

Does more schooling make you run for the border?

Evidence from post-independence Kosovo¹

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Abstract:

Does an extra year of schooling augment one's propensity to migrate? In a naive regression, which does not account for the potential reverse causality and omitted variables, the coefficient of education is likely to be biased. To deal with the problems of endogeneity, we use parental education as an instrument for own education. The data come from a survey on preparedness to emigrate from Kosovo, carried out in the summer of 2008. Two-stage residual inclusion multinomial probit results suggest that an extra year of education increases the probability of taking concrete steps to realize the migration intentions by up to 8 percentage points. This finding is policy relevant in that it informs potential policy design – be it toward retention or 'export' of the highly skilled, depending on whether policymakers subscribe to the 'brain drain' or 'brain gain' view of emigration.

Keywords: Emigration decision, Kosovo, brain-drain, education, transition

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1. Introduction

Does more schooling increase one's propensity to emigrate? An answer to this question is not only of theoretical interest, but is of acute practical significance for policymakers – particularly in developing countries. Suppose the findings are that extra schooling indeed increases emigration propensity. A policy response in such a case would hinge on whether the net effect of emigration on the development of the emigration source country is positive or negative. Opinions are far from unanimous on this matter. The predominance of the 'brain-drain' view of emigration (Grubel and Scott 1966, Bhawati and Hamada 1974, McCulloch and Yellen 1977) has recently been challenged by the 'brain gain' view along the following lines: First, the outside option of emigration may give large segments of the population an incentive to acquire higher education to be more marketable internationally. If a proportion of these higher educated will opt to stay at home, the stock of human capital in the migration origin country will increase (Mountford 1997, Stark et al 1997, Vidal 1998, Beine et al. 2001, Beine et al. 2008). Second, some of the high-skilled emigrants will return – bringing with them financial resources and know-how – energizing the entrepreneurial scene in the home country (World Bank 2008a, Saxenian 2008, Solimano 2008). Third, even emigrants not returning home, or staying abroad for long time periods, influence their home country in beneficial ways. Remittances sent by emigrants to family members in the home country have in recent years attracted attention both by their sheer magnitude and by their significant effect on development in the migrant source country.⁴ In addition, what is being 'remitted' is not only financial resources, but also 'social and political remittances' - the flow of ideas and values (United Nations 2009, Spilimbergo 2009). So, depending on which view of emigration you subscribe to, policies can be designed to either discourage emigration or to encourage it.⁵

⁴Note that the high-skilled migrants do not necessarily remit more than the low-skilled migrants. Even if the high-skilled earn more, they are also more likely to come from better-off households at home and reunite with their close family in the host country (Faini 2007, Niimi et al. 2008).

⁵ While encouragement of emigration by policy may, on first sight, appear unlikely, there are precedents for such action. The Philippines, for example, by policy, produces a surplus of nurses, which are 'exported' as 'remittance generators' (De Haas 2005). According to the Human Development Report 2009 (United Nations 2009), several – typically small - countries have integrated emigration into their development strategies; for 10 countries "export of labor" has been a policy measure aimed at international migration between 2000 and 2008.

So, whether or not additional education increases a person's propensity to emigrate holds policy relevance. However, the question is not so easily answered in an unambiguous way. First, there is the potential problem of 'reverse causality': People planning to emigrate may decide to obtain more schooling (given that immigration policies of target country often favor skilled workers). Consequently, comparing the level of education of actual immigrants in host countries to the level of education of the general population in the sending country, or running a naïve regression of the willingness to migrate on the education level, would likely suffer from reverse causality, and results would be biased. Second, a bias may come from omitted/unobserved variables. For example, people with higher ability may be both better educated and more prone to emigrate, if their abilities allow them to accomplish both getting educated and emigrated with greater ease. On the other hand, higher ability may also make an individual more successful on the home country labor market – and thus less likely to emigrate.

