Cyprus–UK Migration Corridor: Economic Implications of Remittances

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1. Introduction

Cyprus, which is the third biggest island of the Mediterranean, joined European Union (EU) on 1st May in 2004 together with Malta and the eight Central and Eastern European countries (CEECs). Its strategic location, in the far eastern part of the Mediterranean, historically adjoining Europe, Asia and Africa, made the island an important participant in the migration process either as a point of origin, transit or destination for migrants for years.

The EU’s fifth enlargement process induced substantial labour migration from accession states – mostly eastern European – into EU15 states such as UK, Ireland and Sweden where no restrictions were in place. In response, a number of EU15 states took steps to limit in migration of labour because of fears about the potential political and economic consequences of increased competition in domestic labour markets. Cyprus was one of the countries which were granted access to EU15 labour markets together with Malta and Slovenia as they are relatively small countries in comparison to other CEECs as well as being relatively prosperous.

As a result of the EU membership of Cyprus, bilateral trade duties on commodities are eliminated on trade between EU15 and Cyprus. At the same time, EU’s common customs tariff (CCT) is imposed by Cyprus on imports from third countries. In addition, with the full membership, there is also free movement of labour between the two parties.

As a former British colony, being under British colonial rule from 1878 to 1960, Britain has always been the main destination country for Cypriot migrants. This paper reports an analysis of the economy wide effects of changes in the number of Cypriots migrating from Cyprus to the UK as a result of the access to EU’s labour market brought about by the EU membership of Cyprus. This is analysed together with the economic implications of the changes in the volume of workers’ remittances sent back by Cypriot migrants on the Cypriot economy. Migrations’ decisions are endogenised through labour supply functions that respond to changes in relative wages. Due to the past migration patterns and volumes of Cypriots in the UK, the analysis focuses on labour migration to the UK and the transfer of Cypriot workers’ remittances back into the island, which is one of the smallest EU member countries, both in terms of population and GDP, where 26% of the work force is skilled.

The analyses are carried out using a 15-region, 12-sector and 4-factor aggregation of the GTAP database augments by the labour and remittance data from the GMig2 database (Walmsley et al. 2007) . The computable general equilibrium model used is a development of the GLOBE model - GLOBE_MIG (see McDonald & Thierfelder, 2008). GLOBE_MIG allows for bilateral labour migration through labour supply function and a richer characterization of domestic labour markets that allow, among other things, (limited) migration between labour types. This latter
feature is important since it allows ‘skilled’ labour in one region to migrate to another region where the labour services are traded on the ‘unskilled’ labour markets.

Preliminary results indicate that there will be strong incentives for increased migration of Cypriot labour into the UK, while, in some scenarios, have major negative implications for the performance of the domestic Cypriot economy. While the negative welfare implications are offset by increased remittances these serve to increase the adverse implications for domestic Cypriot production.

The rest of this paper is organised as follows. In section 2 labour migration and remittance trends in Cyprus are reviewed. This is followed by a description of the data set and model used in this study and some descriptive statistics. The results are discussed in section 5 and the paper ends with some concluding comments.

2. Cyprus – EU Relations

2.1. Cyprus – EU Relations

Following the Association Agreement between Cyprus and European Economic Community in 1972, Cyprus became an EU member in May 2004 despite the division of the island into a Greek speaking and a Turkish speaking zone.

Cyprus formally applied for accession to the EU in 1993. EU considered Cyprus eligible for membership and the formal negotiations on membership of Cyprus into the EU started in 1995. EU sent a special envoy to Cyprus to monitor UN efforts there to achieve a political settlement since initially it was announced that the membership of Cyprus into the EU could only take place after a political settlement. Negotiations between the two communities of Cyprus continued as well as the negotiations between the EU and Cyprus. Although, it was hoped that the EU pressure could help bring about a political settlement on the island, it did not.

In 1999, it was formally announced that ‘a solution to the political problems of Cyprus was not a precondition for Cyprus joining the EU’ (PIER, 2010, pg2).

The final stages of negotiations between the EU and Cyprus were concluded in 2002 and 2003 and Cyprus became an EU member in 2004.

