Southeast European and Black Sea Studies

Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713634533

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Online publication date: 17 December 2009

To cite this Article Hoti, Avdullah(2009) 'Determinants of emigration and its economic consequences: evidence from Kosova', Southeast European and Black Sea Studies, 9: 4, 435 — 458
To link to this Article DOI: 10.1080/14683850903314931
URL: http://dx.doi.org/10.1080/14683850903314931
Determinants of emigration and its economic consequences: evidence from Kosova

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(Received 28 October 2008; final version received 17 March 2009)

This paper concentrates on the determinants of emigration decisions among the working-age population in Kosova, a country with 20% of its population abroad. The estimates derived are largely consistent with the conventional theories of migration in that emigration decreases with age and generally increases with education and household size, though significant differences are also noted. In addition, the paper focuses on the brain drain effect due to emigration and employment differentials at home and abroad as the driving force for emigration from Kosova. This is the first systematic study of these issues in this post-socialist and post-conflict economy.

Keywords: emigration; brain drain; labour force; Kosova

Introduction

Labour movements from one country to another change the economic prospects of both the destination and origin countries. From an individual point of view, emigration is an income-maximising strategy, while in macroeconomic terms emigration 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-order effects. The political crisis in Kosova following the dismantling of socialist Yugoslavia resulted in 145,000 workers being laid-off at once (Riinvest Institute 2003), which was unseen elsewhere in transition economies. This, coupled with the lack of jobs and widespread political unrest, contributed to large-scale emigration. In spite of the economic upturn brought by the economic reconstruction after 1999 and large inflows of foreign aid, unemployment remains above 40% due to the large number of new entrants to the labour market coupled with low job creation in the private sector. Therefore, from an individual point of view, emigration may be seen as a strategy of escaping unemployment and contributing towards household incomes.

This paper explores how personal, household and other contextual characteristics shape the emigration decisions in Kosova. The analysis is based on the Riinvest Household and Labour Force Survey of 2002 (HLFS 2002) 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 are far from perfect, for...
reasons that will be discussed later, but this is the first analysis of emigration and remittances in Kosova.

The paper is organised as follows. The next section presents a brief review of the orthodox economic analysis of migration and empirical evidence. This is followed by an examination of the potential brain drain and brain gain consequences of emigration and the effect of remittances on the local economy. Numerical estimates of emigrants from Kosova and their remittances are discussed in the following section, and using the Riinvest HLFS data, the profile of emigrants and the brain drain issue is examined. In the subsequent section, the paper presents a set of determinants of emigration decisions in Kosova and puts forward an estimate of employment possibilities at home and abroad as the driving force for emigration in the case of Kosova. The final section includes the concluding remarks.

The economic basis of migration and empirical evidence

The World Bank (2006) estimates that in 2002 international migrants represented 3% of the destination countries’ population worldwide, while for the developed countries this was 8%. 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 were very limited (León-Ledesma and Piracha 2004; Mansoor and Quillin 2007). Typically, there had been rural-to-urban migration from the 1950s. The movement of workers towards 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 regimes, migration intensity increased sharply and included both permanent and temporary migration, mostly towards the EU-15 (Mansoor and Quillin 2007). A number of ETCs experienced true mass migration waves (notably 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 differentials has generally been low and migration flows declined through the 1990s, even though inter-regional disparities during this decade were rising (Fidrmuc 2004). Some of these countries became net immigration areas by 2002–2003 (Salt 2005).1

The orthodox economics of migration attempts to answer two key questions: Why does labour migrate? And what are the consequences of such decisions? The discussion below tackles the first question, while in the following section we deal with the second question. In general, migration theories are rooted in theories of economic growth where labour mobility from one (low productive) sector to another (more productive) sector is seen as an instrument that promotes economic welfare and therefore is socially desirable (Ghatak, Levine, and Price 1996). Labour moves to take advantage of wage and employment differentials between locations (Harris and Todaro 1970). Workers 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 individual \( i \) in source country \( h \) to migrate to destination country \( f \) can be expressed as:
\[ d_i = w_{fi} - w_{hi} - z_i - c > 0 \]  

(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 the destination country, while it decreases with the wage in the 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 Todaro 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 that at home (\( w_h \)) depend, inter alia, on the individual’s skill level (\( s_i \)) as indicated by Equations (2) and (3), where \( \beta_f \) and \( \beta_h \) are the rates of return to skills abroad and at home respectively:

\[ w_{fi} = \alpha_f + \beta_f s_i \]  

(2)

\[ w_{hi} = \alpha_h + \beta_h s_i \]  

(3)

Substituting them into Equation (1) we get:

\[ d_i = \alpha_f - \alpha_h + (\beta_f - \beta_h) s_i - z_i - c \]  

(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. Note that with migration, we refer to international migration. However, most of the discussion in this paper applies to internal (inter-regional) migration as well.

