreciate, given that the price of the non-tradables will be the only one to rise (Bourdet and Falck 2006, 271-272).

Capital inflows can also cause a resource movement effect. The boom raises the marginal products of the mobile factors employed in this sector and draws resources out of other sectors, giving rise to various adjustments in the rest of the economy, like the appreciation of the real exchange rate (Corden and Neary 1982, 827). The increase in the price of the non-tradables makes their production more profitable and their growth raises factor demand, especially for the intensively used ones. It is true that the non-tradable sector uses labour more intensively. As a result, the wages in this sector relatively to other sectors increase and this motivates the labour force, which is a mobile production factor, to move from the tradable to the non-tradable sector. This is called factor reallocation (Bayangos and Jansen 2011, 3). Afterwards, firms in the tradable goods sector (e.g., manufacturing) will be forced to raise wages and following that prices as well and since this cannot happen in the world market, output will decline and profits will fall.

The resource movement effect gives rise to direct de-industrialization, since employment in manufacturing falls. Both the resource movement and the spending effects cause indirect de-industrialization (Corden 1984, 361). Brahmbhatt et al. (2010, 2) believe that the resource movement effect is less likely in the low-income economies, because most of the inputs used in the natural resource "enclave" are imported from abroad.

Factor reallocation and de-industrialization are two symptoms of the "Dutch Disease" that harm the economy, by making it less competitive and disturbing it's economic order. Real exchange rate appreciation will make the tradable goods that used to be exported less competitive and the export sector will be crowded out by the non-tradable goods one, the growth of which cannot by itself lead to the economic development of the country.

Apart from the above mechanism demonstrated in the Salter-Swan-Conder-Dornbusch model, there is also another mechanism of exchange rate appreciation, discussed by Acosta et al. (2007, 2). This one refers to the substitution of work for leisure by the labour force, due to the increasing household aggregate wealth, which is caused by the capital inflows. Due to the fact that there is smaller labour supply and wages start to increase, the production costs are pushed up and the tradable goods sector is shrunk, since the rising cost cannot be shifted to the consumers through the prices.

In a "Dutch Disease" situation, it is worth mentioning that the real exchange rate appreciation can also occur due to the productivity gains mostly common in the tradable goods sector of the developing countries. This effect is called the Balassa-Samuelson effect (Holzner 2006, 5). This means that when the gains are higher in the tradable than the non-tradable goods sector and the wages between the two sectors are equalized, the real exchange rate appreciates (Grafe and Wyplosz 1998, 1). The effect describes the situation when wages are determined in one single national market and they tend to increase in both sectors (Holzner 2006, 5).

Having seen how the "Dutch Disease" works, the remaining questions refer to how remittances get involved in the appreciation of the real exchange rate. Remittances have turned out to be the booming sector of several transition economies, after the collapse of communism, but also of other developing countries around the world. Remittances are stable and countercyclical to the receiving economy. They play the stabilizing role the capital flows promise, but do not deliver (Frankel 2009, 2). They provide an international risk sharing mechanism, they alleviate the costs of forgone monetary policy autonomy and consequently, they increase the viability of a fixed exchange rate. They support the family income, protect emerging economies from the side-effects of globalization and they are also a form of insurance for developing countries against exogenous shocks. They generally have a systematic influence on how governments design their macroeconomic policies. Remittances are

"unrequited", meaning that they do not result in claims on assets, debt service obligations or other contractual obligations. Moreover, they can be taken away from a country ex post without causing house insecurity or income volatility, as foreign investment does (Singer 2010, 307-308).

Furthermore, the surpluses stimulated by the remittances in the balance of transfers can finance the deficit in the trade balance (Holzner 2006, 3). The net asset position of a country is increased by the inflows of remittances and as a result, the external equilibrium of the economy is certainly influenced (Lopez et al. 2007, 6). However, there is a strong cross-sectional correlation between the changes in the real exchange rate and the changes in the net foreign assets in both the industrial and the developing countries, which is commonly known as the transfer problem (Lane and Milesi-Ferretti 2004, 841).

Since "Dutch Disease" has been used as a common term to express the problems caused by a booming sector of the economy on the rest of it when this particular sector is responsible for a significant growth in the country's income (Younger 1992, 1588), this could also be the case in the remittances receiving countries. An interesting argument is that through labour migration, "Dutch Disease" can be transmitted to the sending countries and the appreciation of the real exchange rate can result from the transfer of remittances (Wahba 1998, 362). The booming export sector of the economy is a country's labour force, which is exported as immigrant workers and as for the capital inflows, these are the migrants' remittances, which could cause such problems in an economy if not properly managed.

When it comes to the extent of the appreciation due to the capital inflows and remittances, there are many factors that play a key role in smoothing it. A fact, that is unambiguous, is that the extent of the appreciation varies from country to country. Actually, Bandara (1995, 328) supports that the impact of the profits of capital inflows on the economic structure of a country, as presented by the traditional "Dutch Disease" model, cannot always be generalized for all the developing countries.

Acosta et al. (2009, 11), using panel data for 109 developing and transition countries examined with a generalized method of moments estimator, supported that the problem is less damaging for the economy the more developed the financial sector is, since the mature and developed financial sectors can more effectively channel remittances into investment opportunities. Bayangos and Jansen (2011, 2) also concluded that the liquidity on financial markets can soften the appreciation of the nominal exchange rate. When, for example, the financial sector is well developed, then the investment rates are high and the remittances received will be channeled to investment.

According to Fielding (2010, 933-934) and the simple time series model he developed for 10 territories, countries with a high level of openness to trade, a high level of measured government effectiveness as well as the poorer states are less prone to a large appreciation. Moreover, states with a high level of measured political stability are more likely to experience a large appreciation. Fielding supported that the most likely country to suffer from "Dutch Disease" is a middle-income economy that is relatively closed with a stable but inefficient government. Beja (2010, 11-12), based in a dataset of twenty countries estimated with the seemingly unrelated regression procedure, confirmed such an outcome.

Barajas et al. (2010, 42-45) using panel cointegration techniques to test a large set of countries supported that there are various factors responsible for the "Dutch Disease" phenomenon, such as the degree of openness of a certain economy, the factor mobility between the different domestic sectors, the countercyclicality of the capital inflows, the share of consumption in tradables and the sensitivity of a country's risk premium to capital inflows which have the potential to change the impact of the international transfers on the real exchange rate. On the other hand, Mongardini and Rayner (2009, 15) focused on the way the capital flows are used and not on the international transfers themselves as an approach to mitigate the problem.

In general, the domestic policies, the international developments and the relative importance of the remittances in the total economic activity and in the external sector should be taken into consideration to determine the exact link between the remittances and the real exchange rate. Moreover, the behavior of the exchange rate depends on the impact of emigration on the domestic output and the spending patterns of the recipients of remittances (Loser et al. 2006, 18). According to Égert (2009, 19), remittances may influence the exchange rate via the net foreign effects, via the demand effects on services (if not spent on consumption rather than investment) and via the economic growth.

Another important factor in the remittances-exchange rate relationship is the possible increase in savings because of the remittances, which would have a dampening effect on the "Dutch Disease" outcome related to the exchange rate. As interest rates tend to decrease, capital flows decelerate and this brings on a partial turnaround of the exchange rate. The impact of the remittances on the exchange rate slows down when the domestic interest rates decline, as the exchange rates tend to depreciate (Loser et al. 2006, 20). The bidirectional relationship between remittances and the real exchange rate should also be referred (Vargas-Silva 2009, 12). Faini (1994, 236) for example, claims that the real exchange rate depreciation exerts a negative impact on the real value of remittances.

In a research on the impact of capital flows on 57 countries, Naceur et al. (2012) used a dynamic panel data approach estimated with the generalized method of moments, to report that while the portfolio investments, the foreign borrowing, the aid and the income appreciate the real exchange rate, the remittances' effects present diversifications across regions. However, when the remittances lead to such an appreciation, it is the second strongest impact after the one caused by income. According to Cruz Zuniga (2011) and his analysis with the use of panel vector autoregression method, the impact of the remittances on the real exchange rate appreciation applies only to the countries with high remittances' participation in the economic activity.

In order to fully understand the impact of the remittances on the exchange rate, one has to take into account the analysis provided by Kamas (1986, 1178) who uses the Corden and Neary model (Corden and Neary 1982) to explain the phenomenon. The fact that the booming sector increases its profits, pulls resources out of the tradable and the non-tradable sectors. Consequently output declines, while the increased spending, raises the relative price of the non-tradable goods, pulling resources out from both the booming and the other tradable sectors and reducing their output. There is an explicit decline in the other tradable sectors, while the net effect on the output in the non-tradable and the booming sector is uncertain. While, in the final equilibrium, the overall trade balance is back to zero, the net exports of the other tradable sectors have fallen, following the fall in their production, while the consumption increases. Despite the fact that this effect has received less attention than the de-industrialization one, it represents an increased reliance on the primary export to the detriment of manufacturing or other non-booming sectors. This is particularly undesirable for the less developed countries attempting to diversify exports.

The increased inflows of remittances raise the supply of foreign exchange and lead the nominal exchange rate to appreciate. Moreover, an increased spending by the households receiving the remittances both on tradable and on non-tradable goods follows and since the supply of the non-tradable goods is constrained in the short-run, this leads to an increase in the price of the non-tradables or an appreciation of the real exchange rate (Bayangos and Jansen 2011, 2). Bourdet and Falck (2006, 272) performing multivariate Engle and Granger co-integration tests suggest that the impact of remittances on the domestic savings and investment enhances capital accumulation which increases the production of both the tradable and the non-tradable goods in the long run affecting also the relative non-tradables to tradables prices. However, the increased liquidity on financial markets, because of the increased remittances, may smoothen the appreciation of the nominal exchange rate.

Vos (1998, 98-99) applied a computable general equilibrium model, the simulations of which suggested that remittances can generate "Dutch Disease" effects and that the foreign income injection in the form of remittances allows the economy to enlarge in the first year, but in the next years there are some side-effects leading to lower overall growth. That is, the extra demand due to the remittances results in food price inflation, which is transmitted with a lag to the nominal wages and the prices in the markup sectors, resulting in lower competitiveness. Thus, both the exports and the domestic demand decrease due to the falling real incomes. The imports demand also increases and part of the increase in the foreign exchange earnings leaks abroad.

There is also the research of Amuedo-Dorantes and Pozo (2004, 1414) who found, using the instrumental variables method, that remittances appreciate the exchange rate, while the foreign aid does not. Saadi-Sedik and Petri (2006, 25-26) using the Johansen cointegration methodology, supported that in Jordan, both the grants and the remittances appreciate the equilibrium real exchange rate and the effect of remittances is not as big as the grants' one is (it is actually less than half that of the grants'), because they are spent mostly on tradables, with a smaller effect on the relative prices between the tradables and the non-tradables.

The appreciative effect of the remittances is usually weakened by the productivity enhancing depreciative effect of the simultaneous foreign direct investment (Fayad 2010, 4). Moreover, the "Dutch Disease" may be prevented by the role of the large emigrant networks channeling productive foreign direct investment to home countries. However, even in the extreme case when the remittances are exclusively channeled towards investments and capital accumulation in the tradable sector, the "Dutch Disease" hypothesis could apply (Acosta et al. 2007, 19).

3.3 Remittances and the "Dutch Disease": Evidence from Albania and Moldova

This chapter actually tries to answer whether the remittances inflows in small transition economies affect the real exchange rate and consequently influence the transition process. For this reason, the reference set consists of countries where remittances have been found to play a major macroeconomic role.

There are cases supporting the argument that an increase in the inflows of the emigrants' remittances causes an appreciation of the real exchange rate and finally, a loss of competitiveness of the country's exports. In fact, there are two papers focusing on both developing and transition countries. Acosta et al. (2009) and Lartey et al. (2008) used panel data from 109 developing and transition countries and estimated them with a generalized method of moments estimator. Both papers concluded that remittances are responsible for the appreciation of the real exchange rate, though the former focused on the financial sector development level which may prevents it and the latter on the exchange rate regime that favors it. Among the transition countries involved in these results one can find Albania and Moldova.

Holzner (2006) investigating the real exchange rate distortion on seven Southeast European countries (Albania, Bosnia & Herzegovina, Bulgaria, Croatia, FYROM, Romania and Serbia & Montenegro) concluded that the national currencies of most West Balkan countries were overvalued, whereas the East Balkan ones were undervalued. Especially in the case of Albania, he suggested that remittances may be the most possible reason for the overvaluation of the country's currency.

In fact, Albania has been widely referred in the literature as a "Dutch Disease" victim. Germenji (2005) based on specific data from the Bank of Albania, indicated that the Albanian Lek experienced an appreciation, partly due to the large volume of remittances. Moreover, Nikas and Baklavas (2009)

considered the Albanian “Dutch Disease”, due to the remittances inflows, as a fact that could be prevented with the use of bank intermediation for the transfers. Barisitz (2004) interpreting official data of the exchange rate arrangements of the Southeast European countries under transition including Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, FYROM, Montenegro, Romania, Serbia and Turkey attributed them to a number of factors including the use of informal transfers.

Before proceeding with the detailed analysis of each country’s data, it is also necessary to refer to the variable to be used so as to derive conclusions on the loss of competitiveness of the countries under examination. The variable chosen is the real effective exchange rate. It has been widely utilized in the related literature to assess a country’s competitiveness in terms of prices and costs, against its main competitors in international goods and services markets. The effective exchange rate, or else the trade weighted index, is a multilateral exchange rate, which is a weighted average of a basket of exchange rates of foreign currencies, with the weight of each foreign country equal to its share in trade. It is usually viewed as an overall measure of the country’s external competitiveness despite the fact that some authors find it inappropriate (Nenova 2004, 26; Horobet and Dumitrescu 2008, 114). The real effective exchange rate is the nominal effective exchange rate (which is weighted with the inverse of the asymptotic trade weights) deflated by the home country price level. When the index increases, exports become more expensive and imports become cheaper; therefore, an increase indicates a loss in trade competitiveness.

Besides the real effective exchange rates, Table 1 that follows includes the average official exchange rate of the national currency of every country, against the US dollar, so as to show that the real sector distortions usually differ from the financial sector. Emigrants’ remittances inflows’ values during the transition period are also used so as to illustrate their possible connection with the loss of competitiveness.

Starting with the Albanian currency, one can see that the Lek appreciated significantly till the beginning of the global financial crisis. The current account deficit of the country has been much smaller than the trade deficit, exactly due to the presence of remittances (Germenji 2005, 58). Remittances inflows grew at very high rates between 1992 and 2008 and the country's balance of payments was affected considerably by these inflows. In 2004 alone, the Albanian Lek appreciated by 7.2% vis-à-vis the Euro and 15.7% vis-à-vis the USD (op. cit., 49). The appreciation of the Lek since the beginning of transition can be seen in Table 1. The Albanian real effective exchange rate has also undergone a significant appreciation, part of which can be attributed to the inflows of remittances and could result to the operation of the "Dutch Disease" hypothesis. This gets more obvious in the late 1990s and until the outbreak of the global financial crisis.

Table 1. Remittances and Exchange Rates in Albania and Moldova

			ALBANIA			**MOLDOVA**		
YEAR	R (CURRENT US$)	R %GDP	ER	RER[1]	R (CURRENT US$)	R %GDP	ER	RER
1990				87.47				
1991				55.22				
1992	151,800,000.00	23.28	75.03	36.15				
1993	332,000,000.00	28.01	102.06	53.68				
1994	307,100,000.00	16.33	94.62	69.08				78.27

1995	427,300,000.00	17.86	92.70	68.94	1,020,000.00	0.06	4.50	74.39
1996	550,900,000.00	17.22	104.50	66.23	87,080,000.00	5.14	4.60	73.63
1997	300,300,000.00	13.30	148.93	66.43	114,320,000.00	5.92	4.62	84.80
1998	504,140,000.00	19.80	150.63	80.64	122,170,000.00	7.19	5.37	82.38
1999	407,200,000.00	12.68	137.69	89.70	110,410,000.00	9.43	10.52	62.84
2000	597,800,000.0	17.18	143.71	95.86	177,580,000.00	13.78	12.43	73.12
2001	699,300,000.00	17.83	143.48	100.68	242,210,000.00	16.36	12.87	75.79
2002	733,570,000.00	16.87	140.15	101.09	322,590,000.00	19.41	13.57	71.71
2003	888,748,582.31	15.84	121.86	98.84	484,020,000.00	24.43	13.94	67.85
2004	1,160,672,105.02	16.15	102.78	107.72	701,370,000.00	26.99	12.33	77.69
2005	1,289,704,315.93	16.02	99.87	109.47	915,080,000.00	30.62	12.60	79.27
2006	1,359,467,324.66	15.28	98.10	110.17	1,175,820,000.00	34.50	13.13	81.45
2007	1,468,020,000.00	13.75	90.43	110.60	1,491,260,000.00	33.88	12.14	87.76

2008	1,865,574,187.99	14.48	83.89	111.79	1,888,020,000.00	31.18	10.39	104.05
2009	1,716,130,304.12	14.25	94.98	105.47	1,352,350,000.00	24.86	11.11	106.75
2010	1,586,925,580.49	13.31	103.94	100.00	1,752,830,000.00	25.13	12.37	100.00
2011	1,551,123,785.69	12.03	100.89	99.02	1,813,110,000.00	21.55	11.74	104.98
2012	1,420,282,798.15	11.53	108.18	98.58	1,986,440,000.00	22.81	12.11	110.09
2013	1,281,914,066.36	10.03	105.67	100.03	2,191,540,000.00	23.08	12.59	106.75
2014	1,420,535,452.78	10.74	105.48	102.38	2,075,920,000.00	21.83	14.04	102.64
2015	1,290,350,891.32	11.33	125.96	102.86	1,540,120,000.00	19.88	18.82	99.12
2016	1,305,750,160.70	11.01	124.14	106.46	1,460,220,000.00	18.09	19.92	101.49
2017	1,310,873,388.35	10.06	119.10	110.76	1,638,890,000.00	16.95	18.50	112.12
2018	1,458,272,003.45	9.68	107.99	118.71	1,837,430,000.00	16.25	16.80	122.36

Sources: a) World Development Indicators 2019, b) Darvas, Zsolt, 2012a; 2012b; 2012c, c) Author’s calculations

R: workers' remittances

ER: official exchange rate (LCU per US$. Period average)

RER: real effective exchange rate index (2010=100)

Both the nominal and the real effective exchange rate values are indicative of an increase in the purchasing power of the Lek, making the country's exports less competitive. It was during 1997 and the pyramid crisis[1] that the nominal exchange rate of the Lek against the dollar reached a peak and the Albanian currency depreciated. However, at the same time due to the rising inflation, the real exchange rate of the country did not change as much as the nominal one (Schautzer 2005, 116). Moreover, the remittances' magnitudes show that they increased all through that period and a large part of them was spent on non-tradable or imported goods, rather than being directed to developmental activities (Vullnetari and King 2011).

Actually, in the early 1990s all the transition countries experienced depreciations of their national currencies. This was also caused by the political and economic uncertainty. By the time the overall economic climate started to improve, the currency appreciation that followed was considered as a mere adjustment towards the equilibrium levels (Boeva 2009, 7).

The emergence of "Dutch Disease" could also be the case for Moldova, another major destination for remittances. Remittances have not been exclusively channeled to investment functions. Moreover, the real exchange rate of the country has also been appreciated and remittances have been accused of being responsible for this outcome. It should be mentioned that the capital inflows such as the remittances can lead to the appreciation of the equilibrium real exchange rate in the short-run, by stimulating excess demand for non-tradable goods, which leads to an increase in the prices of this sector. However, in the long run, if the capital inflows are used to increase the competitiveness of the national economy, the real exchange rate undergoes a sustainable appreciation. If, on the other hand, they continue to trigger only consumption, the result is the depreciation of the real exchange rate (Herciu and Toma 2006, 6).

[1] For a detailed analysis of the implications of the "pyramid crisis" see Korovilas, 1999.

The data in Table 1 are indicative of the development of the remittances inflows in Moldova along with the real effective exchange rate path. Both the official exchange rate and the real effective exchange rate depict periods of appreciation of the Moldovan currency especially after 2004. It is ambiguous whether Moldova has been a victim of the "Dutch Disease" and even more if remittances hold the responsibility for such an outcome. Previous research findings however clearly indicate the considerable role remittances played in the consumption patterns of those receiving them in this country and the rise in the imports they caused. One could therefore presume that Moldova is a "Dutch Disease" example due to the remittance inflows the country experienced.

3.4 The Model

As far as the determinants of the real exchange rate distortion are concerned, the existing literature identifies a large number of variables that have been used to test an economy for the "Dutch Disease". Holzner (2006, 20-27), for example, tested a variety of variables and concluded to a model that included the nominal exchange rate, the trade openness, the indicators for the International Financial Organisations' disbursements, the aid, the gross fixed capital formation, the foreign direct investments, the remittances and the government consumption. The first five were negatively while the last three positively related to the real exchange rate distortion.

The aim of this chapter is to investigate the relationship between the remittances and the real effective exchange rate distortion in the panel of the two transition countries, Albania and Moldova. To this end, all the other determinants of the real exchange rate variable need to be taken into account. However, the availability of homogeneous and comparable empirical data about

some of the determinants for an extended period of time is limited, so they have not been empirically tested in this thesis. The correlations between the real effective exchange rate (REER) and the available variables that could have an impact on it were investigated (other capital flows like the foreign direct investment, the official development assistance, the age dependency ratio, the terms of trade, the official exchange rate, the trade openness etc). We ended up with the remittances (R), the gross fixed capital formation (GFCF), the general government final consumption expenditure (GFCE) and the GDP per capita (GDPPC) of each country examined. In order to simplify the interpretation, the values of the variables are measured by their ratio to GDP, except for the GDP per capita which is in constant 2010 US $. The model was estimated for the 1990-2018 period for which data is available.

More specifically, the GDP per capita is used as a proxy for the Balassa-Samuelson effect and it is expected to appreciate the real effective exchange rate. The fiscal expenditure does not have a definite impact on the real effective exchange rate distortion. As far as the remittances and the gross fixed capital formation, the expected results are also ambiguous and largely depend on a variety of factors.

Due to the small number of observations, part of which has been the result of our own calculations, the test methods that can be applied are restricted. The panel dynamic ordinary least squares method is preferable in order to define the long run relationship between the independent and the dependent variables. An advantage of this method is that it doesn't require exogeneity assumptions or the use of instruments but rather produces unbiased estimates for variables that cointegrate even with endogenous regressors. Moreover the DOLS estimator is robust when variables that do not form part of the cointegration relationship are omitted. It outperforms the bias-corrected OLS and the Fully Modified OLS in small samples and it has better sample properties (Kao and Chiang 2001). Since leads and lags are present in the DOLS regression model to make its stochastic error term independent of past

innovations in stochastic repressors, the model for the dependent variable y_t and the independent x_t is specified as follows:

$$Y_{it} = a_i + bx_{it} + \Sigma^{n}_{j=-m} c_{ij}\Delta x_{it-j} + e_t$$

where b= cointegrating vector representing the long-run cumulative multipliers

e_t = error term

n= lag length

m= lead length

Table 2 presents the descriptive statistics of the series. The mean for the gross fixed capital formation (GFCF) is higher than for the remittances and the government final consumption expenditure while the standard deviation of the remittances series exceeds that of the GFCF. Skewness and kurtosis are positive for all the variables except from the skewness of the real effective exchange rate and they indicate a normal distribution (skewness around zero and kurtosis around three).

Table 2. Descriptive Statistics

	REER	R	RGDPPC	GFCE	GFCF
Mean	91.85034	17.16025	2484.137	14.89975	25.00353
Median	99.12064	16.32684	2085.432	14.37173	24.15867
Maximum	122.3631	34.49900	5075.355	28.80613	38.07024
Minimum	36.14803	0.058187	1135.818	9.453599	5.656684
StD. Dev.	1860723	7.299200	1158.581	4.879168	7.108837
Skewness	-0.746231	0.385257	0.774738	1.120199	0.132221
Kurtosis	2.979569	3.087218	2.351861	3.412618	2.912393
Jarque-Bera	4.734205	1.277758	5.994533	11.02797	0.164911
Probability	0.093752	0.527884	0.049923	0.004030	0.92853
Sum	4684.367	875.1727	126691.0	759.8875	1275.180
Sum S. Dev.	17311.44	2663.916	67115458	1190.314	2526.778
Observations	51	51	51	51	51

The first step of the analysis is the unit root tests for the stationarity of the variables to avoid spurious regression problems. The summary unit root tests are performed with automatic selection of maximum lags based on the AIC criterion.

Table 3. Unit Root Tests

	Statistics			
	Levin, Lin & Chu t	Im, Pesaran & Shin W-stat	ADF- Fisher Chi-square	PP- Fisher Chi-square
REER	-0.78366	0.47308	3.65923	0.61336
ΔREER	-4.35416	-5.31453	30.1580	33.3545
RGDPPC	2.72877	4.49125	0.00793	0.0793
ΔRGDPPC	-4.79722	-4.30538	26.0407	41.6826
R	-1.24173	-0.73627	4.82373	7.76665
ΔR	-2.42295	-4.54176	25.8702	38.4079
GFCE	-1.59372	-1.14574	6.56172	6.00777
ΔGFCE	-2.01469	-3.25636	17.9249	30.7867
GFCF	-0.84733	-1.48804	8.01377	4.18352
ΔGFCF	-6.80987	-6.62262	37.6043	33.3157

The variables are stationary in first differences. The next step of the empirical analysis is the Johansen Fisher Panel cointegration test.

Table 4. Cointegration Tests

	Fisher Stat from trace test	Fisher Stat from max-eigen test
None	39.89	24.45
At most 1	19.76	12.72
At most 2	9.965	9.330

In Table 4, there is indication of 2 cointegrating regressions. Having considerable evidence of cointegration, the dynamic ordinary least squares method is going to be utilized to estimate the cointegrating vector. The Tables 5-7 present the panel data model DOLS with pooled, pooled weighted and grouped estimation. The pooled estimation performs the standard DOLS on the pooled sample of the data. The pooled weighted allows for heterogeneity by using cross-sections specific estimates, while the grouped mean estimations computes the cross-section average of the individual cross-section DOLS estimates.

Table 5. Panel Dynamic OLS Estimates of Long-Run Real Effective Exchange Rate-Pooled Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
R	-1.702361	0.318068	-5.352186	0.0001
RGDPPC	0.004432	0.001476	3.003255	0.0089

GFCE	3.183480	0.825878	3.854664	0.0016
GFCF	1.263908	0.249322	5.069385	0.0001

R Bar Squared: 0.970975, Automatic Leads and Lags based on AIC , 45 panel observations, Long-run variance (Bartlett Kernel, Newey-West fixed bandwith) used for coefficient covariances

Table 6. Panel Dynamic OLS Estimates of Long-Run Real Effective Exchange Rate-Pooled (Weighted) Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
R	-1.740247	0.386149	-4.506671	0.0004
RGDPPC	0.004546	0.001235	3.680507	0.0022
GFCE	2.985076	0.957488	3.117612	0.0071
GFCF	1.308270	0.149234	8.766551	0.0000

Table 7. Panel Dynamic OLS Estimates of Long-Run Real Effective Exchange Rate-Grouped Estimation

Variable	Coefficient	Std Error	t-statistic	Prob
R	-4.535378	0.775147	-5.850993	0.0000
RGDPPC	-0.004687	0.017785	-0.263549	0.7957
GFCE	4.900575	1.276301	3.839670	0.0016

GFCF	1.300515	0.907203	1.433543	0.1722

The methods produce similar results in terms of the sign while the magnitudes of the estimated coefficients and their significance are different.

Remittances represent a negative and significant determinant of the real effective exchange rate in the receiving countries illustrating a depreciative tendency rather the expected appreciative one. The coefficients derived from the pooled DOLS are quite smaller than the grouped estimations. The coefficients of the GDP per capita and the gross fixed capital formation are not significant in the grouped estimation but they are positive and significant in the pooled and pooled weighted ones. The general government final consumption expenditure variable produces the largest coefficient in the regression which is both positive and significant. Thus, the remittances origin of the Dutch Disease in the long run is unlikely to be verified for our panel.

The negative relationship between the real effective exchange rate and the remittances variables could be explained either by an overvalued exchange rate reversal policy implementation, by the counter-cyclical nature of remittances, by the channeling of remittances in the tradable sector of the economy or by a rise in the price of the tradable goods due to the boost in the production of the non-tradable goods (Brahim et al. 2017). However, in this particular case, the most possible explanation is considered to be that the inflows of remittances in Albania and Moldova have been mainly channeled in the long run either to consumption or to the non-tradable goods sector resulting to a depreciative effect on the real exchange rate (Nikas and King 2005).

The macroeconomic implications of remittances for Albania, Bulgaria Moldova and Romania were investigated by Blouchoutzi and Nikas (2010 and 2013). According to their findings, remittances have a considerable impact on the spending patterns of these countries, but they also display a growth potential through financing investment. Moreover, there is no doubt that remittances have

also financed a large part of the imports of the receiving countries, a fact verified by the econometric findings. However, the extent to which they have debilitated the economy, for example due to the appreciation of the real exchange rate they may cause, has not been clarified. The possibility of the "Dutch Disease" hypothesis applying in these countries, after the beginning of the transition period and the remittances inflows, has been discussed a lot and in some of these cases, it has been considered as a major problem for their economies.

However, the results of the econometric tests do not confirm the appreciation of the real exchange rate due to the remittances inflows but they illuminate a negative relationship between the two variables in the long run probably attributed to the prevailing consumption use of these capital flows which may have bridged the dual gap problem (savings-investment gap and foreign exchange gap) but has also increased the latter in the long run (Nikas and King 2005).