This paper explores the link between individual education level and preparedness to migrate in Kosovo - the youngest state in Europe. It contributes to the literature along several dimensions. First, by instrumenting 'own education' with 'parental education', we mitigate the potential problems of endogeneity in estimating the 'true' effect of education on emigration propensity. Second, in recognition of the common critique of migration intentions surveys (i.e. that intentions are a far cry from actions), we ask the respondents in our survey about concrete steps taken toward emigration. In this way we strengthen the credibility of the stated emigration intentions. Third, the paper is based on what may very well be the first detailed survey of emigration intentions and preparedness to emigrate from Kosovo after it declared independence from Serbia in February 2008. Among other things, we analyze emigration intentions and their link to the respondents' education level for the Albanian speaking majority as well as for the country's largest (ethnic Serb) minority. A boosted Serb sub-sample allows us to gain more insights into this politically important minority group.

The main finding of this paper is that additional education encourages additional emigration. In particular, holding other factors constant, an additional year of education increases the probability of taking concrete steps towards emigration by up to 8 percentage points. This finding points to an apparent reversal in the skill composition of (potential) emigrants from Kosovo. In contrast to earlier migration waves of

predominantly low-skilled workers (ESI 2006, Riinvest 2007, Vathi and Black 2007), our findings signal a potential brain-drain problem - for both the Albanian speaking majority and the Serb speaking minority. The finding is policy relevant in that it informs potential policy design – be it toward retention of high-skilled residents to support nation-building or, at the opposite end of the spectrum, toward generating remittance income via ‘export’ of the highly-skilled. This education-driven augmentation of emigration intentions rides on top an already enormous emigration potential: more than 30% of the Albanian speaking ethnic majority report to have taken concrete steps toward emigration.

The remainder of the paper is organized as follows. Section two presents data and descriptive statistics. Section three reports and discusses the econometric results. Section four concludes.

2. Data and descriptive statistics.

2.1. Description of the data.

This paper is based on a survey of emigration intentions in Kosovo. The custom-designed (by the authors) questionnaire for the interviews that we commissioned was carried out in June 2008 by the *Ipsos Strategic Puls* Research Institute, based in Belgrade, Serbia. The survey consists of 1367 interviews with individuals aged 18 - 86 : 845 with people who identify themselves as ethnic Albanians and speak Albanian as primary language with their family members, 482 with people who identify themselves as ethnic Serbs and speak Serbian as primary language with their family members, and 40 with people who identify themselves as other ethnic minorities (Turkish, Bosnian, Ashkali and Roma; may speak Albanian or Serbian as primary language with their family members). In order to gain more insight into emigration intentions of the ethnic Serb minority group the ethnic Serb subsample was boosted (does not reflect the actual share of ethnic Serbs in Kosovo population - about 6%). Ivlevs and King (2010) provide a detailed description of the survey design and how it was implemented.

The interviews explored a large spectrum of issues – among them external migration, internal migration and remittances. External migration is the essential issue for this paper,

and we access it via migration intentions. While the use of emigration intentions data as a proxy for actual emigration is not uncontested,⁶ emigration intentions have been shown to be a good predictor of future actual emigration (De Jong 2000, van Dalen and Henkens 2008). Burda et al. (1998) take the position that migration intentions are a monotonic function of the variables which motivate migration.⁷ Moreover, in contrast to actual migration data from host countries, migration intentions data, typically, is representative of the source country population. Thus it is likely to offer a more reliable picture of the migrant selection process compared to the actual migration data from particular host countries (Liebig and Sousa-Poza, 2004; van Dalen and Henkens 2008). The latter are likely suffer from sample selection bias if host county immigration policies are slanted toward attracting more (or less) skilled migrants. The picture gets even more complicated if migrants obtain education in the host country (Rosenzweig 2006).

What we call *likelihood of emigration* stems from respondents' answers to the following two questions: (first) "How high is your probability that you will go to work and live outside of Kosovo in the next year?" with a pre-set list of answers: "very low", "rather low", "rather high", and "very high". In order to mitigate the common critique of migration intentions surveys, i.e. that intentions are a far cry from actual migration, we augment the likelihood of capturing actual future migration by asking a follow-up question that probes whether concrete steps have been taken to realize the emigration intentions. In practice this means that respondents with reported "rather high" or "very high" probability of emigration were asked a second question: "What have you done to pursue your intention of moving outside of Kosovo?" (no pre-set list of answers)

In the following we exclude respondents older than 64, those who reside permanently abroad and are in Kosovo for holidays, as well as pupils.