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 easily integrate at the same occupational and skill level of the labour market in the destination country. 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 who 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, Epstein, and Gang 2000). This is referred to as the ‘network’ or ‘friends and relatives’ effects of migration.

The so-called ‘new economics of migration’ emphasises the role of the household in the decision to migrate (Funkhouser 1995; Mincer 1978; Rapoport and Docquier 2005; Rodriguez and Tiongson 2001; Stark 1991). 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 some evidence for other countries as well. In line with the theoretical predictions, most studies find that young people tend to migrate more than older people. Migration is found to increase with education, pointing to the positive selection of migrants. A number of studies find that migrants do not predominantly come from the poor households, suggesting that easing financial constraints increases migration. As expected, migration is found to increase with migration networks.

The macroeconomic evidence is largely in line with that presented above. 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 a country’s per capita income on its emigration rate. Rotte and Vogler (1998) also find evidence of the importance of the political situation in the sending countries and of network effects.

**The economic consequences of emigration**

For the origin country, the emigration of parts 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 knock-on effects in the economy.

**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 wide-ranging debates among both academics and policy-makers. 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 the population with higher education. From the limited evidence from transition economies, Gedeshi (2006) reports that each year during 1991–2000, 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 former may decrease the productivity of the latter (Docquier and Rapoport 2004).
Table 1. A summary of empirical findings on determinants of migration decisions.

<table>
<thead>
<tr>
<th>Author(s) and country</th>
<th>Explores</th>
<th>Explanatory variables</th>
<th>Main findings</th>
</tr>
</thead>
</table>
| Gerber (2005), Russia                     | Determinants of internal migration 1985–2001  | Individual and contextual characteristics                   | • Younger, married, more educated and unemployed are more likely to migrate  
                                                                 • 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  
                                                                 • 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 1993–1994          | 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                                   | • Migration increases with education |
| Drinkwater (2003), 10 ETC 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 |
<table>
<thead>
<tr>
<th>Author(s) and country</th>
<th>Explores</th>
<th>Explanatory variables</th>
<th>Main findings$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bauer, Epstein, and Gang (2000), Mexico</td>
<td>The effect of migration networks on migrants’ location choice</td>
<td>Unemployment rate, migration network and costs of migration</td>
<td>• 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</td>
</tr>
<tr>
<td>Funkhouser (1992), Nicaragua</td>
<td>Determinants of being an emigrant</td>
<td>Personal and household characteristics</td>
<td>• Emigration increases with age, education, household incomes and household size • Males are more likely to emigrate</td>
</tr>
</tbody>
</table>

$^a$All these findings are statistically significant unless otherwise is stated.
Recently, a new ‘brain drain – brain gain’ literature has emerged (Stark 2004; Stark, Helmenstein, and Prskawetz 1998; Vidal 1998) that contradicts this view on the grounds that emigration of skilled workers leads to more investment in human capital by the remaining non-migrant workers, with a resultant net brain gain. The argument goes that an economy open to emigration provides workers with more opportunities, relative to when the economy is closed. On the other hand, 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.

A topic related to this issue – one that is neglected in the literature – is 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, Yun, and Gang (1998) estimate earnings equations for men in Hungary and find a wage premium for those who have been abroad, again suggesting that emigration has contributed to enhancing their human capital. Likewise, de Coulon and Piracha (2005) find for returned migrants in Albania that the benefits of migration translate into access to better jobs.

**Remittances and their economic impacts**

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 (Mansoor and Quillin 2007; Ratha 2004; World Bank 2006). Worldwide, the World Bank (2006) estimates that international remittances rose from US$87 billion in 2000 to US$167 billion in 2005; including unrecorded transfers, the total is likely to be much higher. Based on the World Bank Indicators database, in 2004 international remittances received by 24 transition economies were estimated at US$18.9 billion (Table 2).

The macroeconomic impact of remittances depends partly on whether they are used for consumption or investment purposes. If they are used for investment 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, they may free other sources of finance that can be used for investment. The increased consumption due to remittances is in itself productive for the economy, because it has important multiplier effects on wages, employment and business opportunities.

For 11 ETCs for 1990–1999, León-Ledesma and Piracha (2004) find a positive effect of remittances on aggregate output through financing investment and entrepreneurial activities. Catrinescu et al. (2006) contend that remittances have also produced negative effects through appreciating the real exchange rate that affects the trading sector. Since remittances enable the economy to spend more than it produces, they might encourage ‘Dutch Disease’ and more migration. This increases the dependency of the economy on these financial flows.

