DETERMINANTS OF EMIGRATION: THE CASE OF KOSOVA

FAKTORËT PËRCAKTUES TË EMIGRACIONIT: RASTI I KOSOVËS

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Abstract

Migration of the labour force from one country to another change the economic prospects of both the destination and origin countries of the migration. Given poor employment prospects in Kosova, from an individual point of view emigration might be a strategy of escaping unemployment and contributing toward household incomes. In macroeconomic terms, emgiration (i) reduces the size of the domestic labour force and changes its skills composition, (ii) affects aggregate spending due to remittances and (iii) produces other second and third round effects. Given the scale of emigration from Kosova (around 20 percent of the population is abroad whose remittances are at the level of 15 percent of GDP), emigration and remittances are important aspects of any economic analysis in Kosova.

The analysis of emigration in Kosova in this paper is is based on the Riinvest Household and Labour Force Survey (HLFS) data and other existing data and estimates on emigration and remittances in Kosova. We first present a brief review of the orthodox economic analysis of migration and empirical evidence. We provide estimates of emigrants from Kosova, their profile and remittances. We investigate the determinants of emigration decisions and also estimate employment possibilities at home and abroad as the driving force for emigration in the case of Kosova.

Key words: emigration, remittances, labour force, Kosova

1. Introduction

Labour movements from one country to another change the economic prospects of both the destination

and origin countries of the migrant.[1] Given poor employment prospects in Kosova, from an individual point of view emigration might be a strategy of escaping unemployment and contributing toward household incomes. In macroeconomic terms, it reduces the size of the domestic labour force and changes its skills composition, affects aggregate spending due to remittances and produces other second and third round effects. Given the scale of emigration from Kosova that we discuss later in this paper, emigration and remittances are important aspects of any economic analysis.

In this paper, we investigate emigration in Kosova. The analysis is based on the Riinvest Household and Labour Force Survey (HLFS) data and other existing data and estimates on emigration and remittances in Kosova. The data from the Riinvest HLFS with regard to emigration and remittances is far from perfect, for reasons that we discuss later, but this is the first analysis of emigration and remittances in Kosova. The paper is organised as follows. We first present a brief review of the orthodox economic analysis of migration and empirical evidence (Section 2). In Section 3, we examine the potential brain drain and brain gain consequences of emigration and the effect of remittances on the local economy. In Section 4, we provide estimates of emigrants from Kosova and their remittances. Using the Riinvest HLFS data, we examine the profile of emigrants and the brain drain issue. In Section 5, we investigate the determinants of emigration decisions in Kosova. We also estimate employment possibilities at home and abroad as the driving force for emigration in the case of Kosova. In Section 6, we conclude.

2. The economic analysis of migration and empirical evidence

The World Bank (2006) estimates that in 2002 international migrants represented 3 percent of the destination countries' population worldwide, while for the developed countries this was 8 percent. These figures represent net migration with gross migration certainly being larger due to temporary and returning migration. In the European Transition Countries (ETCs), prior to 1990 both international and internal migration was very limited (Leon-Ledesma and Piracha, 2004; Mansoor and Quillin, 2007). Typically, there had been rural-to-urban migration from the 1950s. The movement of workers toward industrial centres was the dominant form of migration, while the limited international migration was contained within ETCs (Kaczmarczyk and Okólski, 2005).

With the collapse of the socialist regime, migration intensity increased and included both permanent and temporary migration mostly toward the EU-15 (Mansoor and Quillin, 2007). A number of ETCs countries

experienced mass migration waves (e.g. Albania), while in some others migration was unexpectedly moderate (most of the Central European countries) given their proximity to the EU and the removal of many legal barriers to migration.

The unemployment rate reached double digits in many ETCs and stayed high throughout the 1990s. However, the efficacy of migration in reducing national and regional unemployment has generally been low and migration flows declined through the 1990s, even though inter-regional disparities during this decade have been rising (Fidrmuc, 2004). However, there are no estimations as what would have been the unemployment rate in the absence of migration. As the data in Table A1 in Appendix suggests, some of these countries became net immigration areas by 2002-2003 (Salt, 2005). Though note that the data on migration flows is likely to be inaccurate due to different definitions of migrants, unrecorded migration, etc. In addition to these movements, intra-regional movements of labour toward urban centres are frequently large in relative terms and usually unrecorded.

Further migration waves towards the EU-15 were witnessed following the EU accession of 8 transition countries in May 1, 2004.[2] Bauer and Zimmermann (1999) projected that around a quarter of million people from these eight ETCs will move to the EU-15 annually following their accession (that is 0.05 percent of the population in the EU). Within 10 to 15 years, the stock of emigrants will reach around 3 percent of the population of these 8 ETCs or 0.8 percent of the population of the EU-15. Further migration after this 15 year period was seen as unlikely due to demographic changes in these ETCs (Fassmann and Münz, 2002) and also due to their economic convergence to the EU-15. The evidence after 2004 revealed that this number was generally overestimated as many countries of the EU-15 instituted a transition period before allowing free movement of people (with the exception of the UK, Denmark and Ireland) (Salt, 2005). Some authors (Drinkwater, 2003) criticised the previous forecasts for this discrepancy on the ground that they used previous historical data on migration to predict future flows of migration without taking into consideration changes in economic and political environment following their EU accession and cultural differences that prevent migration.