⁶ See e.g. Manski (1990) for a critical evaluation of the relation between stated intentions and actual behaviour.

⁷ For papers which empirically study emigration intentions see e.g. Burda et al. (1998), Drinkwater and Ingram (2008), Epstein and Gang (2006), Firdmuc and Huber (2007), Lam (2000), Liebig and Sousa-Poza (2004), Papapanagos and Sanfey (2001) and Ubelmesser (2006).

2.2. Descriptive statistics

Table 1 presents, sorted by ethnicity and gender, the willingness to emigrate and the proportion of respondents having taken concrete steps to emigrate. The emigration potential that emerges is truly enormous: about 30 % of the Albanian speaking respondents say that they are very likely to emigrate. Particularly astonishing is the fact that here we are talking about Kosovo’s ethnic majority group.

Table 1. Self-reported likelihood of emigration and concrete steps to emigrate, by ethnicity and gender.

	Kosovo Albanians (n=686)			Kosovo Serbs (n=427)			The non-Serb minorities (n=37)		
	All	Male	Females	All	Males	Females	All	Males	Females
Self-reported likelihood of emigration									
Very low	40%	32%	49%	66%	69%	74%	49%	42%	62%
Rather low	10%	8%	12%	8%	8%	7%	5%	8%	0%
Rather high	19%	21%	17%	9%	8%	10%	5%	4%	8%
Very high	29%	37%	20%	16%	23%	8%	41%	46%	31%
Taken concrete steps to emigrate	31%	44%	18%	8.2%	11.4%	4.5%	30%	33%	23%

As mentioned above, respondents who reported ‘very high’ or ‘rather high’ probability of emigration were subsequently asked whether they have done something (up to three answers) to pursue their emigration objectives. 43.9% said they have collected information about the opportunities for work abroad, 36.3% said that they have contacted their relatives and friends abroad, and 5.6% said that they have also done one of the following: talked to a potential employer abroad, received a jobs offer from abroad, bought or booked travel ticket, received a work permit or concluded an agreement with an agency. 40.7% said they have done nothing.

In the bottom row of table 1 we report the shares (out of the total respondents) who have taken practical steps to realize their emigration intentions – confirming the high potential of out-migration from Kosovo. In excess of 30 % of Kosovo Albanians have taken concrete actions to pursue their intention of moving abroad. For Kosovo-Albanian male respondents it is even 44%.

With regard to preferred target countries (each respondent could give up to three answers), half (49.6%) of the Kosovo Albanians with very high or rather high probability of emigration reported Germany as their preferred emigration destination, followed by Switzerland and the USA (both 34%), the UK (29%), France (18.2%), Italy (16.4%) and Sweden (15.2%). The preferred destinations for the Kosovo Serbs are Serbia (29.7%) and Switzerland (21.6%), followed by the USA, Norway, Greece, Italy, Luxemburg, Slovenia and Montenegro with a score between 4% and 6%. Switzerland emerges as an important destination for both Kosovo Albanians and Kosovo Serbs, pointing to a history of refugee networks (ESI 2006). For similar reasons, Germany is the premier destination for Kosovo Albanians.

Economic reasons figure prominently among the motives behind emigration intentions: 52.5 % of respondents want to leave because they find it impossible to find work in Kosovo, 25.7 % are in pursuit of a chance to earn more money, and 9.7% are after better career and personal growth opportunities. Although the stated reasons are, in general, not out of the ordinary, the high proportion of respondents listing the impossibility to find work in Kosovo stands out. It fits the fragile state of the economy – with an unemployment rate of around 45% and youth unemployment rate of 76% (World Bank 2008b).

Quite revealing are the answers to the question: “If you go outside of Kosovo for work, for how long do you think you would stay?” Longer stays are clearly preferred to shorter ones. 35% of the respondents reporting rather high or very high likelihood to migrate want to leave forever, 15% for longer than 5 years, 18.6% for 3-5 years, 5.7% for 1-3 years and 4.7% for up to 1 year. These proportions remain very similar when we focus only on those respondents having taken concrete steps to pursue their intention to emigrate.