3.5 Conclusion

The "Dutch Disease" is an economic phenomenon related to the real exchange rate appreciation and the loss of competitiveness of a country receiving large capital inflows or discovering a significant amount of natural resources. Since many transition countries have been receivers of remittances, this chapter presented specifically the remittances – "Dutch Disease" hypothesis relationship in the countries under transition. The findings of the econometric investigation indicate that the relationship between the real effective exchange rate and the remittances inflows in the panel of the two countries is negative and

significant giving prominence to a depreciation trend rather than an appreciation one.

A constant persistence of the appreciation of the real exchange rate, without proper handling and without being accompanied by a rise in productivity and in the quality of the products offered on the external markets, would crowd out the traditional export sector, reduce manufacturing output and even lead to speculative attacks. The chapter has not focused on the growth – "Dutch Disease" relationship, but it is almost certain that the economy would face difficulties towards the recovery. A combination of fiscal and other policies would be very helpful in the policymakers' hands, so as to treat the situation in the economy's best interest.

It is definitely the kind of shock that determines the appropriate policies. The Euro currency for example was meant to bring prosperity to the member-states but the debt crisis transformed it into a "doomed" currency (Nikas et al. 2019). Kronemberg (2004), investigating the application of the "Dutch Disease" hypothesis on the European transition economies, (focusing however on natural resources rather than inflows such as remittances) finds that corruption and neglect of investment in human capital (education) have brought "Dutch Disease" to these countries. However, asking the rhetoric question "…should oilfields be set on fire and the gold mines demolished?", he answers "…of course. No". As Magud and Sosa (2010, 27) have so typically claimed "When thinking about "what to do" about the Dutch Disease", policymakers should beware—in responding to the effects of the disease—of killing the goose that laid the golden egg."

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Chapter 4. Immigration and Economic Growth: The Case of Greece

Abstract

In the aftermath of the recent economic and migration crisis, Greece was found facing questions such as whether immigration is advantageous for the economy of the country or whether the benefits of immigration outweigh its fiscal cost. During a recession, immigration usually attracts the general attention due to the competition for scarce job vacancies and social provisions. Consequently, countries tend to respond reactively by adopting more restrictive immigration policies. However, the economically rational response to the immigrant inflows is the effective labour market integration, which eventually leads to the successful social inclusion of the immigrants. This chapter focuses on displaying the potential gains of immigration for Greece by presenting the "immigration surplus", that is the economic benefits due to immigration. A neoclassical growth model is used assuming a competitive, market-clearing framework to measure the impact of immigrants in natives' earnings from 2001 to 2018. Moreover, the chapter aims at exploring whether there is a long run relationship between immigration and growth in Greece and estimate it using the dynamic ordinary least squares method.

Key words: immigration, growth, Greece, immigration surplus, DOLS

4.1 Introduction

Greece, being at the crossroads of Europe, Asia and Africa, started attracting immigrants in the late 80's and the early nineties. Immigrants' proportion to the total population was increasing gradually since the outburst of the financial crisis in 2009, as it is presented in Table 1 below, with the ratio of immigrants to the total labour force being higher than their ratio to the total population. Therefore, it could be suggested that immigrants have contributed to the GDP growth in Greece during the last decades.

Table 1. Population in Greece by Citizenship (thousands)

Year	Total population	Natives	Foreign population
1987	9,714.50	9,659.40	55.1
1988	9,739.20	9,672.40	66.8
1989	9,752.80	9,690.50	62.3
1990	9,843.60	9,777.00	66.6
1991	9,919.00	9,839.80	79.3
1992	9,942.70	9,838.70	104
1993	10,118.20	10,002.70	115.6
1994	10,206.00	10,080.90	125.1
1995	10,238.00	10,107.50	130.5
1996	10,254.30	10,120.90	133.5
1997	10,265.60	10,097.10	168.5

1998	10,389.60	10,095.20	294.4
1999	10,437.10	10,146.80	290.3
2000	10,471.90	10,176.30	295.6
2001	10,813.30	10,453.00	360.2
2002	10,852.10	10,416.10	436.1
2003	10,887.50	10,399.30	488.1
2004	10,925.40	10,361.30	564.1
2005	10,963.30	10,383.70	579.6
2006	10,999.10	10,424.90	574.2
2007	11,034.90	10,405.90	629
2008	11,059.40	10,346.80	712.6
2009	11,061.30	10,215.80	845.6
2010	11,028.80	10,188.10	840.7
2011	10,998.30	10,208.20	790.1
2012	10,967.20	10,202.90	764.2
2013	10,921.10	10,198.60	722.6
2014	10,880.50	10,181.20	699.2
2015	10,831.70	10,204.10	627.6
2016	10,783.20	10,221.10	562.1

2017	10,730.70	10,216.80	513.8
2018	10,673.40	10,178.80	494.6

Source: Hellenic Statistical Authority 2019

The numbers reported in Table 1 refer to the legal immigrant population in Greece. One of the challenges of immigration for the Greek state though has been the large number of undocumented immigrants and their occupation in the informal sector of the economy which has expanded it to become one of the largest informal economies in Europe (Arango and Baldwin-Edwards 2014). Greek immigration policy reform was provoked by the influx of illegal immigrants and immigration gradually became an issue of political debate. The majority of the immigrant population in Greece used to consist of Albanians according to the 2011 census of the Hellenic Statistical Authority and they were concentrated mostly in urban areas like the capital city of Athens. Albanians massively left their country after the fall of the Communist bloc searching to improve their standards of living and find well-paid jobs. In fact, the target of the immigration policy reform launched in Greece in 1991 was the deportation of Albanians who had entered in Greece illegally and the prevention of further illegal immigration.

It has been supported that initially the immigrants weren't competitive to the natives except from the low-skilled sectors. On the contrary, a big part of the latent demand which was created in Greece by the rising living standards, the rigidities of the local labour market and the EU funded investments during the aforementioned time period has been met by the immigrant population. As such, the gaps created due to the new needs and the mobility of the native labour force to upgraded job positions were covered by the immigrant inflows (Lyberaki 2008). Moreover, the labour supply shock created by the low paid immigrant workers helped the family businesses and the small traditional manufacturing units to be viable instead of closing, despite the fact that at the same time, it

contributed to minimum modernization and innovation initiatives in the manufacturing and the industrial sector in Greece (Triantafyllidou 2007).

Following the global financial crisis, Greece entered a period of deep recession. Furthermore, during the economic downturn, Greece was found in the front line of the refugee crisis which was triggered by the Syrian civil war. As a result, the immigrants already integrated into the Greek labour market started to compete with the natives for the limited job places, while there were also the newcomers who entered the labour force searching for employment opportunities. During a recession, immigration usually attracts the general attention due to the competition for scarce job vacancies and social provisions. Consequently, countries tend to respond reactively by adopting more restrictive immigration policies. However, the economically rational response to the immigrant inflows is the effective labour market integration, which eventually leads to a successful social inclusion of the immigrants.

The aim of this chapter is to elucidate the economic benefits of immigration in Greece and relate immigration with the economic growth. Towards this purpose, Borjas' formula, implemented in the case of the USA to compute the amount of the immigration surplus, is utilized. The use of this calculation presumes an oversimplified economy which is actually not the case for Greece. Nevertheless, even the estimation of the upper bound of the amount of the national income accruing to the native population due to immigration could stimulate the assessment of the advantages of immigrants' presence in Greece, so as the appropriate immigration policies to be implemented in order to capitalise on it. Moreover, this chapter seeks to explore whether there is a long run relationship between immigration and GDP growth using a dynamic ordinary least squares model with quarterly data from 2001 onwards.

The chapter is divided in five parts. The following section gives a brief theoretical perspective of the impact of migration on the countries involved in the migration process. The review of the most relevant literature follows in order to establish the framework in which this chapter contributes. The

empirical part of the chapter is divided in two sections. The first section is dedicated to the description of Borjas' model and the estimation of the immigration surplus in Greece. Next, the econometric testing of the available data follows to search for the cointegration between immigration and GDP growth. Last but not least, the main conclusions of the chapter are produced.

4.2 A Theoretical Perspective on the Impact of Migration

The motives for the mobility of people vary from economic to political, environmental or personal. For example, the low income level, the low pay wages, the GDP decline, the harsh working conditions and the level of unemployment usually induce migration outflows. Moreover, authoritarian regimes, conflicts, a war or the climate change could also provoke emigration. On the other hand, a high index of economic welfare, high salaries, labour demand and loose immigration policy could attract immigrants towards a country (Nikas 1991, 108-116). It is definitely the age, the gender and the origin of a migrant that defines his/ her decision to migrate (Nikas and King 2005, 246; King and Vullnetari 2009, 28-30). But other features such as the education, the foreign language qualification, the working experience, the family status and the human capital investment also play a role in the decision to migrate. Thus, migration is a constant challenge for the countries involved, either they are the source countries of the migrants, the transit countries in the migratory route or the host countries.

Migration generates several positive and negative economic and social consequences for the migrants themselves, for the countries that send and host them. With regard to the country of the migrants' origin, there is a decrease in the unemployment rate due to the outflow of labour. There is also an increase in

financial inflows in the form of migrant remittances and foreign direct investment. Remittances, apart from their use for consumption purposes, they are also a potential pool of savings and investment capital for future investment and capital formation. Knowledge diffusion, which helps narrowing the technological gap between the country of origin and the destination country, is another benefit of the migration process, which eventually results in the reduction of emigration and the increase of emigrants' repatriation in the long run (Dos Santos and Postel-Vinay 2003, 163). On the basis also of the findings that positively relate past migration with business ownership (Kilic et al. 2007, 23) and the repatriation of migrants with the productivity level of the source country (Leon-Ledesma and Piracha 2004, 77), migration could be considered as a developmental tool. The question of whether migration leads to development and reduces poverty in the migrants' country of origin has actually caught the attention of the researchers. In the existing literature, there are studies favoring the growth potential of migration through certain channels like enhancing the asset positions and the productivity levels of poor households via migrants' remittances and overseas savings, the human capital accumulation of the return and the circular migration (Kilic et al. 2007, 2-3). However, there is a whole different issue concerning the effect of migration on the inequalities and the redistribution of income.

As far as the social outcomes of migration are concerned, there is much attention on the permanent phenomenon which deprives the country of origin from population growth, since the migrants are usually young and they belong to the country's labour force. The loss in human capital has been a controversial issue especially due to its long run consequences. Migration results in a considerable loss of labour force upon which the sending country invested. However, as it was mentioned above, this could also work vice-versa, in the way that part of the sending country's unskilled labour force finds the opportunity to acquire qualifications and useful knowledge abroad and affects their home country through imitation and knowledge diffusion (De Coulon and Piracha 2002, 6; Dos Santos and Postel-Vinay 2003, 162-163). In general, the

migration cost, the adaptation difficulties, the racial and social racism migrants face, make the policymakers skeptical on the appropriate measures that could relieve the migrant population.

The migration process affects the labour supply and consequently the levels of employment and wages in the destination country as well. Migrants' host countries benefit as they cover their gaps with qualified or unskilled labour (Zhao and Kondoh 2007, 347) and improve their growth rates. The increase in the labour supply helps covering the shortages in the labour market of the host countries relieving it from the upward pressure on the wages. The employment of immigrants in job positions with low skills can exert negative pressure on the wages of the host country, but it could also lead the locals in better positions pushing in this way wages to rise (Franz et al. 1994, 224). It is the immigrants' skill composition that defines the wage adjustments and the gains and the losses for the natives. According to the Solow model, a permanent migration flow will reduce the per capita income in the short run, when the immigrants are less skilled than the natives. If, on the other hand, the supply shock comes from highly qualified workers then it could trigger long-term economic growth (Borjas 2019). A change in the output mix of the economy or a technology modification are alternative mechanisms of adjustment to the labour supply shock in the migrants' host country (Dustmann et al. 2008).

4.3 Literature Review

The relationship between immigration and growth in the migrants' host countries has challenged the researchers, enriching the literature with several case studies based on various approaches which lead to diverse results, offering still plenty of evidence to build on and stimulating further analysis. Boubtane et al. (2013) using a panel VAR for 22 OECD countries found that immigration

positively affects the GDP per capita and it is affected by the host country's economic conditions. In 2016, Boubtane et al. reaffirmed with their research the positive impact of the migrant's human capital on the GDP per capita and the high growth impact of immigration even in the case of host countries with non-selective migration policies. On the contrary, Bashier and Siam (2014), using the Fully Modified Ordinary Least Squares approach in a Cobb-Douglas production function economic model for Jordan, ended up with a positive but insignificant impact of immigration on economic growth.

Morley (2006) in his study on the cases of Australia, Canada and USA, used an ARDL bounds testing approach to examine the causality between economic growth and immigration and much as he found a long run causality running from the per capita GDP towards immigration, there was no evidence proving the relationship the other way round. Feridun's results in the case of Finland provided with no evidence of causality between the two variables (Feridun 2004). In the research of Gonzalez-Gomez and Giraldez (2011) the results of the causality testing between immigration and growth for two traditional destination countries for immigrants in Europe, Germany and Switzerland, have been contradictory. In the case of Germany the per head number of foreigners causes economic growth, while in Switzerland it does not.

As regards the influential work of Borjas and his concept of "immigration surplus", there is plenty of research built on it, like Altonji and Card (1991), Peri and Ottaviano (2005), Drinkwater et al. (2007) and Ben-Gad (2008) pointing out various aspects of the impact of immigration on the labour market of the host country.

There are several papers searching for the impact of immigration on the native workers in the case of Greece too. Chassamboulli and Palivos (2013) allowed for skill heterogeneity and differential unemployment income between immigrants and natives and supported that skilled natives gain from immigration in terms of employment and wages. Chletsos and Roupakias (2012) studied the direction of causality between migration and two macroeconomic

variables, the real GDP and unemployment, and though they detected that GDP growth as well as unemployment Granger cause migration, there was no evidence for the reverse causality. Dritsakis (2008) also examined the causal relationship between migration and economic growth, revealing a long run bidirectional causality. Tzougas (2013) reaffirmed the long run bidirectional causality between immigration and GDP per capita.

Relevant literature about the "immigration surplus" for other European countries has been available as well. Amuedo-Dorantes and De la Rica (2013) assessing the impact of immigration in Spain, showed that the amount of the immigrant surplus is larger when considering for the imperfect substitutability between immigrant and native workers. The benefits of migration are pointed out for the Visegrad group countries by the empirical research of Bilan and Strielkowski (2016). Kim et al. (2010) focusing on the UK labour market recommended that migration increases the world growth rate except from the case of unskilled migration.

In the aforementioned framework, this chapter searches for the cointegration between immigration and GDP growth in the case of Greece following the Stock and Watson (1993) DOLS approach, which has been found to be superior over other long run model estimators, using available quarterly data from 2001 to 2018. Moreover, part of the empirical research is dedicated to estimate the immigration surplus in Greece using longitudinal data and following Borjas' calculation formula.

4.4 Immigration Surplus in Greece

Borjas (1995) tried to shed light on the benefits which natives receive due to immigration in the USA and established that the short run immigration surplus is on the order of 0,1% of the US GDP. Emphasizing on the production complementarities between immigrant workers and other factors of production, he provided evidence that natives do benefit from immigration. For the purpose of Borjas' study, the following assumptions have been made:

- a single consumption good is produced
- the elasticities of capital and labour supply is 0
- all workers are substitutes in production
- natives own the capital
- the negative impact of immigration on the wage is spread over the entire economy
- there is no structural unemployment.

Borjas' research led to the following suggestions:

- the complementarities that exist between capital and labour produce the immigration surplus through the fall in the native wage
- apart from the efficiency gains there are distributional issues arising due to the transfer of wealth away from workers
- a small immigration surplus could mean small or even negative economic benefits due to the fiscal cost of immigration which should be taken into account when defining the optimal size and skill composition of immigrant flow.

The calculation formula for the short run immigration surplus as a fraction of national income based on the aforementioned simple economic model which Borjas used is:

$$\Delta Qn/Q = -½*s*e*m^2,$$

where: Qn=national income accruing to natives

s=labour's share of national income,

e=elasticity of factor price for labour,

m=foreign-born fraction of the labour force.

In the case of Greece, half of the total national income is paid as employee compensation. As for the elasticity of factor price for labour, assuming a linear homogeneous Cobb-Douglas production function, it is derived as follows: e=s-1 (or else e=capital's share of income). Labour force, in this study, refers to the fraction of working age population 15-64 years old. The data are available from the ILOSTAT (2019) and Eurostat (2019) databases.

Following Borjas' calculations, we intend to create longitudinal immigration surplus data for Greece from 2001 to 2018. The experience of Greece as a destination country for migrants originated from the Balkans and the Eastern European countries and as a transit country for migrants originated from the MENA countries could provide us with quantitative data to describe whether natives benefit from immigration. It should be noted that the aforementioned methodology is a static one, used for small temporary immigrant inflows. Therefore, it does not account for the immigrant stock and the adjustment of the capital over the years. However, the implementation of such a simple model, though it may not capture the exact quantitative effect of immigration in Greece but rather the upper limits of it, it could still provide us with useful policy suggestions on the benefits of immigration on growth.

Using longitudinal data for Greece from 2001-2018, this study suggests that the immigration surplus in Greece varies between 0.02% and 0.12% of GDP as it is presented in Table 2. Though it seems as a small amount, considering the absolute values it is between 35 and 283 million €. It reached a

peak in 2009-2010, when the labour share of income and the foreign born fraction of the workforce in the country received their largest values. This is attributable to the fact that during these years, in the aftermath of the global financial crisis and the beginning of the Greek government-debt crisis, the total active labour force in Greece started to decrease due to the flea of many Greek emigrants abroad to search for better job opportunities.

Table 2. Immigration Surplus in Greece

Year	Immigration Surplus % GDP	Immigration Surplus (€)
2001	0.02	35,007,000.69
2002	0.04	59,382,056.10
2003	0.04	77,009,449.29
2004	0.05	101,961,359.57
2005	0.06	116,348,839.86
2006	0.06	121,097,226.24
2007	0.06	150,913,491.26
2008	0.08	204,018,257.33
2009	0.12	283,459,965.86
2010	0.12	270,377,749.23
2011	0.11	219,838,908.82
2012	0.10	184,640,804.59
2013	0.09	162,637,650.85
2014	0.09	157,054,172.95
2015	0.07	119,858,750.81

2016	0.06	101,182,734.99
2017	0.05	85,434,072.08
2018	0.04	79,653,033.04

This "textbook" model, as Borjas mentions it (2006, 10), illustrates the plausible dynamics of immigration in the case of the Greek labour market. Such an outcome, no matter how small it seems relative to the overall economy, it is enlightening of the potentials of immigration in Greece and crucial for the planning of a more immigration friendly policy.

4.5 The Relationship Between Immigration and Economic Growth

For the purpose of defining the relationship between immigrant inflows in Greece and GDP growth, the generalized Cobb Douglas production function will be utilized to capture the contribution of the immigrant labour force, the native labour force and capital in the gross domestic output as follows:

$$Y=b\ K^{a1}\ L_n^{a2}L_f^{a3}, \text{ where:}$$

Y=output

K=capital

L_n= native labour force

L_f=foreign labour force

b, a1, a2, a3= coefficients of inputs

Quarterly data from 2001 to 2018 have been used in logarithms. The economic variables are the real gross domestic product (Y=GDP), the gross fixed capital formation (K=GFCF), the native labour force (L_n=NAT) and the foreign labour force (L_f=FOR). The data are available from the Hellenic Statistical Authority (2019). The main concern of this chapter is to verify whether there is a long run relationship between immigration and economic growth and estimate it with the DOLS method which includes lagged and led values in the change of the regressors to deal with simultaneity and small sample size issues.

In Table 3 the descriptive statistics of the series are depicted. The standard deviation of the foreign labour force series is higher than that of the native labour force while as it was expected the mean of the latter is higher than the mean of the former. Skewness is around zero while kurtosis is around 2. The Jarque-Bera test indicates a normal distribution of the series except from the GDP series for which the null hypothesis of a normal distribution is rejected at the 5% significance level but not for the 1%.

Table 3. Descriptive Statistics

	GDP	FOR	NAT	GFCF
Mean	5.28E+10	355873.6	4521168.	9.42E_09
Median	5.16E+10	338150.0	4514050.	1.05E+10
Maximum	6.33E+10	509800.0	4653400.	1.75E+10
Minimum	4.56E+10	189500.0	4395200.	4.38E+09
StD. Dev.	6.04E+09	79658.57	69756.56	3.57E+09
Skewness	0.338481	0.082595	0.202710	0.154178
Kurtosis	1.601212	2.241411	2.026063	1.900784
Jarque-Bera	7.244651	1.808234	3.338755	3.910077
Probability	0.026720	0.404899	0.188364	0.141559
Sum	3.80E+12	25622900	3.26E+08	6.78E+11
Sum S. Dev.	2.59E+21	4.51E+11	3.45E+11	9.04E+20
Observations	72	72	72	72

The first part of the analysis includes the stationarity tests to avoid spurious regression problems. Table 4 presents the results of the Phillips-Perron unit root test for the presence of a unit root in the time series. Since all the

variables are integrated of order (I) the appropriate lag length of the model is computed and the Johansen cointegration test is conducted to determine the number of cointegrating vectors.

Table 4. Unit Root Test

Variables	Phillips-Perron t-test Statistic	Test Critical Value 5% Level
LGDP	-0.958620	-2.902953
ΔLGDP	-7.083470	-2.903566
LFOR	-2.548438	-2.902953
ΔLFOR	-6.186378	-2.903566
LNAT	-0.959146	-2.902953
ΔLNAT	-6.734211	-2.903566
LGFCF	-1.493730	-2.902953
ΔLGFCF	-16.06225	-2.903566

Before proceeding with the Johansen cointegration test which is subject to sensitivity of the lag length, the VAR lag order selection criteria have been used. Two of the criteria suggest 1 optimum lag and the rest of them favor 4 lags for the model, as it is portrayed in Table 5. However, the diagnostics for the model with 4 lags perform better.

Table 5. Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	365.5154	NA	2.83e-10	-10.63281	-10.50225	-10.58107
1	669.2709	562.8411	5.99e-14	-19.09620	-18.44341*	-18.83754*

2	682.6661	23.24462	6.50e-14	-19.01959	-17.84456	-18.55401
3	701.6691	30.74020	6.02e-14	-19.10792	-17.41064	-18.43540
4	724.1175	33.67251*	5.11e-14*	-19.29757*	-17.07806	-18.41814

The Johansen cointegration trace test indicates one cointegrating vector at the 0.05% significance level as also indicated by the maximum eigenvalue. The results of the Johansen tests are presented in Table 6.

Table 6. Results of Johansen Cointegration Test

Trace Test				
Hypothesized Number of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob
None*	0.436620	62.37959	47.8561	0.0012
At most 1	0.197463	23.36110	29.79707	0.2288
At most 2	0.114178	8.402647	15.49471	0.4234
At most 3	0.002326	0.158359	3.841466	0.6907
Maximum Eigenvalue Test				
None*	0.436620	39.01849	27.58434	0.0011
At most 1	0.197463	14.95845	21.13162	0.2918
At most 2	0.114178	8.244288	14.26460	0.3544

At most 3	0.002326	0.158359	3.841466	0.6907

*denotes rejection of the hypothesis at the 0.05 value
MacKinnon-Haug-Michelis (1999) p-values

Having established the existence of one cointegrating vector, the DOLS approach is utilized to establish the long run relationship between the variables which is presented in Table 7. The maximum lag length is set up at 4 following the Akaike criterion.

Table 7. Estimated DOLS Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LFOR	0.153852	0.019631	7.836987	0.0000
LNAT	3.036740	0.555489	5.466791	0.0000
LGFCF	0.167097	0.026708	6.256509	0.0000
C	-27.64136	8.011807	-3.450078	0.0011

Included observations=69 after adjustments, R-squared=0.981038, Automatic leads and lags specification: 2 leads, 0 lags based on AIC, Long-run variance estimate: Bartlett kernel, Newey-West fixed bandwidth=4.0000 potentials

The long run coefficient of the immigrant labour force is indicative of a positive and significant (p-value= 0.0000) relationship. The results of the DOLS estimator portray that an increase of 10% in the immigrant labour force boosts GDP growth by 1,5% providing further evidence in the existing literature that immigration could be beneficial for the economic growth of the host country. The largest coefficient in the regression is the native labour force's estimator which is indicative of a ratio relationship between economic growth and native labour force in the order of 1:3 confirming the labour intensive production in

Greece. With regard to the capital's coefficient in the regression, it is smaller than the native labour's and larger than the foreign labour's ones. Still, it is positive and significant as expected.

4.6 Conclusion

In a period when immigration in Europe has been questioned, this chapter unveils the relationship of immigration with growth for Greece. Apart from the immigrant flows in the country, which peaked in 2015, Greece has also faced a deep economic recession that altered its labour market. However, the economically rational response towards immigration is the successful labour market integration.

This chapter provides evidence that immigration could be beneficial for the native population in Greece following a targeted immigration policy. The results of this study offer indication that the immigration surplus in Greece, that is the economic benefits from immigration, has varied between 0.02% and 0.12% of GDP, which could prove a valuable contribution to the natives' earnings in a period of recovering from a deep economic recession. Moreover, the results of the econometric tests illustrate a long run positive relationship between immigration and growth which provides further evidence of the immigrants' contribution in the GDP growth in Greece. In particular, the findings of the empirical testing suggest that a 10% increase in the immigrant labour force could increase the output by 1.5%. Considering that the projections of the Bank of Greece (2019) for the GDP growth in the next years do not exceed 2%, it could easily be derived that proper selective immigration and effective integration policies that would capitalise on the immigrants' human capital could strengthen the developmental potentials of the Greek economy.

Hence, the importance of a targeted immigration and integration policy has become even more evident. In a period of recovery from a deep recession and restructuring of the Greek economy which has lost a considerable part of young and highly skilled native labour force due to the economic crisis, the enlightment of the potentials of the immigrants' presence in Greece is a first step towards their effective integration in the labour market and their social inclusion in the Greek society.

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Chapter 5. The Unemployment of Natives and Immigrants in a Country in Deep Recession: The case of Greece

Abstract

The outburst of the economic crisis in Greece deepened the problems in its labour market affecting both the native and the immigrant population. Immigrants had contributed considerably to the country's growth until the recession the economy faced made them struggle to cope with. The purpose of this chapter is to present the evolution of unemployment in Greece along with a short overview of the Greek experience on the economic and the migration crises trying to answer whether immigrants have been more flexible and less vulnerable or less competitive and more vulnerable to the changes in the labour market. Moreover, this chapter examines Okun's coefficient in the case of the native and the immigrant population in Greece relating in this way immigration in Greece with growth.

Key words: migration crisis, economic crisis, Greece, recession, unemployment, Okun, growth

5.1 Introduction

Greece has a long history as an emigration country since the formation of the modern Greek state (1830s) and up to the 1970s. After the fall of the Communist system, Greece gradually transitioned to an immigration country. More recently, Greece has become an entry and transit country for hundreds of thousands of refugees from Africa, Asia, and the Middle East, some of which eventually evolve to immigrants. This last immigration wave coincided with the outbreak of an economic recession. As a result the economic, political and social environment of immigration in Greece changed dramatically.

Employment and income have shrunk for both the native-born and the immigrant population. This has led to lower wages, a contracting labour market and fewer regularized immigrants. Until the outbreak of the crisis most immigrants seemed to have chosen to live permanently in the country. However, the economic crisis changed this picture. Unemployment rates went well above 20%. Immigrant workers were also affected. In fact, they started to consider repatriating or emigrating to a more promising European state. However, most of them remain in Greece, thus adding a serious problem in a chaotic labour market, despite the fact that in the past they contributed significantly to the improvement of the demographic and economic profile of the country.

This chapter presents the development of the employment and the unemployment levels in Greece by citizenship and by sector of economic activity trying to answer whether immigrants have been more flexible and consequently less vulnerable to the changes in the labour market or less competitive and more vulnerable to lose their jobs. Furthermore, Okun's law validity in the case of the native and the immigrant population is tested to relate immigration with growth in Greece. The chapter is organized in six parts. Part one includes a brief theoretical approach on the causes of migration. Part two gives a short overview of the Greek migration history. Part three describes the

impact of the crisis on the Greek economy. The fourth part focuses on the impact of the crisis in specific segments of the labour force distinguishing between native Greeks and immigrants. The empirical analysis is thoroughly presented in the fifth part of the chapter and conclusion wraps up the analysis. An important note that should be taken into consideration is that the statistical data we present include only the legal immigrants. However, it should also be noted that according to Eurostat, Greece delivers immigrant data including asylum seekers and refugees usual residents for at least 12 months.

5.2 A Theoretical Approach on the Causes of Migration

Economic theorists developed a number of approaches on the causes of immigration, especially in the period after the 2nd World War. Individuals and their decisions are at the center of the contemporary immigration theories such as the Neoclassical (stressing the importance of wage differentials between the countries involved in the migration process), the Keynesian (stressing employment opportunity differentials) and the human capital one. One of these approaches stresses the importance of the "push" and "pull" factors for immigration to occur (Lee 1966).