The orthodox economics of migration attempts to answer the following questions: (i) why labour migrates and (ii) what are the consequences of such decisions? Our discussion below provides answers pertaining to the first question, while in Section 3 we deal with the second question. In general, migration theories are rooted in theories of economic growth where labour

mobility from one sector (low productivity) to another sector (more productive) is seen as an instrument that promotes economic welfare and therefore is socially desirable (Ghatak et al. 1996). Labour moves to take advantage of wage and employment differentials between locations (Harris and Todarro, 1970). Workers are assumed to be rational and forward-looking in their decisions to move. They choose the location that maximises the expected net present value of lifetime earnings, net of the costs of a move. Following Hatton and Williamson (2002), the decision of the individual *i* in the source country *h* to migrate to the destination country *f* can be expressed as:

$$d_i = w_{f\,i} - w_{h\,i} - z_i - c > 0 \quad (1)$$

where w_{fi} and w_{hi} are the expected earnings of the individual in the destination and the source country respectively, z_i is the individual's compensating differential in favour of *h,* and *c* is the direct cost of migration. Thus, the theory predicts that the likelihood of migration increases with the wage in destination country, while it decreases with the wage in home country, compensating differentials in favour of *h* and migration costs. The likelihood of migration declines with age, since for older workers the remaining working life is shorter. In the Harris and Todarro framework, w_{fi} and w_{hi} are weighted by the probability of securing employment abroad (p_{fi}) and at home (p_{hi}) respectively.

In the human capital framework, the wage abroad (w_f) and at home (w_h) depend, among others, on the individual's skill level (s_i) as indicated by Equations (2) and (3), where β_f and β_h are the rate of return to skills abroad and at home respectively:

$$w_{fi} = \alpha_f + ß_f s_i \quad (2)$$
$$w_{hi} = \alpha_h + ß_h s_i \quad (3)$$

Substituting them into Equation (1) we get:

$$d_i = \alpha_f - \alpha_h + (ß_f - ß_h)\, s_i - z_i - c \quad (4)$$

which suggests that migrants are unlikely to be randomly selected from the population with the nature of selection bias being determined by the relative returns to skills. Thus, migration will increase with skill-level (i.e. migrants will be positively selected) if returns to skills are higher in the destination country compared to the source country ($\beta_f > \beta_h$) and vice versa.

This analysis is based on Roy's (1951) model, which predicts that under certain assumptions (such as similar political conditions) the relative payoff to skills across countries determines the skill composition of migrants. Under both positive and negative selection of migrants, the assumption is that skills are sufficiently transferable to allow migrants to eas-

ily integrate at the same occupational and skill level of the labour market in the destination country. The self-selection of migrants may also occur due to migration policies in the destination country (e.g. quotas restricting the number of migrants or selecting immigrants only if they have certain skills).

Given that migration is costly, easing financial constraints is expected to induce more migration. The likelihood of migration increases with the stock of previous migrants that are living in the destination country by affecting the destination-specific utility, reducing the costs of the move and the uncertainty associated with migration (Bauer et al., 2000). This is referred to as the network or friends and relatives effects of migration.

The new economics of migration emphasises the role of the household in the decision to migrate (Mincer, 1978; Stark, 1991; Funkhouser, 1995; Rodrigez and Tiongson, 2001; Rapoport and Docquier, 2005). Migrants and non-migrants jointly decide about migration and share the costs and returns (i.e. remittances) of migration according to an implicit contractual arrangement. Migration of a household member is likely to have implications for the entire household and this theory suggests that migration takes place due to the household allocating its labour force so as to reduce (or diversify) the risk to its incomes as predicted by portfolio investment theory. Incomes from migrant members abroad ensure a smoothing of household consumption over time. Thus, the migration decision is not driven by maximising an individual's lifetime earnings, but by whether the household as a whole is better off.

A summary of empirical evidence on determinants of migration is presented in Table 1. There is limited evidence for transition economies, therefore we show evidence for other countries as well. In line with the theoretical predictions, most studies find that young people tend to migrate more than older ones. Migration is found to increase with education pointing to the positive selection of migrants. This is thought to be due to the more educated individuals facing a lower risk of unemployment and lower costs associated with migration (Basker, 2003; Drinkwater, 2003; Kennan and Walker, 2003). The more educated are more able to process information and also more likely to have the means to finance migration costs. A number of studies find that migrants do not predominantly come from the poor households (Funkhouser, 1992; Gërmenji and Swinnen, 2005; Konica and Filer, 2005) suggesting that easing financial constraints increase migration. As expected, migration is found to increase with migration networks (Bauer et al., 2000; Epstein and Gang, 2004).

The macroeconomic evidence is largely in line with that presented abo-

Table 1: A summary of empirical findings on determinants of migration decisions

Author(s) and country	Explores	Explanatory variables	Main findings*
Gerber (2005) *Russia*	Determinants of internal migration 1985-2001	Individual and contextual characteristics	- Younger, married, more educated and unemployed are more likely to migrate compared to their respective counterparts - Rural residents are less mobile than urban residents
Germenji and Swinnen (2005) *Albania*	Determinants of being an emigrant	Individual, household and contextual characteristics	- Younger, male, more educated and single individuals are more likely to emigrate compared to their respective counterparts - Emigrants are not likely to come from poor households - Positive effect of migration networks
Konica and Filer (2005) *Albania*	Determinants of being an emigrant	Individual, household and contextual characteristics	- Emigration increases with age (but at a decreasing rate) and with household size - Emigration decreases with household income - Males tend to emigrate more - Being married has negative (positive) effect on emigration of males (females)
Epstein and Gang (2004) *Hungary*	Willingness to emigrate in 1993/94	Household characteristics, migration networks and costs of migration	- Younger and more educated people are willing to emigrate more - Positive effect of migration networks - Negative effect of costs of migration
Basker (2003) *USA*	Migration of workers	Individual characteristics	- Migrate increases with education
Drinkwater (2003) *10 ETCs countries*	Willingness to emigrate from ETCs to EU	Individual and contextual characteristics	- The more educated persons and those speaking a foreign language are more willing to emigrate - Increase in a country's GDP per capita reduces the willingness to emigrate
Kennan and Walker (2003) *USA*	The role of expected income on migration decisions (1979-1992)	Individual and contextual characteristics	- Positive effect of income differentials on interstate migration for high school educated white men.
Papapanagos and Sanfey (2001) *Albania*	Profile of potential emigrants	Personal, household and contextual characteristics	- Males and more educated and those with certain occupations tend to emigrate more - Intention to emigrate decreases with age - No significant effect of household income
Bauer et al. (2000) *Mexico*	The effect of migration networks on migrants' location choice	Unemployment rate, migration network and costs of migration	- Positive effects of migration networks. But, as the share of the migrant population at a certain location is too large, then there are negative size effects
Funkhouser (1992) *Nicaragua*	Determinants of being an emigrant	Personal and household characteristics	- Emigration increases with age, education, household incomes and household size - Males are more likely to emigrate