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

<table>
<thead>
<tr>
<th>Countriesa</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>Remittances/GDPb in 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moldova</td>
<td>179</td>
<td>243</td>
<td>323</td>
<td>486</td>
<td>703</td>
<td>0.271</td>
</tr>
<tr>
<td>Bosnia &amp; Herzegovina</td>
<td>1,595</td>
<td>1,521</td>
<td>1,526</td>
<td>1,745</td>
<td>1,824</td>
<td>0.214</td>
</tr>
<tr>
<td>Serbia &amp; Montenegro</td>
<td>1,132</td>
<td>1,698</td>
<td>2,089</td>
<td>2,661</td>
<td>4,129</td>
<td>0.172</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>n.a.</td>
<td>n.a.</td>
<td>79</td>
<td>146</td>
<td>252</td>
<td>0.122</td>
</tr>
<tr>
<td>Albania</td>
<td>598</td>
<td>699</td>
<td>734</td>
<td>889</td>
<td>1,160</td>
<td>0.117</td>
</tr>
<tr>
<td>Armenia</td>
<td>87</td>
<td>94</td>
<td>131</td>
<td>168</td>
<td>336</td>
<td>0.109</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>9</td>
<td>11</td>
<td>37</td>
<td>78</td>
<td>189</td>
<td>0.086</td>
</tr>
<tr>
<td>Georgia</td>
<td>274</td>
<td>181</td>
<td>230</td>
<td>239</td>
<td>303</td>
<td>0.058</td>
</tr>
<tr>
<td>FYR Macedonia</td>
<td>81</td>
<td>73</td>
<td>106</td>
<td>174</td>
<td>213</td>
<td>0.040</td>
</tr>
<tr>
<td>Croatia</td>
<td>641</td>
<td>747</td>
<td>885</td>
<td>1,085</td>
<td>1,222</td>
<td>0.036</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>57</td>
<td>104</td>
<td>182</td>
<td>171</td>
<td>228</td>
<td>0.027</td>
</tr>
<tr>
<td>Latvia</td>
<td>72</td>
<td>112</td>
<td>138</td>
<td>173</td>
<td>213</td>
<td>0.017</td>
</tr>
<tr>
<td>Lithuania</td>
<td>50</td>
<td>79</td>
<td>109</td>
<td>115</td>
<td>325</td>
<td>0.015</td>
</tr>
<tr>
<td>Estonia</td>
<td>3</td>
<td>9</td>
<td>17</td>
<td>49</td>
<td>164</td>
<td>0.015</td>
</tr>
<tr>
<td>Poland</td>
<td>1,726</td>
<td>1,995</td>
<td>1,989</td>
<td>2,655</td>
<td>2,710</td>
<td>0.011</td>
</tr>
<tr>
<td>Belarus</td>
<td>139</td>
<td>149</td>
<td>140</td>
<td>222</td>
<td>244</td>
<td>0.011</td>
</tr>
<tr>
<td>Slovakia</td>
<td>18</td>
<td>24</td>
<td>24</td>
<td>425</td>
<td>425</td>
<td>0.010</td>
</tr>
<tr>
<td>Ukraine</td>
<td>33</td>
<td>141</td>
<td>209</td>
<td>330</td>
<td>411</td>
<td>0.006</td>
</tr>
<tr>
<td>Russia</td>
<td>1,275</td>
<td>1,403</td>
<td>1,359</td>
<td>1,453</td>
<td>2,668</td>
<td>0.005</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>58</td>
<td>71</td>
<td>72</td>
<td>67</td>
<td>103</td>
<td>0.004</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>297</td>
<td>257</td>
<td>334</td>
<td>498</td>
<td>454</td>
<td>0.004</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>122</td>
<td>171</td>
<td>205</td>
<td>148</td>
<td>167</td>
<td>0.004</td>
</tr>
</tbody>
</table>
Table 2. (Continued)

<table>
<thead>
<tr>
<th>Countries</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>Remittances/GDP&lt;sup&gt;b&lt;/sup&gt; in 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hungary</td>
<td>281</td>
<td>296</td>
<td>279</td>
<td>295</td>
<td>307</td>
<td>0.003</td>
</tr>
<tr>
<td>Romania</td>
<td>96</td>
<td>116</td>
<td>143</td>
<td>124</td>
<td>132</td>
<td>0.002</td>
</tr>
<tr>
<td>Total</td>
<td>8,823</td>
<td>10,194</td>
<td>11,340</td>
<td>14,396</td>
<td>18,899</td>
<td>–</td>
</tr>
</tbody>
</table>

<sup>a</sup>The order of countries is by the ratio of remittances/GDP presented in Column 6.
<sup>b</sup>Author’s own calculations using data from the World Development Indicators database.
consequently decrease the labour supply of non-migrant household members (assuming that leisure is a normal good). Evidence for this is provided by Funkhouser (1992) for Nicaragua, Rodriguez 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 again provided by Funkhouser (1992), Konica and Filer (2005) and Amuedo-Dorantes and Pozo (2006).