This last approach is rather macro than microeconomic and it did not bring in any entirely new elements to the theory. In fact it was based on "loans" from the pre-existing literature, structured however in an original way (Nikas 1991, 41). Immigration may occur as the result of pull factors exercised by the destination countries, push factors exercised by the origin ones, or a combination of the two. The economic developments in the country of origin and the country of destination are carefully observed and assessed by the potential immigrant in order to reach a final decision. If a country has more

labour than it needs, a number of forces start to operate in order to enable it to get rid of this surplus. On the other hand, countries experiencing labour shortages, develop labour attraction forces and mechanisms (higher wages and employment opportunities, low unemployment etc). One could argue that in essence, it is an approach of simultaneous operation of push and pull forces meaning that for emigration or repatriation to occur, a country wishing to export labour and a country wishing to import it are needed. Origin and destination countries harmoniously compete in an auction where the potential immigrant, having perfect knowledge and understanding of the offers, will choose the best one for his (her) interests. Following this logic, after a person decides to immigrate, he (she) may decide to repatriate after a period of time in the context of a dynamic process, if the offer of the country of origin has become the better one. That is, repatriation may occur because of the same forces operating in the opposite direction (push by the destination country and/or pull by the origin one).

Push and pull factors are related with the areas of origin and destination as well as the obstacles these flows may face. These factors may facilitate or prevent people from immigrating and / or repatriating. It is evident that the individual immigrant is not at the center of this analysis. Although immigration is a selective process (De Coulon and Piracha 2002, 2) and the immigrants are utility-maximizing individuals who try to make the optimizing choice to increase their expected utility (Agarwal and Horowitz 2002, 2033), the individual person in this approach has a rather passive role, in the sense that his (her) decision will be determined by the interaction of forces developed in the two countries involved. The possibility that a person ends up better off by immigrating or repatriating, is simply one of the conditions (neither the only, nor the decisive one) for immigration / repatriation to occur. The decisive condition is that immigration / repatriation also serves the interests of, at least, one of the two countries involved.

5.3 Short Overview of the Greek Migration History

Greece has been in the center of international interest lately due to several kinds of crises the country has been involved in. The economic crisis, the sovereign debt crisis, the Eurozone crisis and last but not least the migration crisis (Kasimis 2012) are all bound up with each other to a certain extent.

To begin with the migration crisis, Greece has turned from a country of origin to a transit and a destination country of immigrants over the years. To be more accurate nowadays Greece is all of the above. Initially, the major emigration outflows from Greece happened in the early 1830s, after the formation of the modern Greek state, and after World War II. In both of the cases above, economic forces like the poor economic performance and political factors (civil war) were the main causes. Following the oil crises and the restrictive immigration policies European countries adopted, there was also a repatriation wave in the late 1970s and the early 1980s (Christodoulou and Nikas 2012). However, due to the economic crisis and the pessimistic expectations of the economy during the recession, native Greeks created again a negative migration balance (Cavounidis 2013, 75). Whether this considerable part of the Greek human capital will return back in its home country remains a question. After all, the return migration usually corresponds with the developments in the country of origin (Papademetriou and Terrazas 2009, 13).

At this point, it is also worth mentioning the brain-drain aspect of migration in general and Greek migration in particular. Considering that the youth unemployment levels in Greece has also been affected by the crisis, a considerable part of Greek young and educated people decide to leave the country and search for better employment opportunities abroad. However, the consequences of this phenomenon could harm the developmental potential of the country (Labrianidis 2011).

Besides the Greek emigration history, there is also an immigration experience in Greece, which has become lately increasingly widespread. There were two major peaks in the immigration flows in Greece, one after the fall of the communist system and later another one after the Syrian civil war began. With regard to the above mentioned, Greece has been the gateway to Europe for several years for illegal immigrants from Africa and Asia due to its geographical position. One important difference between Greece's experience as a sending and receiving country of migrants is that Greek emigrants used to have all the legal necessary documents and they were employed in the formal sector of the economy of the destination country. In fact, emigrations of the past such as the ones from Greece to W. Germany and Australia followed bilateral emigration agreements between the countries involved. On the contrary, the majority of the immigrants entering the Greek borders nowadays are illegal and undocumented and between those who have all the proper documents that verify their status, there are many who work in the underground economy of the country (Cavounidis 2013, 63). Moreover, the majority of the illegal immigrants entering the European Union borders through Greece intend to claim the status of a refugee asking for asylum in a European state (usually the one with the strongest "pull" factors according to their preference)[2].

At first, immigrants in Greece used to substitute unpaid family labour in agriculture, manufacturing, commerce and domestic or care services, since the employment structures used to be based on self-employment or small family work units (op. cit., 64). Actually, the informal immigrant labour in southern Europe has been tied to the orbit of the familistic welfare regime characterizing its economies (Maroukis 2013, 235). Moreover, the immigrants' wages were low, a fact that contributed to the competitiveness of Greek products in the international markets (Cholezas and Tsakloglou 2009, 87). Some researchers actually support that due to the low wages, the production costs were smaller reducing the inflation, while there is also an opinion that they affected

[2] For the purposes of this paper we will follow Eurostat's data and we will refer to the immigrant population in Greece as "immigrants" or "foreigners" either they are economic immigrants, refugees or asylum seekers.

productivity negatively since the firms were labour intensive instead of adopting new technology (Cavounidis 2013, 66).

Undoubtedly, immigration helped Greece via the increase in the GDP growth rate, revitalization of the agricultural sector and small and medium enterprises, the dampening of inflationary pressures and the short-term positive impact on the social security system. On the other hand, due to immigration the informal sector of the economy expanded and sometimes immigrants' skills instead of complementing the native workers' ones, they used to substitute them. As a result, income inequality, unemployment and slowing wage growth presented (Cholezas and Tsakloglou 2009).

5.4 The Impact of the Crisis on the Greek Economy

In 2008, Greece entered a period of deep recession. After the collapse of Lehman Brothers, the economic crisis spread from the US to the rest of the world affecting disproportionally the economies. Moreover, the Greek economic crisis was connected to structural weaknesses but also the implications of the country's entrance to the monetary union (Michail 2013, 266). From 2008-2015 the country's GDP dropped by 23%, the unemployment rate reached a peak of 27.5%, the real adjusted gross disposable income of households per capita and the gross fixed capital formation decreased (Visvizi 2016). The household consumption expenditure also contracted.

As a result, Greece requested a bailout package from the EU and the IMF. This came along with several austerity measures which, in turn, deepened the recession (Giglioli 2017, 5). Austerity is an umbrella term for reducing public spending, increasing government revenues and reducing the cost of

labour in order to increase competitiveness and attract foreign investment (op. cit., 5). At this point, it should be mentioned that the human toll of a recession extends beyond temporary earning losses to long-term unemployment, wage setbacks, deteriorating health and a series of social problems. Moreover, under economic turmoil the public interest towards immigration is more intense as there is competition for scarce job and social provisions and countries tend to respond reactively by adopting more restrictive immigration policies (Dimitrakopoulou and Kontis 2016, 2). So, as migration affects globalization, economic development, labour market institutions, workforce and human capital development, welfare, poverty and social cohesion (Papademetriou et al. 2010, 4), it is also largely affected by an economic recession.

Immigrants are usually considered more vulnerable to unemployment than the natives because of their demographic characteristics, their work to cyclical industries and occupations and their work as a contingent labour force, according to the last hire first fire approach (op. cit., 9). Moreover, their legal status is endangered since maintaining employment is a prerequisite for continuing residence in Greece (Michail 2013, 267). However, we should point out that irregular residency in Greece doesn't nullify the person's right as a worker (Maroukis 2013, 225-227).

The recession increased inter-sector mobility among the immigrant workers as they sought new employment opportunities in sectors other than those which they had been previously employed. Nevertheless, the crisis which affected the real estate and housing market, in which the biggest part of the immigrant population in Greece was employed, destabilized the immigrant households. Unemployment affected women immigrants too, since households, which used to be their employers, reduced their expenses (Michail 2013, 267). That notwithstanding, the substitution of full-time job positions by part-time ones and flexible work practices has become a fact lately for Greece as it will be presented below in this chapter.

However, the economic crisis occurring in Greece does not affect only the country itself. Taking into account that Greece is the destination country for extensive immigration flows, there has been an impact in the immigrants' countries of origin too. For example, the countries of migrants' origin are affected due to the loss of remittances, the amount of which could vary in relation to the immigrants' background, their age and sex, their occupation, their income and their unemployment rates (Glytsos 1994, 107). After all, remittances represent a net gain for the emigration countries (Nikas and King 2005, 242; Bourguignon, Levin and Rosenblatt, 2009, 1) similar to the development aid and they are also necessary for the covering of the Balance of Payments deficit when capital goods are imported or when there are no sufficient savings for financing investment in order to achieve economic development (Nikas and King 2005, 242). Actually, whether the overall assessment of the economic consequences of immigration provides a positive or a negative sign for the countries involved, largely depends on remittances and how emigrants choose to use their savings.

5.5 The Impact of the Crisis on the Greek Labour Market

As it was mentioned above, the unemployment rates in Greece during the economic crisis were raised with the immigrants being affected the most. In Table 1, the unemployment rates of the native Greek population, the EU citizens and the immigrant population originated from a foreign country outside the European Union, which for the purpose of this chapter will be called immigrants, foreign citizens or foreigners, are presented. Moreover, the total amount of the labour force as well as the total unemployment rate in Greece are depicted. The data are also presented in a graph (Figure 1) in order to give a clearer perspective of the situation.

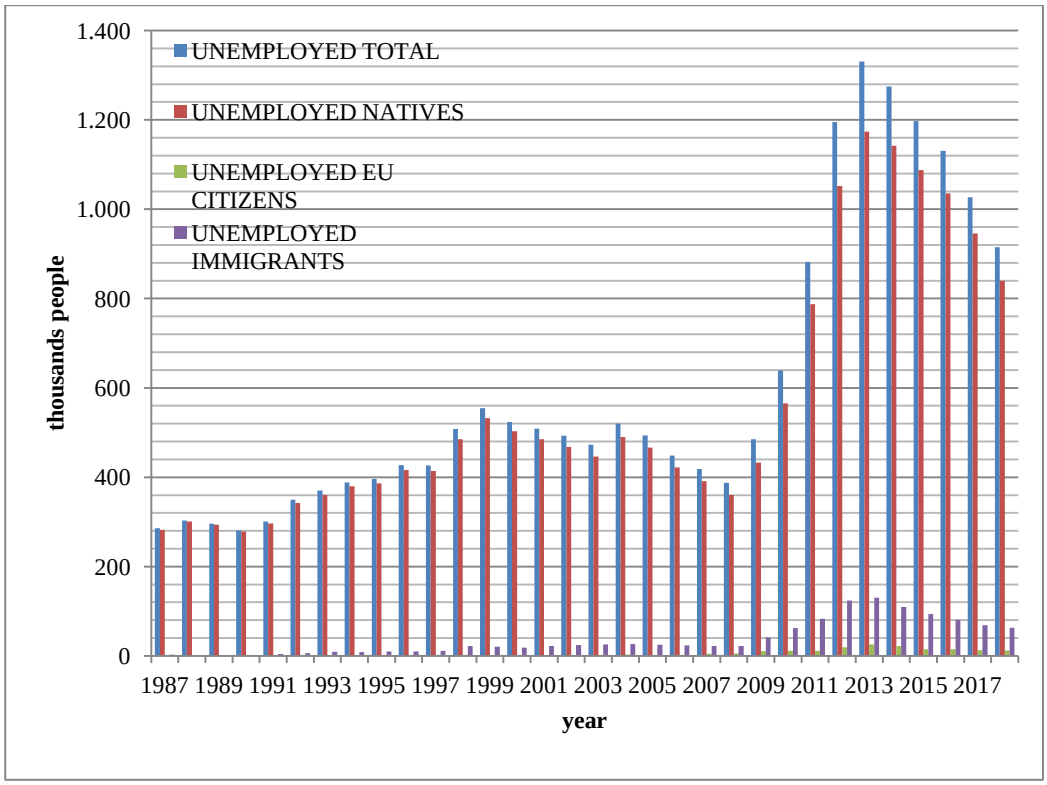
Table 1. The Development of Unemployment in Greece per Citizenship

Year	Total active labour force 15+ (1981-97: 14+) (thousands)	Total Unemployment (thousands)	Total unemployment rate 15+	Unemployment of the natives (thousands)	Unemployment rate of the natives	Unemployment of the EU citizens (thousands)	Unemployment rate of the EU citizens	Unemployment of the foreign citizens (thousands)	Unemployment rate of the foreign citizens
1987	3,883.0	285.5	7.4	282.0	7.3	0.4	8.7	3.1	19.4
1988	3,960.7	303.4	7.7	300.8	7.6	0.2	3.4	2.4	12.3
1989	3,966.8	295.9	7.5	293.9	7.5	0.2	5.1	1.8	9.8
1990	4,000.2	281.2	7.0	278.4	7.0	0.4	6.5	2.3	11.8
1991	3,933.5	301.1	7.7	296.8	7.6	0.4	7.8	3.9	13.3
1992	4,034.3	349.8	8.7	342.7	8.6	0.6	7.6	6.5	15.0
1993	4,090.7	370.5	9.1	360.7	8.9	0.7	9.7	9.1	17.2
1994	4,178.3	388.7	9.3	379.4	9.2	0.5	6.8	8.7	14.7
1995	4,220.0	396.2	9.4	385.9	9.3	0.6	7.0	9.7	15.3
1996	4,298.8	426.8	9.9	416.1	9.9	0.7	8.8	10.0	14.7
1997	4,280.3	426.3	10.0	414.0	9.9	1.1	13.6	11.2	13.1
1998	4,525.8	507.9	11.2	484.9	11.1	1.1	13.6	21.8	13.5
1999	4,586.1	554.7	12.1	532.5	12.0	1.4	14.9	20.8	13.3
2000	4,611.9	523.5	11.4	503.0	11.3	1.7	19.5	18.7	12.0
2001	4,710.5	508.4	10.8	484.8	10.8	1.7	16.3	21.8	11.3
2002	4,757.6	492.6	10.4	467.6	10.4	0.9	12.7	24.2	9.8
2003	4,825.8	472.6	9.8	446.6	9.8	0.3	3.7	25.8	9.4
2004	4,909.5	520.0	10.6	490.3	10.7	3.2	11.9	26.6	9.1
2005	4,937.1	493.5	10.0	466.1	10.1	2.4	8.5	25.0	8.2
2006	4,975.7	448.2	9.0	422.3	9.1	2.2	8.1	23.8	7.9

Year	Total active labour force 15+ (1981-97: 14+) (thousands)	Total Unemployment (thousands)	Total unemployment rate 15+	Unemployment of the natives (thousands)	Unemployment rate of the natives	Unemployment of the EU citizens (thousands)	Unemployment rate of the EU citizens	Unemployment of the foreign citizens (thousands)	Unemployment rate of the foreign citizens
2007	4,982.4	418.3	8.4	391.5	8.5	4.8	7.4	22.1	7.6
2008	4,998.3	387.9	7.8	360.1	7.8	5.4	7.4	22.3	6.7
2009	5,040.7	484.7	9.6	432.5	9.5	10.5	11.6	41.6	10.4
2010	5,029.1	639.4	12.7	565.5	12.5	11.3	13.0	62.6	15.6
2011	4,936.2	881.8	17.9	787.6	17.6	11.5	13.8	82.7	22.4
2012	4,890.1	1,195.1	24.4	1,052.1	23.6	19.1	24.6	123.9	35.4
2013	4,843.5	1,330.3	27.5	1.174.0	26.5	25.9	32.9	130.4	39.3
2014	4,810.6	1,274.4	26.5	1,142.0	25.9	22.5	28.8	109.9	33.9
2015	4,807.7	1,197.0	24.9	1,087.8	24.4	15.0	24.8	94.1	32.3
2016	4,804.5	1,130.9	23.5	1,035.1	23.1	15.2	27.3	80.6	30.1
2017	4,779.7	1,027.0	21.5	945.5	21.1	12.7	24.9	68.8	28.4
2018	4,743.0	915.0	19.3	839.8	18.8	12.0	25.1	63.2	27.4

Source: Hellenic Statistical Authority 2019

Figure 1. The Development of Unemployment in Greece per Citizenship



Thus, as it may be clearer in the graph, after 2008 unemployment became higher with its peak on 2013. Between 1993 and 2013, the unemployment rate in Greece was tripled. Especially if we consider the period 2007-2013, the unemployment rate of the foreigners increased by more than five times turning from 7.6% to 39.3%. When it comes to the EU nationals, up to the late nineties, their unemployment rate was lower than that of the foreigners. This picture however changed in the beginning of the 21st century up to the outbreak of the economic crisis. In particular, the EU nationals' unemployment rate surpassed the unemployment rate of the foreigners, a situation that lasted for almost ten years. Upon that, the crisis affected the unemployment rate of the foreigners comparing with the EU nationals, but also the unemployment rate of the foreigners comparing with the natives. That having been said, in 2009 the unemployment rate of the foreigners surpassed that of the natives, with the gap continuing to increase, while there were 5 years before the crisis when they were enjoying lower levels of unemployment.

The graphs make the picture even clearer. It can be seen that the EU nationals' unemployment rate in Greece was usually smaller than the immigrants' and the natives' one. The data also suggest that in the late 1980's, the unemployment rate in Greece was relatively low. Since the early 1990's it started to increase, until the period before the 2004 Olympic Games when major construction works took place in the country. Later again, after 2009, it started growing fast, until it reached a peak in 2013. While numbers depicting the total unemployment rate in Greece and the unemployment rate of the native Greeks evolve likewise, the development of the unemployment rate of the immigrants hasn't been smooth. Apart from the period between 1998 and 2008 when it presented a downward slope, it increased dramatically during the last years.

Moreover, we could also notice in Table 1 that the active labour force in 2018 in absolute numbers was almost as much as it used to be in 2002, though the unemployment rate of the population over these years has almost been doubled. From 1987 to 2009, the labour force's increase in Greece surpassed 1,000,000 people. However, it is easy to see that after 2009 and the beginning of the crisis, the labour force has decreased by almost 300,000 of people who have probably left the country. The most possible explanation for this situation is that there are increasing outflows of emigrants due to the economic crisis.

As far as the employment rates in Table 2 are concerned, the drop in the absolute numbers after the beginning of the economic crisis is obvious. The number of the working foreign population in Greece exceeds the number of the unemployed foreign population but this ratio has changed dramatically. It is also worth noting that the total working population in 2019 is as much as it used to be in 1995, but we could safely suggest that part of the national working force has been replaced by the foreign population. The development of the employment in Greece follows the same route as the development of the active labour force and it declines rapidly after 2009. Almost 1,000,000 jobs have been lost during the period of the crisis.

Table 2. Employment in Greece per Citizenship

Year	Total employment in thousands 15+ (1981-97: 14+)	Citizenship		
		Greek	EU	Foreign Country
1987	3,597.4	3,580.3	4.2	12.9
1988	3,657.4	3,634.6	5.6	17.1
1989	3,670.9	3,650.7	3.7	16.5
1990	3,719.1	3,696.0	5.8	17.2
1991	3,632.4	3,602.2	4.7	25.5
1992	3,684.5	3,640.5	7.3	36.7
1993	3,720.2	3,669.9	6.5	43.8
1994	3,789.6	3,732.4	6.8	50.4
1995	3,823.8	3,762.0	8.0	53.9
1996	3,871.9	3,806.8	7.3	57.8
1997	3,854.1	3,772.7	7.0	74.4
1998	4,017.9	3,871.7	7.0	139.2
1999	4,031.4	3,888.1	8.0	135.2
2000	4,088.5	3,944.6	7.0	136.9
2001	4,202.1	4,022.3	8.7	171.1
2002	4,264.9	4,035.3	6.2	223.4
2003	4,353.2	4,096.9	7.9	248.3

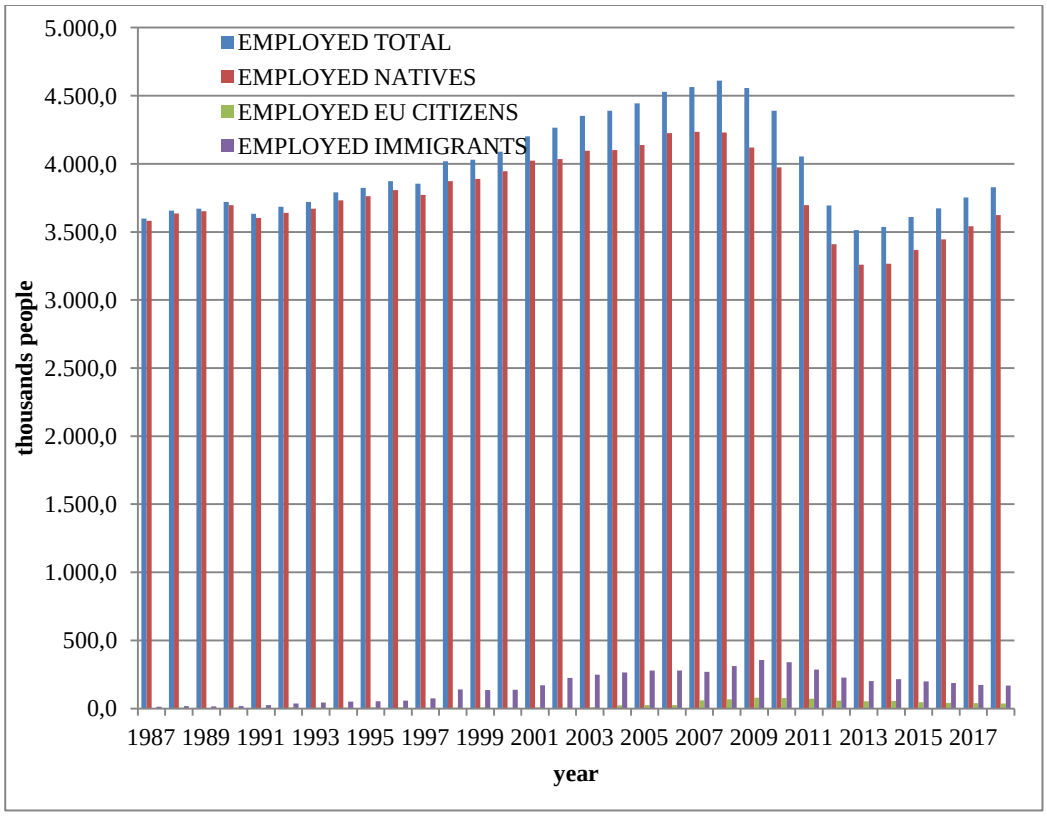
2004	4,389.5	4,100.6	23.6	265.3
2005	4,443.6	4,137.9	25.9	279.8
2006	4,527.5	4,224.4	25.1	278.0
2007	4,564.0	4,234.7	60.1	269.2
2008	4,610.5	4,230.7	67.8	312.0
2009	4,556.0	4,119.5	79.8	356.7
2010	4,389.8	3,974.5	75.5	339.7
2011	4,054.3	3,696.1	71.8	286.5
2012	3,695.0	3,409.8	58.6	226.5
2013	3,513.2	3,259.3	52.8	201.1
2014	3,536.2	3,265.9	55.7	214.6
2015	3,610.7	3,367.5	45.6	197.6
2016	3,673.6	3,445.7	40.4	187.5
2017	3,752.7	3,540.9	38.3	173.5
2018	3,828.0	3,624.7	35.9	167.4

Source: Hellenic Statistical Authority 2019

As far as the employment of the EU citizens is concerned, there is an increase in its number in 2004 which was further tripled in 2010. This could probably be attributed to the enlargement of the European Union and the accession of new members. That is, foreign citizens from the Eastern European Countries as well as Bulgaria and Romania who used to live in Greece were considered as immigrant population in our data before the enlargement and EU citizens afterwards. However, the crisis had an impact on their employment

status too and their employment rates started to decline afterwards. Figure 2 depict graphically the above.

Figure 2. The Development of Employment in Greece per Citizenship



Looking further into the data of Table 2, one can see that up to 2008 there was an increase in employment. Especially for the immigrants, the numbers show a fourfold growth in their employment between 1997 and 2008. It is for sure that apart from the labour demand, this is a result of the growing population of immigrants in Greece. Between 1997 and 1998 the employment of the immigrants was doubled, while the employment numbers of the European citizens in Greece remained in low levels. This is probably attributable to the immigration wave from the Central and Eastern European countries towards Greece. On the other hand, during 2006-2007 the employment numbers of the Europeans were doubled, while those of the immigrants did not change much. This could be explained on the grounds of the accession in the EU of many Eastern European countries. Another important feature of Table 2 is that while

the employment for the Europeans and the immigrants reached a peak in 2009, the downturn for the native Greeks had already started from 2007. Although, it seems that there is an increase in the employment for the natives after 2013, the numbers for the immigrants and the European citizens do not follow as well.

Comparing the two Tables (1 & 2), this of the unemployment and the one for the employment, we can suggest that until 2009 for every 10 employed native people there was 1 unemployed (a 1/10 ratio). However, this ratio changed dramatically and in 2013 it became 1/3. As for the immigrants, between 1987 and 2010, for every 10 employed people there used to be 1-2 unemployed, but this ratio increased later and reached the number of almost 1 unemployed per 2 employed. The numbers for the Europeans show an increase too, which almost reached 1/2 in 2013.

As for the country's GDP (Table 3 and Figure 3), it had been doubled in a decade (1998-2008) reaching a peak of 231,914,664,200 euros. However, it finally dropped by 24% (constant prices), reaching almost the 2003 level. Due to the economic policies adopted which were hostile to businesses, the economy's private sector shrunk and many businesses relocated to neighboring Balkan countries or closed. The majority of businesses operating now are micro-enterprises in low-cost service sectors since the households' spending adjusted to non durables and services (Visvizi 2016, 3). The rate of people at risk of poverty or social exclusion also increased.