3. Schooling and propensity to emigrate: empirical results.

3.1. Empirical specification.

In estimating the relationship between the level of schooling and the propensity to

migrate, one has to account for endogeneity. At least two sources of endogeneity can be identified. First, the reverse causality - people may acquire more education to improve their prospects of emigration, especially if immigration policies of receiving countries favor better educated migrants. If such reverse causality exists, the education coefficient in a naive regression will be overestimated. Second, omitted variables - people with higher ability, talent and ambition may be, on the one hand, better educated and, on the other, more prone to emigration, if their abilities help them reduce migration costs. This would again generate an upward bias in the estimated education coefficient. However, it is also possible that higher ability makes an individual more successful on the home labour market, hence less likely to migrate. The bias then would be negative.

To account for these and other potential sources of endogeneity, we use a two stage instrumental variable estimation. In the first stage we regress the respondent's years of education on the years of education of his/her parents, and a vector of socio-demographic characteristics and district fixed effects. In the second stage we regress the proxy for the propensity to migrate, a categorical variable, on the first-stage regression residuals, the endogenous education variable and the same set of socio-demographic controls and district-fixed effects as in the first stage. This procedure corresponds to the two-stage residual inclusion estimation (2SRI), and is discussed by e.g. Terza et al. (2008) and Alvarez and Glasgow (1999). Terza et al. (2008) compare 2SRI to the two stage predictor substitution (2SPS) - a standard technique for linear models where the endogenous regressors are replaced by the first-stage predicted values of the endogenous regressor. They show that, for non-linear models, 2SRI produces consistent estimates and 2SPS does not; 2SRI is therefore the preferred estimation technique.

Formally, the 2SRI procedure is described as follows:

$$\text{First stage:} \quad EDUC_i = PARENT_EDUC_i \alpha_1 + Z_i \alpha_2 + u_i \quad (1)$$

$$\text{Second stage:} \quad PROP_MIGR_i = Z_i \beta_1 + EDUC_i \beta_2 + \hat{u}_i \beta_3 + \varepsilon_i \quad (2)$$

where $EDUC$ is an individual's years of education, $PARENT_EDUC$ is parental years of education, Z is a vector of socio-demographic characteristics and municipality fixed effects, u is the error term of the first-stage regression, $PROP_MIGR$ is a proxy for

emigration propensity, \hat{u} is the predicted residual from the first-stage equation ($\hat{u} = EDUC - (PARENT_EDUC_i \hat{\alpha}_1 + Z_i \hat{\alpha}_2)$), and ε are the error terms in the second-stage regression.

An important advantage of the 2RSI estimation is that β_3 , the coefficient of the predicted residuals from the first-stage regression, represents a direct test for the exogeneity of the education variable. If β_3 is not statistically different from 0, one accepts the null hypothesis that education is exogenous and equation 2 should be estimated by simple non-linear regression (Bollen et al. 1995).

We allow the dependent variable of the second stage equation, the propensity to migrate, to take several forms. Recall that the respondents were asked two questions: (first) “How high is your probability that you will go to work and live outside of Kosovo in the next year?” with a pre-set list of answers: “very low”, “rather low”, “rather high”, and “very high”. Those respondents who said that their probability of emigration is “rather high” or “very high” were asked a second question: “What have you done to pursue your intention of moving outside of Kosovo?” with no pre-set list of answers.

In our main model, the dependent variable accounts for both the self-reported likelihood of emigration and specific action to realize emigration intentions – a discrete choice variable representing the following three mutually exclusive states: 1) the respondent has taken specific action to realize his or her intention to move abroad (*potential mover*); 2) the respondent reports rather high or very high likelihood of emigration but has done nothing to realize his emigration intention (*dreamer*); 3) the individual has rather low or very low likelihood of emigration (*stayer*). We estimate this discrete choice model with the multinomial probit.⁸ As a robustness check, we will estimate two binary probits: the first explaining the probability of reporting concrete action towards emigration, and the second explaining the probability of reporting very high likelihood of emigration.