* All these findings are statistically significant unless other is stated.

ve. Mayda (2005), investigating bilateral migrant flows in 14 OECD countries, finds that a country's emigration rate increases with its share of young population. Adams and Page (2003) find for 74 developing countries that a country's emigration rate decreases with its distance to a major labour-receiving region (USA and European OECD countries). They find an inverted U-shaped curve regarding the effect of country's per capita income on its emigration rate. Similar findings are reported by Rotte and Vogler (1998) from the analysis of the determinants of potential migration from 86 African and Asian countries to Germany during 1981-1995. They also find evidence

of the importance of the political situation in the sending countries and of network effects.

3. The economic consequences of emigration

For the origin country, emigration of its labour force has two main implications. First, emigration changes the size and may also change the skill composition of the labour force. Second, emigration through remittances affects aggregate spending and investment in the local economy, the labour market behaviour of non-migrant household members and produces other second and third round effect in the economy. In this section we analyse these effects of emigration.

3.1. Brain drain and brain gain consequences of migration

When a country experiences the emigration of highly skilled workers then it faces a 'brain drain', an issue that has generated debates among both academics and policy-makers regarding its effect on a country's economic prospects. Adams (2003) analysing 24 labour exporting countries finds that emigrants disproportionately represent the elite of the population, though in most countries it does not involve more than 10% of population with higher education. Docquier et al. (2005), investigating the brain drain in Latin America and the Caribbean, Asia and Africa, find that some countries suffer from high emigration rates in general, while others experience a positive selection of emigrants (i.e. emigrants are more educated than non-migrants). From the limited evidence from transition economies, Gëdeshi (2006) reports that during 1991-2000, each year 8-10% of lecturers and research workers at the universities and research institutions in Albania emigrated. This trend decreased after 2000 and in 2005, it was about 2%.

Conventional wisdom has seen the emigration of skilled workers as damaging the country of emigration. It affects the income level and long-run economic growth and makes the country less attractive to foreign direct investment. Emigration of highly skilled workers increases the fiscal burden of those left behind, because the former are typically net contributors to the government budget. Skilled and unskilled workers are frequently complements in the production process and emigration of the skilled workers may decrease the productivity of the remaining unskilled labour (Docquier and Rapoport, 2004).

Recently, a new 'brain drain – brain gain' literature has emerged (Stark et al., 1998; Vidal, 1998; Stark, 2004) that contradicts this view on the ground that emigration of skilled workers contributes to more investment in human capital by the remaining non-migrant workers with a net brain gain. It argues that an economy open to emi-

gration provides workers with more opportunities, relative to when the economy is closed, that increase the prospective returns to human capital.

Schiff (2005) contends that this new 'brain drain – brain gain' literature does not consider various negative effects of the brain drain on human capital, welfare and growth. Under a partial equilibrium model, he argues that emigration of low skilled workers is significant as well, because their expected wage is higher under migration just as it is the case for the high-skilled workers. Hence, it is less likely that additional domestic human capital formation will take place. Under a general-equilibrium model, Schiff argues that if the demand for education in the origin country increases (induced by the brain drain), then this will require more funds from the government (assuming that education is at least partly publicly provided). In such a case, the government may need to increase taxes, reduce educational subsidies or reduce other public expenditures, which all result in a smaller brain gain. Similarly, Lundborg and Rechea (2002) and Lundborg (2004) add that an outflow of low-skilled workers lowers their supply. This puts downward pressure on the relative wage of the high-skilled workers, which in turn reduces the incentives for additional human capital accumulation among non-migrants resulting in a negative brain gain. In addition, in the case of high skilled migration, it often happens that immigrants are employed in jobs in the host countries for which they are overqualified. This is described as a 'brain waste' and is not likely to contribute to additional human capital investment by the remaining non-migrant workers. The lack of accurate and systematic data does not yet allow a full empirical assessment of the relative importance of these views on the effect of migration on the human capital formation of the non-migrant workers.

A topic related to the issue of the 'brain drain – brain gain' that is neglected in the literature is the return migration and its effect on the skills of the workforce in the country of origin. This is important from the perspective of transition economies where migration is frequently of a seasonal nature or for a short period only, where the returned migrants bring back the experience gained abroad that is diffused in the local economy. For 11 ETCs, León-Ledesma and Piracha (2004) find that returned migrants have had a significant positive impact on aggregate labour productivity suggesting that temporary migration has contributed to acquiring new skills. Co et al. (1998) estimate earnings equations for men in Hungary and find a wage premium for those who have been abroad suggesting that emigration has contributed to enhancing their human capital.

De Coulon and Piracha (2005) find for returned migrants in Albanian that the benefits of migration translate into access to better jobs. However, these findings may suffer from a sample selection problem, since the returned migrants might not be randomly selected among the pool of emigrants (i.e. they might be more productive in any case). In addition, there is also a selection bias if emigrants are on average more productive than other non-migrant members of the labour force.

3.2. Remittances and their economic impacts

In this section we first provide data on the level of international remittances (worldwide and for transition economies in particular) and then examine their economic effects on the receiving countries.

For many transition and developing economies, remittances (defined as the money and goods that emigrants send to their households residing in the country of origin) are the second largest source of external finance after foreign direct investments (Ratha, 2004; Schiopu and Siegfried; 2006). Worldwide, the World Bank (2006) estimates that international remittances rose from US$87 billion in 2000 to US$167 billion in 2005 with the actual size including unrecorded transfers likely to be higher. For selected ETCs in 1999, León-Ledesma and Piracha (2004) estimate remittances to be around US$7 billion. Based on the World Bank Indicators database, in 2004 international remittances received by 24 transition economies were estimated at US$18.6 billion (Table 2). Similar estimates for transition economies are provided by Mansoor and Quillin (2007).