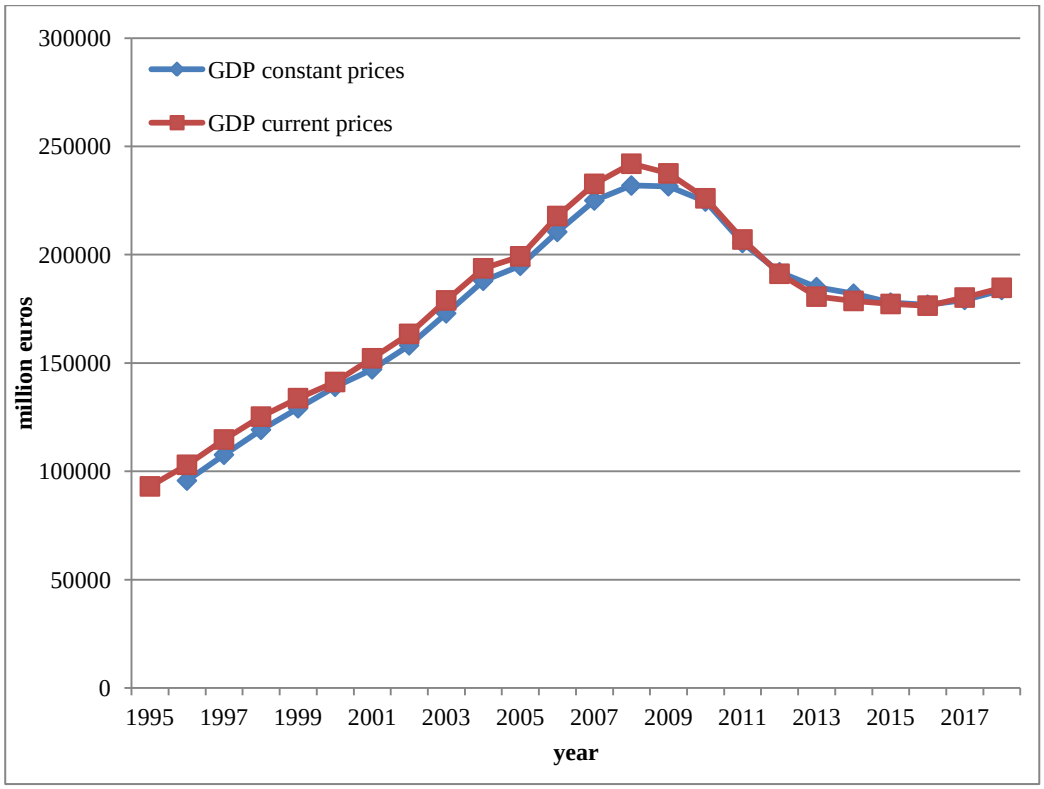
Table 3. The Development of Greek GDP

Year	GDP in market prices Constant prices of the previous year In thousands euros	GDP in market prices Current prices In thousands euros
1995		93,064
1996	95,727	103,037

Year	GDP in market prices Constant prices of the previous year In thousands euros	GDP in market prices Current prices In thousands euros
1997	107,657	114,712
1998	119,180	125,263
1999	129,111	133,789
2000	139,033	141,247
2001	147,083	152,194
2002	158,164	163,461
2003	172,933	178,905
2004	187,959	193,716
2005	194,876	199,242
2006	210,504	217,862
2007	224,994	232,695
2008	231,915	241,990
2009	231,583	237,534
2010	224,521	226,031
2011	205,389	207,029
2012	191,915	191,204
2013	185,006	180,654
2014	181,991	178,656
2015	177,874	177,258
2016	176,920	176,488
2017	179,144	180,218
2018	183,704	184,714

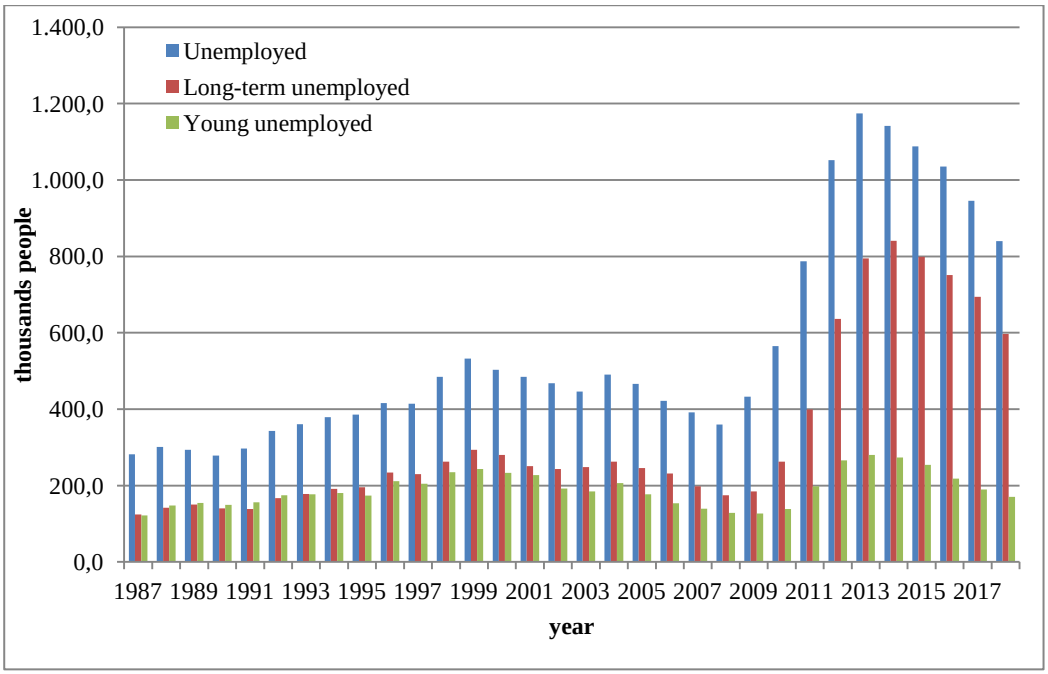
Source: Hellenic Statistical Authority 2019

Figure 3. The Development of Greek GDP



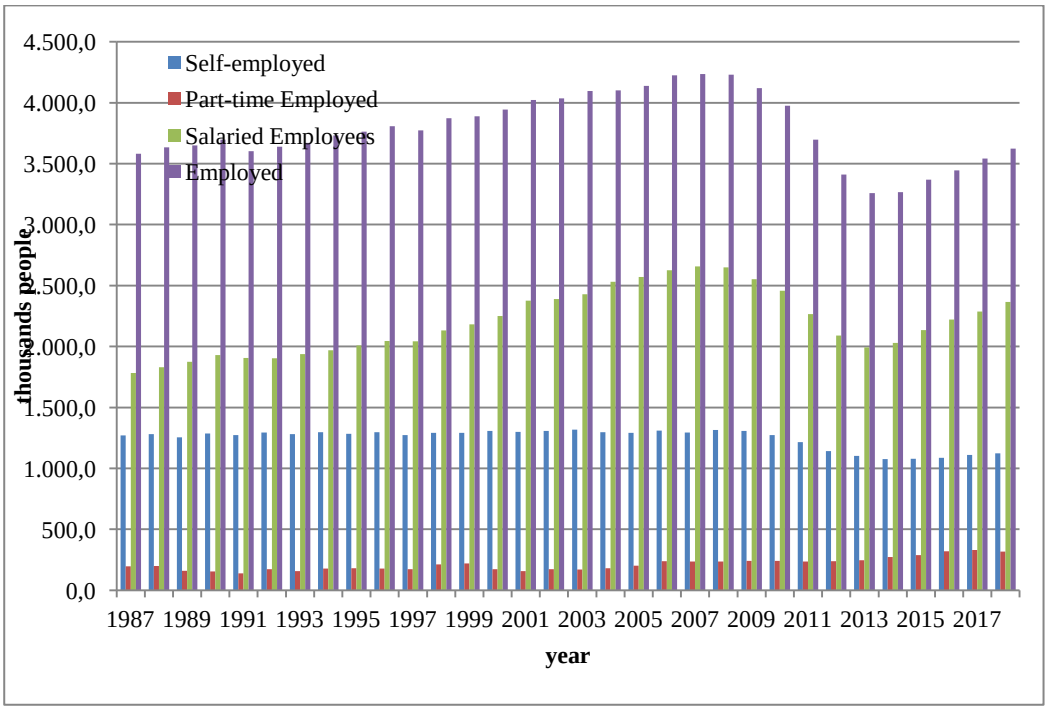
The graphs (Figure 4,5,6,7) show the employment and the unemployment status of the native Greeks and the immigrants. More specifically, the unemployment status shows the long-term unemployment and the youth unemployment development apart from the total unemployment development, because following the latter, the long-term unemployment as well as the youth unemployment have also grown during the crisis in Greece and their consequences could harm the developmental potential of the country. The employment status shows whether the employed people have been self-employed, salaried workers or part-time employees. It is easy to compare and contrast the graphs with each other to make suggestions about the employment-unemployment status of the natives/immigrants or between the natives and the immigrants.

Figure 4. Unemployment Status of the Natives



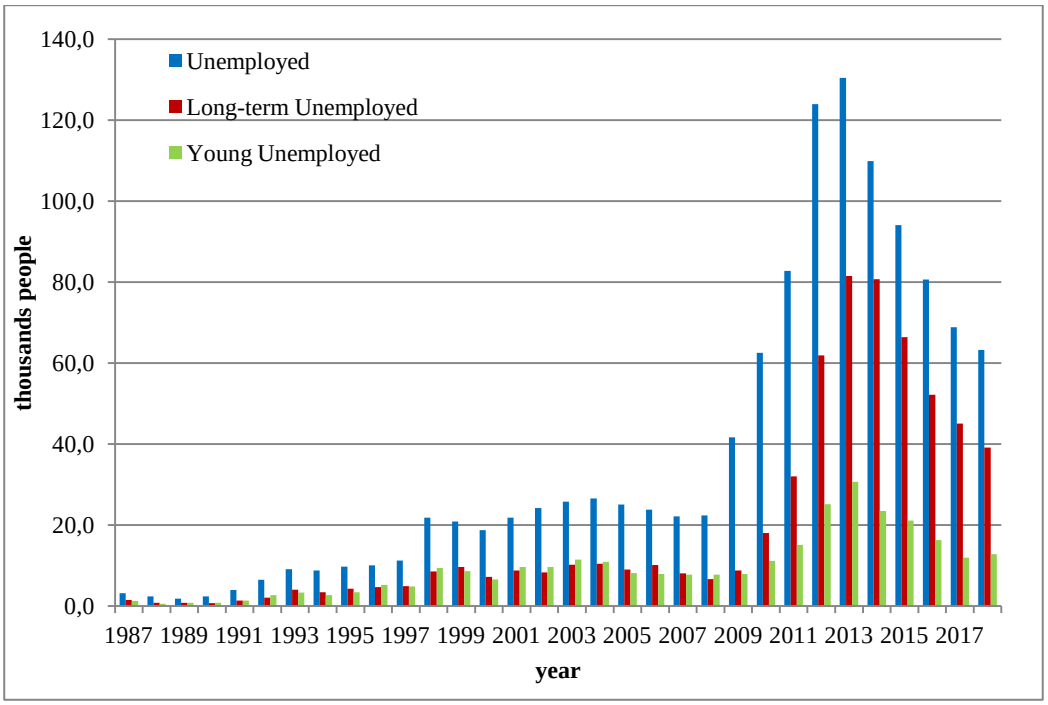
Source: Hellenic Statistical Authority 2019

Figure 5. Employment Status of the Natives



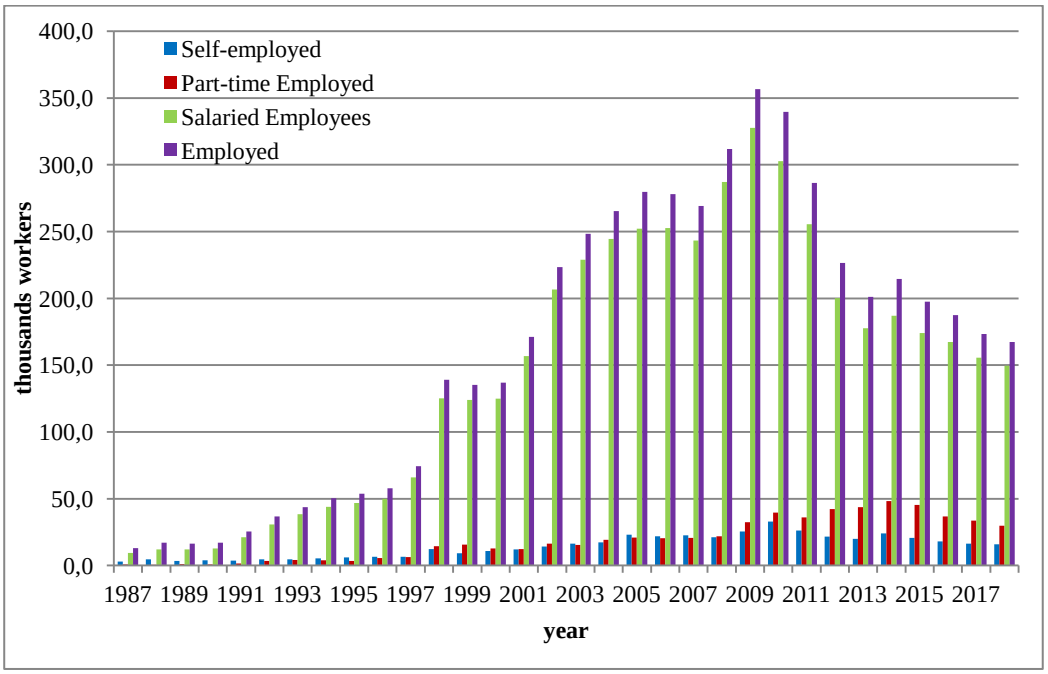
Source: Hellenic Statistical Authority 2019

Figure 6. Unemployment Status of the Immigrants



Source: Hellenic Statistical Authority 2019

Figure 7. Employment Status of the Immigrants



Source: Hellenic Statistical Authority 2019

Following the graphs, we can say that the employment numbers decline while the unemployment ones increase during the economic crisis. Then, it is also easy to see that the development of the long-term and the youth unemployment follows the pattern of the total unemployment evolution. Moreover, there is an increase in the part-time workers especially for the immigrants and a decrease in the number of the self-employed people, though especially for the natives this number had been steady for more than 20 years. Self-employment for the immigrants was pretty low in the late 1990's, reached a peak in 2010 and later dropped again. When it comes to the employee status, we have to say that more than half of the employed natives used to be salaried employees while the ratios for the immigrants are impressive, varying between 80-90% most of the years examined.

Most of the immigrant population used to work in the construction sector with the manufacturing and the households following as Figure 8 shows. The only sector where the immigrant workers were more than the natives was in the households. It was the households after all to which part of the latent demand presented in Greece was attributable. To be exact, the immigrant workers in household employment were more than double than the natives because the immigrant female population was mainly concentrated on household services. The ratio of immigrants to natives in the construction sector was also high, while in all the other sectors the natives were either 10 times more than the immigrants, as for example in the manufacturing sector, or even more (Table 4). The native Greeks were mainly concentrated on the tertiary sector of the economy and a big part of them in agriculture (Figure 9).

Table 4. Worker's Employment per Sector and Citizenship (thousands)

Sector	Manufacturing		Agriculture		Commerce		Hospitality and Food Industry		Construction		Households	
Year	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives

Sector	Manufacturing		Agriculture		Commerce		Hospitality and Food Industry		Construction		Households	
Year	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives	Immigrants	Natives
2008	49.3	489.3	16.1	494.8	32.0	800.5	29.8	284.8	110.5	271.7	43.7	20.4
2009	59.1	453.7	26.9	500.2	37.4	781.7	38.9	269.6	107.0	248.2	53.6	22.4
2010	48.0	413.8	30.8	507.0	44.8	747.3	38.3	258.1	88.1	221.0	52.6	21.9
2011	37.1	367.6	28.7	464.6	43.0	702.7	37.7	249.5	63.5	171.7	42.9	14.9
2012	29.2	317.1	28.7	445.6	31.2	624.2	34.7	231.3	43.3	149.3	33.3	13.0

Source: Hellenic Statistical Authority 2019

Figure 8. Immigrants' Employment per Sector

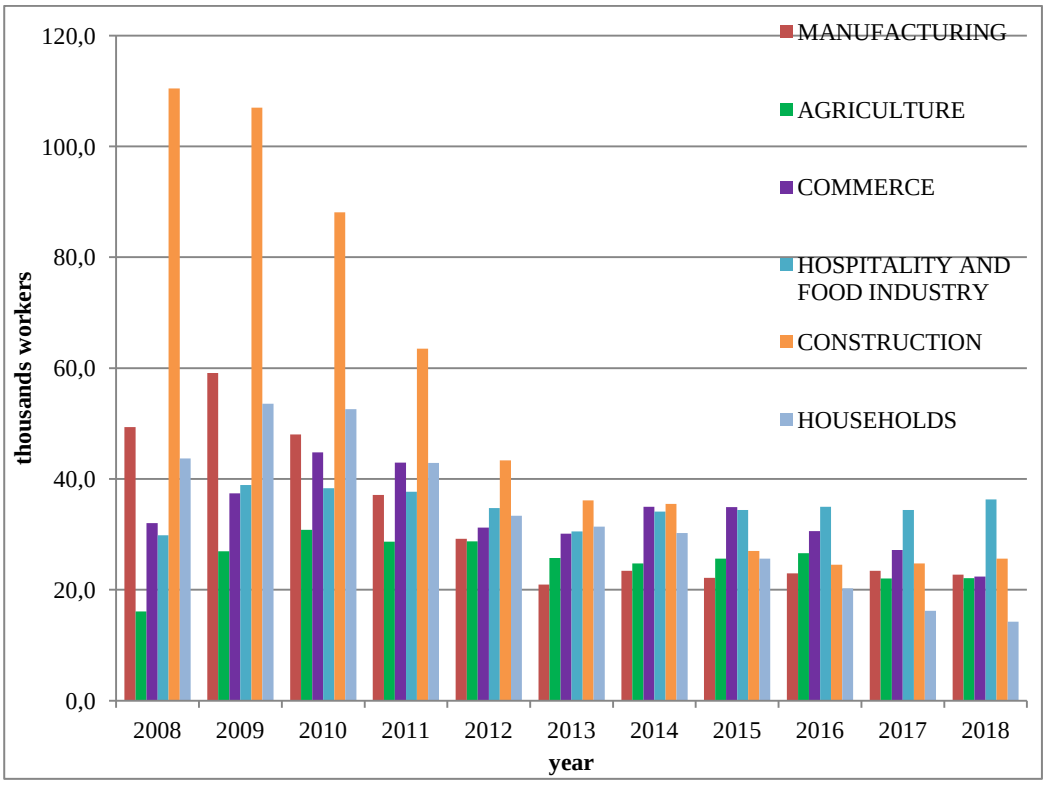
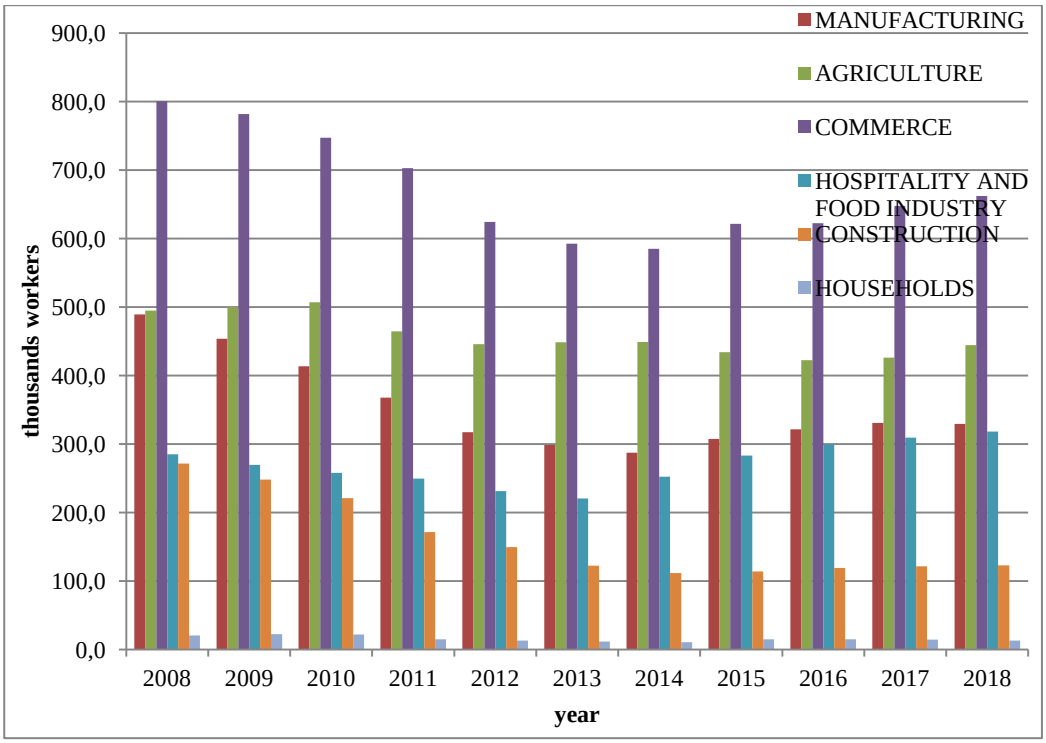


Figure 9. Natives' Employment per Sector



After the outbreak of the crisis, this picture had to change since the employees had to change sectors in order to find work. The number of the immigrants working in manufacturing and households dropped by 50%. The numbers of those working in commerce, agriculture, in hospitality and food businesses had less change and the greater decline happened in the number of the construction workers which dropped dramatically from 110,500 to 24,500 (-78%!!!). As a result, the biggest part of the immigrants currently concentrates on businesses that have to do with hospitality services and the food industry and commerce.

The figures for the native Greeks developed accordingly. One important difference however, is that although in 2009 the natives working in the construction sector were a bit more than twice as much as the immigrants, in 2018 the natives were almost five times more. This was the sector that affected the immigrants the most and made them searching for a job position in different sectors of the economy.

In this respect, we could suggest that before the crisis immigrant workers in Greece used to complement the natives and being more flexible they weren't much vulnerable to job losses but after the crisis the picture changed. Immigrant workers compete with the natives for the same job positions and being less competitive they became more vulnerable to job losses.

5.6 Empirics

Okun (1970) reported that unemployment is negatively correlated with the output in the short run and estimated this empirical regularity using two approaches, the first-difference form and the gap model. According to Okun, a one percentage point change in the unemployment rate is associated with approximately three percentage points change in output in the opposite direction. Since Okun's formulation of the inverse relationship between unemployment and GDP growth, the literature on this subject has been growing either validating Okun's Law or questioning it in specific case studies. However, the Law seems to fit the data in most countries and there is a consensus over its empirical validity. The coefficient in the relationship between the two variables varies though.

Okun's Law presupposes that there is some kind of long run level of output which is called potential output, a natural rate of unemployment for the long run level of unemployment and also a long run level of employment. The factors determining potential output is the technological change and the factor accumulation while employment and unemployment are determined by the size of the labour force and the labour market's dynamics. The main argument of Okun's law is that shifts in aggregate demand cause movements in real output which in turn lead firms to demand labour, thus reducing unemployment. The

relationship expressing the changes from the potential output and the natural rate of unemployment are expressed in the gap model described by Okun in the following relationship

$$U_t-U_t^*=b(Y_t-Y_t^*)+e_t,\ b<0$$

where U_t is the unemployment rate, U_t^* is the natural rate of unemployment, Y_t is the log of output, Y_t^* is the log of potential output, b is Okun's coefficient and e_t is the error term. Okun's coefficient depends on the technological costs, the employment protection costs and the number of workers entering and exiting the labour markets as employment fluctuates. The white noise term is small when Okun's Law fits well and captures unusual changes in productivity or in the labour force participation (Ball et al. 2013, 4).

The first-difference form is expressed with the variables in first differences and the white noise term as follows:

$$\Delta UN_t=a+b\Delta Y_t+e_t$$

It provides with a convenient way to achieve stationarity in data containing a unit root and depicts the changes from the previous period. It follows the previous equation if we assume that the economy is in a steady state position where all markets are clear. Thus, the changes in the unemployment rate display changes from the natural level, while output grows in a constant rate.

Okun's law has been revisited with regard to Greece. However, the emphasis of this chapter is on Okun's coefficient distinguishing between the natives and the immigrants, an issue that hasn't been pointed out. Apergis and Rezitis (2010) have estimated Okun's relationship between 1960 and 1997 for certain regional areas, finding a structural change in the responsiveness of unemployment to output changes after 1981. Christopoulos (2004) also applied the law at a regional level, confirming the relationship in 6 out of 13 Greek regions. Karfakis et al. (2014) have more recently tested the validity of the

output-unemployment relationship for the period 2000-2012, suggesting a 3:1 ratio.

In a general framework of OECD, European or Mediterranean countries, the aforementioned relationship has also been examined for Greece, by Moazzami and Dadgostar (2009), Blazquez-Fernandez et al. (2018) and Perman and Tavera (2007) respectively. On the other hand, Rigas et al. (2011) and Koutroulis et al. (2016) examined thoroughly the implementation of the law, calibrating the model to the structural differences and specific characteristics of the Greek economy.

Furthermore, Okun's law has been studied with regard to gender differences. Zanin (2014) investigated estimates for male and female age cohorts in OECD countries. Bod'a and Povazanova (2015) established minimal different responses of male and female unemployment to output changes in Greece. Brincikova and Darmo (2015) also suggested that the sensitivity of male and female unemployment to output changes is more similar in countries with lower economic performance, as in Greece.

For the purpose of this chapter, the growth rate form of Okun's Law, or else the difference version, is used. Moreover, a dynamic version of the law is derived when adding to the previous specification the lagged values of the unemployment rate and the output.

The variables of the model are the unemployment rate of the foreign/ native population in Greece and the natural logarithm of real GDP and include quarterly data for the years 1998-2017, available from the Eurostat database (2019), which are adjusted for seasonality. Table 5 portrays the descriptive statistics of the variables. The mean of the unemployment rate of the immigrant population in Greece is higher than that of the native population and the same pattern is observed for the case of the standard deviation for the two variables. Skewness and kurtosis are positive and skweness is around zero while kurtosis is around two.

Table 5. Descriptive Statistics

	UN_{IM}	UN_{NAT}	GDP
Mean	17.48750	14.98500	5.20E+10
Median	12.45000	11.60000	4.99E+10
Maximum	40.60000	27.20000	6.33E+10
Minimum	5.800000	7.500000	4.40E+10
StD. Dev.	10.39787	6.565543	6.20E+09
Skewness	0.777931	0.725774	0.453749
Kurtosis	2.071994	1.846077	1.701450
Jarque-Bera	10.93967	11.46177	8.365947
Probability	0.004212	0.003244	0.015253
Sum	1399.000	1198.800	4.16E+12
Sum S. Dev.	8541.148	3405.402	3.04E+21
Observations	80	80	80

The Phillips and Perron unit root test indicates that both LGDP and UN series contain a unit root and they are not stationary processes. They are stationary in their first differences. Moreover, the relationship of the two variables is analysed using cross-correlation analysis, which portrayed that the GDP growth leads the changes in the immigrants' unemployment rate by 5 quarters and in the natives' unemployment by 1 quarter and their relationship is countercyclical.

Table 6. Unit Root Test

	Immigrants		Natives	
Variables	Phillips Perron t-test statistic	Test critical Value 5% level	Phillips Perron t-test statistic	Test critical Value 5% level
UN	-0.539767	-2.898623	-0.752786	-2.898623
ΔUN	-7.537435	-2.899115	-5.805872	-2.899115
LGDP	-1.358018	-2.898623	-1.358018	-2.898623
ΔLGDP	-7.281548	-2.899115	-7.281548	-2.899115

Afterwards, the time series are analysed using an ARDL model which is more efficient with a small sample size. Although the ARDL model approach could be used without first searching for unit roots, the variables were tested for stationarity to make sure that no series is integrated of order 2, I(2). The maximum lag length is set up at 6 and the Akaike Information Criteria determines that 6 lags are necessary for the dependent variable and 5 for GDP growth in the model for the immigrants, while 6 lags are necessary for the dependent variable and 2 for GDP growth in the model for the natives. The models also include two dummies, a crash dummy variable for 2009Q1 and another one, depicting the wide fluctuations of ΔUN after 2015Q2.

Table 7. Estimated ARDL Model for the immigrants

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ΔUN(-1)	0.055381	0.104837	0.528256	0.5993
ΔUN(-2)	-0.005712	0.100923	-0.056597	0.9551
ΔUN(-3)	-0.075925	0.088021	-0.862587	0.3919
ΔUN(-4)	0.539936	0.087157	6.194993	0.0000
ΔUN(-5)	-0.283181	0.110010	-2.574132	0.0126
ΔUN(-6)	-0.519433	0.107616	-4.826742	0.0000
ΔLGDP	-0.129666	0.115686	-1.120845	0.2670
ΔLGDP(-1)	-0.201138	0.104610	-1.922744	0.0594
ΔLGDP(-2)	-0.254573	0.110068	-2.312876	0.0243
ΔLGDP(-3)	0.064173	0.114608	0.559936	0.5777
ΔLGDP(-4)	0.008035	0.112538	0.071396	0.9433
ΔLGDP(-5)	-0.311145	0.115055	-2.704319	0.0090
DUM	-1.261750	0.415608	-3.035911	0.0036
DUM1	0.356296	1.257945	0.283236	0.7780
C	0.452850	0.164766	2.748439	0.0080

Included observations=73 after adjustments, R-squared=0.821644, F-statistic=19.08511

Table 8. Estimated ARDL Model for the natives

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ΔUN(-1)	0.118900	0.114737	1.036280	0.3042
ΔUN(-2)	-0.06099	0.111639	-0.054627	0.9566

ΔUN(-3)	0.042508	0.087021	0.488482	0.6270
ΔUN(-4)	0.594145	0.083009	7.157571	0.0000
ΔUN(-5)	-0.164924	0.109682	-1.503664	0.1378
ΔUN(-6)	-.0344448	0.105232	-3.273226	0.0018
ΔLGDP	-0.125037	0.044639	-2.801080	0.0068
ΔLGDP(-1)	-0.067967	0.042604	-1.595329	0.1158
ΔLGDP(-2)	-0.096927	0.043836	-2.211131	0.0308
DUM	-0.534645	0.178092	-2.002065	0.0039
DUM1	0.219412	0.530572	0.413539	0.6807
C	0.173057	0.071545	2.418865	0.0186

Included observations=73 after adjustments, R-squared=0.788414, F-statistic=20.66352

The diagnostic tests indicate that there is no serial correlation, heteroskedasticity or functional misspecification and the residuals are distributed normally. Stability diagnostics confirm that the parameters of both our models are stable. Table 9 presents the results of the Bounds test which unveil whether there is a long run relationship between the two variables of each model.

Table 9. Bounds Test

Significance	I(0) bound	I(1) Bound
2.5%	5.77	6.68
5%	4.94	5.73
10%	4.04	4.78
F-statistic$_{IM}$: 17.10130		F-statistic$_{NAT}$: 11.05183

The computed F statistic is greater than the upper bound I(1) whether compared with the critical values of Pesaran et al. (2001) or Narayan (2005), so the null hypothesis is rejected and the Error Correction Models are specified.

Hence, the long run relationship between the unemployment and the growth rate in each model receives the following form:

$$\Delta UN_{IM} = - 0.6395\ \Delta LGDP - 0.9789\ DUM + 0.2764\ DUM1 + 0.3513$$

$$\Delta UN_{NAT} = - 0.3815\ \Delta LGDP - 0.7036 DUM + 0.2887 DUM1 + 0.277$$

In the case of the immigrants, the long run coefficient is indicative of a long-term negative and significant (p-value= 0.0000) relationship between changes in unemployment and GDP growth. It shows a ratio of 1.56:1, that is, every 1% decrease in the unemployment rate of immigrants is connected to a 1.56% GDP growth. The cointegration coefficient which receives a value between -1 and -2 (CointEq(1): -1.288934, p-value: 0.0000) portrays that convergence is achieved in a decreasingly fluctuating form (Narayan and Smith 2006).

With regard to the natives, the long run coefficient is also indicative of a long-term negative and significant (p-value= 0.0000) relationship between changes in unemployment and GDP growth and shows a ratio of 2.62:1, that is, every 1% decrease in the unemployment rate is connected to a 2.62% GDP growth. Therefore, the unemployment of immigrants is far more responsive to GDP growth than the natives'. The cointegration coefficient (CointEq(1): -0.759918, p-value: 0.0000) portrays that 75% convergence is achieved from the previous period. The coefficients of the dummy that represents the economic crisis implications in the labour market are indicative of the aforementioned deeper impact on the immigrant population.

The short run coefficients are presented in Tables 10 and 11.