⁸ Another alternative would be to estimate a probit model with Heckman selection where in the first stage the respondents are selected into reporting ‘rather high’ or ‘very high’ willingness to emigrate, and in the second stage decide to take or not specific action in order to emigrate. The disadvantage of this approach is that the set of explanatory variables in the first (selection) and second stage equations must be different (Baum 2006); we would therefore have to make a strict assumption that some factors affecting the selection into rather high or very high likelihood of emigration do not affect the selection into taking concrete steps towards emigration.

As for the main regressor, the level of schooling, which enters the first stage equation (1) as dependent variable, the respondents were asked about their highest completed education level. We recode this information into a continuous variable ‘years of education,’ according to the typical number of years necessary to obtain each level of education.⁹

The respondents were also asked about the highest finished education level of their father and mother. We again recode this information into two continuous variables for father’s and mother’s years of education (using the same code as in the case of own education). Parental level of education is used as an instrument in the first stage OLS education equation: we expect individual education to be highly correlated with parental education; however, we do not expect parental years of schooling to have a direct effect on individual’s propensity to migrate.

Following Ivlevs and King (2010), the set of standard socio-demographic characteristics potentially affecting the willingness to migrate includes age, age squared, household size and its squared term, household income per income earner and its squared term, dummy variables for being male, married, having children of different age (0-6, 7-14, 15-18), living in rural area and being unemployed, two migrant network dummies (first, for family members living abroad and sending remittances; second, for family members living abroad but not sending remittances), dummies for the first and second generation migrants, and dummies for Kosovo Serbs living in North and Centre enclaves, Kosovo Serbs living in South-East enclaves, and the non-Serb minorities (with Kosovo Albanians being the reference group). Appendix 1 provides the definitions and summary statistics of the variables for the two ethnic groups (Kosovo Albanians and Kosovo Serbs).

We make use of dummies for the respondents’ municipalities of residence (24 municipality fixed effects in total) in all our specifications. The reasons for this are that first, it allows us to *fully* isolate the effects of individual characteristics variables from the combined municipality level effect on an individual’s decisions to emigrate. Second, we

⁹ In particular, the non-completed elementary school education is equivalent to 6 years of schooling; completed elementary to 8 years; non-completed secondary to 10 years; secondary vocational to 11 years; completed secondary to 12 years; completed college to 14 years; non-completed faculty to 15 years; and completed faculty to 17 years. To those with a current student status, we add two extra years of education.

are left with no other choice than to use municipality fixed effects. A potential alternative, regional-level variables which potentially affect emigration decisions (e.g. unemployment, crime, ethnic diversity, population density rates), is ruled out due to the poor quality of this type of data in Kosovo.

Finally, given that the interview-design called for boosting of the ethnic Serb subsample, we apply different weights (0.17 for Kosovo Serbs, 1.42 for Kosovo Albanians and 2.04 for the non-Serb minorities) in order to re-balance the three groups. As a robustness check, the models are estimated separately for Kosovo Albanians and Kosovo Serbs. It is not possible to run a separate regression for the non-Serb minorities due their low number in the sample.

3.2 Results

Table 2 reports the marginal effects of the correlates of the emigration decision from the non-instrumented and instrumented (2RSI) multinomial probit regressions (stayer/dreamer/ mover model). In the left panel, the education variable is treated as exogenous, and we obtain a positive, but statistically insignificant coefficient. In the right panel (2RSI), we instrument own education with father's education.¹⁰ Father's education coefficient in the first-stage equation is 0.205, implying that, other factors held constant, an extra year of the father's education increases the respondent's education by 0.205 years (*a complete regression out put is provided in an appendix not submitted for publication*). The instrument is highly significant, with F-statistic equal to 35.30. 2RSI second-stage results suggest that, at the average level of schooling of 11.69 years, an extra year of education increases the probability of having taken specific steps towards emigration by 8.5 percentage points. A statistically significant coefficient of the first-stage residuals implies that the education variable cannot be treated as exogenous and 2SRI should be used.