Emigrants from Kosova, remittances and brain drain

This section examines estimates regarding Kosova’s emigrants and their remittances. The Riinvest HLFS data are used to comment on the characteristics of emigrants and the brain drain issue.

Estimates on emigrants and their remittances

As a consequence of its young population, persistent high unemployment and political unrest, the latter especially during the 1980s and the 1990s, Kosova has experienced both temporary and permanent mass emigration. During the socialist era, in the late 1960s and early 1970s, 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 the number of Yugoslavia’s emigrants 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 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 statistics from destination countries to estimate the number of emigrants in the range of 300,000–500,000. Moalla-Fetini et al. (2005) estimate approximately 470,000 emigrants (that is around 20% of a total population estimated at 2.4 million). Among transition economies, only Albania has had a higher 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: (1) the household survey fails to capture infrequent remittances, (2) households may be hesitant to report the full amount of remittances out of fear of drawing attention to their own finances, and (3) 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).

In the Riinvest HLFS conducted in December 2002, 254 (20%) of 1252 households in the sample received remittances (defined as ‘money received from household members working abroad’). The average amount per month for those households who
receive remittances was €302. If distributed across all households, then on average each household in the sample received 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 annual remittances amount to €234 million – close to the estimates by Moalla-Fetini et al. (2005). Therefore, remittances are around 13% of GDP, ranking Kosova among the top five in terms of the ratio of remittances to GDP in transition countries (see Table 2).

**Characteristics of emigrants and the brain drain issue**

To examine the characteristics of emigrants and the extent of brain drain in Kosova, we turn again to the Riinvest HLFS data. The question asked to the household head (or the person replacing him or speaking on his behalf) in the interview was to provide details of the household members abroad. Some 20% of households in the sample responded that they have at least one member abroad. Out of 8552 individuals accounted in the sample, some 576 are emigrants (6.7%). It is relevant to note that when an entire household has moved abroad, it is not included in the sample. This is one reason why we observe only 6.7% of population as emigrants compared to the 20% estimated by Moalla-Fetini et al. (2005). This exposes a significant 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 Columns 2 and 3 show data for non-migrants and the total population respectively. These data indicate that emigrants are disproportionately of working age, males, from rural areas and with upper-secondary education. As shown in Column 5, almost all of these differences between migrants and non-migrants are statistically significant (at the 5% level). From Column 4, we can see that 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. Note also that the labour–leisure choice of non-migrant household members is expected to be influenced by the additional income provided by household members abroad. As such, the survey data indicate that 25% of non-migrants who are inactive in the labour market have at least one household member abroad, compared to only 18% of non-migrants who are active in the labour force. The average monthly wage for emigrants is six times higher than for non-emigrants (€1332 compared to €215). More than two-thirds of emigrants are in Germany and Switzerland. As 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 among these the average amount remitted is €347 per month.

Regarding the brain drain, we find that 7.4% of the sample aged 25 and over with higher education are emigrants. This is comparable to that found in other countries, but note that the Riinvest data do not include permanent emigrants and therefore underestimates the brain drain in Kosova. The brain drain is more pronounced in some occupations. For instance, 13% of engineers and doctors in the sample have emigrated compared to only 3% of lawyers and 6% of 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
Table 3. Characteristics of emigrants from Kosova based on the Riinvest HLFS (December 2002).