Table 10. Short run Coefficients (Immigrants' unemployment)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Δ(ΔUN(-1))	0.344314	0.206207	1.669755	0.1004
Δ(ΔUN (-2))	0.338603	0.197409	1.715231	0.0916
Δ(ΔUN (-3))	0.262677	0.163268	1.608868	0.1131
Δ(ΔUN (-4))	0.802613	0.130924	6.130380	0.0000
Δ(ΔUN (-5))	0.519433	0.107616	4.826742	0.0000
Δ(ΔLGDP)	-0.129666	0.115686	-1.120845	0.2670
Δ(ΔLGDP(-1))	0.254573	0.110068	2.312876	0.0243
Δ(ΔLGDP(-2))	-0.064173	0.114608	-0.559936	0.5777
Δ(ΔLGDP(-3))	-0.008035	0.112538	-0.071396	0.9433
Δ(ΔLGDP(-4))	0.311145	0.115055	2.704319	0.0090
DUM	-1.261750	0.415608	-3.035911	0.0036
DUM1	0.356296	1.257945	0.283236	0.7780
CointEq(-1)	-1.288934	0.220486	-5.845865	0.0000

Table 11. Short run Coefficients (Natives' unemployment)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Δ(ΔUN(-1))	-0.121182	0.149199	-0.812217	0.4198
Δ(ΔUN (-2))	-0.127280	0.139768	-0.910656	0.3661
Δ(ΔUN (-3))	-0.084772	0.126673	-0.669222	0.5059
Δ(ΔUN (-4))	0.509373	0.114049	4.466245	0.0000
Δ(ΔUN (-5))	0.344448	0.102157	3.371772	0.0013
Δ(ΔLGDP)	-0.125037	0.041512	-3.012037	0.0038
Δ(ΔLGDP(-1))	0.096927	0.042091	2.302802	0.0247
DUM	-0.536465	0.162058	-3.299102	0.0016
DUM1	0.219412	0.509222	0.430876	0.6681
CointEq(-1)	-0.759918	0.158202	-4.803464	0.0000

There is also a short run causal effect in the case of the immigrants according to the Pairwise Granger causality tests which depicts that the past values of GDP growth help predicting the future values of the changes in the immigrants' unemployment. This effect doesn't hold for the natives though.

5.7 Conclusion

Greece has received sizeable inflows of immigrants during the last thirty years. Although there were many positive effects for the economy which was growing fast until the mid 2000's, after the economic crisis made its presence clear in the country, problems affecting immigrants started to emerge. From 2008 to 2015 the country's GDP dropped by 23%, unemployment rates reached a peak of 27.5%, real adjusted gross disposable income of households per capita fell and the gross fixed capital formation did so. The main problem for the immigrants was the increase in their unemployment rates which threatened their residence status. They lost thousands of job positions in specific sectors on which they had concentrated, such as the construction or the household services. Inter-sector mobility and repatriation have suddenly caught their attention while planning for their future. Native Greeks have been affected as well. There were many who decided to emigrate to seek for better employment opportunities. Others focused on the tertiary sector of the economy and there is also a big part of the population threatened with poverty and inequalities.

The econometric survey of Okun's law using available data for the immigrants in Greece, demonstrates a relationship between GDP and unemployment on the order of 1.56:1 contrary to the 2.62:1 natives' ratio. Thus, it supports that boosting Greek economy towards growth and overcoming its structural weaknesses is essential to promote the labour market integration of immigrants. After all, employment is usually the single most important determinant of a migrant's net fiscal contribution. On that account, the challenge for drastic policy measures to facilitate the labour market integration of the newly arrived immigrants and their social inclusion has become urgent for Greece.

However, it should be stressed that the Law doesn't distinct between job places of good and bad quality. Consequently, in a period of economic recovery

from a deep recession, the faster responsiveness of immigrant workers towards the output growth could be somewhat the result of their eagerness to accept low-skilled or part-time jobs.

Furthermore, combining the projections of the IMF for the real GDP growth in Greece with the aforementioned findings, the picture for the employment potentials of the native population becomes less optimistic than that for the immigrants. Specifically, for 2019, GDP growth is expected to reach 2.4% (Athens Macedonian News Agency 2018), the level of which could affect positively the immigrant population as it is reported above in the empirical part of this chapter. The midterm projections are even less optimistic for the natives, since in 2020 it is expected a 2.2% growth while till 2024, output growth will slow down to 1.2%. As it can be concluded, despite the nature of the available jobs, that is whether they are of low quality or not, immigrants are going to be benefited more than the natives by the economic growth in the country and it could be easier for them to be employed. This could lead to further emigration of the native population to search for better job opportunities abroad.

Since Greece has been a country in deep recession, the necessity for drastic policy measures to stabilize the economy has become urgent. First and foremost, overcoming the economy's structural weaknesses is an essential target to aim at while trying to find the push out of the recession. Following the path of the New Deal applied in the UK in the late 90s, there is first to provide as many jobs as possible and then try to make them better.

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Chapter 6. Good Practices to Labour Market Integration of Immigrants and the Challenge for Greece

Abstract

In a period of scepticism and a polarised political debate over the effects of immigration in Europe, this chapter emphasises on illustrating the successful policy measures adopted by the national governments to address the challenges arisen in their labour markets as a result of the recent immigrants' inflows. The identification of the obstacles and an effective course of action could enhance and ameliorate the outcomes of an integration policy or stimulate the establishment of a new integration plan. The empirical part of this chapter adds to the aforementioned analysis a pairwise comparison of the 28 member states' immigrants' integration indicators for employment, using longitudinal data from 2008 to 2017. Hence, combining the qualitative with the quantitative data, this chapter unveils the new landscape that has arisen for the immigrants' labour market integration in the European Union with a focus in Greece. Taking into consideration that Greece has recently been a country in deep recession while receiving large inflows of immigrants, an effective Greek labour market integration strategy has become imperative.

Key words: migration, integration, labour market, PROMETHEE

6.1 Introduction

After the outbreak of the Syrian civil war, massive inflows of immigrants emerged towards the European Union countries escalating the public debate over the impact of immigration on these countries. Instead of estimating the appropriate integration strategies, national governments had to deal with the scepticism over the implications of immigration with regard to their economies and the safety of their countries as well. The European sovereign debt crisis, which had decelerated economic growth and had affected adversely the labour markets of several European member states, was probably somewhat responsible for formulating a perception of this influx of immigrants as a threat rather than as an opportunity.

Nevertheless, the social inclusion is one of the targets of the Europe 2020 strategy (European Commission 2010) and the effective labour market integration of immigrants is a necessary step towards achieving it. From an economic and a fiscal point of view, the successful labour market integration of immigrants in their host country is the optimum response towards immigration. That is, an increased participation of immigrants in the labour force of the host economy, contributes to higher productivity, more tax revenues and less need for public benefits. For that matter, free labour mobility constitutes a core value of the EU.

Greece, along with other Mediterranean countries, has been in the frontline of the recent immigration outburst, for as much as 1 out of the 2 million people who entered the European Union since 2014 used the Eastern Mediterranean sea route (UNHCR 2019). In fact, in 2016, Greece became the first European country with the highest number of asylum applications compared to its population (Lodovici et al. 2017). Initially, the focus of the public action was fairly on reception measures. Nonetheless, lots of the newcomers stay in the country rendering a revised integration policy a priority

issue. Besides, Greece, while receiving the latest inflows of immigrants, was experiencing a recession which had affected deeply its labour market and the third-country nationals already integrated into it.

The aim of this chapter is to give prominence to the various measures identified in policy documents as good practices towards an effective labour market integration of immigrants and unveil the labour market integration outcomes of the immigrant population in the 28 EU member states during a decade (1998-2017), emphasizing on the position of Greece. First, a short theoretical perspective on the economic and the fiscal impact of immigration on the country of immigrants' destination will be presented. Then the challenges the host countries confront in their efforts to promote, establish or improve their integration policies will be outlined and classified. Additionally, following the same classification, the identified measures which contribute to the effectiveness of a labour market integration policy and relevant examples of the good practices already performed in the European member states will be demonstrated. Next, the realities formulating the new landscape with regard to the labour market integration of immigrants in Greece will be highlighted. Last but not least, the results of the "Preference Ranking Organization Method for Enrichment Evaluations" multi-criteria method of decision analysis comparing the EU-28 immigrants' integration indicators for employment will be unraveled.

For the purpose of this chapter, the use of the word "immigrants" receives its EU context as third-country nationals establishing their usual residence in the territory of a Member State for different purposes including humanitarian ones.

6.2 The Impact of Immigrants' Employment in their Host Country: A Short Theoretical Survey

The main concern over the impact of immigration on a host country is concentrated on its economic and fiscal effects. Do immigrants displace natives in the labour market? Are they responsible for the decline of the native wages? Is there a possibility that immigrants complement the natives, enhance productivity and contribute to the long-term economic growth? Or, is it the case that the cost of immigration exceeds immigrants' contribution through their taxes?

Economic theory cannot capture the exact effects of immigration in the host country's labour market that could be multiple, differentiated and/or simultaneous. As such, the net economic impact of immigration is a complex issue that should definitely take into account the specific circumstances of the host economy. Immigrants' arrival to a host country increases its labour supply and the return to capital, but its overall consequences as regards employment and wages depend mostly on the skills' distribution of immigrants. For example, the changes in the wage structure could be negative for the natives with skills similar to the immigrants'. On the other hand, those natives complemented by the immigrants could experience a raise in their income. Moreover, the magnitude of such changes influences the "immigration surplus", that is the increase in the overall income of the native population due to immigration (Blau and Mackie 2017).

In the long run, after the initial shock of the increased labour supply and after the effective labour market integration of the immigrant population, when all the production factors including the capital and the technology have been adjusted, immigration could boost aggregate demand, promote innovation and technological change and improve the quality of the human capital. It could also affect the occupational and industrial structure of the labour market (Rhus and Vargas-Silva 2017). After all, labour mobility favors an optimal allocation of

resources and leads to higher and more qualitative output and welfare (Zimmermann 2016).

Regarding the fiscal impact of immigration, in the short run, it is mainly associated with the increase in government expenses connected to rescuing operations as well as integration measures. In the long run though, it is the successful labour market integration of immigrants that could strengthen fiscal sustainability (Aiyar et al. 2016), since the net fiscal contribution of an immigrant is strongly determined by the integration of him/ her in the labour market of the host country (European Commission Directorate General for Economic and Financial Affairs 2016). Norway's perception on this issue is of interest, since the aim of its integration policy is that all the third-country nationals, unless they are engaged in studies, should be employed in order to contribute to the host country with their taxes (Norwegian Ministry of Justice and Public Security 2016). Furthermore, immigration and the effective labour market integration of the immigrant population improves the employment-to-population ratio and consecutively reduces the fiscal pressure particularly in countries with ageing population, that is actually the case for the European Union.

From a different perspective, employment is also essential for the immigrants themselves because it increases their self-sufficiency and their socio-economic participation, their standard of living, their interactions with the natives and the overall outcome of their inclusion in the host society (OECD 2018a). Moreover, it prevents them from social dumping, labour exploitation and discrimination (European Migration Network 2019). No matter what the motivation for migration is, the labour market participation affects all the immigrant subgroups i.e work immigrants, family immigrants, education immigrants, asylum seekers and refugees.

Although labour market integration is one of the five key areas of the EU Action Plan on the Integration of Third-Country Nationals (European Commission 2016) which specifically refers that: "successful labour market

integration can also help to meet the growing needs for specific skills in the EU as well as to enhance the sustainability of the welfare systems against the background of an ageing population and workforce", the gap between the immigrants and the natives does not seem to close in the OECD countries, including Greece, and it is obvious when comparing immigrants' unemployment rates with the native-borns' ones.

6.3 Integration Challenges and Policies

In the Common Basic Principles for Immigrant Integration Policy in the EU (Council of the European Union 2004), integration represents a dynamic two-way process of mutual accommodation by immigrants and EU nationals. It is also a multifaceted process that begins as soon as the immigrants arrive in the host countries and involves considerable challenges encountered by the immigrants' host countries.

Table 1 includes the most common obstacles in the implementation of a labour market integration policy classified in four categories as economic, structural, educational and social. Such a general classification is deliberately preferred for the purpose of this study to provide with a comprehensible approach to this complicated issue. The list is by no means exhaustive, but it presents a typical overview of the most commonly referred challenges. The policy documents which have been reviewed to formulate Table 1 are:

- Eurocities (2017). *Labour Market Integration of Refugees and Asylum Seekers*. Brussels: Eurocities.

- Eurofound (2016). *Approaches to the labour market integration of refugees and asylum seekers*. Luxembourg: Publications Office of the European Union.
- European Employment Policy Observatory (2016). *Challenges faced by asylum seekers and refugees in successfully integrating into the labour market - Synthesis Report*. Luxembourg: Publications Office of the European Union.
- European Migration Network (2016). *Integration of beneficiaries of international/humanitarian protection into the labour market: policies and good practices - Synthesis Report*. Brussels: European Migration Network.
- European Migration Network (2019). *Labour Market Integration of Third-Country Nationals in EU Member States - Synthesis Report*. Brussels: European Migration Network.
- Hooper, K., Desiderio, M., V., & Salant, B. (2017). Improving the Labour Market Integration of Migrants and Refugees: Empowering Cities Through Better Use of EU Instruments. Brussels: Migration Policy Institute Europe.
- Kalantaryan, S. (2016). The Labour-Market Integration of Refugees and Asylum Seekers as a Special Category of Migrants: Evidence and Literature Review. In I. Martín et al., *From Refugees to Workers. Mapping Labour-Market Integration Support Measures for Asylum Seekers and Refugees in EU Member States, Volume II: Literature Review and Country Case Studies* (pp. 11-25). Gütersloh: Bertelsmann Stiftung. http://dx.doi. org/10.11586/201600.
- OECD (2018a). *Working Together for Local Integration of Migrants and Refugees*. Paris: OECD Publishing.

Notwithstanding that some of these policy documents refer to specific groups of immigrants like the refugees, the challenges emerged in the integration process could be alike for any immigrant group.

Table 1. Common Challenges in Immigrants' Integration

Economic	Structural	Educational	Social
Housing shortage	Vague rules of participation to the labour market	Language barriers	Inadequate living conditions
Allowances and cash benefits	Social security benefits	Low levels of skills	Discrimination
Lack of incentives to employers to hire	Provision of temporary asylum	Recognition of qualifications	Restrictions to family reunification
Limited opportunities for self-employment	Lack of coordination of services	Lack of targeted support	Psychological barriers
Poor funding for employment services			Lack of social networks
Low labour market demand			

The economic challenges associated with the integration process of immigrants refer to:

- The housing shortage which prevents from an optimal allocation of immigrants and refugees based on the proximity of available job vacancies.
- The allowances and cash benefits associated with the access to social welfare which may weaken the immigrants' incentive to participate in the workforce.
- The lack in the provision of the necessary incentives for employers to hire new immigrant employees. Wage subsidies for example which could encourage the recruitment of immigrants in the local labour market are not usually adopted.

- The opportunities for self-employment which are limited due to the uncertainty of the legal status of some groups of immigrants like the asylum seekers.
- The poor funding available for the development of the public employment services.
- The low labour market demand, the high levels of unemployment and the competition for the scarce job positions which is increased in countries like Greece due to the recent debt crisis and the austerity that followed it.

The structural challenges include:

- The various and vague rules of participation to the labour market between EU member states.
- The provision of temporary asylum to asylum seekers which deters employers from hiring them.
- The plurality of actors engaged in the management of migration and the lack of coordination among the services.
- The social security benefits due to the diversification of the social welfare system across the EU member states.

In the educational challenges belong:

- The language barriers, the overcoming of which is widely considered as a crucial step towards the social inclusion of the immigrants.
- The low skills levels.
- The difficulties in the recognition of immigrants' qualifications, especially when the motive of immigration is a humanitarian one, so there is no time for the appropriate preparations. Thus, even high-skilled immigrants could end up working in low-skilled jobs.
- The lack of targeted support for special categories of immigrants like the refugees. Especially at the beginning of the recent migration crisis, the host countries did not always provide with specific targeted measures for asylum seekers and refugees.

Last but not least, the social challenges combine:

- The inadequate living conditions such as the lack of accommodation, the poor conditions and the overcrowding, especially at the reception centres, which deter people from preparing for joining labour market.
- The discrimination, the exploitation and the undeclared work.
- The restrictions to family reunification.
- The psychological barriers.
- The lack of social networks especially in the case of the refugees.

Towards addressing the aforementioned barriers and proceeding with their integration policies, EU Member States have adopted three kinds of approaches (European Migration Network 2019): the mainstream approach, the individualised approach and the hybrid one. The first one promotes equality among the immigrant and the native population and similar access to social services. The tailored integration measures or else the individualised approach focuses on covering the needs of specific immigrant subgroups like the refugees. The last approach, the hybrid one, is a combination of the other two approaches.

In this framework, Table 2 portrays the identified policy measures which have been derived from the above mentioned policy documents and could enhance the outcomes of the integration process. Following the classification of the challenges, Table 2 introduces four groups of integration methods: the economic measures, the structural reforms, the social and the educational measures.

Table 2. Integration Measures

Economic	Structural	Educational	Social
Social clauses in the public procurement	Reduce the time needed to ensure legal status	Language learning	Anti-discrimination measures
Temporary agency employment	Legal rights to employment	Qualification programs	Access to social services
Promote entrepreneurship	Coordination among different levels of governance	Bridging courses	Housing assistance
Job matching	Bring together a spectrum of actors	Ethics education	Career's advice and orientation services in different foreign languages
Funding	Provide cities support for the evaluation of their integration projects	Vocational education and training	Mapping skills

The economic measures combine:

- Social clauses in the public procurement. The method of introducing social clauses in government contracting has been widespread for social regulation and it has been used to cover many subject areas of a social policy (McCrudden 2004). According to a Eurocities report (2017), in the city of Barcelona there is a social clause for public contracts awarded by the municipality encouraging businesses to hire refugees or asylum seekers. Moreover, in the latest report of the European Migration Network (2019), both

Lithuania and Sweden have been acknowledged to provide subsidies to motivate employers to invest in a multicultural working environment.

- Temporary agency employment. There is evidence that temporary jobs are easier for low-skilled people to obtain the necessary work experience and improve their possibilities to escape poverty in the short term (Autor and Hausman 2006). This practice has taken place in Denmark, Netherlands and Sweden (Kalantaryan 2016). In fact, the analysis of Jahn and Rosholm (2014) over the impact of temporary agency employment in Denmark, lead to evidence of large positive treatment effects, particularly for immigrants.
- Promotion of entrepreneurship and particularly high quality entrepreneurship. The benefits from immigrant entrepreneurship vary from the regeneration of areas neglected by the native entrepreneurs which suffer from demographic decline to the innovation initiatives which promote economic growth (Desiderio 2014). Vienna, Barcelona and Helsinki are cities which have been associated with offering packages or advice on entrepreneurship (Hooper et al. 2017). Furthermore, the city of Munich offers another perspective on this integration approach by honouring migrant entrepreneurs for their extraordinary achievements in business with a Business Prize (Eurocities, 2017). Italy's Giovani 2G grant scheme, which targeted immigrants between 18 and 30 years old and provided them with networking and business planning, is the most recently reported example of the measures for the promotion of immigrants' entrepreneurship (European Migration Network, 2019).
- Job matching. Besides addressing the needs of the labour market, job matching could also help orienting migrants towards the right training. The "ARRIVO Berlin" initiative for example operates a company service office in Berlin that provides guidance to companies interested in hiring refugees (Hooper et al. 2017). Employment-oriented integration programs that included job matching have also been launched in Sweden (Wiejbrock 2011).
- Funding provided from the city, the national, the federal and the EU level which is crucial in every step of the integration process.

Structural reforms include the following approaches:

- The reduction of the time needed to ensure legal status. This is particularly important since the uncertainty of the legal status prevents immigrants from overcoming the psychological barriers and from entrepreneurship initiatives as well as employers from hiring immigrants. A typical example of a good course of action towards this direction is the passing of the Law 4375/2016, in Greece, which promoted the speed of the asylum recognition procedure (Bontenbal and Lillie 2019).
- Free and easy access to employment by changing the legal rights. Asylum seekers do not have full access to employment as refugees according to the EU legislation. However, the above mentioned Greek Law, 4375/2016, abolishes requirements for work permits in Greece and grants refugees and asylum seekers immediate access to employment on similar conditions as Greek nationals.
- Coordination among different levels of governance. Although the process of integration is usually a responsibility of the central government, the involvement of local authorities and the coordination among them could be beneficial. Local authorities could take advantage of their proximity to private and civil society actors to ask for their support in the integration process. The EU also participates in the integration process through soft law instruments, funding and knowledge exchange mechanisms. Good practices of coordination among the different levels of governance have been reported in Belgium where central government is responsible for the anti-discrimination policies and the regional authorities for the labour market ones and in Germany as well where the integration policy is a matter of the federal state while the lander and the municipalities deal with the education, the language training and the social security policy (Hooper et al. 2017).
- Cooperation among a range of actors. The private sector could be engaged in the integration process in a framework of social responsibility commitments. Moreover, it could offer with its expertise and additional funding. There are several examples of developing networks with the private sector in

Ammerland, Amsterdam, Berlin and Paris Ireland, Lithuania, Belgium (European Migration Network 2019; OECD 2018a).

- The provision of cities with support for the evaluation of their integration projects. There are a lot of issues implicating the assessment of the outcomes of integration policies. As such, it is valuable to provide the actors with assistance to implement their evaluation programs. The city of Stuttgart has evaluated migrant entrepreneurs using federal funds (Hooper et al. 2017). The example of Denmark's benchmark system for the evaluation of the municipalities' success in the labour market integration of immigrants is typical (Liebig 2007). There is also the evaluation of the Mingo Migrant Enterprises project in Vienna available to offer lessons through its strengths and weaknesses applicable to other programmes.

The educational group of measures covers:

- Language learning. The positive impact of language skills on the labour market outcomes has been highlighted by Chiswick and Miller (2007). Learning the language of the host country is the most common challenge during the integration process. Being multilingual though, could also prove to be beneficial for migrants working in specific fields, like tourism. An innovative approach was followed in Hungary with the 'Hungarian C' mon, let's speak Hungarian' project which offered a mobile application with practice materials to complement language courses (European Migration Network 2019). Moreover, the Swedish 'Language Friend' brought into touch local volunteers with immigrants. Apart from the basic language learning courses, linking language learning to the job market increases the likelihood that learning supports employment. Such practices like free of charge language courses with specialized vocabulary for the profession chosen are offered in Berlin, Munich and Ghent (Eurocities 2017). There are also the examples of Finland's and Norway's language programs which correspond to the occupational needs and the real life language practices. Likewise, in Sweden, the Stockholm SFX project provides specialized Swedish language courses based on different

professions to help refugees learn the necessary vocabulary (Eurocities 2017; European Migration Network 2015).

- Qualification programs. The educational attainment levels of the immigrants are found to be lower compared to those of the EU nationals, so their participation in qualification programs offers them the opportunity for further knowledge and training.
- Ethics education. One convergent trend of the Western European countries' integration policies is the obligatory civic education courses (Joppke 2007). In Germany the project "Live Democracy" for instance had a field devoted to civic engagement (European Migration Network 2019).
- Bridging courses, which include complementary education and training for getting qualifications recognized. In the last report of the European Migration Network (2019), Germany's "Integration through Qualification" measure was illustrated as an example with an important impact of 17,191 participants in the training projects.
- Vocational education and training. The restructuring of active labour markets towards the provision of targeted training for immigrants has been found effective for increasing their earnings (Sarvimäki and Hämäläinen 2016). Milan Celav centre offers vocational training courses taking place in the reception centres (OECD 2018a). Moreover, it is important that the training meets labour market needs. In Finland for example nursing, construction, engineering and metal work courses were mostly offered to immigrants (European Migration Network 2019).

The social measures involve:

- Anti-discrimination initiatives such as the Berlin's Campaign "Refugee is not a profession" which aims to sensitise the local businesses to offer job opportunities to immigrants (OECD 2018a). Discrimination is considered one of the most important barriers against immigrants' economic integration (Constant et al. 2009). Another good practice example is the Flemish Public Employment

Services which have integrated intercultural relation activities in their action plan (European Migration Network 2019).

- Access to social services which is further aggravated by the immigrant legal status and the lack of fluency in the language of the host country (Derose et al. 2007). In Solingen, Germany, there are health services offered to people without health-care coverage such as the humanitarian immigrants (OECD 2018a).
- Housing assistance. Taking into consideration the local employment opportunities while planning the dispersal policies could lead to valuable integration outcomes.
- Career's advice and orientation services in different foreign languages. In Berlin, for example, MoBIBE aims to provide advice to migrants, asylum seekers and refugees in the most important languages of the countries of origin (OECD 2018a). Another approach is offered by the Cypriot Infobus which brought in touch volunteers with third-country nationals to inform them on how to find a job (European Migration Network 2019).
- Mapping of people's skills. Kunz (2003), in his paper on the social capital, focuses on the importance of the formal and informal recognition of the qualifications of immigrants for an effective labour market integration. The profiling of immigrants from the labour offices can help to better predict the opportunities and potentials for the labour market. In the city of Altena, a first attempt was made in establishing a skills assessment for newly arrived asylum seekers and refugees on a voluntary basis, taking stock of their education and previous professional experiences. The municipality of Amsterdam signed a contract with the enterprise Manpower to understand candidates' aspirations and make the information available to the local enterprises (OECD 2018a). In Nuremberg, the KompAS project measures professional competencies and develops language skills to foster early activation in the labour market (Eurocities 2017). In Austria, there is a platform with a guide and description for 2000 professions allowed for non certified skills to be assessed by one to one consultations or special tests. In Germany, there is a test which is available in six languages, the "MySkills" test (European Migration Network 2019).

The list of the recorded good practices in the labour market integration of third-country nationals in EU member states adopted in the last European Migration Network Synthesis Report (2019) follows a different classification in a similar conceptual framework though:

- Enhancement of soft skills
- Training and qualification
- Information and counselling
- Targeted measures
- Support for self-employment
- Enhancement of intercultural/civic relations
- Incentive measures

No matter which categorization is followed and no matter which immigrant group is targeted, there are certain pillars or areas of target when referring to the labour market integration of third-country nationals that are associated with their education, their financial support, their access to the host country's social services and the legal framework that defines all of the above.

6.4 Greece's Integration Policy

Greece, not being a traditional country of destination for immigrant population, introduced its first immigrants' regularization program in the late 1990s, followed by two other similar attempts in 2001 and 2005. In such a framework, the first integration strategy hadn't been introduced in Greece until 2013 when it touched specific interventions for the management of migration and the enhancement of integration (Hellenic Ministry of Migration policy 2013). A revision of the national integration strategy was made during 2018 triggered by

the several challenges emerged from the refugee crisis and following relevant European initiatives as well (Hellenic Ministry of Migration policy 2018). The revised document includes several of the aforementioned policy measures and engages both the central government and the local authorities in the integration process.

Taking into account that more than 60,000 immigrants, refugees and asylum seekers are stranded in Greece adding to an immigrant population of more than 800,000 immigrants (UNHCR 2019), the effective implementation of a realistic integration plan towards their fast and sustainable integration should become a priority issue. Besides, the development of the labour market integration of third-country nationals in Greece has been aggravated by the financial crisis and the austerity that followed it. The unemployment rate during the years of recession reached a peak of 27.5% and the jobs filled by low-skilled entrants were lost as they were in the sectors most affected by the crisis (construction, transport, households, retail). In fact, the employment of immigrants in the construction sector of the economy which gathered most male immigrants, dropped by 78% during the recession period. Subsequently, the immigrant population may even resort to working in the shadow economy, which further subjects them to poverty and vulnerability.

Hence, sharing good practices regarding the successful integration of immigrants in the labour market of the host country constitutes a real added value. Although most of the integration measures which have been implemented so far in Greece had an ad hoc project basis, there are still some examples of good practices to be shared, such as:

- The Helios project, which started as a pilot program for the social inclusion, the labour market participation and the respect of human rights engaging two municipalities in Greece and now receives a revised form with the new “Helios 2” project. This revised project targets 5,000 refugees to provide them with access to Greek language courses and assistance to labour market integration (Zotou 2019).

- Vocational training which was has been developed by the I.ReF.SoS Project (https://irefsos.oaed.gr/) implemented by the Public Employment Service in Greece, targeting young refugees with innovative educational counseling, language and intercultural training and career guidance.
- Immigrant entrepreneurship which has been supported by the city of Athens through its participation in the Cities Grow project (http://www.integratingcities.eu/integrating-cities/projects/cities-grow). The action plan includes the participation of immigrant entrepreneurs in public procurements, the involvement of local employment services and educational institutions in the development of support mechanisms, as well as, anti-discrimination strategies.
- The finding of paid employment suitable for jobseekers which has been the target of several NGOs. Moreover, the temporary employment of refugees in the agricultural sector is the target of a new project launched in the framework of the new national integration strategy (Zotou 2019).
- Educational programs which have also been used by NGOs to strengthen and evaluate the abilities of the participants before finding them paid internships.
- The procedure for the recognition of the immigrants' qualifications which used to follow specific tailored measures usually with a fee. Moreover, in 2017, the European Qualification Passport for Refugees came into force to assess the qualifications of refugees who cannot fully document them (Bontenbal and Lillie 2019).
- Greece's Emergency Support to Integration & Accommodation Programme (https://estia.unhcr.gr/el/home_page/) which has provided urban accommodation and cash assistance to more than 40,000 refugees and asylum seekers residing within the country.
- A new method of payment and retention of insurance contributions which focuses on workers in specific disciplines and has been a useful means of combating undeclared work (Bontenbal and Lillie 2019).

However, the criteria for choosing good practice examples and considering the transferability of a certain policy or measure should be carefully estimated, since there are specific elements affecting their outcomes like the immigrants' background etc.

6.5 Empirical Investigation

The empirical part of this study emphasises on comparing the immigrants' employment integration indicators of the EU 28 member states to provide policy actors with similarities and differences useful for the assessment of the effectiveness of national labour market integration policies. The variables of the model are the Zaragoza integration indicators for employment presented in Table 3 and based on the Zaragoza Declaration, which was adopted in April 2010 and includes the list of the indicators accepted by the EU Ministers responsible for integration. Particularly, the employment, unemployment, activity rates and the self-employment in thousand people will be examined.