Before turning to our robustness checks, we would like to mention the significant role of other individual characteristics in the probability of being a “mover”. While the

¹⁰ We have experimented both with father's and mother's education and found that mother's education is a weaker instrument for own education. In particular, mother's education is an insignificant predictor of own education for the ethnic Serb subgroup.

coefficients of age, gender, marital status, networks have the expected signs (the young, single males with networks abroad report the highest likelihood of emigration), we also find that the Serb minority respondents – especially from the North and Centre enclaves - are more likely to be “stayers”.¹¹ Ivlevs and King (2010) offer two explanations for this seemingly counter-intuitive result: first, those Kosovo Serb speakers who wanted to move out did so prior to independence; and second, among the Kosovo Serbs, and with the tacit encouragement of the Serbian authorities, Kosovo is perceived to remain a ‘Serb land’ and independent Kosovo possibly a temporary aberration.

Returning to the role of education, we estimate, as a robustness check, two binary probit models explaining 1) the probability of taking concrete steps towards emigration (as opposed to the joint probability of having “very low” and “rather low” probabilities of emigration and having taken no steps towards emigration); and 2) the probability of reporting very high likelihood of emigration (as opposed to the joint probability of reporting “very low”, “rather low” or “rather high” likelihood of emigration). Note that the two binary variables are far from being perfectly collinear (correlation coefficient 0.50): 33% of the respondents with very high willingness to migrate said they have done nothing to realize their intention, and 36% of respondents who have done something to realize their emigration intention characterized their willingness to migrate as “rather high” (the remainder reported “very high”).

The results, reported in table 3, again suggest that the education variable is endogenous and the 2SRI results are preferred. The “true” effect of an extra year of education on the probability of taking specific steps towards emigration is 7.9 percentage points, and the “true” effect of an extra year of education on the probability of reporting “very high” likelihood of emigration is 8.5 percentage points.

Looking at the two main ethnic groups separately, table 4 shows the results of the stayer/dreamer/mover model for Kosovo Albanians and Kosovo Serbs. For the ethnic majority (Albanians), the coefficient of the first-stage residual is insignificant; hence the education variable can be treated as exogenous. An extra year of schooling increases the probability of moving by 2 percentage points for the ethnic majority. For the Kosovo

¹¹ For a more detailed discussion see Ivlevs and King (2010).

Serbs, the hypothesis of education exogeneity is rejected (the coefficient of the first-stage residual is significantly different from zero). An extra year of schooling increases the probability of moving by 5.3 percentage points for the Serb minority.

Finally, we estimate the two robustness check models separately for the two ethnic groups. The results suggest that for Kosovo Albanians the education variable is endogenous in the model focusing on reported “very high” likelihood of emigration, while for the Kosovo Serbs it is endogenous in the model focusing on “specific steps” taken toward emigration. In both cases, the “true” effect of education is 4-6 percentage point higher than the one observed in a ‘naive’ probit regression.

Table 2: Correlates of the emigration decision – multinomial probit marginal effects.