More importantly, these remittance flows are found to be less volatile than foreign direct investments or exports (Schrooter, 2005). In a number of countries, the ratio of remittances to GDP (column 6 of Table 2) is high and affects the level of gross national product directly as well as through providing an important source of foreign exchange. The ratios for transition economies are comparable to that found in developing countries presented in Table A2 in Appendix.

The macroeconomic impact of remittances depends partly on whether they are used for consumption (and whether this consumption is on goods produced domestically or imported goods) or investment purposes. If they are used for investment purposes then they are expected to shift the 'production frontier' of the receiving countries. Nevertheless, as Adams (2005) argues, even if remittances are used for consumption purposes, they may free other sources of finance that can be used for investment purposes. The increased consumption due to remittances is in itself productive for the economy, because it has important multiplier effects on wages, em-

Table 2: International remittances in transition economies in million of US$ (2000-2004)

Countries *	Remittances in million of US$					Remittances/GDP** in 2004
	2000	2001	2002	2003	2004	
	[1]	[2]	[3]	[4]	[5]	[6]
Moldova	179	243	323	486	703	0.271
Bosnia & Herzegovina	1,595	1,521	1,526	1,745	1,824	0.214
Serbia & Montenegro	1,132	1,698	2,089	2,661	4,129	0.172
Tajikistan	n.a.	n.a.	79	146	252	0.122
Albania	598	699	734	889	1,160	0.117
Armenia	87	94	131	168	336	0.109
Kyrgyz Republic	9	11	37	78	189	0.086
Georgia	274	181	230	239	303	0.058
Macedonia	81	73	106	174	213	0.040
Croatia	641	747	885	1,085	1,222	0.036
Azerbaijan	57	104	182	171	228	0.027
Latvia	72	112	138	173	230	0.017
Lithuania	50	79	109	115	325	0.015
Estonia	3	9	17	49	164	0.015
Poland	1,726	1,995	1,989	2,655	2,710	0.011
Belarus	139	149	140	222	244	0.011
Slovakia	18	24	24	425	425	0.010
Ukraine	33	141	209	330	411	0.006
Russia	1,275	1,403	1,359	1,453	2,668	0.005
Bulgaria	58	71	72	67	103	0.004
Czech Republic	297	257	334	498	454	0.004
Kazakhstan	122	171	205	148	167	0.004
Hungary	281	296	279	295	307	0.003
Romania	96	116	143	124	132	0.002
Total	8,823	10,194	11,340	14,396	18,899	-

Source: World Development Indicators database, available from http://devdata.worldbank.org/data-query/, date accessed *20 June 2006*; * The order of countries is by the ratio of remittances/ GDP presented in column 6; ** Own calculations using data from the World Development Indicators database.

ployment and business opportunities (which again depend on whether the increased spending is on imported or domestically produced goods).

For 11 ETCs countries for 1990-1999, Leon-Ledesma and Piracha (2004) find a positive effect of remittances on aggregate output through financing investment and entrepreneurial activities. This effect is expected to be of importance in the context of transition economies where the credit market is underdeveloped or the costs of raising new finance are relatively high. Catrinescu et al. (2006) contend that although remittances have driven macroeconomic growth in a number of receiving countries by increasing national disposable incomes, they have also produced negative effects through appreciating the real exchange rate that affects the tradable sector. Schrooter (2005) argues that since remittances enable the economy to spend more than it produces then they might encourage 'Dutch Disease' and more migration. This increases the dependency of the economy on these

financial flows. While Mansoor and Quillin (2007) find that the benefits from remittances for receiving countries partly depend on the quality of economic, social and political institutions and policies in those countries.

Remittances are found to affect human capital formation in the receiving countries through easing the liquidity constraints on educational spending by households. Hanson and Woodruff (2003) find for Mexico that children in households with a migrant member complete significantly more years of schooling. Adams (2005) finds for Guatemala that, at the margin, households receiving remittances spend more on education and that most of these increments to expenditure go into post-compulsory education where enrolment is more prone to financial constraints.

Remittances affect the labour supply of non-migrant household members through two different channels. First, based on the neoclassical model of labour-leisure choice, remittances shift the budget line upwards, increase the reservation wage and consequently decrease labour supply of non-migrant household members (assuming that leisure is a normal good). Evidence for this is provided by Funkhosuer (1992) for Nicaragua, Rodrigez and Tiongson (2001) for the Philippines, Konica and Filer (2005) for Albania and Amuedo-Dorantes and Pozo (2006) for Mexico. Second, in line with macroeconomic evidence, remittances increase the propensity of some non-migrant household members (males in particular) to engage in self-employment through financing entrepreneurial projects. This may be particularly important for transition and developing economies where the credit market is underdeveloped. Supportive evidence for this is provided by Funkhosuer (1992), Konica and Filer (2005) and Amuedo-Dorantes and Pozo (2006).

To conclude, emigration causes an initial brain drain since it is the more educated persons that emigrate. There are conflicting views whether the emigration of high-skilled workers induces additional human capital formation among non-migrants that results in a positive net brain gain. Remittances in many transition countries affect their macroeconomic aggregates (through affecting consumption and investment) and provide additional household incomes that ease liquidity constraints on spending on education, but they also affect the labour market behaviour of non-migrant members in two opposing ways.

4. Emigrants from Kosova, their remittances and brain drain issue

In this section, we provide estimates of emigrants from Kosova and their remittances (Section 4.1). We use the Riinvest HLFS data to comment on the characteristics of emigrants and the brain drain issue (Section 4.2). This

informs our empirical analysis on emigration.

4.1. Estimates on emigrants and their remittances

As a consequence of its young population, persistent high unemployment and political unrest, especially during the 1980s and the 1990s, Kosova has experienced both temporary and permanent mass emigration. During the socialist era in the late 1960s, many workers from Yugoslavia emigrated to Western Europe (West Germany in particular), which at that time experienced a shortage of labour (Zimmermann, 1995). Moalla-Fetini et al. (2005) report that in 1973 this number reached 1.1 million (equivalent to 12% of Yugoslav's labour force). Emigration from Kosova broadly resembled that of Yugoslavia. In 1981, there were some 27.000 emigrants from Kosova, while between 1981 and 1987 another 50.000 people emigrated.