The employment rate is the percentage of employed people compared to the working-age population (Eurostat 2019b). It is the most important indicator to monitor the EU 2020 strategy employment target. The employed people include the population who had any work for profit or had a job even if they were absent from it. Although this paper does not refer to gender differences but rather the gap between the native and the immigrant population, it should be mentioned that according to Eurostat (2019b) there is also a gender gap between the employment rates of men and women in almost all the EU member states. The largest difference between the employment rate of the native and the immigrant population in 2018 was found in Greece where the gaps in the labour

market indicators between the natives and the immigrants aggravated after the debt crisis.

The unemployment rate refers to the percentage of the labour force that is unemployed during the reference year (Eurostat 2019b). The differences between the unemployment rate of the native-born population and the third-country nationals in the EU were relatively small before the global financial crisis, but the gap widened following the economic shock. The lowest unemployment rates with regard to the third-country nationals in 2018 were recorded in Czechia (Czech Republic), in Malta, and in the UK, while Greece had the highest, followed by Spain, Sweden, France, and Finland.

The activity rate is an indication of the economically active people compared to the total population (Eurostat 2019b). According to Eurostat (2019b), between 2008 and 2017, third-country nationals presented lower activity rates than their EU-born peers, but in 2019 this trend seems to change. Netherlands, Latvia, Germany, Denmark, and France belong to the countries with the largest gaps in the activity rates between natives and immigrants, while there are also countries like Slovakia, Czechia, Romania and Greece that had higher activity rates for the foreign-born population than for the natives.

The self-employment rate includes the sole or joint owners of the unincorporated enterprises, the unpaid family workers, the outworkers who work outside their usual workplace and workers engaged in production done entirely for their own capital formation (Eurostat 2019b). The share of the self-employed native-born people in the EU-28 has declined between 2008 and 2018. For the foreign-born population an increase in self-employment has been observed until 2016 when it also turned downwards.

Over-qualification refers to the situation in which a person has tertiary education and works in low or medium-skilled jobs (Eurostat 2019b). The over-qualification rate is usually high among the immigrants and there are regions where the lowest level of migrants' over-qualification surpasses the highest

level of the natives' over-qualification leading to immigrants' lower labour productivity and worsening the region's economic development (OECD, 2018a).

There are no longitudinal data available for the over-qualification rate. However, it is expected that the results would be further enforced by the use of this extra indicator. The data for each indicator include values that refer only to the foreign (non-EU) population of every member state, without separating between immigrant subgroups such as the economic immigrants, the refugees, the asylum seekers etc. and they are available in Eurostat (2019a). Moreover, immigrant population data have been used to balance the model. The method of analysis is the PROMETHEE multi-criteria decision analysis method.

Table 3. List of Zaragoza Indicators

Employment	**Education**	**Social Inclusion**	**Active Citizenship**	**Welcoming Society**
Employment rate	Highest educational attainment	At-risk-of-poverty	Naturalisation rate	Perceived experience of discrimination
Unemployment rate	Tertiary attainment	Income	Share of long-term residence	Trust in public institutions
Activity rate	Early school leaving	Self-reported health status	Share of elected representatives	Sense of belonging
Self-employment	Low-achievers	Property ownership	Voter turnout	
Over-qualification	Language skills of non-native speakers			

Source: Council of the European Union 2010

The Preference Ranking Organization Method for Enrichment of Evaluations is a method that belongs to the outranking family of the multi-criteria decision analysis methods. It is expressed as a method of organizing the preference ranking for an enhanced evaluation of a problem. Thus, the PROMETHEE method provides a decision-maker with either a single choice or a ranking of the various alternatives, based on preference degrees among the available options and is based on pairwise comparisons in order to calculate them (Papathanasiou and Ploskas 2017). The main steps of PROMETHEE are based on

- the calculation of the preference degrees for every action on every criterion,
- the calculation of the unicriterion flow of every criterion and
- the calculation of the global flows of all criterions.

The outcome is a ranking of all the available alternatives based on the global flows, which are the aggregated unicriterion flows.

Table 4. Preference Degrees

Preferences	2008 to 2017				
	Activity rates	Employment rates	Self-employment	Unemployment rates	Population
min/max	max	max	max	min	max
Weight	0.2	0.2	0.2	0.2	0.2
Preferences function	linear	linear	linear	linear	linear
thresholds	absolute	absolute	absolute	absolute	absolute
Q:Indifference	3	3	5000	3	10000
P:Preference	10	10	10000	10	20000

The criteria used, as presented above in Table 4, have provided us with a preferable ranking steamed from the pairwise comparisons of a combination of the lowest unemployment rate, the highest employment and activity rate and the highest number of the self-employed immigrant population in every country under the same weight degree. The weights of all the criteria are almost equal because there is no question of preference among the criteria. The type of the function chosen is linear, thus an indifference threshold Q and a preference threshold P for each criterion has been selected according to the values of the data. The calculation of the global flows of all the criteria entered into the system leads to the following ranking displayed in Table 5:

Table 5. Global Flows of the PROMETHEE Method

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
1	Italy	Greece	Greece	Italy	Czechia	Czechia	Czechia	Czechia	Italy	Czechia
2	Greece	Italy	Portugal	UK	UK	Italy	UK	Italy	UK	Italy
3	Portugal	Portugal	UK	Czechia	Germany	UK	Italy	Germany	Spain	UK
4	Spain	UK	Spain	Greece	Italy	Germany	Germany	Estonia	Estonia	Germany
5	UK	Spain	Italy	Spain	Cyprus	Cyprus	Cyprus	Spain	Portugal	Estonia
6	Estonia	Czechia	Czechia	Cyprus	Spain	Estonia	Malta	Latvia	Latvia	Latvia
7	Latvia	Cyprus	Cyprus	Portugal	Austria	Spain	Lithuania	Cyprus	Malta	Spain

8	Czechia	Estonia	Austria	Austria	Estonia	Lithuania	Spain	UK	Czechia	Portugal
9	Cyprus	Germany	Germany	Netherlands	Latvia	Malta	Estonia	Slovakia	Germany	Poland
10	Ireland	Austria	Netherlands	Estonia	Malta	Austria	Latvia	Malta	Slovenia	Greece
11	Lithuania	Latvia	France	Slovenia	Portugal	Latvia	Hungary	Lithuania	Denmark	Slovenia
12	Hungary	Poland	Estonia	Latvia	Netherlands	Portugal	Portugal	Slovenia	Lithuania	Malta
13	Germany	Denmark	Romania	Romania	Lithuania	Denmark	Austria	Greece	Greece	Austria
14	Slovakia	Netherlands	Latvia	Slovakia	Greece	Slovakia	Poland	Austria	Austria	Lithuania
15	Austria	Ireland	Denmark	Germany	Slovakia	France	Netherlands	Portugal	Cyprus	Denmark
16	France	Slovakia	Ireland	France	Slovenia	Netherlands	France	Hungary	Romania	Romania
17	Slovenia	Hungary	Lithuania	Ireland	Poland	Poland	Romania	Romania	Ireland	Ireland
18	Denmark	France	Luxembourg	Malta	France	Slovenia	Slovakia	Netherlands	Poland	Slovakia
19	Netherlands	Romania	Slovenia	Denmark	Denmark	Ireland	Greece	Denmark	Netherlands	Netherlands
20	Poland	Malta	Poland	Poland	Ireland	Greece	Luxembourg	France	France	Cyprus

21	Croatia	Lithuania	Slovakia	Bulgaria	Bulgaria	Hungary	Sweden	Ireland	Sweden	Sweden
22	Romania	Sweden	Malta	Lithuania	Romania	Romania	Ireland	Bulgaria	Slovakia	France
23	Sweden	Luxembourg	Sweden	Luxembourg	Hungary	Luxembourg	Denmark	Poland	Hungary	Hungary
24	Bulgaria	Slovenia	Hungary	Hungary	Luxembourg	Sweden	Bulgaria	Sweden	Belgium	Luxembourg
25	Malta	Finland	Finland	Sweden	Sweden	Finland	Slovenia	Luxembourg	Bulgaria	Bulgaria
26	Finland	Croatia	Belgium	Finland	Finland	Belgium	Finland	Belgium	Luxembourg	Finland
27	Belgium	Bulgaria	Bulgaria	Belgium	Belgium	Bulgaria	Belgium	Finland	Finland	Belgium
28	Luxembourg	Belgium	Croatia	Croatia	Croatia	Croatia	Croatia	Croatia	Croatia	Croatia

Several elements distinguished the immigration experiences of the European member states such as their geographical location, their socio-economic development and their historical background (Doomernik and Bruquetas-Callejo 2016). Between 1750 and 1960 Europe used to be the world's prime source of migration. Since 1960 though, most of the EU member states have transitioned from countries of emigration to destination countries of immigrants (Munz 2007). Postcolonial migration was the first migrant wave towards Europe. Labour migration followed, directed mainly to the North-Western European countries the economies of which were rapidly growing. The end of the Cold War triggered large numbers of asylum seekers and refugees towards the traditional migrant destinations but also the Southern European countries.

Beginning the analysis with the Mediterranean countries, which have been the main entrance of immigrants to the European Union, it should be noted that the financial problems, the forefront to the recent migration crisis and a broad «shadow economy» are all common ground elements among them although their efficiency as regards labour market integration seems quite different. Moreover, it should be mentioned that the model of migration in Southern Europe was mainly characterized by labour and family migration, illegality and frequent amnesties. Greece used to achieve a high rank until the peak of the recession in 2013, when it received the twentieth position among the 28 member states. The consequences of the economic crisis seem to have affected the outcomes of the immigrants' labour market integration as it was also highlighted above. Albanian immigrants for example, who consist more than half of the immigrant population in Greece, since their first entrance and up to the crisis had improved their employment status, used to receive higher salaries, they had increased their savings and their remittances to Albania and they used to consider staying in Greece permanently (Nikas and Aspasios 2011). Nevertheless, the crisis increased the inter-sector mobility of the Albanian employees, affected the transfers of remittances to Albania and provoked thoughts for repatriation (Aspasios et al. 2014).

On the other hand, although Italy has adopted a restrictive strategy lately as regards its migration policy, it maintains one of the top places in the ranking over the ten years of this survey. In fact, a typical example of immigrants' labour market integration in Italy is that the immigrants' share in the country's total employment exceeds their share in the country's total population (Bontenbal and Lillie 2019). Italy was the first Mediterranean country to adopt an integration policy in the late nineties followed by Spain, Greece, and Portugal in the early 2000s in which a labour-oriented approach and an economic conception of migration were clear, contrary to the North-Western humanitarian oriented policies (Doomernik and Bruquetas-Callejo 2016). This approach enhances the importance of the labour market integration for the effective social inclusion of immigrants.

Spain also receives a high place. Immigration policies in Spain are considered as generally open, committed to integration, and more concerned with enlarging avenues for legal immigration rather than limiting flows probably because there is a widespread belief among the Spanish public that immigration has been positive to economic growth and Spain's political culture employs immigration as a vehicle for expressing democratic values. Moreover, there is relatively low visibility of immigrants, which makes them less of a perceived threat to national identity (Arango 2013).

Portugal and Cyprus, despite their financial problems during the years under examination, have kept their above average places besides some slight ups and downs during the last decade. The Mediterranean island of Malta seems to have improved its position over the years though its first integration program was launched just in 2018.

The Baltic countries present a satisfying and consistent immigrants' labour market integration score although they are strict and conservative to protect their national labour markets. The common history with the majority of their immigrants originated from the CIS countries, ameliorates the difficulties of integration. Moreover, the net migration rate is positive only in Estonia, while Latvia and Lithuania are emigration countries.

As regards the Visegrad countries, Hungary and Poland not being much exposed in immigration along with Slovakia do not respond in their integration strategies as effectively as Czech Republic which takes the lead in Central Europe in developing an effective integration policy.

The case of the Nordic countries is an interesting one, since the labour market outcomes of the immigrants do not seem to follow the innovational labour market policies implemented. Hence, the differences in the employment indicators between the foreign population and the natives remain wide, revealing that apart from the policies, there are also several other elements that affect the outcomes of immigrants' integration.

With regard to the European Union founding countries, Germany, which has an integration strategy since the late 1970s, stands in the first ten places of the ranking. On the other hand, the score of France, which is considered the older European immigration country, was below average for most of the years and it has worsened after 2015. Luxembourg also receives a low ranking while Netherlands, whose integration vision puts the responsibility of integration on the immigrants, has an unstable record during the last ten years. Belgium competes with the newest member state, Croatia, for the last position of the EU28 labour market integration ranking. This is probably attributable to the structural characteristics of the Belgian labour market.

The employment integration indicators of immigrants in Austria and the UK present a consistency through the years. The UK is among the first five countries between 2008 and 2017 even if it does not have a national integration plan, encouraging bottom-up initiatives. On the contrary, Austria, whose place in the ranking is above average, has a mandatory integration programme.

Slovenia, where most of the immigrant population had similar characteristics with the natives facilitating their integration, does not have an official strategy documented and its position in the ranking is not stable. Last but not least, Romania seems to achieve higher scores than Bulgaria and Croatia receives the lowest scores among the EU-28.

The results of this method are vulnerable to changes outside certain stability intervals since the selection of the weights and the preference degrees is subjective. The sensitivity analysis conducted and presented in Table 6 reveals the stability intervals of this model for which the results remain unaffected. A sensitivity analysis of the weights is always an interesting and useful tool, and in this way, the decision maker can examine how robust the given solution is. Thus, if the intervals of all the criteria are particularly limited, then the given solution is quite sensitive to change. On the other hand, when the intervals are wide, the solution is characterized by robustness. In the case that the given solution is too sensitive to small changes, the decision maker could consider the

selected model and he/ she can reconstruct it in a more robust way, so the given final ranking will be more stable.

In Table 6, there are the intervals for the five criteria for the ten selected years, from 2008 to 2017. It is clear that the limits above the intervals are too strict, and the given solution is not characterized by robustness. This may happen due to the fairly close values of the data entered into the model. In any case, the sensitivity analysis should be taken into account for the flexibility of all the final rankings. For the purpose of this chapter, the sensitivity of the results is to be expected, but it does not play a negative role in the given rankings, as the selected model could not be formulated in a different way. Presumably, an interesting idea would be to use different weights, in order to focus more on selected criteria, and then to examine how each ranking and the model's robustness of the solution will react.

Table 6. Sensitivity Analysis

Sensitivity analysis	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Activity Rates	19.74 %- 20.17 %	19.71 %- 21.17 %	19.84 %- 21.06 %	19.88 %- 20.60 %	19.71 %- 20.23 %	19.92 %- 20.00 %	18.27 %- 20.98 %	18.36 %- 20.74 %	23.37 %- 23.86 %	19.80 %- 20.02 %
Employment Rates	19.63 %- 23.72 %	19.50 %- 21.25 %	18.70 %- 21.02 %	19.05 %- 20.15 %	19.52 %- 20.22 %	19.89 %- 20.00 %	17.14 %- 20.87 %	18.43 %- 21.28 %	18.89 %- 19.07 %	19.89 %- 20.02 %
Self-Employment	19.83 %- 20.75 %	19.49 %- 20.40 %	19.35 %- 20.37 %	19.85 %- 20.04 %	19.90 %- 20.61 %	18.49 %- 20.23 %	19.03 %- 23.45 %	19.14 %- 21.00 %	19.02 %- 19.63 %	19.98 %- 20.82 %
Unemployment rates	19.78 %- 21%	18.43 %- 20.68 %	19.24 %- 20.24 %	19.97 %- 20.12 %	19.23 %- 20.26 %	19.44 %- 20.30 %	18.25 %- 20.76 %	18.22 %- 20.70 %	18.75 %- 19.07 %	19.83 %- 21.48 %

Population	18.60%-20.11%	18.72%-20.25%	18.80%-20.72%	19.88%-20.08%	19.79%-20.38%	19.28%-20.07%	19.15%-21.00%	19.58%-21.02%	19.03%-19.17%	19.98%-20.06%

6.6 Conclusion

In a period of a polarised political debate in the European Union on the benefits and the cost of immigration, this chapter intends to illuminate effective immigrants' labour market integration strategies followed by the EU member states and compare them over a decade of economic turbulences. Towards this direction, an extensive presentation of the challenges and the appropriate measures to confront them has been illustrated. Last but not least, the position of Greece, a member state of the European Union captured both in the middle of the economic and migration crises, has been emphasized on.

The classification of the integration challenges in economic, social, structural and educational ones offers a simple framework to comprehend and address them with the appropriate policies. Moreover, sharing the good practices implemented in the EU could stimulate the establishment of new ones or the expansion of the old ones to further enhance their outcomes. The most important part of this study though is the evaluation of the immigrants' integration indicators between 2008 and 2017. The results of the PROMETHEE multi-criteria method analysis combined with the identified good practices implemented for the labour market integration of third-country nationals in each EU member state unveil the effectiveness of the various approaches attempted to address the issue and reveal the challenges that have arisen for Greece.

Although the Nordic or some Central European countries seem to implement an innovative labour market integration policy, the outcomes as regards the employment, unemployment, activity and self-employment indicators of immigrants in these countries do not follow. It is probably the high level of the natives' standard of living which lowers the possibilities that the gap between the natives and the immigrants closes and raises the importance of a successful labour market integration policy. On the other hand, the Mediterranean countries, dealing with various economic problems, used to include the immigrant population in their societies quite successfully until the peak of the recession. This positive observation could stimulate a more targeted integration policy that could benefit from the various examples of good practices to enforce its outcomes.

Immigration, regardless of the motive or the cause behind it, is going to be a global challenge for the years to come. As such, the host countries should form clear integration policies to improve the social inclusion outcomes of the immigrant population.

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Chapter 7. Conclusions

This thesis focuses on illuminating, describing and validating the macroeconomic impact of migration in specific countries of origin and destination of migrants. Acknowledging the timely feature of migration and the constant challenges that emerge from the mobility of people for the economies of the countries involved, this thesis contributes to the relevant literature with further econometric evidence about the effect of remittances on the economies of the sending countries of migrants and the consequences of immigration for the host countries of migrants.

Following the selection of a panel of four emigrant countries which received large inflows of emigrant remittances, the panel dynamic ordinary least squares model approach was implemented to discover the existence of a long run relationship between remittances, as the main compensation of the country of migrants' origin for the loss of human capital upon which it had invested, and other macroeconomic variables important for their development. More specifically, the consumption, the imports and the investment functions were tested with remittances as one of the independent variables in the regressions to estimate their quantitative contribution. On the basis of the findings of the econometric investigation, remittances seem to have financed imports to a very large extent, as economic theory and the existing evidence suggest. However they have had a substantial impact on both the consumption and the investment patterns as well. This positive and strong, as the econometric investigation suggests, correlation between remittances and three of the key macroeconomic injections in the Keynesian sense, clearly implies that remittances have played a crucial role in the economic reconstruction of these countries and their overall growth performance. In this respect, the findings defy the pessimistic view that the lack of effective mechanisms for the management of the remittance flow and its channeling to priority uses and sectors have caused a complete loss of their developmental momentum. By collecting and summarizing the main research contributions in the field and by offering new quantitative data, the thesis also

stimulates further research on the potentials of these capital flows and supports the policymakers in planning policy measures and effective practices to capitalise on emigration.

Moreover, the potential negative outcome of the "Dutch Disease" incident was investigated for Albania and Moldova which have been considered to suffer from the phenomenon due to the large capital inflows they received in the form of remittances. A constant persistence of the appreciation of the real exchange rate, without proper handling and without being accompanied by a rise in productivity and in the quality of the products offered on the external markets would crowd out the traditional export sector, reduce manufacturing output and even lead to speculative attacks. The findings of the econometric investigation based on the panel dynamic ordinary least squares method indicate that the relationship between the real effective exchange rate and the remittances inflows in the panel of the two countries is negative and significant giving prominence to a depreciation trend rather than an appreciation one. This finding, despite its contradiction to the general context with regard to the existence of the phenomenon in these countries, could trigger a diverse approach towards this issue, both from the researchers' and from the policymakers' perspective to redirect their focus on finding other possible sources of the appreciation of the real exchange rate. Moreover, it is a lead that the remittances haven't been spent on productive investments rather than on consumption expenditures that do not sustainably appreciate the real exchange rate.

The rest of the thesis was dedicated to the implications of migration for Greece as a host country of immigrants being inspired by the recent migration crisis in the country which coincided with the economic crisis that hurt deeply its labour market. The economic benefits of immigration for the native population, the "immigration surplus" which Borjas quantified in the case of the USA, were estimated assuming though an oversimplified economy. The results of this study offer indication that the immigration surplus in Greece could have reached a level of 0.02% to 0.12% of GDP, which obviously portrays a dynamics, if anything beneficial, for the revitalization of the Greek economy.

Moreover, the dynamic ordinary least squares estimates, assuming a generalized Cobb Douglas production function to simulate the greek economy, illustrate a long run positive and significant relationship between immigration and GDP growth. The results of the DOLS estimator portray that an increase of 10% in the immigrant labour force boosts GDP growth by 1,5% providing further evidence in the existing literature that immigration could be beneficial for the economic growth of the host country. Greece hasn't been extensively analysed as far as the impact of immigration is concerned. However, the issue has become particularly relevant nowadays when the country has started to recover from a long-term recession and has received considerable inflows of foreign labour force. The findings of this thesis is a sign of the significance of the potential contribution of the immigrant labour force if further integrated in the labour market.

For this purpose, the research was extended with an econometric survey to validate Okun's law using available data for the immigrant population. The findings demonstrate a relationship between GDP and unemployment on the order of 1.56:1 contrary to the 2.62:1 natives' ratio. Thus, it supports that boosting Greek economy towards growth and overcoming its structural weaknesses is essential to promote the labour market integration of immigrants. From the analysis of the statistical data, it could also be suggested that before the crisis immigrant workers in Greece used to complement the natives and being more flexible, they weren't much vulnerable to job losses, but after the crisis the picture changed as immigrant workers have competed with the natives for the same job positions and being less competitive they have become more vulnerable to job losses. Such suggestions could prove useful to the planning of the appropriate policies for the integration of immigrants in the labour market towards the ultimate goal of social inclusion. Apart from supporting the policymakers though, they also enhance the literature with regard to the impact of migration in a country in deep recession and trigger further research on the appropriate integration measures.

One step towards this direction was made in the last chapter, combining qualitative with quantitative data from a pairwise comparison of the 28 member

states' immigrants' integration indicators for employment and using longitudinal data from 2008 to 2017 to unveil the new landscape that has arisen for the immigrants' labour market integration in the European Union with a focus in Greece. The results of the PROMETHEE multi-criteria method analysis combined with the identified good practices implemented for the labour market integration of third-country nationals in each EU member state unveil the effectiveness of the various approaches attempted to address the issue and reveal the challenges that have arisen for Greece providing with some interesting and unexpected findings. Although the Nordic or some Central European countries seem to implement an innovative labour market integration policy, the outcomes as regards the employment, unemployment, activity and self-employment indicators of immigrants in these countries do not follow. It is probably the high level of the natives' standard of living which lowers the possibilities that the gap between the natives and the immigrants closes and raises the importance of a successful labour market integration policy. On the other hand, the Mediterranean countries, dealing with various economic problems, used to include the immigrant population in their societies quite successfully until the peak of the recession. This positive observation could stimulate a more targeted integration policy that could benefit from the various examples of good practices to enforce its outcomes. Moreover, the ranking consists an indication of the general situation of the immigrants' labour market integration in the European Union member states which could be utilized in the future research as a measure to evaluate, compare and contrast the effectiveness of new policies.

There are plenty of recommendations arising from the findings of the thesis. From the remittances receiving countries' point of view, the monitoring and analysis of the size of the transfers and of the way the recipients use them is the first and most urgent step to be made. Ways of attracting larger amounts of remittances as well as other capital transfers should also form the developmental toolbox of the governments of the transition countries. Reducing remittances' fees, fighting corruption, promoting transparency, easing the access of

individuals into financial markets and advancing their financial literacy, rerouting the remittances towards productive investments, removing the government's distortions and market failures and supporting a business friendly environment would be suggested as appropriate policies to capitalise on the developmental potential of the remittances. With regard to their adverse effects such as the appreciation of the real exchange rate, practices such as the sterilization of the inflows, the pursuit of industrial strategies, policies to advance productivity and the quality of the exported products and stabilization measures could prove as beneficial and effective measures to be followed.

From the perspective of the host countries of immigrants, the proposed ways to capitalise on migration include the targeted immigration and the effective integration policies that would take advantage of the immigrants' human capital in order to strengthen the developmental potentials of the host economy. Especially in the case of the restructuring of an economy that recovers from a recession such as Greece which is hurt by a brain drain, the enlightment of the potentials of the immigrants' presence, the appeal of foreign human capital with complementary skills to the native labour force and the effective integration of immigrants in the labour market would benefit the economy. Sharing good labour market integration practices could be a real added value but the criteria for choosing them should be carefully estimated since there are specific elements affecting their transferability.

All in all, the contribution of this thesis in the field of migration studies could be summed up in the following points:

- It offers an enhancement of the understanding of the contribution of migration in developing transition countries of the former East Bloc but also in Greece, an emigration country that gradually transitioned into an immigration one.
- It is a cohesive approach to the macroeconomic implications of migration that could benefit both migration scholars to produce

further research but also offer the policymakers a new perspective on the reasons to capitalise on migration.

- Last but not least, it supports the public debates with a comprehensive insight in the benefits of migration.