	<i>Stayer/dreamer/mover model, Education treated as exogenous, Multinomial probit</i>			<i>Stayer/dreamer/mover model, Education treated as endogenous, 2SRI multinomial probit, Second stage</i>		
	Stayer	Dreamer	Mover	Stayer	Dreamer	Mover
Years of education	-0.015	0.001	0.015	-0.062	-0.022	0.085**
First-stage pred. resid.				0.049	0.024	-0.074**
Age	-0.043***	0.012	0.030***	-0.035**	0.017	0.018
Age ² /100	0.076***	-0.026**	-0.050***	0.065***	-0.032**	-0.033**
Male	-0.233***	-0.026	0.259***	-0.198***	-0.008	0.206***
Single	-0.138*	-0.062	0.200**	-0.099	-0.045	0.144*
Children under 6	-0.067	-0.032	0.099**	-0.078	-0.038	0.116***
Children aged 7-14	0.041	-0.009	-0.031	0.027	-0.017	-0.010
Children aged 15-18	0.020	-0.028	0.008	0.008	-0.032	0.024
Household size	-0.047	0.048*	-0.001	-0.066	0.038	0.029
Household size ²	0.004	-0.003*	-0.001	0.005*	-0.003	-0.003
Income/100	-0.048	-0.023	0.071*	0.001	-0.002	0.001
Income ² /10000	0.012*	0.002	-0.013**	0.007	0.000	-0.007
Unemployed	-0.057	0.011	0.045	-0.063	0.007	0.057
Living in rural area	-0.072	0.025	0.047	-0.103**	0.010	0.093**
Networks+ remittances	-0.201***	-0.113***	0.314***	-0.217***	-0.120***	0.337***
Networks, no remittances	-0.220***	-0.064**	0.284***	-0.239***	-0.071**	0.310***
First generation migrant	-0.278	0.176	0.102	-0.284	0.178	0.105
Second gen. migrant	-0.194*	0.063	0.130*	-0.188**	0.074	0.114*
Serbs South-East	0.069	0.053	-0.121***	0.069	0.052	-0.121***
Serbs North and Centre	0.265***	-0.066*	-0.198***	0.262***	-0.068*	-0.194***
Non-Serb minorities	0.007	-0.032	0.025	-0.084	-0.068	0.152
<i>Instrument:</i>						
1 st stage coefficient					0.205***	
F test					35.30***	
Number of observations		1025			1025	
Prob>Chi ²		0.000			0.000	

Notes: 1) Both regressions include municipality fixed effects (24).

2) *** denotes significance at 1%, ** - at 5%, * - at 10%; robust standard errors used in all regressions.

3) Instrument: father's years of education

Table 3. Robustness checks: Correlates of the emigration decisions, marginal effects.

	Probability of taking concrete steps towards emigration		Probability of reporting very high willingness to emigrate	
	Probit	2SRI probit	Probit	2SRI probit
Years of education	0.011	0.079**	0.012	0.085***
First-stage pred. resid.		-0.071**		-0.077**
Number of observations	1025	1025	1025	1025
Prob > Chi ²	0.000	0.000	0.000	0.000
Pseudo R ²	0.327	0.332	0.222	0.228

- Notes:
- 1) The models include the same regressors as in table 2, their coefficients are not reported (available from the authors upon request). *See appendix not submitted for publication.*
 - 2) *** denotes significance at 1%, ** - at 5%, * - at 10%.
 - 3) Instrument (father's years of education) statistics are reported in table 2.

Table 4. Correlates of the emigration decision by ethnicity, marginal effects.

	<i>Stayer/dreamer/mover model, Education treated as exogenous, Multinomial probit</i>			<i>Stayer/dreamer/mover model, Education treated as endogenous, 2SRI multinomial probit, Second stage</i>		
	Stayer	Dreamer	Mover	Stayer	Dreamer	Mover
<u>Kosovo Albanians</u>						
Years of education	-0.019	-0.001	0.020*	-0.051	-0.013	0.064*
First-stage pred. resid.				0.034	0.013	-0.047
<i>Instrument</i>						
1 st stage coefficient					0.23***	
F test					37.55***	
Number of obs.		627			627	
Prob > Chi ²		0.000			0.000	
<u>Kosovo Serbs</u>						
Years of education	-0.008	0.006	0.002	-0.090	0.037	0.053**
First-stage pred. resid.				0.085	-0.032	-0.053**
<i>Instrument</i>						
1 st stage coefficient					0.16***	
F test					13.13***	
Number of obs.		354			354	
Prob > Chi ²		0.000			0.000	

- Notes:
- 1) The models include the same regressors as in table 2, their coefficients are not reported (available from the authors upon request). *See appendix not submitted for publication.*
 - 2) *** denotes significance at 1%, ** - at 5%, * - at 10%.
 - 3) Instrument: father's years of education.

Table 5. Correlates of the emigration decisions by ethnicity, robustness checks.