<table>
<thead>
<tr>
<th>Emigrants ($\mu_1$)</th>
<th>Non-migrants ($\mu_2$)</th>
<th>Total population</th>
<th>Emigration rate</th>
<th>Test results: H0: $\mu_1 = \mu_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total in the sample</td>
<td>576</td>
<td>7,976</td>
<td>8,552</td>
<td>0.067</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>0.663</td>
<td>0.492</td>
<td>0.503</td>
<td>0.089</td>
</tr>
<tr>
<td>Females</td>
<td>0.337</td>
<td>0.508</td>
<td>0.497</td>
<td>0.046</td>
</tr>
<tr>
<td>Residence in Kosova</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban residents</td>
<td>0.35</td>
<td>0.446</td>
<td>0.44</td>
<td>0.054</td>
</tr>
<tr>
<td>Rural residents</td>
<td>0.65</td>
<td>0.554</td>
<td>0.56</td>
<td>0.078</td>
</tr>
<tr>
<td>Age (average years)</td>
<td>26.37</td>
<td>27.39</td>
<td>27.32</td>
<td>–</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–15</td>
<td>0.22</td>
<td>0.33</td>
<td>0.32</td>
<td>0.05</td>
</tr>
<tr>
<td>16–24</td>
<td>0.18</td>
<td>0.19</td>
<td>0.19</td>
<td>0.06</td>
</tr>
<tr>
<td>25–34</td>
<td>0.37</td>
<td>0.15</td>
<td>0.17</td>
<td>0.15</td>
</tr>
<tr>
<td>35–44</td>
<td>0.15</td>
<td>0.12</td>
<td>0.12</td>
<td>0.08</td>
</tr>
<tr>
<td>45–54</td>
<td>0.05</td>
<td>0.09</td>
<td>0.09</td>
<td>0.04</td>
</tr>
<tr>
<td>55–64</td>
<td>0.03</td>
<td>0.06</td>
<td>0.06</td>
<td>0.03</td>
</tr>
<tr>
<td>65+</td>
<td>0.01</td>
<td>0.05</td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td>0–15</td>
<td>0.22</td>
<td>0.33</td>
<td>0.32</td>
<td>0.05</td>
</tr>
<tr>
<td>16–64</td>
<td>0.77</td>
<td>0.62</td>
<td>0.63</td>
<td>0.08</td>
</tr>
<tr>
<td>Over 64</td>
<td>0.01</td>
<td>0.05</td>
<td>0.05</td>
<td>0.01</td>
</tr>
</tbody>
</table>
Table 3. (Continued)

<table>
<thead>
<tr>
<th></th>
<th>Emigrants ($\mu_1$)</th>
<th>Non-migrants ($\mu_2$)</th>
<th>Total population</th>
<th>Emigration rate</th>
<th>Test results: H0: $\mu_1 = \mu_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education level (age 25+)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than upper-secondary</td>
<td>0.277</td>
<td>0.489</td>
<td>0.471</td>
<td>0.049</td>
<td>Rejected</td>
</tr>
<tr>
<td>Upper-secondary education</td>
<td>0.612</td>
<td>0.386</td>
<td>0.405</td>
<td>0.126</td>
<td>Rejected</td>
</tr>
<tr>
<td>Higher education</td>
<td>0.111</td>
<td>0.125</td>
<td>0.124</td>
<td>0.074</td>
<td>Not rejected</td>
</tr>
<tr>
<td>Average years of education (age 25+)</td>
<td>11.08</td>
<td>9.92</td>
<td>10.02</td>
<td>–</td>
<td>Rejected</td>
</tr>
<tr>
<td><strong>Occupation for those with higher education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td>0.07</td>
<td>0.18</td>
<td>0.17</td>
<td>0.03</td>
<td>–</td>
</tr>
<tr>
<td>Economist</td>
<td>0.13</td>
<td>0.17</td>
<td>0.16</td>
<td>0.06</td>
<td>–</td>
</tr>
<tr>
<td>Lawyer</td>
<td>0.02</td>
<td>0.06</td>
<td>0.05</td>
<td>0.03</td>
<td>–</td>
</tr>
<tr>
<td>Engineer</td>
<td>0.24</td>
<td>0.12</td>
<td>0.13</td>
<td>0.13</td>
<td>–</td>
</tr>
<tr>
<td>Doctor</td>
<td>0.11</td>
<td>0.06</td>
<td>0.06</td>
<td>0.13</td>
<td>–</td>
</tr>
<tr>
<td>Linguist</td>
<td>0.07</td>
<td>0.05</td>
<td>0.05</td>
<td>0.09</td>
<td>–</td>
</tr>
<tr>
<td>Other</td>
<td>0.37</td>
<td>0.36</td>
<td>0.36</td>
<td>0.07</td>
<td>–</td>
</tr>
<tr>
<td>In employment (age 16–64)</td>
<td>0.61</td>
<td>0.30</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Earnings in €/month for those employed</td>
<td>1,332</td>
<td>215</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Country of emigration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>0.43</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0.22</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other EU countries</td>
<td>0.06</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>USA and Canada</td>
<td>0.04</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other former Yugoslav countries</td>
<td>0.04</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>All other countries</td>
<td>0.22</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
Table 3. (Continued)

<table>
<thead>
<tr>
<th>Year of emigration for the first time</th>
<th>Emigrants (µ1)</th>
<th>Non-migrants (µ2)</th>
<th>Total population</th>
<th>Emigration rate</th>
<th>Test results: H0: µ1 = µ2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970–1979</td>
<td>0.03</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1980–1989</td>
<td>0.12</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1990–1999</td>
<td>0.58</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2000–2002</td>
<td>0.10</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>No answer</td>
<td>0.18</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Remit (age 16+)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0.49</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>No</td>
<td>0.51</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Average amount remitted in €/month for those emigrants who remit (age 16+)</td>
<td>347</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Average amount remitted in €/month for all emigrants (age 16+)</td>
<td>170</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Note: All data in proportions unless otherwise stated.
25 and over is estimated at 1,176,000. Following this approach, in Column 4 we find that there are around 11,000 emigrants with higher education, which is equivalent to four years’ output from higher education in Kosova. It is relevant to note here that the emigration rate of individuals with upper-secondary education is almost twice the overall emigration rate.