Further large migration waves were witnessed following the break up of the former Socialist Yugoslavia (after 1989) and the poor economic prospects that prevailed during the 1990s. There are no official data on emigrants either during the 1990s or after the war of 1999. Bush (2004) uses data from the Demographic and Health Survey (DHS) conducted by the Statistical Office of Kosova (SOK) in 2003 and data from the destination countries to estimate the number of emigrants in the range of 300-500.000. Moalla-Fetini et al. (2005) estimate this number at approximately 470.000 (that is around 20% of the total population estimated at 2.4 million). Among transition economies, only Albania has had such a high emigration rate.

Regarding remittances, Bush (2004) using DHS data estimates them at €174 million annually. Moalla-Fetini et al. (2005) argue that this is an underestimation because of the following: (i) the household survey fails to capture infrequent remittances; (ii) households may be hesitant to report the full amount of remittances out of fear of drawing attention to their own finances; and (iii) households may be reluctant to report remittances from household members working abroad illegally. They estimate annual remittances at €241 million. This is 13.4% of the 2003 estimated GDP (€1,797 million) and approximately 25% of imports in that year (€968.5 million).

From the Riinvest HLFS conducted in December 2002, 254 (20%) of 1,252 households in the sample receive remittances (defined as 'money received from household members working abroad'). The average amount per month for those households who receive remittances is €302. If distributed across all households then on average each household in the sample receives remittances of €61 per month. As such, remittances constitute 14% of the household monthly incomes of €428.

They are the second largest income source after income from salaries. Assuming the number of households in Kosova is 320,000, then we estimate that annual remittances amount to €234 million that is close to the estimates by Moalla-Fetini et al. (2005).

4.2. Characteristics of emigrants and the brain drain issue

To examine the characteristics of emigrants and the extent of brain drain in Kosova we use the Riinvest HLFS data. The question asked to the household head[3] in the interview was to provide details of the household members abroad, with some 20% of 1,252 households in the sample responding that they have at least one member abroad. Out of 8,552 individuals in the sample, some 576 are emigrants (6.7%). Note that when an entire household has moved abroad then it would not be included in the sample. This is one reason why we observe only 6.7% of population as emigrants compared to 20% that is estimated by Moalla-Fetini et al. (2005) and this is a main deficiency of the Riinvest HLFS data with regard to emigration and remittances.

The characteristics of these emigrants are presented in column 1 of Table 3, while in columns 2 and 3 we show data for non-migrants and the total population respectively. This data indicates that emigrants are disproportionately of working age, males, from rural areas and with upper-secondary education. From column 5, almost all of these differences are statistically significant. From column 4, the emigration rate of males is almost twice that of females (8.9 and 4.6% respectively).

As expected, there are large employment and wage differentials between emigrants and non-migrants. About 61% of emigrants aged 16-64 are working compared to 30% of non-emigrants. The average monthly wage for emigrants is six times higher than for non-migrants (€1,332 compared to €215). More than two-thirds of emigrants are residing in Germany and Switzerland. As we discussed above, the first emigrants during the 1970s went to these countries suggesting that migration networks contributed to the concentration of emigrants in these two countries. Some 49% of emigrants aged 16 and over remit and amongst these the average amount remitted is €347 per month.

The majority of the current emigrants (58%) emigrated during the 1990s. The large-scale emigration in Kosova during the 1990s that followed the break up of the socialism is in line with that witnessed in other former-socialist countries (e.g. Albania). However, in the case of Kosova, emigration may also partly be attributed to political reasons related to the repression by the Serbian regime of the Albanian majority population in Kosova. After the war of 1999, there has

Table 3: The characteristic of the sample of emigrants from Kosova based on the Riinvest HLFS (2002) (all data is in proportions unless otherwise is stated)

	Emigrants (μ_1)	Non-migrants (μ_2)	Total population	Emigration rate	Test results: * H_0: $\mu_1=\mu_2$
	[1]	[2]	[3]	[4]	[5]
Total in the sample	576	7.976	8.552	0.067	-
Gender					
Males	0.663	0.492	0.503	0.089	Reiected
Females	0.337	0.508	0.497	0.046	-
Residence in Kosova					
Urban residents	0.35	0.446	0.44	0.054	Reiected
Rural residents	0.65	0.554	0.56	0.078	-
Age (average years)	26.37	27.39	27.32	-	Not reiected
Age group					
0-15	0.22	0.33	0.32	0.05	Reiected
16-24	0.18	0.19	0.19	0.06	Not reiected
25-34	0.37	0.15	0.17	0.15	Reiected
35-44	0.15	0.12	0.12	0.08	Not reiected**
45-54	0.05	0.09	0.09	0.04	Reiected
55-64	0.03	0.06	0.06	0.03	Reiected
65+	0.01	0.05	0.05	0.01	Reiected
0-15	0.22	0.33	0.32	0.05	-
16-64	0.77	0.62	0.63	0.08	Reiected
Over 64	0.01	0.05	0.05	0.01	-
Education level (age 25+)					
Less than upper-secondary	0.277	0.489	0.471	0.049	Reiected
Upper-secondary education	0.612	0.386	0.405	0.126	Reiected
Higher education	0.111	0.125	0.124	0.074	Not reiected
Average years of education (age 25+)	11.08	9.92	10.02	-	Reiected
Occupation for those with higher education					
Teacher	0.07	0.18	0.17	0.03	-
Economist	0.13	0.17	0.16	0.06	-
Lawyer	0.02	0.06	0.05	0.03	-
Engineer	0.24	0.12	0.13	0.13	-
Doctor	0.11	0.06	0.06	0.13	-
Linguist	0.07	0.05	0.05	0.09	-
Other	0.37	0.36	0.36	0.07	-
In employment (age 16-64)	0.61	0.30	-	-	-
Earnings in €/month for those employed	1.332	215	-	-	-
Country of emigration					
Germany	0.43	-	-	-	-
Switzerland	0.22	-	-	-	-
Other EU countries	0.06	-	-	-	-
USA and Canada	0.04	-	-	-	-
Other former Yugoslav countries	0.04	-	-	-	-
All other countries	0.22	-	-	-	-
Year of emigration for the first time					
1970-1979	0.03	-	-	-	-
1980-1989	0.12	-	-	-	-
1990-1999	0.58	-	-	-	-
2000-2002	0.10	-	-	-	-
No answer	0.18	-	-	-	-
Remit (age 16+)					
Yes	0.49	-	-	-	-
No	0.51	-	-	-	-
Average amount remitted in €/month for those emigrants who remit (age 16+)	347	-	-	-	-
Average amount remitted in €/month for all emigrants (age 16+)	170	-	-	-	-