	Probability of taking concrete steps towards emigration, marginal effects		Probability of reporting very high willingness to emigrate, marginal effects	
	Probit	2SRI probit	Probit	2SRI probit
<i>Kosovo Albanians</i>				
Years of education	0.015	0.063*	0.018**	0.075***
First-stage pred. resid.		-0.052		-0.061*
Number of observations	627	627	627	627
Prob>Chi ²	0.000	0.000	0.000	0.000
Pseudo R ²	0.360	0.363	0.238	0.243
<i>Kosovo Serbs</i>				
Years of education	0.001	0.049**	0.004	0.062
First-stage pred. resid.		-0.049**		-0.062
Number of observations	354	354	354	354
Prob>Chi ²	0.000	0.000	0.000	0.000
Pseudo R ²	0.282	0.330	0.251	0.259

Notes: 1) The models include the same regressors as in table 2, their coefficients are not reported (available from the authors upon request). *See appendix not submitted for publication.*
2) *** denotes significance at 1%, ** - at 5%, * - at 10%.
3) Instrument (father's years of education) statistics are reported in table 4.

4. Concluding Remarks

Kosovo declared its independence from Serbia in February 2008. In a region, where out-migration was often synonymous with escape from a war zone, the motivations of current emigration intentions in calmer political circumstances are of interest. Are the better educated more likely to emigrate? Or is it the less educated that prepare to move out – continuing the pattern of emigration waves of the past? We provide answers to these questions using data from a survey on emigration intentions from Kosovo carried out in the summer of 2008 – four months after the country declared its independence. To give more credence to respondents' stated emigration intentions we introduce follow-up questions that reveal whether or not respondents have taken concrete steps toward emigration. This mitigates the common critique of intentions surveys.

In particular, we are interested in the effect of an extra year of education on emigration propensity. To deal with the potential problems of endogeneity, we instrument ‘own education’ with ‘parental education’. The findings from two-stage residual inclusion regression suggest that an extra year of education increases the probability of taking concrete steps towards emigration by up to 8 percentage points.

The findings are policy relevant. They inform Kosovo policy makers that more education promotes more emigration. By implication this suggests that public investment in education – in particular higher education- may encourage brain drain. This, in turn, lends itself to the possible interpretation that a developing country’s public investment in education may turn into a de facto subsidy from a relatively poor country to a relatively rich country – under the assumption of a predominant migration flow from poorer to richer countries and the assumption that the net effect on the home country of the emigration of the highly skilled is negative. Policies aimed at retaining the better educated could be designed. Alternatively, policies could be designed toward generating remittance income via ‘exporting’ the highly skilled.

All things considered, our findings point to an enormous emigration potential from Kosovo with a slant toward the higher educated. This does not bode well for the near future of this fragile young state.

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Appendix 1. Definitions of variables and summary statistics.

Variable	Definition	Kosovo Albanians		Kosovo Serbs	
		Mean	St.d.	Mean	St.d.
Age	Age in years	37.21	13.89	35.23	13.33
Male	1 if male	0.50	0.50	0.52	0.50
Single	1 if single, 0 if lives with a partner, married or widowed	0.29	0.45	0.42	0.49
Children under 6	1 if has children under 7	0.58	0.49	0.23	0.42
Children aged 7-14	1 if has children 7-14	0.58	0.49	0.29	0.45
Children aged 15-18	1 if has children 15-18	0.38	0.49	0.25	0.43
Household size	Number of household members	5.88	2.03	4.41	1.78
Household income per earner	Household income per income earner, in EUR	196.2	125.2	277.1	172.8
<i>Education</i>					
Years of education	Years of education	11.76	2.34	12.24	1.97
Father's years of education	Father's years of education	9.56	3.10	11.03	2.81
Mother's years of education	Mother's years of education	8.31	2.68	10.29	2.82
Unemployed	1 if unemployed	0.20	0.40	0.21	0.41
Living in rural area	1 if lives in rural area	0.48	0.50	0.63	0.48
Networks + remittances	1 if has family members abroad who send money back home	0.44	0.50	0.12	0.32
Networks, no remittances	1 if has family members abroad who do not send money back home	0.16	0.37	0.33	0.47
1 st generation migrant	If born outside Kosovo	0.01	0.11	0.06	0.23
2 nd generation migrant	If born in Kosovo, and at least one of the grandparents never lived in Kosovo (implying that parents migrated to Kosovo)	0.08	0.27	0.06	0.24