Determinants of emigration from Kosova

Utilising the theorisations of migration summarised earlier, the Riinvest HLFS data are used to investigate how personal, household and other contextual characteristics influence the probability of being emigrant. In the following section, the estimation strategy and the choice of explanatory variables are explored first followed by a discussion on the main findings. In addition, acknowledging the large employment differentials observed between emigrants and non-migrants, this section examines the change in employment incidence if one moves abroad.

Estimation strategy and the explanatory variables

In the Riinvest HLFS, we observe household members that are abroad at the time of the survey. Recapitulating the economic theory of migration, 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:

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

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

\[
\Pr (E_i = 1| A_i, H_i, Z_i, \epsilon_i)
\]
where $A_i$, $H_i$ and $Z_i$ stand for personal, household and contextual characteristics respectively and $\varepsilon_i$ 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: (1) the returns to education abroad should be higher than at home, and (2), following our earlier discussion, 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 marital status controls for the effect of family obligations, culture and attitudes towards emigration. Since temporary emigration is expected to be mostly for employment purposes then marital status may also account for family arrangements regarding employment. In general, family ties prevent mothers from undertaking temporary migration and may also deter the migration 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) stress 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 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, regional dummies account for any region-specific effect in the emigration decision.

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

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

such as employment or wage differentials between regions. Note that, unlike most 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).

We limit the sample to individuals aged 16–64 because we are interested in the determinants of emigration decisions of the working-age population. We also exclude those in full-time education and end up with 4891 observations (of whom 431 or 8.8% are emigrants). Table 6 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.

**Findings on the determinants of emigration**

The findings are presented in Columns 1 and 2 of Table 7. In line with the theoretical predictions, for both genders the estimates suggest that the likelihood of being an

<table>
<thead>
<tr>
<th>Table 6. The characteristics of the sample used in estimations of the probability of being an emigrant.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>Observations</td>
</tr>
<tr>
<td>Emigrants</td>
</tr>
<tr>
<td><strong>Personal characteristics</strong></td>
</tr>
<tr>
<td>Gender (males)</td>
</tr>
<tr>
<td>Age (average years)</td>
</tr>
<tr>
<td>Education: less than upper-secondary</td>
</tr>
<tr>
<td>Education: upper-secondary</td>
</tr>
<tr>
<td>Education: higher</td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td><strong>Household characteristics</strong></td>
</tr>
<tr>
<td>From urban areas</td>
</tr>
<tr>
<td>Household size (average members)</td>
</tr>
<tr>
<td>Household incomes per capita (/month), without remittances</td>
</tr>
<tr>
<td><strong>Contextual characteristics</strong></td>
</tr>
<tr>
<td>Prishtina</td>
</tr>
<tr>
<td>Prizren</td>
</tr>
<tr>
<td>Peja</td>
</tr>
<tr>
<td>Mitrovica</td>
</tr>
<tr>
<td>Gjilan</td>
</tr>
<tr>
<td>Ferizaj</td>
</tr>
<tr>
<td>Gjakova</td>
</tr>
</tbody>
</table>

Note: Age group 16–64, all data in proportions unless otherwise stated.
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 further suggest that being married has a negative effect on the likelihood of emigration for males and a 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 prior expectations, for both genders the estimates indicate that the likelihood of being an emigrant increases with household size. Regarding household incomes, evidence exists of a non-linear relationship between household incomes and the probability of emigration; but the coefficients have the opposite signs to those expected. However, the size of the coefficient on the squared term is small.