Source of data: Riinvest HLFS of December 2002; * Indicate whether H_o: $\mu_1=\mu_2$ can be rejection at 5% level of significance; ** H_o can be rejected at 10 percent.

been lower new emigration, with only 10% of those currently abroad having emigrated during this period.

Regarding the brain drain, we find that 7.4% of our sample aged 25 and over with higher education are emigrants. This is comparable to that found in other countries, but note that our data does not include permanent emigrants and therefore provides only the lower bound of the brain drain in Kosova. The brain drain is more pro-

nounced in some occupations. For instance, 13% of engineers and doctors in the sample have emigrated compared to only 3% of lawyers and 6% economists.

In Table 4, we quantify the brain drain assuming a population of 2.4 million. Based on the distribution of population by age from the Riinvest HLFS, the population of age 25 and over is estimated at 1.176 million. Following this approach, in column 4 we find that there are around 11 thousand emigrants with higher education, which is equivalent to four years output from higher education in Kosova. Note also that the emigration rate of individuals with upper-secondary education is almost twice the overall emigration rate.

To summarise, overall it is estimated that some 20% of population has emigrated. From the household level data, 20% of households in Kosova have at least one member abroad that we defined as temporary emigrants. Emigrants are disproportionately males, from rural areas and with upper-secondary education. The brain drain is comparable to that found in other economies (in the order of 10% of individuals with higher education), but our estimates does not include permanent emigrants and therefore underestimate the true extent of brain drain in Kosova. Emigration of prime age population has decreased the net population growth from 46,000 persons per year in the early 1980s to 36,000 in the 1990s (Moalla-Fetini et al., 2005). Remittances that emigrants send home are as large at 13.4% of GDP, ranking Kosova among the top five in terms of the ratio of remittances to GDP in transition countries (see Table 2). They are the second largest source of household incomes (on average 14% of household incomes are from remittances).

Table 4: Estimates of the brain drain in Kosova

	Proportion in the total population *	Population	Emigration rate*	Number of emigrants
	[1]	[2]	[3]	[4]=[2]x[3]
Total population	1.000	2,400,000**	0.067	160,800
Population of age 25+	0.490	1,176,000 ***	0.083	97,608
Education level of the population aged 25+				
Less than upper-secondary education	0.471	553,896 ***	0.049	27,141
Upper-secondary education	0.405	476,280 ***	0.126	60,011
Higher education	0.124	145,824 ***	0.074	10,791

Source of data: * Riinvest HLFS of December 2002; ** Estimated by Moalla-Fetini et al. (2005) using the size of the population from the last census of 1981 and assuming a natural growth rate of 2 percent for Albanians and 1.2% for other ethnic groups living in Kosova. This estimate includes emigrants.
*** Own calculations by multiplying the respective proportion in the population from column 1 with the total number of population.

5. Determinants of emigration from Kosova

Utilising the theory of migration summarised in Section 2, we now use the Riinvest HLFS data to investigate how personal, household and other contextual characteristics influence the probability of being emigrant. In Section 5.1, we explain the estimation strategy and the choice of explanatory variables, while in Section 5.2 we discuss our main findings. In addition, in Section 5.3 acknowledging the observed large employment differentials between emigrants and non-migrants, we examine the change in employment incidence if one moves abroad.

5.1. Estimation strategy and the explanatory variables

In the Riinvest HLFS, we observe household members that are abroad at the time of the survey. Based on the discussion on the theory of migration in Section 2 above, a person emigrates *(E_i=1)* if the expected value of being abroad *(V_e)* net of the costs of the move *(c)* exceeds the expected value of staying *(V_s)*, such that:

$$E_i = \begin{cases} 1 & \text{if} \quad V_e - c > V_s \\ 0 & \text{if} \quad V_e - c \leq V_s \end{cases}$$

Therefore, the dependent variable is discrete, taking values of 1 if abroad and 0 if not. We employ the probit model to estimate:

$$\Pr(E_i=1 \mid A_i, H_i, Z_i, \varepsilon_i) \qquad (6)$$

where A_i, H_i and Z_i stand for personal, household and contextual characteristics respectively and ε_i is the error term.

The three sets of explanatory variables are identified in Table 5. The likelihood of emigrating is expected to decrease with age. For the more educated persons to be more likely to emigrate then: (i) returns to education abroad should be higher than at home and/or (ii) following our discussion in Section 2, emigration costs and risk should decrease with education. In addition, the more educated are also more likely to have the means to finance migration costs. The dummy for the marital status controls for the effect of family obligations, culture and attitudes toward emigration. Since temporary emigration is expected to be for employment purposes then marital status may also account for family arrangements regarding employment. In general, family ties may prevent mothers undertaking temporary migration and deter that of fathers (Mincer, 1978), since a married person may have to take care of their children and taking them abroad involves monetary and non-monetary costs.