Appendix

Table 1. Chapter 2 Data

	Time	GDP (constant 2010 US$)	I=Gross capital formation (constant 2010 US$)	C=Household final consumption expenditure (constant 2010 US$)	M=Imports of goods and services (constant 2010 US$)	CPI=Consumer Price Index (2010 = 100)	RIR= Real Interest Rate %	RER= Real Effective Exchange Rate (2010 = 100)	Personal remittances, received (current US$)	R=Personal remittances, received (constant prices)
Albania	1996	5,923,813,890.03	732,587,502.07	3,187,296,409.47	1,163,340,524.19	45.94	-10.29	66.23	550,900,000.00	1,199,110,916.26
Albania	1997	5,276,934,356.01	583,606,585.54	2,612,704,708.05	1,062,239,124.49	61.19	19.3	66.43	300,300,000.00	490,797,126.3
Albania	1998	5,742,892,287.98	750,938,843.72	3,108,605,608.63	1,452,047,810.08	73.82		80.64	504,140,000.00	682,961,490.07
Albania	1999	6,483,145,173.39	1,135,130,265.21	3,795,436,254.39	1,703,248,557.47	74.1	19.11	89.70	407,200,000.00	549,496,343.37
Albania	2000	6,933,726,105.58	1,489,415,379.22	4,128,122,854.64	2,370,043,082.16	74.14	15.58	95.86	597,800,000.00	806,298,359.96
Albania	2001	7,508,536,855.23	1,962,232,167.22	4,366,574,917.19	2,616,967,226.75	76.45	15.26	100.68	699,300,000.00	914,771,794.38
Albania	2002	7,849,421,473.13	2,176,377,125.06	4,782,387,599.55	2,921,651,649.76	82.39	11.25	101.09	733,570,000.00	890,411,575.72
Albania	2003	8,283,498,466.37	2,374,563,203.91	5,461,957,750.62	3,192,959,749.68	82.78	8.63	98.84	888,748,582.31	1,073,572,133.43
Albania	2004	8,739,919,123.62	2,719,478,976.04	5,716,277,588.85	3,540,943,469.01	84.67	8.34	107.72	1,160,672,105.02	1,370,790,403.14
Albania	2005	9,223,229,205.55	2,984,600,353.16	6,136,019,241.84	4,017,748,084.44	86.68	9.46	109.47	1,289,704,315.93	1,487,967,546.81
Albania	2006	9,767,407,472.26	3,279,969,605.58	6,699,624,002.2	4,374,619,609.1	88.73	10.21	110.17	1,359,467,324.66	1,532,132,364.02
Albania	2007	10,351,496,684.51	3,476,325,812.96	7,733,652,111.37	5,344,603,314.25	91.33	9.3	110.60	1,468,020,000.00	1,607,334,232.88
Albania	2008	11,127,855,784.88	3,855,749,890.29	8,804,195,344.43	5,749,040,281.79	94.4	8.55	111.79	1,865,574,187.99	1,976,155,258.99
Albania	2009	11,500,638,274.95	3,907,754,165.05	9,157,984,972.47	5,825,579,970.06	96.51	10,00	105.47	1,716,130,304.12	1,778,175,015.11
Albania	2010	11,926,953,213.7	3,614,902,093.97	9,316,051,065.84	5,792,202,154.39	100,00	7.97	100.00	1,586,925,580.49	1,586,925,580.49

Albania	2011	12,230,542,524.08	3,841,099,557.04	9,483,942,368.53	6,150,523,397,00	103.44	9.89	99.02	1,551,123,785.69	1,499,498,512.12
Albania	2012	12,403,913,643.34	3,543,837,577.6	9,497,832,456.53	5,738,798,342.06	105.55	9.74	98.58	1,420,282,798.15	1,345,609,937.83
Albania	2013	12,528,199,360.38	3,482,960,637.47	9,673,168,103.73	5,701,861,907.86	107.58	9.51	100.03	1,281,914,066.36	1,191,573,016.4
Albania	2014	12,749,948,526.21	3,301,545,849.19	9,944,979,608.3	5,944,692,234.87	109.32	7,00	102.38	1,420,535,452.78	1,299,464,349.68
Albania	2015	13,034,272,401.2	3,404,907,520.37	9,958,940,467.44	5,773,770,209.47	111.4	8.13	102.86	1,290,350,891.32	1,158,252,495.2
Albania	2016	13,470,920,485.99	3,411,023,712.58	10,157,290,708.55	6,173,322,050.79	112.83	10.39	106.46	1,305,750,160.7	1,157,318,024.89
Albania	2017	13,987,748,469.26	3,543,253,741.71	10,394,874,461.69	6,671,154,186.6	115.08	5.06	110.76	1,310,873,388.35	1,139,145,130.85
Albania	2018	14,547,875,720.15		10,711,062,341.97	6,929,262,221.9	117.4	5.1	118.71	1,458,272,003.45	1,242,133,186.67
Bulgaria	1996	32,014,958,711.25	84,013,131.18	19,698,862,867.2	10,820,917,422.5	3.61	130.34	46.22	41,500,000.00	1,150,654,247.2
Bulgaria	1997	31,666,373,358.6	2,453,494,043.59	16,261,540,544.2	10,771,019,561.39	41.78	-64.41	56.51	50,600,000.00	121,115,193.99
Bulgaria	1998	33,676,864,762.42	4,693,583,322.05	15,965,344,524.16	11,065,182,076.62	49.58	-13.02	65.42	50,675,833.24	102,211,556.24
Bulgaria	1999	30,845,268,715.31	5,192,500,338.43	17,130,161,093.81	12,887,978,881.82	50.86	9.96	67.06	42,528,019.77	83,625,942.31
Bulgaria	2000	32,315,283,606.34	5,671,585,217.27	18,495,600,379.04	11,643,495,329.63	56.1	3.87	69.26	58,235,451.35	103,803,924.02
Bulgaria	2001	33,533,640,178.69	6,641,938,540.68	19,923,717,341.28	13,106,064,708.27	60.23	4.71	72.51	826,200,309.56	1,371,719,701.49
Bulgaria	2002	35,524,705,563.83	7,127,182,888.86	21,083,051,306.35	13,930,553,675.38	63.73	5.24	75.75	1,176,951,496.86	1,846,763,508.71
Bulgaria	2003	37,356,436,983.89	8,313,794,503.86	22,431,568,972.52	16,041,221,064.03	65.23	6.13	78.92	1,718,485,429.28	2,634,610,933.09
Bulgaria	2004	39,760,457,560.58	9,205,969,947.2	24,548,801,949.37	20,250,913,767.43	69.24	3.04	82.76	1,722,769,584.63	2,488,224,557.26
Bulgaria	2005	42,592,798,158.93	11,426,424,800.32	26,380,601,055.91	23,156,558,819.55	72.73	2.02	83.02	1,612,912,427.01	2,217,804,474.35
Bulgaria	2006	45,520,779,748.21	13,816,840,395.29	28,653,986,733.45	26,841,952,077.97	78.01	2.02	86.64	1,716,435,980.57	2,200,370,571.28
Bulgaria	2007	48,864,017,869.23	15,715,378,367.4	32,273,656,423.45	32,912,616,759.17	84.56	-0.98	91.66	1,693,553,171.14	2,002,754,053.41
Bulgaria	2008	51,806,552,0	18,325,775,0	33,356,843,1	34,513,537,2	95,00	2.53	99.62	1,918,650,33	2,019,558,74

		50.9	10.15	02.75	95.25				4.47	0.14
Bulgaria	2009	49,948,693,651.01	13,869,094,354.95	31,846,216,325.98	27,090,226,072.83	97.62	7,00	103.9	1,591,794,627.64	1,630,618,349.06
Bulgaria	2010	50,610,058,210.37	11,421,483,687.56	32,291,728,712.6	26,837,687,829.97	100,00	9.93	100,00	1,332,910,000,00	1,332,910,000,00
Bulgaria	2011	51,579,193,177.2	11,049,411,127.66	32,924,191,146.61	29,504,128,875.05	104.22	4.39	101.47	1,483,190,000,00	1,423,135,073.7
Bulgaria	2012	51,595,167,185.6	11,325,978,069.58	33,908,217,138.22	31,141,397,048.87	107.3	8.03	100.02	1,448,880,000,00	1,350,318,224.44
Bulgaria	2013	51,850,006,768.65	10,764,383,376.2	33,071,612,291.86	32,485,650,467.04	108.25	9.82	100.92	1,666,960,000,00	1,539,856,907.65
Bulgaria	2014	52,802,761,608.23	11,500,270,745.91	33,978,881,819.41	34,162,041,424.12	106.72	7.76	100.12	1,684,740,000,00	1,578,669,647.7
Bulgaria	2015	54,635,643,698.39	11,657,844,862.6	35,506,227,155.81	36,021,591,985.92	106.61	5.13	96.81	1,494,740,000,00	1,402,099,010.59
Bulgaria	2016	56,786,516,853.93	11,118,586,706.38	36,767,496,954.11	37,628,536,618.38	105.76	4.06	96.97	1,665,570,000,00	1,574,920,976.54
Bulgaria	2017	58,950,791,931.77	11,842,222,823.88	38,430,012,183.57	40,437,931,501.29	107.94	1.97	98.05	2,193,590,000,00	2,032,250,502.63
Bulgaria	2018	60,767,158,521.73	12,628,468,931.91	40,876,066,062,00	41,922,769,730.61	110.97	1.28	101.32	2,395,410,000,00	2,158,531,489,00
Moldova	1996	4,512,469,063.29	1,177,447,869.23	2,556,778,755.91	1,719,287,275.7	18.19	6.89	73.63	87,080,000,000	478,785,870.07
Moldova	1997	4,586,792,337.87	1,123,995,779.19	2,810,004,483.2	1,930,678,422.73	20.33	18.51	84.8	114,320,000,000	562,352,802.58
Moldova	1998	4,286,715,575.55	1,185,875,778.81	2,974,657,223.76	1,730,274,611.56	21.89	19.52	82.38	122,170,000,000	558,023,637.44
Moldova	1999	4,142,328,087.78	941,216,099.39	2,736,420,447.21	1,338,831,160.32	30.49	-3.04	62.84	110,410,000,000	362,145,068.52
Moldova	2000	4,229,636,601.81	999,694,549.78	3,300,614,017.24	1,771,066,142.3	40.03	5.06	73.12	177,580,000,000	443,614,569.82
Moldova	2001	4,487,644,446.41	1,051,424,783.05	3,501,951,455.03	1,958,935,074.8	43.94	14.81	75.79	242,210,000,000	551,240,695.05
Moldova	2002	4,837,680,703.67	1,062,990,441.33	3,708,566,602.73	2,266,998,139.7	46.27	12.47	71.71	322,590,000,000	697,214,805.78
Moldova	2003	5,156,967,625.57	1,206,494,175.79	4,394,651,424.11	2,918,686,246.01	51.7	3.85	67.85	484,020,000,000	936,152,742.04
Moldova	2004	5,538,583,221.62	1,333,176,046.66	4,667,119,805.23	3,023,798,164.37	58.18	11.99	77.69	701,370,000,000	1,205,547,596.45
Moldova	2005	5,953,976,968.53	1,574,480,927.63	5,306,515,232.42	3,732,232,621.02	65.14	9.07	79.27	915,080,000,000	1,404,871,220.71

Moldova	2006	6,239,767,855.2	1,766,567,582.82	5,720,423,426.61	4,071,624,579.6	73.46	4.15	81.45	1,175,820,000,00	1,600,644,354.88
Moldova	2007	6,426,960,903.27	2,155,212,446.35	5,926,358,670.15	4,665,154,817.02	82.54	2.52	87.76	1,491,260,000,00	1,806,624,694.67
Moldova	2008	6,928,263,860.16	2,301,766,916.78	6,270,087,479.04	4,798,402,813.95	93.1	10.82	104.05	1,888,020,000.00	2,028,043,842.18
Moldova	2009	6,512,568,010.6	1,408,681,344.84	5,762,210,389.64	3,668,001,616.62	93.04	17.98	106.75	1,352,350,000.00	1,453,557,857.15
Moldova	2010	6,974,960,345.37	1,663,652,672.34	6,292,333,761.81	4,192,525,850.29	100,00	-12.71	100,00	1,752,830,000.00	1,752,830,000,00
Moldova	2011	7,380,775,144.92	1,844,159,895.87	6,872,481,223.67	5,130,119,974.45	107.69	5.77	104.98	1,813,110,000.00	1,683,681,199.58
Moldova	2012	7,337,248,194.48	1,864,679,165.81	6,935,982,679.07	5,270,374,448.18	112.58	5.58	110.09	1,986,440,000.00	1,764,421,541.7
Moldova	2013	8,000,819,054.67	2,134,981,306.99	7,379,315,181.56	5,564,979,937.36	117.76	8.05	106.75	2,191,540,000.00	1,861,030,211.28
Moldova	2014	8,400,830,051.07	2,234,381,812.22	7,783,376,556.67	5,736,982,003.56	123.75	4.38	102.64	2,075,920,000.00	1,677,483,516.84
Moldova	2015	8,372,415,478.67	2,038,078,717.59	7,594,641,779.45	5,405,749,366.45	135.73	4.18	99.12	1,540,120,000.00	1,134,722,468.84
Moldova	2016	8,741,545,794.8	2,062,882,848.65	7,816,331,025.34	5,557,603,618.4	144.36	8.14	101.49	1,460,220,000.00	1,011,527,930.95
Moldova	2017	9,151,593,650.48	2,294,002,841.77	8,229,414,263.86	6,168,950,145.9	153.84	3.87	112.12	1,638,890,000.00	1,065,303,831.8
Moldova	2018	9,517,657,396.5	2,633,968,257.81	8,470,232,867.39	6,790,751,357.25	158.53	6.57	122.36	1,837,430,000.00	1,159,063,782.8
Romania	1996	115,493,044,233.17	20,801,248,940.46	54,855,542,516.01	13,861,510,877.94	3.72	7.73	55.21	18,000,000,000	484,496,504.53
Romania	1997	109,892,714,060.31	19,580,035,245.14	52,336,920,047.43	15,315,134,603.71	9.46	-26.69	65.16	16,000,000,000	169,044,463.85
Romania	1998	107,662,097,567.87	18,672,303,278.49	55,464,843,810.42	17,083,710,743.59	15.06	4.85	84.7	49,000,000,000	325,398,988.19
Romania	1999	107,256,576,751.34	16,274,515,302.85	53,138,023,338.74	16,352,584,214.68	21.96	10.78	72.66	96,000,000,000	437,242,697.05
Romania	2000	109,896,443,682.54	20,464,058,509.62	53,959,352,399.16	15,019,152,155.83	31.98	7.45	81.79	96,000,000,000	300,166,760.9
Romania	2001	115,630,989,855.2	23,976,059,694.43	58,457,614,870.51	18,548,148,442.43	43.01	5.4	82.99	116,000,000,000	269,712,641.9
Romania	2002	122,225,415,551.96	24,547,032,297.55	62,605,311,627.7	20,527,433,208.93	52.7	10.36	83.61	143,000,000,000	271,332,538.78
Romania	2003	125,086,892,	26,645,084,8	67,851,670,4	24,313,161,2	60.75	1.85	81.1	124,000,000.	204,107,088.

		603.75	02.15	48.86	26.37				00	59
Romania	2004	138,131,095,135.3	31,185,564,697.38	78,599,567,021.7	30,377,069,312.9	67.97	8.8	82.89	131,000,000.00	192,742,337.04
Romania	2005	144,579,259,160.47	31,505,943,503.04	87,422,715,985.64	36,374,491,490.97	74.09	6.78	97.44	951,783,338.19	1,284,570,697.04
Romania	2006	156,187,254,733.54	41,907,549,848.81	96,345,836,812.91	46,079,031,020.36	78.95	3.05	104.38	1,160,464,157.61	1,469,817,752.1
Romania	2007	167,485,540,461.01	53,258,414,312.3	109,681,517,700.05	65,107,764,077.08	82.77	-2.13	112.66	1,624,282,412.09	1,962,353,977.93
Romania	2008	183,074,202,155.21	59,178,932,259.19	119,226,409,522.61	72,398,602,972.6	89.27	-0.89	106.37	1,702,335,817.56	1,906,942,789.92
Romania	2009	172,973,276,362.91	45,861,347,132.2	111,654,215,807.5	57,333,901,051.45	94.26	12.67	98.67	682,463,491.15	724,035,186.13
Romania	2010	166,225,180,150.41	45,118,474,464.27	106,084,930,299.88	64,556,688,379.12	100,00	10.17	100,00	641,386,614.54	641,386,614.54
Romania	2011	169,561,579,232.31	47,256,137,265.21	107,571,310,073.39	71,053,701,548.38	105.79	8.04	102.58	694,116,383.39	656,131,281.6
Romania	2012	173,083,653,020.66	44,852,841,207.25	109,704,143,136.68	69,768,222,359.98	109.32	7.04	96.6	733,218,617.54	670,725,492.93
Romania	2013	179,166,767,670.47	44,947,484,430.45	109,865,049,414.24	75,938,631,696.36	113.67	6.9	101.13	3,518,842,652.16	3,095,577,505.49
Romania	2014	185,277,804,086.67	45,608,214,827.24	115,042,846,306.21	82,554,125,230.42	114.89	6.61	101.84	3,381,251,954.73	2,943,095,569.73
Romania	2015	192,450,875,631.63	48,721,622,437.41	121,899,896,248.73	89,137,140,434.61	114.2	4.05	98.34	3,085,453,944.71	2,701,680,477.79
Romania	2016	201,690,057,088.72	48,630,763,027.29	131,512,064,464.3	103,876,949,825.01	112.44	3.18	96.52	3,488,810,336.32	3,102,798,717.51
Romania	2017	215,791,002,717.49	50,652,708,203.1	144,725,019,498.2	115,617,065,037.92	113.95	0.87	95.09	4,299,105,930.11	3,772,920,757.89
Romania	2018	224,629,098,584.48	55,490,337,165.5	152,314,096,588.37	126,157,521,043.93	119.22	0.88	97.73	4,856,429,481.03	4,073,607,134.34

Source: a)World Bank (2019). *World Development Indicators 2019*, Washington: The World Bank Group. https://databank.worldbank.org/source/world-development-indicators. Accessed 5 August 2019

b) Darvas (2012a; 2012b; 2012c)

c) Author's calculations

Table 2. Chapter 3 Data

Country Code	Time	R= Personal remittances, received (% of GDP)	FDI= Foreign direct investment, net inflows (% of GDP)	TOT= Net barter terms of trade index (2000 = 100)	ODA= Net official development assistance and official aid received (% of GDP)	RGDPPC= GDP per capita (constant 2010 US$)	REER= Real effective exchange rate index (2010 = 100)	ER= Official exchange rate (LCU per US$, period average)	OPEN = Trade (% of GDP)	GFCE= General government final consumption expenditure (% of GDP)	POP= Age dependency ratio (% of working-age population)	GFCF= Gross Fixed capital formation (% of GDP)
ALB	1990				0,25	1838,67	87,47		39,44	19,19	61,81	30.36095
ALB	1991				9,83	1331,81	55,22		36,07	22,88	62,52	7.603111
ALB	1992	23,28	3,07		13,05	1243,61	36,15	75,03	108,79	21,41	63,11	5.656684
ALB	1993	28,01	4,89		8,51	1370,83	53,68	102,06	80,52	14,64	63,54	13.67614
ALB	1994	16,33	2,82		4,37	1493,79	69,08	94,62	53,10	14,62	63,87	18.89658
ALB	1995	17,86	2,93		3,90	1703,29	68,94	92,70	47,61	13,83	64,20	21.27851
ALB	1996	17,22	2,82		4,61	1869,87	66,23	104,50	44,90	9,45	63,16	21.79444
ALB	1997	13,30	2,10		4,09	1676,13	66,43	148,93	45,43	10,45	62,24	20.11537
ALB	1998	19,80	1,77		6,14	1835,65	80,64	150,63	48,14	10,84	61,41	21.48867
ALB	1999	12,68	1,28		10,10	2085,43	89,70	137,69	51,01	11,06	60,56	23.54313
ALB	2000	17,18	4,11	106,17	6,61	2244,63	95,86	143,71	63,45	9,69	59,59	31.90659
ALB	2001	17,83	5,29	105,03	5,27	2453,63	100,68	143,48	66,49	10,63	58,57	36.72933
ALB	2002	16,87	3,10	104,98	5,42	2572,73	101,09	140,15	68,53	11,34	57,45	36.05551
ALB	2003	15,84	3,17	100,15	5,00	2725,18	98,84	121,86	67,02	11,10	56,24	35.89392
ALB	2004	16,15	4,75	97,94	3,78	2887,38	107,72	102,78	67,05	11,21	55,02	37.79571
ALB	2005	16,02	3,26	97,11	3,62	3062,68	109,47	99,87	70,87	11,03	53,82	37.91984
ALB	2006	15,28	3,65	97,13	3,43	3263,91	110,17	98,10	74,27	10,53	52,61	38.07024
ALB	2007	13,75	6,11	96,74	2,77	3485,33	110,60	90,43	83,20	10,48	51,62	36.38475
ALB	2008	14,48	9,73	95,96	2,83	3775,59	111,79	83,89	77,45	10,38	50,79	33.9493
ALB	2009	14,2	11,1	96,7	2,75	392	105,	94,9	75,0	11,1	50,1	32.7

		5	6	0		8,46	47	8	9	1	1	0891
ALB	2010	13,31	9,14	100,00	2,77	4094,36	100,00	103,94	76,54	11,16	49,56	28.42848
ALB	2011	12,03	8,13	99,35	2,63	4209,89	99,02	100,89	81,22	10,97	48,10	29.36623
ALB	2012	11,53	7,45	101,12	2,52	4276,62	98,58	108,18	76,51	10,84	46,82	26.48868
ALB	2013	10,03	9,82	100,10	1,90	4327,39	100,03	105,67	75,87	11,03	45,68	26.07956
ALB	2014	10,74	8,69	97,75	1,94	4413,12	102,38	105,48	75,41	11,45	44,71	24.15867
ALB	2015	11,33	8,69	96,12	2,56	4524,68	102,86	125,96	71,80	11,11	44,02	24.41349
ALB	2016	11,01	8,80	98,35	1,25	4683,74	106,46	124,14	74,81	11,27	44,00	24.36793
ALB	2017	10,06	7,85	97,44	1,11	4867,92	110,76	119,10	78,16	11,46	44,06	24.53137
ALB	2018	9,68	8,02			5075,35	118,71	107,99	77,25	11,18	44,30	24.17219
MDA	1990										56,76	
MDA	1991										57,17	
MDA	1992										57,18	
MDA	1993										56,84	
MDA	1994						78,27				56,20	
MDA	1995	0,06	1,48		1,70	1304,52	74,39	4,50	128,02	25,90	55,31	15.95427
MDA	1996	5,14	1,40		1,03	1230,31	73,63	4,60	129,24	25,97	54,32	19.7484
MDA	1997	5,92	4,08		1,86	1255,21	84,80	4,62	127,56	28,81	53,25	19.89704
MDA	1998	7,19	4,44		1,24	1173,56	82,38	5,37	116,80	24,71	52,06	22.05159
MDA	1999	9,43	3,24		3,44	1135,82	62,84	10,52	117,53	15,32	50,64	18.43883
MDA	2000	13,78	9,90	128,37	4,03	1162,12	73,12	12,43	126,16	14,66	48,98	15.43406
MDA	2001	16,36	6,99	123,23	3,70	1235,77	75,79	12,87	124,50	14,36	47,25	16.74388
MDA	2002	19,41	5,06	122,00	3,99	1335,25	71,71	13,57	129,84	20,23	45,34	16.32295
MDA	2003	24,43	3,72	119,70	2,83	1427,39	67,85	13,94	140,06	19,68	43,36	18.56436
MDA	2004	26,99	5,81	115,39	2,44	1536,81	77,69	12,33	132,70	14,90	41,47	21.18786
MDA	2005	30,62	6,38	111,07	3,09	1656,10	79,27	12,60	143,02	16,44	39,75	24.58824
MDA	2006	34,5	7,59	105,	3,77	174	81,4	13,1	137,	19,9	38,8	28.3

		0		98		0,42	5	3	15	9	2	5812
MDA	2007	33,88	12,18	105,01	3,97	1796,79	87,76	12,14	142,72	19,95	38,02	34.10419
MDA	2008	31,18	12,00	102,30	3,87	1940,63	104,05	10,39	134,42	20,41	37,37	33.99691
MDA	2009	24,86	4,75	100,00	3,48	1826,50	106,75	11,11	110,36	23,76	36,82	22.59639
MDA	2010	25,13	4,10	100,00	6,29	1958,13	100,00	12,37	87,94	18,21	36,36	22.52428
MDA	2011	21,55	4,13	97,27	5,43	2073,26	104,98	11,74	98,62	16,56	35,85	23.16205
MDA	2012	22,81	2,88	95,31	5,88	2061,30	110,09	12,11	96,31	16,69	35,33	23.63391
MDA	2013	23,08	2,55	94,34	3,96	2248,33	106,75	12,59	95,69	15,31	34,83	23.03386
MDA	2014	21,83	3,59	90,98	5,59	2362,17	102,64	14,04	93,16	14,37	34,52	25.8929
MDA	2015	19,88	2,79	96,20	3,79	2355,70	99,12	18,82	89,33	14,50	34,53	24.29275
MDA	2016	18,09	1,17	98,97	3,00	2461,05	101,49	19,92	87,64	14,87	35,21	22.20876
MDA	2017	16,95	1,66	98,86	2,58	2578,50	112,12	18,50	85,64	15,03	36,25	22.28767
MDA	2018	16,25	2,05			2684,14	122,36	16,80	86,69	14,99	37,46	24.28641

Source: a)World Bank (2019). *World Development Indicators 2019*, Washington: The World Bank Group. https://databank.worldbank.org/source/world-development-indicators. Accessed 5 August 2019

b) Darvas (2012a; 2012b; 2012c)

c) Author's calculations

Table 3. Chapter 4-Immigration Surplus Data

TIME	Labour share of national income(%) in Greece	S= Labour share of national income in Greece	E=Elasticity of factor price for labour	M=Foreign born fraction of workforce in Greece	Immigration surplus	Immigration surplus % GDP	GDP (million euros) in Greece	Immigration surplus in euros
1995	49.10	0.49	-0.5090	0.0171	0.0000	0.00	104,662,100,000.00	3,808,957.67
1996	48.20	0.48	-0.5180	0.0181	0.0000	0.00	114,908,200,000.00	4.697,373.63
1997	49.00	0.49	-0.5100	0.0225	0.0001	0.01	126,353,800,000.00	8,015,383.86
1998	49.60	0.50	-0.5040	0.0374	0.0002	0.02	129,057,300,000.00	22,619,278.15
1999	49.50	0.50	-0.5050	0.0383	0.0002	0.02	139,945,100,000.00	25,706,708.21
2000	49.50	0.50	-0.5050	0.0364	0.0002	0.02	142,976,000,000.00	23,672,898.77
2001	48.70	0.49	-0.5130	0.0429	0.0002	0.02	152,193,800,000.00	35,007,000.69
2002	51.40	0.51	-0.4860	0.0539	0.0004	0.04	163,460,800,000.00	59,382,056.10
2003	51.20	0.51	-0.4880	0.0587	0.0004	0.04	178,904,800,000.00	77,009,449.29
2004	50.60	0.51	-0.4940	0.0649	0.0005	0.05	193,715,800,000.00	101,961,359.57
2005	53.90	0.54	-0.4610	0.0686	0.0006	0.06	199,242,300,000.00	116,348,839.86
2006	51.70	0.52	-0.4830	0.0667	0.0006	0.06	217,861,600,000.00	121,097,226.24
2007	51.30	0.51	-0.4870	0.0721	0.0006	0.06	232,694,600,000.00	150,913,491.26
2008	51.80	0.52	-0.4820	0.0822	0.0008	0.08	241,990,400,000.00	204,018,257.33
2009	54.10	0.54	-0.4590	0.0980	0.0012	0.12	237,534,200,000.00	283,459,965.86
2010	54.30	0.54	-0.4570	0.0982	0.0012	0.12	226,031,400,000.00	270,377,749.23

2011	53.10	0.53	-0.4690	0.0923	0.0011	0.11	207,028,900,000.00	219,838,908.82
2012	52.20	0.52	-0.4780	0.0880	0.0010	0.10	191,203,900,000.00	184,640,804.59
2013	49.80	0.50	-0.5020	0.0849	0.0009	0.09	180,654,300,000.00	162,637,650.85
2014	49.80	0.50	-0.5020	0.0839	0.0009	0.09	178,656,500,000.00	157,054,172.95
2015	49.40	0.49	-0.5060	0.0736	0.0007	0.07	177,258,400,000.00	119,858,750.81
2016	49.30	0.49	-0.5070	0.0677	0.0006	0.06	176,487,900,000.00	101,182,734.99
2017	49.30	0.49	-0.5070	0.0616	0.0005	0.05	180.217.600.000,00	85,434,072.08
2018	49.40	0.49	-0.5060	0.0587	0.0004	0.04	184,713,600,000.00	79,653,033.04

Sources: a) Eurostat. (2019). Labour Force Survey. Luxembourg: European Commission. Available at https://ec.europa.eu/eurostat. Accessed 27 March 2019

b) ILOSTAT. (2019). Earnings and Labour Cost. Labour Income Share. Geneva: International Labour Organization. Available at https://www.ilo.org/ilostat. Accessed 27 March 2019

c) Author's calculations

Table 4. Chapter 4 Data

Time	Natives (thousan) in Greece	L_n=NAT=Natives in Greece	Foreigners (thousands) in Greece	L_f=FOR= Foreigners in Greece	GDP per capita in Greece	GDP (millions) in Greece	Y=GDP in Greece	Gross Fixed Capital Formation (millions) in Greece	K=GFCF=Gross Fixed Capital Formation in Greece
2001q1	4,549.4	4,549,400	189.5	189,500	25,123	49,171	49,170,774,358	10,551	10,551,276,958
2001q2	4,517.8	4,517,800	199.1	199,100	25,012	49,011	49,011,372,665	11,149	11,148,810,076
2001q3	4,495.4	4,495,400	212.3	212,300	25,384	49,801	49,801,222,981	10,642	10,641,537,099
2001q4	4,466.1	4,466,100	212.5	212,500	25,431	49,952	49,952,001,022	10,447	10,447,130,759
2002q1	4,470.5	4,470,500	236.9	236,900	25,606	50,343	50,343,391,913	10,539	10,538,811,472
2002q2	4,504.6	4,504,600	252.1	252,100	26,164	51,472	51,472,115,496	10,963	10,963,050,931
2002q3	4,520.4	4,520,400	262.2	262,200	26,302	51,777	51,776,625,168	10,394	10,393,664,297
2002q4	4,516.0	4,516,000	267.6	267,600	26,482	52,163	52,162,650,835	10,750	10,750,494,224
2003q1	4,520.6	4,520,600	283.9	283,900	27,013	53,241	53,240,979,708	11,929	11,928,739,730
2003q2	4,541.5	4,541,500	278.3	278,300	27,481	54,195	54,194,672,567	12,359	12,359,437,174
2003q3	4,557.1	4,557,100	282.8	282,800	27,641	54,540	54,540,301,701	12,489	12,488,328,016
2003q4	4,554.9	4,554,900	284.0	284,000	28,212	55,698	55,698,065,850	12,310	12,309,518,433
2004q1	4,564.7	4,564,700	323.8	323,800	28,714	56,725	56,725,367,497	12,804	12,803,821,325
2004q2	4,602.1	4,602,100	314.9	314,900	28,698	56,731	56,731,111,718	13,491	13,491,087,428
2004q3	4,599.1	4,599,100	317.0	317,000	29,066	57,497	57,496,693,734	12,996	12,996,136,317
2004q4	4,597.3	4,597,300	319.1	319,100	28,942	57,291	57,290,693,680	11,250	11,250,045,653
2005q1	4,583.7	4,583,700	328.9	328,900	28,731	56,914	56,914,266,417	11,356	11,355,560,657
2005q2	4,605.3	4,605,300	332.2	332,200	28,787	57,071	57,070,872,504	12,001	12,000,889,815
2005q3	4,610.8	4,610,800	336.7	336,700	29,160	57,856	57,855,670,116	10,630	10,630,209,252
2005q4	4,615.9	4,615,900	335.1	335,100	29,275	58,130	58,129,840,576	10,550	10,550,034,445
2006q1	4,650.1	4,650,100	320.3	320,300	30,223	60,058	60,057,663,969	12,540	12,540,106,327
2006q2	4,649.3	4,649,300	322.9	322,900	30,279	60,212	60,212,354,960	13,724	13,724,065,337
2006q3	4,653.4	4,653,400	335.4	335,400	30,400	60,495	60,49	13,447	13,44

