#### **CERGE-EI GDN RRC12**

#### **Thematic area:**

Migration (Urbanization and Cities: Urban / Rural Policy, Migration, Demographics)

# Migration experience and wage premium: the case of Albanian return migrants<sup>1</sup>

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This study tests whether return migrants succeed in obtaining a wage premium (relative to individuals with no migration experience) for their experience gained abroad. The wage premium of return migrants is analysed using the 2005-2008 Albanian LSMS by conditional mixed processes and propensity score matching. The results indicate that the experience acquired abroad guarantees a wage premium, which is higher for skilled workers, government-sector workers or entrepreneurs. The study concludes that policy makers should target policies that motivate the return of highly skilled migrants by taking advantage of the wage premium effect. Further promotion of entrepreneurship might be a good incentive for migrants to return and become involved in new businesses at home.

**Keywords:** migration, wage premium, propensity score matching, Albania

*JEL classification: J31, O15, J11, I25* 

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### Introduction and background information

The migration dynamics of Albanians have been extensively investigated because of the high interest aroused by the massive migration that began in the 1990s. However, De Zwager et al. (2010) argue that the migration of Albanians has entered into a phase of maturity that might be characterised by the extensive mobility of migrants who choose different forms of movement, e.g., temporary migration or a circular or permanent return to the country of origin. An earlier study by ETF (2007) indicates that the phenomenon of return and out-migration among Albanian migrants is becoming prevalent as either a return to the home country or a move to another host country. Fifty per cent of immigrants leave the host country after three years. Recently, Gedeshi and De Zwager (2012) found that 49% of Albanian migrants, especially those who have migrated to Greece, intend to return to their country of origin.

The motives for return are manifold. According to the literature, immigrants return because of dissatisfaction with the outcomes of the migration experience, the achievement of their targets, their socio-cultural and family ties with the home country and the expected benefits upon their return for the experience gained abroad. The pool of return migrants is composed of high- and low-skilled individuals who are heterogeneous in terms of their motives to return, behaviour and characteristics and expected labour market outcomes upon return.

In the Albanian context, empirical studies that investigate the labour market performance upon return, e.g., in terms of occupation and earnings, based on migration experience are relatively uncommon. Among the few microeconomic analyses that evaluate the potential of return migration, motives to return and post-return labour market performance of returnees is the study of De Coulon and Piracha (2005). Using a semi-parametric approach and a sample of 600 individuals active in the labour market, with one third having spent some time abroad, the study finds that non-migrants deciding to migrate and return would have earned more than twice the wages of return migrants. Furthermore, the study of Kilic et al. (2007) explored the impact of the migration experience of Albanian households on non-farm owned businesses and find that the destination country, e.g., Greece or Italy, is determinative in explaining the differences in earning potential attributed to the skills acquired abroad. The study of Germenji and Milo (2009) indicates that the transferability of human capital in Albania might help return migrants find better jobs and earn higher incomes in the home country labour market.

In this context, this study investigates the effects of migration experience on labour market performance upon return, as measured in terms of wage premium. The main determinants of return to the country of origin are analysed simultaneously with the upgrade in terms of earnings for the experience acquired abroad, distinguishing between high-, moderate- and low-skilled return migrants/non-migrants. The purpose of the study is to analyse whether the human capital acquired abroad is highly valued at home and whether it is the major cause of the higher wages obtained by return migrants compared to non-migrants, depending on skill level. Specifically, this study aims to answer the following research question: Do return migrants this outcome?

The hypothesis is that return migrants, depending on their skill level, should be able to obtain higher wages than their counterparts without migration experience. As such, the wage premium effect due to the human capital acquired abroad, which increases with skill level, is expected to induce to a positive selection of return migrants with respect to those without migration experience.

The methodology chosen to test this hypothesis consists of two approaches. The first approach consists of conditional mixed processes (CMP), which allows the estimation of a recursive system of equations through the full-information maximum likelihood (FIML) method, where one equation could be constructed as a probit (e.g., the probability of having migration experience and declaring earnings) and the second equation represents the expected level of earnings. Through this approach, the correction for the non-response of earnings of return migrants is addressed. The second approach consists of propensity score matching, which compares the earnings of return migrants with that of non-migrants. Different matching methods are implemented, and post-matching covariate balances are performed with the aim of selecting the appropriate matching approach.

The study uses the 2005 and 2008 Living Standard Measurement Survey in Albania (LSMS), which provides comprehensive information about non-migrants and return migrants,

migration motives and return motives, occupation upon return in the country of origin, information about future migration intentions and other relevant socio-economic indicators.

The results demonstrate that return migrants are expected to have a higher level of earnings compared to non-migrants, and this is especially true for those who work as entrepreneurs or are employed in the public sector. One interpretation could be that the reintegration programs for returnees introduced by the Albanian government in 2006, such as the "Brain Gain Programme", might have contributed to highly skilled returnees obtaining higher earnings at home for the human capital they gained abroad.<sup>3</sup>

In addition, those who have a moderate or high level of education and lengthy work experience in their current occupation are expected to have a higher level of earnings. However, the more highly educated have a lower probability of being in the pool of returnees. In conclusion, the results suggest that migration experience contributes to obtaining a wage premium, which increases with education and skill level.

The rest of the study is organised as follows. Section 2 presents the literature review. Section 3 presents with descriptive statistics in specific for non-migrants versus returnees, and Section 4 presents the methodology. Section 5 presents the main results, and Section 6 presents the conclusions.