Mora and Taylor (2006) argue the need to include household variables as required in the new economics of migration. We expect that those from large households are more likely to

Table 5: The explanatory variables in the probit equation for the determinants of emigration decisions

Explanatory variables	Definition
Personal characteristics	
Age	Age of the person
Education	Dummies: less than upper-secondary (the omitted), upper-secondary and higher
Marital status	Dummy=1 if married, 0 otherwise
Household characteristics	
Household size	Number of household members
Household incomes*	€/month per capita without including remittances
Household incomes squared	€/month per capita without including remittances squared
Contextual characteristics	
Residence	Dummy=1 if the person is from urban areas, 0 if from rural areas
Regional dummies	Dummies for the 7 main regions (omitted dummy for the Prishtina region)

* Without including remittances.

emigrate because other household members can take care of children and spouses left behind. Large households in Kosova are characterised by overlapping generations living together. The likelihood of emigration is expected to decrease with household incomes. However, given that emigration involves costs, then higher household incomes provide the financial means for covering the costs of the move giving a non-linear relationship between the likelihood of emigration and household incomes. We model for this by including the squared term of household incomes.

Since formal full-time jobs are more available in urban areas, we expect that rural residents are more likely to emigrate. In addition, agriculture is an important economic activity for rural residents and incomes from this activity are more uncertain which is expected to further increase the likelihood of emigrating for rural residents. Finally, in line with the empirical analysis of the determinants of migration summarised in Section 2, regional dummies account for any region-specific effect in the emigration decision such as employment or wage differentials between regions. Note that, unlike other transitional economies, emigration in Kosova did exist before the market system. This suggests that some network effects might be in place increasing the propensity to emigrate of individuals from regions that are characterised by a higher previous emigration rate (such as the region of Gjilan). Therefore, in our case regional dummies may also account for this effect.

We limit the sample to individuals aged 16-64 because we are interested in the emigration decisions of the working age population. We also exclude those in full-time education and end up with 4,891 observations (of whom 431 or 8.8 percent are emigrants). Table A3 in Appendix gives the characteristics of this sample. We run separate regressions for males and

females motivated by their large observed differences in emigration patterns and by our analysis above. There are insufficient observations (especially for emigrants) to allow for different slope coefficients between urban and rural residents.

5.2. Findings on the determinants of emigration

The findings are presented in columns 1 and 2 of Table 6. In line with the theoretical predictions, for both genders the estimates suggest that the likelihood of being emigrant decreases with age ceteris paribus. For females, it increases with education. For males, the coefficient on upper-secondary education is significant while that on higher education is not though it has the expected positive sign. The coefficients on the education dummies for males are jointly significant ($\chi^2_{(2)}$=11.02, p=0.0037).

The estimates suggest that being married has a negative effect on the likelihood of being emigrant for males and positive effect for females. For the latter, it might be that when the female emigrates she often joins her husband abroad (i.e. she does not emigrate alone, which reflects the traditional nature of the Kosovan society). Similar findings regarding marital status are reported by Konica and Filer (2005) for Albania.

Consistent with our prior expectations, for both genders the estimates indicate that the likelihood of being emigrant increases with household size. Regarding household incomes, we find evidence of a non-linear relationship between household incomes and the probability of being emigrant, but the coefficients have the opposite signs to what we expected. However, the size of the coefficient on the squared term is small.

The estimates suggest that there is no significant difference in the probability of being emigrant between urban and rural residents, though as expected for both genders the coefficient has the negative sign. The coefficients on the dummy for the region of Gjilan is significant and positive for males while for females it is close to being significant at 5%. This region is known for its high emigration of males since the early 1970s, suggesting a network effect operating that lowers the costs of emigration for residents of this region (e.g. lower costs of job search upon emigration, costs of settlement etc.). The emigration rate for this region is 9.7% compared to the national average of 6.7%. However, in the case of females, all 6 coefficients on regional dummies are jointly insignificant ($\chi^2_{(6)}$=7.93, p=0.2435). For males, 3 of them are significant at the conventional 5% level, and they are jointly significant ($\chi^2_{(6)}$=20.98, p=0.0018).

In order to consider the size of the coefficients, we proceed by calculating the probability of being an emigrant for

a male and a female with some specific characteristics. As indicated in panel *A* of Table 7, this probability is estimated at 0.09 for males and 0.01 for females.

Increasing age by 10 years but keeping other characteristics the same, decreases the estimated probability by 1 percentage point for males and by 0.4 percentage point for females. If with upper-secondary education then the likelihood of being emigrant increases by 5 percentage points for males and by 2 percentage points for females. Being married decreases this probability for males by 3 percentage points, while for females it increases by 2 percentage points. Increasing the household size from 8-12 members increases the probability of being emigrant for males by 2 percentage points and by 0.5 percentage point for females. Finally, doubling household income lowers the probability of being an emigrant by 4 percentage points for males and by 0.06 percentage point for females.

5.1. Employment opportunities and emigration decisions

In Section 4, we found that 61% of emigrants aged 16-64 are employed as compared to 30% of non-migrants. Such a large difference in employment incidence is expected to play a key role in emigration decisions in the case of Kosova. In this section, we investigate the change in the probability of being employed when a person emigrates, other things being constant. Since the Riinvest HLFS provides data on the employment status of emigrants and non-migrants, we pool them together and estimate a probit model where

Table 7: The estimated probability of being emigrant for certain values of the explanatory variables

	Male	Female
	[1]	[3]
A. The probability of being emigrant if: - age 35.48 (sample average), - with less than upper-secondary education, - non-married, - 8 members in the household (sample average) - household incomes per capita net or remittances (56 €/month, sample average), - from urban areas, - from the region of Prishtina.	0.09	0.008
B. The probability of being an emigrant in panel A, but now:		
Age 25	0.10	0.012
Age 45	0.08	0.006
With upper-secondary education	0.14	0.030
With higher education	0.12	0.041
Married	0.06	0.033
12 members in the household	0.11	0.014
Household incomes per capita (112 €/month)	0.05	0.004
Household incomes per capita (28 €/month)	0.12	0.012
From urban areas	0.08	0.006
From the region of Gjilan	0.13	0.017

the dependent variable equals 1 if the person is employed in Kosova (in the case of non-migrants) or abroad (in the case of emigrants) and 0 if not. We use the same sample as in the previous estimations.