The EU’s fifth enlargement process of 2004 induced substantial labour migration from accession states – mostly eastern European – into the states of the EU15. In response a number of EU15 states took steps to limit the migration of labour because of fears about the potential political and economic consequences of increased competition in domestic labour markets. However, no limitations were imposed on the migration of Cypriots to the UK thus encouraging
further Cypriot emigration. Indeed, Cyprus was one of the three countries together with Malta and Slovenia which were granted freedom of movement (King and Thomson, 2010).

The Association Agreement signed in 1973 had allowed Cyprus to join a Customs Union with the European Economic Community, providing for trade, financial and technical cooperation. The full membership of 2004, on the other hand, granted the Cypriots the right to the free movement of labour within the EU (PIER, 2010).

Although in comparison to the volume of migration from the CEECs to the EU, Cypriot emigration is not much and Cyprus traditionally exporting migrants has recently transformed into one of the host countries, it has for years been a traditional exporter of migrants. As a former British colony, being under British colonial rule from 1878 to 1960, UK has always been the main destination country for Cypriot emigrants.

2.2. Cypriot Emigration

Although there are several studies on Cypriot migration, there are not any studies analyzing the economic implications of Cypriot migration together with the transfer of Cypriot workers’ remittances back into the domestic economy although due to its geographically important strategic position it has played an important role in different migration routes.

There are a number of studies analysing different aspects of Cypriot emigration. There are some studies on macrodynamics of Cypriot migration, capturing the push-pull forces (Diamantides, 1992; Diamantides and Constantinou, 1989) and on Cypriot diaspora, by focusing on the Cypriot diaspora in Britain (Yiacoumi and Panteli, 2006) as well as the residential behavior of Cypriots in London (King and Bridal, 1982). Some other studies analyse the politics of Cypriot migration to Britain in general (Solomos, 1995), or Cypriot migration to Britain within the context of race and ethnicity (Anthias, 1992). Also, there are some studies describing political practices of Cypriot migrants together with their local and international political ramifications (Ostergaard-Nielsen, 2010) and some others comparing Cypriot immigration to the Maltese and Slovenian immigration (King and Thomson, 2008) as well as analyzing the consequences of involuntary migration (Loizos, 2008). In addition, there are a number of studies analyzing different aspects of Turkish Cypriot immigration to Britain as well as to Australia, USA and other European countries (Mehmet Ali, 2001; Tunc and Gursel, 2007; Mehmet et al. 2007, Ostergaard-Nielsen, 2010).

The strategic location of Cyprus, in the far eastern part of the Mediterranean, historically adjoining Europe, Asia and Africa, made the island an important participant in the migration process either as a point of origin, transit or destination for migrants. The island has traditionally
been an exporter of migrants for years (Trimikliniotis, 1999). Emigration of Cypriots into the EU is now much more easier since Cyprus is one of the twenty seven EU countries.

UK is the main destination country for the Cypriot migrants in addition to other destinations such as Australia, North America and other European countries. In fact, ‘the number of Cypriots living abroad nears half the population of the island’ (Trimikliniotis, 1999, page 2).

According to GMig2 database, 43% of unskilled and 42% of the skilled Cypriot migrant workers are resident in the UK. Thus, it is not surprising that 49% of remittances sent to Cyprus are by Cypriot migrant workers in Britain.

2.3 Cyprus – UK Migration Corridor

Cyprus was under British colonial rule from 1878 until 1960. It is often stated that, in 1878, when Britain assumed the island’s occupation and administration, emigration of Cypriots to London started. However, prior to 1914, there were only a handful of Cypriots living in the UK. It was during the war years, when they enlisted in the allied forces and started traveling due to military service that they became aware of the opportunities laying beyond Cyprus (Yiacoumi and Panteli, 2006). The main destination countries were North America, Egypt, Australia and the UK.

Throughout the 1920s and 1930s, due to bad financial climate in the island, Cypriots found their way to the UK in order to find jobs in the catering industry. ‘What they were coming to was certainly not ‘the mother country’, a land of milk and honey, where the streets were paved with gold. Even though their path was uncertain, there appeared to be opportunities, life chances, openings to be taken up by those who were willing to gamble with the future, because there was so much at stake but in reality so little to lose’ (Yiacoumi and Panteli, 2006, page 2).