							5,097,448		6,580,045
2006q4	4,633.5	4,633,500	337.7	337,700	31,151	62,035	62,03 4,710,954	13,461	13,46 1,376,272
2007q1	4,632.8	4,632,800	337.9	337,900	30,901	61,576	61,57 6,243,449	12,677	12,67 6,856,801
2007q2	4,642.4	4,642,400	338.4	338,400	31,772	63,346	63,34 5,985,280	17,545	17,54 5,277,369
2007q3	4,624.8	4,624,800	369.4	369,400	31,551	62,940	62,94 0,495,933	17,484	17,48 4,235,813
2007q4	4,604.8	4,604,800	379.1	379,100	31,389	62,654	62,65 4,140,216	13,913	13,91 3,282,174
2008q1	4,610.7	4,610,700	374.9	374,900	31,553	63,024	63,02 3,847,579	14,122	14,12 1,632,651
2008q2	4,600.2	4,600,200	403.8	403,800	31,326	62,618	62,61 7,604,239	15,234	15,23 3,992,828
2008q3	4,590.7	4,590,700	412.8	412,800	31,274	62,560	62,55 9,883,192	13,497	13,49 7,001,736
2008q4	4,561.5	4,561,500	438.7	438,700	30,806	61,671	61,67 0,946,657	14,334	14,33 4,453,347
2009q1	4,561.5	4,561,500	460.8	460,800	29,320	58,735	58,73 5,369,663	11,742	11,74 1,878,019
2009q2	4,558.9	4,558,900	481.4	481,400	30,126	60,383	60,38 2,576,437	13,059	13,05 9,415,553
2009q3	4,553.3	4,553,300	509.8	509,800	29,901	59,966	59,96 5,829,884	12,031	12,03 1,234,025
2009q4	4,534.3	4,534,300	502.8	502,800	29,919	60,034	60,03 4,040,877	12,388	12,38 7,621,998
2010q1	4,547.6	4,547,600	498.6	498,600	29,410	59,033	59,03 2,822,068	10,752	10,75 2,212,879
2010q2	4,553.6	4,553,600	487.5	487,500	28,522	57,256	57,25 6,150,113	10,985	10,98 5,276,200
2010q3	4,539.3	4,539,300	490.6	490,600	27,520	55,248	55,24 8,166,534	8,728	8,728 ,336,809
2010q4	4,519.7	4,519,700	479.6	479,600	27,199	54,609	54,60 8,535,817	9,232	9,232 ,163,021
2011q1	4,500.5	4,500,500	464.8	464,800	26,405	52,995	52,99 4,734,322	8,103	8,103 ,126,513
2011q2	4,482.7	4,482,700	457.1	457,100	26,027	52,195	52,19 5,103,856	8,669	8,669 ,081,180
2011q3	4,474.2	4,474,200	449.9	449,900	25,506	51,107	51,10 7,215,144	7,782	7,781 ,861,345
2011q4	4,477.3	4,477,300	438.3	438,300	24,499	49,048	49,04 8,051,358	7,007	7,007 ,197,850
2012q1	4,470.8	4,470,800	433.3	433,300	24,298	48,579	48,57 9,193,864	5,614	5,613 ,556,363
2012q2	4,467.5	4,467,500	425.4	425,400	23,876	47,648	47,64 7,825,636	6,439	6,439 ,011,031
2012q3	4,458.5	4,458,500	427.9	427,900	23,617	47,041	47,04 1,487,799	5,095	5,095 ,097,569
2012q4	4,451.0	4,451,000	426.0	426,000	23,670	47,058	47,05 7,744,888	7,010	7,010 ,007,471
2013q1	4,419.4	4,419,400	420.7	420,700	23,187	46,013	46,01 3,453,504	5,069	5,068 ,743,175

2013q2	4,447.7	4,447,700	415.3	415,300	23,241	46,042	46,04 2,048,927	5,625	5,625 ,229,593
2013q3	4,445.9	4,445,900	408.0	408,000	23,382	46,241	46,24 0,826,700	5,245	5,244 ,521,650
2013q4	4,419.8	4,419,800	397.4	397,400	23,275	45,947	45,94 6,627,269	6,183	6,183 ,148,289
2014q1	4,419.3	4,419,300	406.8	406,800	23,493	46,301	46,30 0,547,253	4,577	4,577 ,426,704
2014q2	4,408.6	4,408,600	410.7	410,700	23,492	46,227	46,22 6,663,350	5,385	5,384 ,665,963
2014q3	4,408.4	4,408,400	407.9	407,900	23,834	46,824	46,82 3,943,417	4,741	4,741 ,192,788
2014q4	4,395.2	4,395,200	385.9	385,900	23,603	46,298	46,29 7,880,102	6,384	6,383 ,668,732
2015q1	4,408.8	4,408,800	368.3	368,300	23,729	46,468	46,46 7,617,835	5,141	5,141 ,264,921
2015q2	4,443.2	4,443,200	362.4	362,400	23,789	46,506	46,50 6,002,302	4,871	4,870 ,512,342
2015q3	4,488.0	4,488,000	343.7	343,700	23,371	45,611	45,61 1,369,614	4,499	4,498 ,743,839
2015q4	4,481.4	4,481,400	335.0	335,000	23,700	46,174	46,17 3,677,766	6,719	6,718 ,722,319
2016q1	4,461.8	4,461,800	339.6	339,600	23,721	46,166	46,16 6,488,146	4,593	4,593 ,230,725
2016q2	4,475.3	4,475,300	339.4	339,400	23,605	45,924	45,92 3,924,708	5,499	5,499 ,134,763
2016q3	4,512.1	4,512,100	317.2	317,200	23,683	46,059	46,05 9,022,386	5,241	5,241 ,125,051
2016q4	4,472.7	4,472,700	299.8	299,800	23,727	46,128	46,12 8,199,866	6,904	6,903 ,823,947
2017q1	4,472.5	4,472,500	301.5	301,500	23,755	46,159	46,15 8,943,117	4,900	4,900 ,142,831
2017q2	4,507.2	4,507,200	300.7	300,700	24,064	46,731	46,73 1,450,453	5,008	5,007 ,944,618
2017q3	4,493.7	4,493,700	300.1	300,100	24,183	46,933	46,93 3,001,168	6,762	6,761 ,906,423
2017q4	4,472.1	4,472,100	271.1	271,100	24,294	47,118	47,11 7,922,165	7,586	7,585 ,930,940
2018q1	4,472.1	4,472,100	271.1	271,100	24,425	47,342	47,34 2,270,753	4,383	4,383 ,182,613
2018q2	4,484.9	4,484,900	281.5	281,500	24,500	47,458	47,45 8,053,015	6,043	6,043 ,249,528
2018q3	4,483.8	4,483,800	282.1	282,100	24,746	47,903	47,90 2,898,422	5,242	5,241 ,995,482
2018q4	4,432.1	4,432,100	282.7	282,700	24,727	47,836	47,83 5,807,853	5,623	5,622 ,936,337

Source: Hellenic Statistical Authority. (2019). Annual Labour Force Survey. Athens: Hellenic Statistical Authority. Available at http://www.statistics.gr/el/statistics/-/publication/SJO03/- Accessed 5 August 2019

Table 5. Chapter 5 Data

YEAR	Unemployment rate of foreign citizens in Greece%	Unemployment rate of native citizens in Greece %	Total unemployment Rate in Greece	GDP Growth in Greece	GDP (constant 2010 prices) in Greece
1998Q1	15.6	11.9	12.1	1.2	44,007,411,508.7
1998Q2	13.3	11.0	11.1	0.5	44,205,963,564.9
1998Q3	12.2	11.0	11.0	0.4	44,378,377,056.9
1998Q4	13.1	11.6	11.6	0.8	44,722,989,026.2
1999Q1	13.7	12.3	12.4	0.7	45,044,452,755.6
1999Q2	12.4	12.1	12.1	1.0	45,493,231,910.8
1999Q3	13.7	11.9	11.9	0.4	45,673,561,377.1
1999Q4	14.1	12.8	12.9	1.6	46,409,939,103.6
2000Q1	14.0	12.5	12.5	0.4	46,584,908,585.9
2000Q2	11.6	11.5	11.5	0.9	47,003,350,000.5
2000Q3	12.1	11.1	11.1	1.8	47,856,727,619.6
2000Q4	12.3	11.1	11.1	1.4	48,532,705,757.8
2001Q1	11.8	11.4	11.4	1.3	49,173,036,292.9
2001Q2	11.5	10.6	10.6	-0.3	49,010,361,137.5
2001Q3	10.8	10.4	10.4	1.6	49,799,655,134.5
2001Q4	12.5	11.4	11.4	0.3	49,952,495,942.7
2002Q1	10.7	11.6	11.6	0.8	50,342,055,704.1
2002Q2	9.8	10.2	10.2	2.2	51,470,955,877.0
2002Q3	8.9	10.1	10.0	0.6	51,776,280,150.0
2002Q4	10.1	10.4	10.4	0.7	52,160,858,207.7
2003Q1	9.8	10.7	10.6	2.1	53,238,308,934.7
2003Q2	9.0	9.6	9.6	1.8	54,193,127,378.6
2003Q3	8.7	9.6	9.5	0.6	54,539,366,741.7
2003Q4	9.6	10.2	10.2	2.1	55,696,249,415.5
2004Q1	10.6	11.6	11.6	1.8	56,724,485,286.3
2004Q2	9.3	10.5	10.5	0.0	56,732,015,660.4
2004Q3	8.5	10.5	10.3	1.4	57,498,544,951.9

2004Q4	9.0	10.7	10.6	-0.4	57,293,991,818.3
2005Q1	9.2	10.8	10.7	-0.7	56,913,213,150.4
2005Q2	8.2	10.0	9.9	0.3	57,072,147,041.9
2005Q3	7.9	10.1	10.0	1.4	57,855,978,985.1
2005Q4	7.7	10.2	10.0	0.5	58,128,430,449.7
2006Q1	9.0	10.0	10.0	3.3	60,059,916,410.5
2006Q2	7.5	9.1	9.0	0.3	60,211,356,095.3
2006Q3	6.8	8.7	8.6	0.5	60,493,574,852.3
2006Q4	8.4	9.1	9.1	2.5	62,033,287,710.0
2007Q1	9.4	9.4	9.4	-0.7	61,577,975,881.2
2007Q2	8.0	8.4	8.3	2.9	63,345,225,873.8
2007Q3	6.3	8.2	8.1	-0.6	62,938,560,591.7
2007Q4	6.7	8.4	8.3	-0.5	62,655,037,616.7
2008Q1	7.6	8.6	8.5	0.6	63,023,271,916.0
2008Q2	6.5	7.5	7.4	-0.6	62,616,697,104.1
2008Q3	5.8	7.5	7.4	-0.1	62,559,341,050.9
2008Q4	7.6	8.2	8.2	-1.4	61,668,772,313.0
2009Q1	10.9	9.5	9.6	-4.8	58,732,467,659.1
2009Q2	10.0	9.1	9.2	2.8	60,381,370,992.4
2009Q3	10.0	9.5	9.6	-0.7	59,966,967,687.0
2009Q4	12.0	10.5	10.7	0.1	60,034,230,700.8
2010Q1	14.7	11.8	12.1	-1.7	59,030,931,394.7
2010Q2	14.5	11.9	12.2	-3.0	57,257,402,573.7
2010Q3	14.2	12.6	12.8	-3.5	55,249,537,915.0
2010Q4	17.3	14.4	14.6	-1.2	54,611,116,349.0
2011Q1	20.1	16.0	16.3	-3.0	52,994,587,962.7
2011Q2	18.1	16.6	16.8	-1.5	52,196,216,746.0
2011Q3	19.8	18.0	18.2	-2.1	51,107,131,313.3
2011Q4	25.4	20.8	21.2	-4.0	49,046,256,188.6
2012Q1	30.8	22.3	23.1	-0.9	48,581,604,136.1
2012Q2	32.9	23.2	24.0	-1.9	47,646,808,201.3

2012Q3	33.1	24.4	25.2	-1.3	47,039,478,209.3
2012Q4	37.1	25.5	26.5	0.0	47,058,195,331.6
2013Q1	40.6	26.6	27.8	-2.2	46,012,559,129.8
2013Q2	38.8	26.5	27.5	0.1	46,041,022,273.8
2013Q3	36.9	26.6	27.4	0.4	46,240,279,873.8
2013Q4	36.5	27.2	28.0	-0.6	45,945,114,203.5
2014Q1	36.6	27.2	28.0	0.8	46,298,282,890.6
2014Q2	33.0	26.2	26.8	-0.2	46,225,469,200.5
2014Q3	30.2	25.3	25.7	1.3	46,822,803,945.9
2014Q4	31.3	25.8	26.3	-1.1	46,296,718,042.2
2015Q1	34.6	26.2	26.9	0.4	46,465,207,919.4
2015Q2	29.4	24.4	24.8	0.1	46,504,737,419.5
2015Q3	28.5	23.9	24.2	-1.9	45,612,658,360.2
2015Q4	30.8	24.1	24.6	1.2	46,175,530,275.9
2016Q1	34.1	24.4	25.1	0.0	46,163,255,907.5
2016Q2	28.1	22.9	23.3	-0.5	45,924,586,280.6
2016Q3	25.7	22.6	22.8	0.3	46,060,005,988.3
2016Q4	30.2	23.3	23.7	0.2	46,130,731,311.4
2017Q1	32.1	23.0	23.5	0.1	46,155,020,633.1
2017Q2	25.7	21.0	21.3	1.2	46,729,315,889.2
2017Q3	24.6	20.1	20.4	0.4	46,935,347,279.9
2017Q4	29.1	20.9	21.4	0.4	47,128,402,156.0

Source: Eurostat. (2019). Labour Force Survey. Luxembourg: European Commission. Available at https://ec.europa.eu/eurostat. Accessed 27 March 2019

Table 6. Chapter 6 Data

Employment rates by sex, age and citizenship (%) [lfsa_ergan]

Last update
08.02.19
Extracted on
19.02.19
Source of data
Eurostat

SEX
Total
AGE
From 15 to 64 years
CITIZEN
Non-EU28 countries nor reporting country
UNIT
Percentage

GEO/ TIME	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Belgium	39.9	38.8	38.0	37.4	36.2	37.6	38.0	39.9	39.3	39.5
Bulgaria	:	42.7	42.5	:	:	47.5	55.4	:	50.8	50.9
Czechia	72.1	68.2	70.9	70.0	72.9	76.0	75.4	73.3	75.6	74.3
Denmark	57.4	58.5	54.2	53.7	52.5	56.0	54.6	54.9	59.8	58.8
Germany (until 1990 former territory of the FRG)	50.0	50.6	51.6	53.8	55.0	54.9	54.7	54.2	51.4	52.3
Estonia	71.1	61.3	56.1	62.6	63.4	65.4	64.8	68.4	67.2	70.6
Ireland	66.5	59.1	54.7	55.6	53.1	53.2	52.9	54.1	58.7	60.6
Greece	69.9	67.2	63.9	58.0	47.9	45.4	50.0	50.4	52.3	51.5
Spain	65.3	55.1	55.4	52.8	48.7	46.4	48.1	51.3	53.7	55.7
France	50.2	46.3	46.3	45.7	46.4	46.0	44.9	44.2	44.3	45.2
Croatia	42.1	28.1	28.2	39.2	28.9	35.3	35.2	32.3	30.3	37.0
Italy	66.0	62.6	60.8	60.5	58.5	56.1	56.7	56.9	57.8	59.1
Cyprus	72.4	67.8	71.8	73.4	73.4	73.1	75.3	72.9	63.6	63.5
Latvia	69.1	56.6	53.3	57.5	57.6	59.2	61.6	63.4	63.3	64.4
Lithuania	73.8	52.6	54.5	53.3	62.8	70.2	72.9	70.5	68.9	68.1
Luxembourg	37.1	53.2	56.6	55.1	56.7	58.7	53.5	54.5	50.2	54.5
Hungary	71.6	61.7	49.7	51.2	59.4	63.5	69.9	68.9	62.4	63.5

Malta	54.6	57.3	59.6	61.2	78.0	82.7	77.3	70.2	73.4	70.6
Netherlands	54.2	52.9	51.0	50.6	51.6	48.4	49.1	48.9	49.3	50.0
Austria	56.5	55.5	57.0	58.2	57.0	55.2	54.2	53.7	52.6	54.3
Poland	63.5	61.9	60.5	57.1	61.9	56.7	62.4	57.4	59.4	68.9
Portugal	72.0	65.7	65.4	62.4	57.5	54.4	59.0	58.9	64.3	67.5
Romania	58.7	60.8	:	:	:	:	:	:	:	:
Slovenia	65.3	52.2	59.3	65.4	60.9	56.5	54.1	67.2	66.7	68.6
Slovakia	:	:	:	:	:	:	:	78.8	60.3	67.1
Finland	51.6	51.5	46.9	47.4	48.8	50.9	47.6	45.9	44.1	48.0
Sweden	50.3	47.1	44.6	44.1	44.2	46.3	47.8	46.8	47.9	50.2
United Kingdom	61.7	60.0	60.1	59.7	58.9	59.0	59.9	60.9	61.3	61.1

Unemployment rates by sex, age and citizenship (%) [lfsa_urgan]

Last update
08.02.19
Extracted on
19.02.19
Source of data
Eurostat

SEX
Total
AGE
From 15 to 64 years
CITIZEN
Non-EU28 countries nor reporting country
UNIT
Percentage

GEO/TIME	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Belgium	27.3	29.5	30.7	27.8	30.6	29.9	30.9	26.6	27.3	25.0
Bulgaria	:	:	:	:	:	:	:	:	:	:
Czechia	4.8	6.7	4.2	5.9	5.2	6.4	4.6	4.4	3.8	3.5
Denmark	11.1	15.0	18.7	19.5	18.8	14.3	15.8	15.6	15.7	12.3
Germany (until 1990 former territory of the FRG)	18.7	19.1	17.2	14.2	13.3	12.7	12.1	12.0	12.1	11.4

Estonia	10.1	22.6	30.2	21.9	18.2	14.8	13.2	9.3	12.4	10.6
Ireland	8.3	14.7	16.6	15.3	17.8	17.2	15.7	13.4	11.0	8.9
Greece	6.7	10.5	15.6	22.4	35.4	39.5	33.7	32.1	30.0	28.4
Spain	18.0	30.0	31.4	34.4	38.6	40.5	37.4	33.6	29.1	26.3
France	18.1	22.7	22.0	24.1	23.8	25.4	25.8	25.6	24.9	23.9
Croatia	:	:	:	:	:	:	:	:	:	:
Italy	8.8	11.4	12.0	12.3	14.5	18.0	17.5	16.8	16.1	15.0
Cyprus	3.8	7.2	6.6	4.8	8.0	9.6	8.4	7.9	10.5	10.6
Latvia	11.6	25.0	27.6	22.3	23.1	17.7	15.0	13.4	12.9	12.2
Lithuania	:	:	:	:	:	:	:	:	:	:
Luxembourg	36.3	17.2	13.0	13.9	15.1	14.1	18.6	16.0	20.8	16.5
Hungary	:	:	:	:	:	:	:	:	:	:
Malta	:	12.7	:	:	:	:	5.6	5.9	4.2	9.6
Netherlands	9.7	11.3	14.4	14.5	15.9	19.4	17.6	17.4	15.1	12.8
Austria	10.7	14.9	11.8	11.3	12.1	13.1	14.8	15.4	16.6	16.0
Poland	:	:	:	:	:	:	:	:	12.9	9.3
Portugal	11.9	17.5	19.0	23.7	28.8	30.4	21.4	22.5	18.6	14.6
Romania	:	:	:	:	:	:	:	:	:	:
Slovenia	6.1	16.3	14.0	12.6	16.5	24.6	19.9	14.9	13.3	10.0
Slovakia	:	:	:	:	:	:	:	:	:	:
Finland	21.3	20.6	25.5	21.8	21.9	21.1	21.2	22.4	24.9	19.8
Sweden	22.5	26.4	28.5	31.2	30.8	29.9	29.2	30.5	30.8	29.5
United Kingdom	8.8	11.2	11.3	12.0	11.3	11.6	9.5	8.8	8.0	7.7

Activity rates by sex, age and citizenship (%) [lfsa_argan]

Last update
08.02.19
Extracted on
19.02.19
Source of data
Eurostat

SEX
Total
AGE
From 15 to 64 years
CITIZEN
Non-EU28 countries nor reporting country

UNIT
Percentage

GEO/ TIME	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Belgium	54.9	54.9	54.9	51.8	52.1	53.6	55.0	54.4	54.0	52.7
Bulgaria	53.5	51.2	48.4	:	70.7	57.3	59.1	:	53.8	53.3
Czechia	75.8	73.0	74.0	74.4	76.9	81.2	79.0	76.7	78.6	77.0
Denmark	64.5	68.8	66.7	66.7	64.7	65.4	64.8	65.1	70.9	67.0
Germany (until 1990 former territory of the FRG)	61.4	62.6	62.4	62.8	63.4	62.9	62.3	61.6	58.5	59.1
Estonia	79.1	79.2	80.4	80.1	77.6	76.7	74.7	75.5	76.7	79.0
Ireland	72.5	69.2	65.5	65.7	64.6	64.3	62.7	62.4	66.0	66.5
Greece	74.9	75.1	75.7	74.8	74.1	75.1	75.5	74.2	74.7	72.0
Spain	79.7	78.8	80.8	80.4	79.4	77.9	76.9	77.2	75.8	75.6
France	61.3	59.9	59.4	60.2	61.0	61.7	60.5	59.3	59.0	59.4
Croatia	48.2	31.2	34.4	47.8	38.5	50.9	50.5	37.4	33.0	38.4
Italy	72.4	70.6	69.1	69.0	68.4	68.5	68.7	68.4	68.9	69.6
Cyprus	75.3	73.1	76.8	77.1	79.8	80.9	82.3	79.2	71.0	71.0
Latvia	78.2	75.5	73.6	74.0	74.9	71.9	72.5	73.1	72.6	73.4
Lithuania	75.8	63.4	71.8	67.6	79.4	80.4	82.8	77.0	75.1	71.4
Luxembourg	58.3	64.3	65.0	63.9	66.8	68.4	65.8	64.8	63.3	65.2
Hungary	74.3	69.3	60.6	60.0	66.4	70.2	72.9	71.8	64.7	64.2
Malta	58.7	65.6	67.4	67.8	80.9	85.2	81.9	74.6	76.7	78.0
Netherlands	60.0	59.6	59.6	59.3	61.4	60.0	59.6	59.3	58.1	57.4
Austria	63.3	65.3	64.6	65.6	64.9	63.6	63.6	63.4	63.1	64.6
Poland	65.5	71.1	66.7	66.8	69.3	70.5	72.8	63.4	68.2	75.9
Portugal	81.7	79.6	80.7	81.8	80.8	78.2	75.1	76.0	79.0	79.0
Romania	62.5	63.5	:	:	:	:	:	:	:	79.3
Slovenia	69.5	62.4	68.9	74.9	72.9	74.9	67.6	79.0	76.9	76.3
Slovakia	:	:	:	:	:	:	:	81.3	64.6	69.1
Finland	65.5	64.9	62.9	60.6	62.5	64.5	60.4	59.2	58.8	59.8

Sweden	65.0	64.0	62.4	64.0	63.8	66.0	67.5	67.3	69.3	71.2
United Kingdom	67.7	67.6	67.7	67.9	66.4	66.8	66.2	66.8	66.6	66.3

Self-employment by sex, age and citizenship (1 000) [lfsa_esgan]

Last update
08.02.19
Extracted on
19.02.19
Source of data
Eurostat

UNIT
Thousand
WSTATUS
Self-employed persons
CITIZEN
Non-EU28 countries nor reporting country
SEX
Total
AGE
From 15 to 64 years

GEO/ TIME	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Belgium	8.0	6.8	8.3	10.1	9.1	12.3	11.1	13.3	15.0	10.8
Bulgaria	:	:	:	:	:	:	:	:	:	:
Czechia	9.7	12.2	11.9	13.0	14.6	18.6	20.9	24.1	16.9	20.8
Denmark	6.1	9.4	6.2	6.8	7.2	8.5	8.8	9.4	8.5	10.8
Germany (until 1990 former territory of the FRG)	154.6	165.6	157.5	157.7	172.4	168.2	170.3	181.5	190.5	198.7
Estonia	6.9	5.7	4.6	4.5	4.5	4.4	4.8	6.6	6.7	5.0
Ireland	5.7	5.9	6.2	7.1	6.0	4.7	5.9	6.0	4.5	4.7
Greece	20.9	25.5	33.0	26.3	21.7	20.0	24.1	20.7	17.9	16.1
Spain	141.5	128.2	126.0	120.1	130.9	135.2	152.5	164.9	152.5	164.4
France	59.1	61.4	67.2	64.9	72.0	68.7	80.1	82.6	106.2	79.8
Croatia	:	:	:	:	:	:	:	:	:	:
Italy	166.8	153.0	168.0	177.0	179.0	185.3	190.5	194.2	221.6	217.8
Cyprus	3.7	2.7	3.0	2.7	2.0	2.7	2.0	2.3	2.2	2.0
Latvia	10.6	10.7	7.9	7.6	8.0	7.7	8.6	10.7	11.1	12.0

Lithuania	:	:	:	:	:	:	:	:	:	:
Luxembourg	:	0.7	:	0.7	0.6	0.9	:	0.9	0.6	1.3
Hungary	:	:	3.8	:	3.1	:	:	:	3.3	3.0
Malta	:	0.6	0.6	:	0.7	1.1	1.0	1.5	2.4	2.7
Netherlands	16.3	17.6	16.9	16.6	20.6	20.6	19.0	19.9	22.2	22.4
Austria	11.7	12.3	11.5	11.1	12.9	11.4	9.8	14.5	17.0	18.4
Poland	5.3	:	5.2	:	:	6.5	7.0	9.5	7.9	6.0
Portugal	25.0	19.4	20.0	14.6	8.7	12.3	8.8	9.5	11.2	8.6
Romania	:	:	:	:	:	:	:	:	:	:
Slovenia	0.6	0.9	1.8	1.3	2.4	1.6	1.5	2.3	2.8	3.3
Slovakia	:	:	:	:	:	:	:	:	:	:
Finland	2.6	4.0	3.1	3.3	2.9	4.4	4.6	4.5	4.9	4.6
Sweden	7.4	9.2	10.1	8.4	9.0	8.8	9.4	8.8	8.7	10.9
United Kingdom	134.1	126.3	113.4	152.7	145.8	150.2	168.4	173.3	185.0	182.9

Population by sex, age, citizenship and labour status (1 000) [lfsa_pganws]

Last update
08.02.19
Extracted on
19.02.19
Source of data
Eurostat

SEX
Total
CITIZEN
Non-EU28 countries nor reporting country
AGE
From 15 to 64 years
WSTATUS
Population
UNIT
Thousand

GEO/TIME	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Belgium	205.3	215.8	227.1	275.9	285.7	282.8	292.1	316.6	318.5	293.1
Bulgaria	6.8	8.9	8.4	7.1	5.9	6.9	6.9	6.8	8.7	9.4
Czechia	39.9	46.7	49.5	50.9	55.9	62.0	68.8	78.7	64.9	77.2
Denmark	148.0	144.2	148.1	164.4	173.7	182.2	191.0	206.8	202.7	212.7

Germany (until 1990 former territory of the FRG)	3,367.1	3,487.0	3,071.1	2,980.1	3,053.3	3,125.3	3,294.4	3,466.5	3,908.8	4,229.4
Estonia	148.0	151.5	144.0	133.4	135.0	131.4	123.9	117.5	119.2	115.7
Ireland	127.5	130.1	130.1	132.3	124.4	112.5	102.9	105.7	113.2	123.2
Greece	442.4	527.7	528.4	491.1	470.1	436.8	425.0	388.1	355.3	333.5
Spain	3,030.0	3,146.8	3,000.1	2,943.6	2,805.5	2,581.7	2,291.4	2,264.8	2,226.2	2,254.6
France	1,534.4	1,533.1	1,625.9	1,637.2	1,740.0	1,715.6	1,738.1	1,894.6	1,930.0	2,063.6
Croatia	4.3	9.6	9.0	3.5	4.7	4.4	5.7	6.0	5.8	6.1
Italy	1,801.8	1,937.8	2,075.0	2,245.3	2,441.0	2,603.9	2,707.2	2,743.8	2,741.1	2,700.4
Cyprus	40.9	41.9	47.9	49.4	46.5	45.8	42.8	41.0	40.8	44.1
Latvia	224.6	229.0	222.9	212.6	209.4	184.6	172.3	165.6	162.7	152.9
Lithuania	8.8	9.7	11.8	10.7	9.9	8.6	7.7	10.7	9.2	9.7
Luxembourg	10.9	15.3	13.3	16.3	17.1	16.3	16.4	20.7	21.2	25.4
Hungary	13.8	13.1	15.4	18.0	17.5	11.4	10.2	10.3	18.9	16.6
Malta	4.6	5.7	4.5	3.9	10.1	12.3	16.2	18.6	23.6	19.7
Netherlands	295.7	274.9	265.0	271.2	274.9	280.9	273.1	291.9	288.9	305.0
Austria	372.3	365.0	364.9	373.0	385.2	395.9	408.0	425.5	488.4	497.2
Poland	29.8	25.4	29.0	27.1	26.9	34.0	39.6	52.4	59.5	81.0
Portugal	259.4	265.7	253.4	199.6	162.4	163.4	138.9	132.2	126.5	117.1
Romania	21.1	13.2	:	:	7.6	9.6	7.9	:	:	9.0
Slovenia	16.1	15.3	18.9	25.1	29.5	34.3	39.6	42.5	50.3	52.8
Slovakia	:	:	3.0	:	:	:	2.3	3.0	4.3	3.5
Finland	47.1	50.8	53.1	57.8	58.7	64.8	77.0	78.6	78.8	78.8
Sweden	159.1	174.0	195.7	218.9	230.6	246.7	264.1	281.8	319.7	340.4
United Kingdom	1,998.9	2,003.6	1,912.5	2,056.3	2,026.3	1,990.2	1,959.6	1,952.9	1,960.7	1,947.3

Source: Eurostat (2019). Migrant Integration Statistics - labour market indicators. Available at https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Migrant_integration_statistics_%E2%80%93_labour_market_indicators. Accessed 19 February 2019