The explanatory variable that is of interest is the dummy that equals 1 if emigrant and 0 if non-migrant. Other explanatory variables include education dummies that proxy for the potential wage. Age and age squared account for work experience and also the changing attitudes toward work with age. Finally, marital status (dummy that equals 1 if married) controls for the effect of family obligations as well as culture, attitudes and family arrangements regarding employment.

Findings are presented in columns 1 and 2 of Table 8, for males and females respectively. The coefficient on education dummies and age and age squared tell the expected story that the probability of being employed increases with education and with age (but at a decreasing rate). As expected, the coefficient on the dummy variable for emigrants is positive and highly statistically significant for both genders indicating an increase in the likelihood of being employed if abroad. This is expected to be a key determinant in emigration decisions.

In order to examine the practical significance of being abroad on the probability of being employed we work out this probability for a person with some specific characteristics. From Table 9, for a male (female) who is 35 years old, with less than upper-secondary education, married and non-migrant, the probability of being employed is 0.49 (0.09). For a similar male (female)

Table 8: Estimates from the probit model on the probability of being employed
The dependent variable equals 1 if employed (in Kosova for non-migrants and abroad for emigrants) and 0 if not

Explanatory variables	Males		Females	
	Coeff.	z	Coeff.	z
Constant	-2.999***	-10.86	-3.503***	-9.96
Age	0.130***	7.98	0.118***	5.79
Age squared	-0.002***	-7.88	-0.001***	-5.57
Upper-secondary education	0.399***	6.21	0.766***	10.64
Higher education	0.897***	9.61	1.489***	12.53
Married	0.334***	4.42	-0.173**	-2.15
Emigrant	0.581***	6.95	0.737***	6.04
Log likelihood	-1499.06		-927.96	
Likelihood Ratio test, $\chi^2_{(6)}$	423.17		340.12	
Pseudo R-squared	0.124		0.155	
Mean dependent variable	0.517		0.169	
Observations	2,470		2,421	

***, **, * significant coefficient at 1, 5 and 10 percent respectively.

but who is abroad this probability is 0.71 (0.28). Note that for females there is a large increase in the likelihood of being employed if abroad, at each level of education. This may indicate that the existing low employment rate for females in Kosova are not primarily due to attitudes and family arrangements regarding employment, but rather to depressed conditions in the Kosovan labour market.

To summarise, our findings are largely consistent with the theory of migration, and results found for other countries in that the likelihood of emigration decreases with age and generally increases with education. The estimates suggest that marital status affects negatively (positively) the likelihood of being emigrant for males (females) and that this likelihood increases with household size. Unlike evidence from other countries, our estimates indicate that the likelihood of being an emigrant decreases with household incomes. We also find evidence that suggests positive network effects. The finding of a sizeable increase in the probability of being employed for a person who is abroad compared to an otherwise similar person who is Kosova is consistent with our explanation of the large temporary emigration from Kosova for employment purposes.

6. Conclusions

In this paper, we provided evidence on emigration and remittances in Kosova that is important in several aspects. These issues in Kosova have not been explored in such depth before and our analysis sets the stage for the future research. Our literature review also found that such evidence for transition economies is very limited. Therefore, our analysis adds to the knowledge of the determinants of emigration decisions and remittances in transition economies.

The available data suggest that compared to other transition economies, Kosova ranks highly both with regard to the rate of emigration of the labour force and the level of remittances to GDP. Aggregate estimates suggest that some 20% of population is abroad, while the household level data indicate that around 20% of households have at least one member abroad. Compared

Table 9: The estimated probability of being employed for emigrants and non-emigrants

	Non-emigrant		Emigrant	
	Male	Female	Male	Female
	[1]	[2]	[3]	[4]
The probability of being employed if age 35, married and with:				
Less than upper-secondary education	0.490	0.092	0.710	0.276
Upper-secondary education	0.645	0.286	0.830	0.568
Higher education	0.808	0.563	0.927	0.815

to other transition economies, only Albania has such a high emigration rate. From this perspective, emigration has an important affect on the size of the domestic labour force and the level of household spending and is an important element of any labour market analysis in Kosova.

Our estimates on the determinants of emigration decisions are largely in line with those found elsewhere in transition and developing economies. The estimates suggested that the likelihood of emigration decreases with age and increases with education and household size. We also found some indirect evidence for the positive effect of emigration networks. Unlike the evidence elsewhere, our estimates suggested that emigration decreases with household income. Marital status is found to affect negatively (positively) the likelihood of being an emigrant for males (females). In addition to wage differentials between home and abroad, emigration decisions are expected to be driven by the perceived higher chances of employment upon emigration. This view is supported by the large increase in the probability of being employed if the person is abroad compared to an otherwise similar person in Kosova.

Based on our estimations, some 7.4% (around 11,000) of individuals with higher education are abroad which is equivalent to four years output from higher education in Kosova. This in line with that found in other developing countries, but note that our estimates do not include permanent emigrants and therefore underestimate the brain drain in Kosova. Does this brain drain contribute to a new brain gain? The evidence for Kosova suggests that this is not likely to be the case. From the Mincerian wage equation for emigrants, we found no evidence that education (and experience) obtained in Kosova is rewarded in the foreign labour market. Therefore, there are few incentives for the non-migrant workers to accumulate more human capital than in the absence of the possibility to emigrate. This has implications for the reform of the education system in Kosova. Remittances that these emigrants send home are the second largest source of household incomes (after labour incomes).

Notes

1. With migration, we refer to international migration. However, most of the discussion in this paper applies to internal (regional) migration as well.
2. As indicated in Paper 2, these countries are: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. As of January 1, 2007, Bulgaria and Rumania became new members of the EU.
3. In the Riinvest HLFS in 95% of cases it was the head of the household that was interviewed who provided data for all household members, which suggests that the responses were fairly accurate.

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