Financial crisis of 1930 affected the Cypriot migrants negatively, slowing down the Cypriot emigration to Britain. However, when a considerable number of Italians left as proscribed aliens during World War II, the gap in the labour force was filled by Cypriots (Yiacoumi and Panteli, 2006).

The 1950s and the early 1960s saw the main exodus of Cypriots into Britain, increasing their number to 70,000 by 1964. Cypriot labour migration to Britain accelerated in the late 1950s with the active recruitment of labour by the British government, and was spurred on by the conflict between Turkish and Greek speaking communities in Cyprus. After the island gained its independence from Britain, Cypriots were given the option to choose either a Republic of Cyprus passport or a British passport due to the colonial ties with Britain (Mehmet Ali, 2001; Yiacoumi
and Panteli, 2006), making it relatively easy for them to migrate and work in Britain. The 1962/68 Commonwealth immigration legislation, inter-communal conflicts of 1963 and 1967/68 as well as the 1974 Turkish military intervention all led to mass emigration of Cypriots to Britain. Economic motives, such as persistent high unemployment of a largely rural economy were also an important push factor (King and Thomson, 2008).

2.4. Cyprus – UK Migration Corridor: A Theoretical Explanation

Neo-classical economic theory of migration, particularly the basic Todaro model and its variants could explain the Cypriot emigration, i.e. the paradoxical relationship of accelerated migration from a developing country into an industrialised one in the context of rising unemployment (Todaro, 1976).

According to Neo-classical economic theory, international migration is driven by geographic differences in wage rates. The wage rate is lower in labour abundant countries, while it is higher in capital abundant and labour scarce countries. In addition to the wage differences the migrant also considers the probability of finding a higher paid urban job as well as the necessary time period in order to find it (Harris and Todaro, 1970).

It is assumed that the migrant behaves rationally by considering the various labour market opportunities available in both developing and developed countries and then, chooses the option, which maximises his expected gains from migration. In other words, expected incomes in the developed country over the migrant’s time horizon and the probability of obtaining a job in the developed country are compared with prevailing average incomes of the developing country. Then, the migrant decides to migrate if the former exceeds the latter i.e. maximisation of expected utility is the driving force (Harris and Todaro, 1970; Todaro, 2000).

Another important assumption of the Harris-Todaro Model is that the migrant retains strong ties to the home country and sends his income back, increasing the welfare of the source country.

Todaro (1969, p.147) argues that it is important to bring “city lights” to the rural sector (developing country) to increase its attractiveness, i.e. eliminate the developing country supply push rather than increasing the developed country demand pull. Otherwise, although there might be a lower probability of finding a job in the industrialised country, due to the continuous gap between incomes, migrants from developing countries will continue to be attracted into industrialised counties even if their standard of living would be lower, i.e. to ‘the ever more congested urban slums’ (Todaro, 1969, p.147).
3. Data and Model

The data for this study are derived from the GTAP database version 7.0, which is benchmarked to the year 2004 (McDougall and Dimanaran, 2005). The form of the database used for this study is a Social Accounting Matrix (SAM) representation of the Global Trade Analysis Project (GTAP) database version 7 (McDonald and Thierfelder, 2004). The GTA project produces the most complete and widely available database for use in global computable general equilibrium (CGE) modelling; indeed the GTAP database has become generally accepted as the preferred database for global trade policy analysis and is used by nearly all the major international institutions and many national governments. Hertel (1997) provides an introduction to both the GTAP database and its companion CGE model. The precise version of the database used as the starting point for this study is a reduced form global SAM representation of the GTAP data (McDonald et al. 2007).

The analyses are carried out by using a 12-sector, 4-factor and 15-region global computable general equilibrium model -GLOBE CGE - that is implemented in GAMS (McDonald et al. 2005). For this study a method for augmenting the GTAP database using additional GMig2 data on bilateral remittance and number of migrant workers differentiated according to the skill type-as skilled and unskilled - have been implemented as an extension to a global representation of the GTAP database (McDonald and Thierfelder, 2004). Due to the availability of bilateral remittance data there was no need for an additional region called “globe”. For modelling remittances in the absence of bilateral remittance data one can refer to McDonald and Sonmez (2006).