### Table 7. Estimates from the probit equation for the determinants of emigration decisions.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.972***</td>
<td>-5.54</td>
<td>-2.023***</td>
<td>-8.65</td>
</tr>
<tr>
<td>Personal characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.008**</td>
<td>-2.08</td>
<td>-0.015***</td>
<td>-3.26</td>
</tr>
<tr>
<td>Upper-secondary education</td>
<td>0.273***</td>
<td>3.35</td>
<td>0.512***</td>
<td>4.90</td>
</tr>
<tr>
<td>Higher education</td>
<td>0.172</td>
<td>1.37</td>
<td>0.652***</td>
<td>3.29</td>
</tr>
<tr>
<td>Married</td>
<td>-0.187**</td>
<td>-2.18</td>
<td>0.551***</td>
<td>4.67</td>
</tr>
<tr>
<td>Household characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household size</td>
<td>0.027***</td>
<td>3.37</td>
<td>0.051***</td>
<td>5.01</td>
</tr>
<tr>
<td>Household incomes</td>
<td>-0.006***</td>
<td>-6.08</td>
<td>-0.005***</td>
<td>-3.38</td>
</tr>
<tr>
<td>Household incomes squared</td>
<td>0.000005***</td>
<td>5.57</td>
<td>0.000003**</td>
<td>2.22</td>
</tr>
<tr>
<td>Contextual characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residence (urban)</td>
<td>-0.017</td>
<td>-0.23</td>
<td>-0.104</td>
<td>-1.02</td>
</tr>
<tr>
<td>Prizren</td>
<td>0.021</td>
<td>0.19</td>
<td>-0.046</td>
<td>-0.30</td>
</tr>
<tr>
<td>Peja</td>
<td>0.222**</td>
<td>1.95</td>
<td>-0.178</td>
<td>-1.02</td>
</tr>
<tr>
<td>Mitrovica</td>
<td>-0.076</td>
<td>-0.71</td>
<td>-0.025</td>
<td>-0.18</td>
</tr>
<tr>
<td>Gjilan</td>
<td>0.247**</td>
<td>2.22</td>
<td>0.261*</td>
<td>1.82</td>
</tr>
<tr>
<td>Ferizaj</td>
<td>-0.276**</td>
<td>-2.03</td>
<td>-0.135</td>
<td>-0.70</td>
</tr>
<tr>
<td>Gjakova</td>
<td>0.097</td>
<td>0.60</td>
<td>0.122</td>
<td>0.61</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-857.88</td>
<td></td>
<td>-439.69</td>
<td></td>
</tr>
<tr>
<td>Likelihood Ratio test, $\chi^2_{(14)}$</td>
<td>122.98</td>
<td></td>
<td>122.34</td>
<td></td>
</tr>
<tr>
<td>Pseudo R-squared</td>
<td>0.067</td>
<td></td>
<td>0.122</td>
<td></td>
</tr>
<tr>
<td>Mean dependent variable</td>
<td>0.123</td>
<td></td>
<td>0.053</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>2,470</td>
<td></td>
<td>2,421</td>
<td></td>
</tr>
</tbody>
</table>

***, **, * significant coefficients at 1, 5 and 10% respectively.

Note: The dependent variable equals ‘1’ if emigrant and ‘0’ if not (population of age 16–64).
The estimates suggest that there is no significant difference in the probability of being an emigrant between urban and rural residents; though, as expected, for both genders the coefficient has a negative sign. The coefficient 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 that lowers the costs of emigration for residents of this region (e.g., lower costs of job search upon emigration, lower 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 six coefficients on regional dummies are jointly insignificant ($\chi^2(6) = 7.93, p = 0.2435$). For males, three 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 8, this probability is estimated at 0.09 for males and 0.01 for females. Increasing the age by 10 years but keeping other characteristics the same (see now Panel B), decreases the estimated probability by 1 percentage point for males and by 0.4 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 to 12 members increases the probability of being an emigrant for males by 2 percentage points and by 0.5 for females. Finally, doubling household income lowers the probability of being an emigrant by 4 percentage points for males and by 0.06 for females.

Table 8. The estimated probability of being emigrant for certain values of the explanatory variables.

<table>
<thead>
<tr>
<th>A. The probability of being emigrant if:</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 35.48 (sample average)</td>
<td>0.09</td>
<td>0.008</td>
</tr>
<tr>
<td>With less than upper-secondary education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-married</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 members in the household (sample average)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household incomes per capita net or remittances (56 €/month, sample average)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From urban areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From the region of Prishtina</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. The probability of being an emigrant in panel A, but now:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 25</td>
<td>0.10</td>
<td>0.012</td>
</tr>
<tr>
<td>Age 45</td>
<td>0.08</td>
<td>0.006</td>
</tr>
<tr>
<td>With upper-secondary education</td>
<td>0.14</td>
<td>0.030</td>
</tr>
<tr>
<td>With higher education</td>
<td>0.12</td>
<td>0.041</td>
</tr>
<tr>
<td>Married</td>
<td>0.06</td>
<td>0.033</td>
</tr>
<tr>
<td>12 members in the household</td>
<td>0.11</td>
<td>0.014</td>
</tr>
<tr>
<td>Household incomes per capita (112 €/month)</td>
<td>0.05</td>
<td>0.004</td>
</tr>
<tr>
<td>Household incomes per capita (28 €/month)</td>
<td>0.12</td>
<td>0.012</td>
</tr>
<tr>
<td>From urban areas</td>
<td>0.08</td>
<td>0.006</td>
</tr>
<tr>
<td>From the region of Gjilan</td>
<td>0.13</td>
<td>0.017</td>
</tr>
</tbody>
</table>
Employment opportunities and emigration decisions