The accounts in the SAM are detailed below and the aggregation mapping from the GTAP database is provided in the Appendix.

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### 3.1. Descriptive Statistics

#### 3.1.1. Real Macroeconomic Totals

#### 3.1.2. Trade: Exports & Imports

#### 3.1.3. Labour Force and Remittances: Cyprus vs. UK

### 3.2. Globe CGE Model

This model is a member of the class of computable general equilibrium (CGE) models that are descendants of the approach to CGE modelling described by Dervis et al., (1982). The implementation of this model, using the GAMS (General Algebraic Modeling System) software, is a direct descendant and development of the single country models devised in the late 1980s and early 1990s, particularly the model reported by Robinson et al., (1990), and the multi-country model developed to analyse NAFTA (see Lewis et al., 1995, for a later application).

The model is a SAM based CGE model, wherein the SAM serves to identify the agents in the economy and provides the database with which the model is calibrated. Since the model is SAM based it contains the important assumption of the law of one price, i.e., prices are common across the rows of the SAM. The SAM also serves an important organisational role since the groups of agents identified by the SAM structure are also used to define sub-matrices of the SAM for which behavioural relationships need to be defined. As such the modelling approach has been influenced by Pyatt’s ‘SAM Approach to Modeling’ (Pyatt, 1987).

#### 3.2.1. Trade

Trade is modelled using a treatment derived from the Armington ‘insight’; namely domestically produced and consumed commodities are assumed to be imperfect substitutes for both imports and exports. Import demand is modelled via a series of nested constant elasticity of substitution (CES) functions; imported commodities from different source regions are assumed to be imperfect substitutes for each other and are aggregated to form composite import commodities that are assumed to be imperfect
substitutes for their counterpart domestic commodities. The composite imported commodities and their counterpart domestic commodities are then combined to produce composite consumption commodities. These are the commodities demanded by domestic agents as intermediate inputs and for final demand by households, the government, and for investment.

Export supply is modelled via a series of nested constant elasticity of transformation (CET) functions; the composite export commodities are assumed to be imperfect ‘substitutes’ for domestically consumed commodities, while the exported commodities from a source region to different destination regions are assumed to be imperfect ‘substitutes’ for each other. The composite exported commodities and their counterpart domestic commodities are then combined to produce composite production commodities. The properties of models using the Armington ‘insight’ are well known (see de Melo and Robinson, 1989; Deverajan et al., 1990), but it is worth noting here that this model differs from the GTAP model through the use of CET functions for export supply; this ensures that domestic producers adjust their export supply decision in response to changes in the relative prices of exports and domestic commodities, which help to moderate the magnitude of the terms of trade effects in this class of model. Homogeneity can be imposed for all or any subset of commodities and regions.

3.2.2. Production

The production structure is a two stage nest. Intermediate inputs are used in fixed proportions per unit of output – Leontief technology. Primary inputs are combined as imperfect substitutes, according to a CES function, to produce value added.

3.2.3. Final Consumption

Final demand by the government and for investment is modelled under the assumption that the relative quantities of each commodity demanded by these two institutions are fixed – this reflects the absence of a clear theory that defines an appropriate behavioural response by these agents to changes in relative prices. For the household there is however a well developed behavioural theory; hence the model contains the assumption that households are utility maximisers who respond to changes in relative prices and their incomes. In this version of the model the utility functions for the private households are assumed to be Stone-Geary, which yields linear expenditure systems that allow for subsistence consumption, and reduce to Cobb-Douglas utility functions where minimum levels of consumption are not specified.

3.2.4. Modelling Endogenous Migration and Remittances

The number of migrants from Cyprus to EU countries change with the difference in relative wage rates and is stimulated by a migration elasticity which shows how responsive Cypriot unskilled and skilled labour are to a change in relative wage rates.
The value of remittance inflows to Cyprus is equal to the value of remittances sent by unskilled and skilled Cypriot labour in EU, adjusted for exchange rate.

The value of factor income changes as a result of the change in remittances which are expressed in domestic currency units.

Share of income for distribution, on the other hand changes with the change in the number of migrants, while initially a fixed share of income for distribution is assumed which is equal to the base level.