Earlier, we found that 61% of emigrants aged 16–64 are employed as compared to 30% of non-migrants. Such a large difference in employment rates is expected to play a key role in emigration decisions in the case of Kosova. This section investigates 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, these data are pooled together and a probit model is estimated where 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. The same sample as in the previous estimations is used.

The explanatory variable that is of interest is the dummy, 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 towards work with age. Finally, marital status (dummy 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 9, 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 specific characteristics. From Table 10, 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) but who is abroad this probability is 0.71

Table 9. Estimates from the probit model on the probability of being employed.

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

***, ** significant coefficients at 1 and 5% respectively.

Note: The dependent variable equals ‘1’ if employed (in Kosova for non-migrants and abroad for emigrants) and ‘0’ if not.
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 is not primarily due to attitudes and family arrangements regarding employment, but rather to depressed conditions in the Kosovan labour market.

### Conclusions

The data and literature analysed in this paper aim to contribute to our knowledge of the determinants of emigration decisions in transition economies, and more specifically in Kosova.

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 to the ratio of remittances to GDP. Aggregate estimates suggest that some 20% of population is abroad, while the household data indicate that around 20% of households have at least one member abroad. Compared to other transition economies, only Albania has such a high emigration rate. Remittances that these emigrants send home are the second largest source of household incomes (after income from salaries). From this perspective, emigration has an important effect on the size of the domestic labour force and on the level of household spending, and is therefore an important element of any labour market analysis in Kosova.

These findings are largely consistent with the standard economic theory of migration and with results found for other countries in that the likelihood of emigration decreases with age and generally increases with education and household size. The estimates suggest that marital status affects negatively (positively) the likelihood of being an emigrant for males (females). Unlike evidence from several other countries, the estimates presented in this paper indicate that the likelihood of being an emigrant decreases with household incomes. Moreover, the data presented suggest 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 living in Kosova, is consistent with what has been described here as being characteristic of a large temporary emigration from Kosova for employment purposes.

Concerning the brain drain effect of emigration, the estimates suggest that 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 is in line with the

### Table 10. The estimated probability of being employed for emigrants and non-migrants.

<table>
<thead>
<tr>
<th></th>
<th>Non-migrant</th>
<th></th>
<th>Emigrant</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>[1]</td>
<td>[2]</td>
<td>[3]</td>
<td>[4]</td>
</tr>
<tr>
<td>The probability of being employed if age 35, married and with:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Less than upper-secondary education</td>
<td>0.490</td>
<td>0.092</td>
<td>0.710</td>
<td>0.276</td>
</tr>
<tr>
<td>• Upper-secondary education</td>
<td>0.645</td>
<td>0.286</td>
<td>0.830</td>
<td>0.568</td>
</tr>
<tr>
<td>• Higher education</td>
<td>0.808</td>
<td>0.563</td>
<td>0.927</td>
<td>0.815</td>
</tr>
</tbody>
</table>

Data Source: The estimated coefficients from Table 9 in the previous page.
situation found in many other developing countries, but note that our estimates do not include permanent emigrants and therefore underestimate the brain drain in Kosova. There are social costs and social benefits from the emigration of the work force, especially highly skilled workers. The social costs consist of the public spending on their education and the absence of positive externalities to the society from a larger educated work force. It is difficult to know whether their remittances outweigh these costs. However, given poor employment prospects in Kosova, temporary emigration remains a necessary short-term strategy for reducing unemployment. Given that the post-war economic reconstruction is almost over, such as rebuilding the destroyed houses and the basic infrastructure, there is the possibility that emigration and therefore remittances might fall. This is likely to result in a reduced aggregate demand in the short run and projections regarding macroeconomic indicators should consider this.

Acknowledgements
The author would like to thank Professor Nick Adnett and Jean Mangan (Staffordshire University, UK) as well as participants at the conference on ‘Migration and Development in Albania and Western Balkans’ held in Durrës (Albania) during 26–27 September 2008, for very useful comments on an earlier draft of this paper. Special thanks go to Riinvest Institute for providing the data for my research.

Notes
1. Note, however, that migration flow data are likely to be inaccurate due to problems of definition, unrecorded migration, etc.
2. In 95% of cases it was the household head who was interviewed – suggesting that survey responses were fairly accurate.

References