Finally, the value of remittances paid to Cypriot skilled and unskilled labour in domestic currency units is a share of the income to skilled and unskilled Cypriot labour in the EU.

4. Policy Experiments and Model Closure

4.1. Policy Experiments

Six different policy experiments are analysed for this study. When Cyprus became an EU member in May 2004, bilateral trade duties on commodities were eliminated on trade between EU15 and Cyprus. At the same time, EU’s CCT is imposed by Cyprus on imports from third countries. With the full membership, there is also free movement of labour between the two parties. For this study, we assume that Cyprus will be subject to the same agricultural subsidies received by the 15 ‘old’ EU accession countries. The policy experiments are as follows:

1. removal of bilateral import duties on all commodities;
2. removal of bilateral export taxes/subsidies on all commodities;
3. removal of bilateral import duties and export taxes/subsidies on all commodities;
4. removal of bilateral import and export duties on all commodities, and the imposition of a CCT by Cyprus on commodity trade with third countries.
5. removal of bilateral import and export duties on all commodities, and the imposition of a CCT by Cyprus on commodity trade with third countries together with the imposition of agricultural subsidies
6. removal of bilateral import and export duties on all commodities, and the imposition of a CCT by Cyprus on commodity trade with third countries together with the imposition of agricultural subsidies as well as the free movement of Cypriot labour within the EU27
Due to the limitations of space, only a subset of possible results will be presented, but references are made to other results, where they provide additional insights. Although 6 different policy scenarios have been run, the analysis will only include a comparison of the base scenario where there is no EU membership and no free movement of labour between Cyprus and EU27 and also no agricultural liberalisation.

4.2 Model Closure

The model closures adopted for this study are detailed below:

Foreign Exchange Account Closure

Cyprus is a member of EMU and it maintains a flexible exchange rate regime not a fixed one. Moreover, tighter fiscal policies are being implemented under the guidance of EMU. Thus, in accordance with these, in the foreign exchange account of the model closures, the current account balance is fixed at the 2004 level so that a specific balance of payments deficit can be maintained but not worsened. Exchange rates are flexible to ensure that the trade balance clears, i.e. balance of payments is maintained via the changes in exchange rate. The exchange rates are flexible; external balances are fixed.

Investment – Savings (Capital Account) Closure

For the Cypriot economy, the Keynesian view of investment driven savings is assumed as the capital account closure. The shares of investment absorption and therefore the share of domestic final demand of investment are fixed. Then, the household savings adjust in an additive mode to equate total savings to total investment. Both the volume and value of investment are free to adjust.

Government Account Closure

In accordance to the EMU, the Cypriot government account deficit must not worsen. Therefore, the government savings/deficit; internal balance is fixed at the 2004 level together with the shares of government expenditure in final demand. The government budgets are cleared by adjusting the value added tax rates additively. Both the value and the volume of expenditures are free to adjust. The shares of government expenditure in final demand are fixed. Internal balance is fixed. Tax rate adjusters are fixed except the uniform adjustment to value added tax, i.e. the government budgets are cleared by additive changes in the household income tax rates.

Factor Market Closure

For this model, unemployment of unskilled labour in Cyprus, Turkey, the new accession countries, Asia and rest of the world is assumed given the unemployment rates in those regions. Therefore, the wage rates are fixed and the total supplies of labour are endogenously determined.

Numéraire
The model is homogenous of degree zero one in prices and it is only the relative prices which are determined, CPI is chosen to be the base. The region specific consumer price indices and the regions in the global numéraire are separately identified OECD countries¹.

For the rest of the countries, flexible exchange rates, investment driven economy, fixed shares of government expenditure in final demand and fixed internal balance is assumed where the government budgets are cleared by additive changes in value added tax rates. Also for the factor market, balanced macroeconomic closure has been assumed with full employment.

5. Results

6. Concluding Comments

7. References


Dimaranan, Betina V. and Robert A. McDougall, Editors (2005) Global Trade, Assistance, and Production: The GTAP 6 Data Base, Center for Global Trade Analysis, Purdue University.


¹ Australia, Canada, USA, France, Germany, the UK, Italy, Sweden
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