### Literature review

The theoretical literature about return migration argues that if the decision to return to the country of origin is human-capital-driven, the return would be optimal if the potential wages at home are expected to increase more than the wages in the host country (Dustmann 1996, 2003). In terms of labour market performance upon return, the study of Mayr and Peri (2008) shows that a sufficient wage premium for return migrants produces a positive net effect of skilled mobility. Lacuasta (2006) and Rainhold and Thom (2008) show that a working experience abroad of longer than three years results in skill-upgrading, which is associated with wage premiums upon return. Thus, the choice of temporary migration may positively generate an upgrading of skills followed by higher wages upon returning to the home country. Furthermore, Co et al. (2000) suggest that

<sup>&</sup>lt;sup>3</sup> See <u>http://www.akti.gov.al/bgp.html</u> for information about the "Brain Gain Programme".

migration experience and its positive effects on earnings are gender specific. Their study finds evidence of a wage premium for the migration experience among women but not men, which is due to the difference in employment sector for men and women upon return. Iara (2008) finds evidence of a 30% wage premium, which can be attributed to the human capital gained abroad. However, the wage premium is skill-biased, meaning that those who are less skilled or educated are less likely to obtain a wage premium for the migration experience.

An important aspect highlighted by the international literature is that returnees might be positively selected such that the most successful return or negatively selected, especially if the realisations are worse than the initial expectation (Hunt 2004, Mayr and Peri 2009). Moreover, the migration experience might positively affect occupational achievement upon return, especially for men (Mulder and van Ham 2005).

In the Albanian context, different studies have indicated that, despite massive migration, especially the last decade, the phenomenon of return migration has intensified, especially after 2001, due to the improvement of socio-economic situation as well as partial recovery from the collapse of pyramid schemes in 1997, in which almost 90% of Albanians lost their savings (Gedeshi 2011, Jarvis 1999, ETF 2007). The literature also suggests that there is a negative selectivity among return migrants and that the transferred human capital acquired abroad is only minor (Kilic et al. 2007). Return migrants who fulfil their target of savings abroad quite often start new businesses upon return. Albanian returnees' managed to transfer financial capital more than human capital (Germenji & Milo 2009), and both the human and financial capitals obtained abroad are mostly channelled into setting up new business activities or becoming self-employed. Other studies suggest that return migrants are worse off in terms of earnings than non-migrants (De Coulon and Piracha 2005). Furthermore, studies that have investigated the economic activity of return migrants in Albania have shown that returnees are most likely to become entrepreneurs or start their own business activities (Piracha & Vadean 2010). Thus, migration experience increases the probability of becoming an entrepreneur or self-employed.

The existing studies suggest that there might be a positive wage premium attributed to the migration experience, but the evidence provided does not consider a set of important factors, such

as the skill level and occupational choice of return migrants and their counterparts, form of employment and whether earnings are declared.

Thus, this study contributes to the literature by comparing the earnings of return migrants with those of non-migrants using conditional mixed process estimates and propensity score matching methods, which account for form of employment and earnings reporting. The study corrects for non-responses of earnings through a two-step Heckman procedure estimated by conditional mixed processes (CMP), which is generally not performed in previous studies. Applying different propensity score matching methods allows the issue of endogeneity of selection into migration to be addressed. Moreover, the study combines the most recent household survey data, LSMS 2005 and LSMS 2008, which provide a larger pool of return migrants to compare with non-migrants.

# **Descriptive analysis**

The LSMS 2005 and 2008 data are exploited by this study to assess any potential wage premium for return migrants in Albania. In the beginning of the 1990s, Albania experienced massive emigration, but more recently, the phenomenon of return migration has begun to take form and intensify. The information provided by the LSMS 2005 and 2008 surveys indicates that return and temporary migration has intensified considerably, and diverse patterns can be observed for different migration periods depending on duration of stay abroad. The analysed sample is composed of 3084 non-migrants and 783 return migrants from LSMS-2005 and 2655 non-migrants and 654 return migrants from LSMS-2008 who are above the age of 15 and below 61. This sample represents non-migrants and return migrants who are active in the labour market and for whom information about employment status (excluding observations with missing values for the variables used in the analysis) is available.

#### Table 1 about here

A comparison of the LSMS-2005 and LSMS-2008 samples (Table 1) indicates that for non-migrants, there are no significant differences in composition in terms of age, gender or employment status. However, for return migrants, there are important differences in the sample composition of LSMS-2005 compared to that LSMS-2008, including differences with regard to

being married or not (81% versus 72%), being single (17% versus 24%), primary and secondary levels of education (36% versus 48% and 52% versus 41%, respectively), employment status (particularly the category of self-employed (21% versus 14%) or those looking for a job (16% versus 20%)), intentions to re-migrate (32% versus 37%) and reasons for returning home (particularly because of permit-of-stay expiration (8% versus 11%), having had no intentions to stay permanently (15% versus 8%), seasonal employment (9% versus 13%), being expelled (12% versus 9%) and family reasons (21% versus 18%)).

As a consequence, the sample of returnees obtained from LSMS-2005 compared to LSMS-2008 included more migrants that returned because they could not obtain a work permit, they were expelled, for family reasons or a lack of intention to stay permanently but fewer migrants who returned because their permit of stay expired or as a result of seasonal employment. Nevertheless, compared to the LSMS 2005 sample, LSMS 2008 is composed of more returnees with primary education and fewer returnees with secondary education, fewer self-employed and more looking for a job, fewer located in the southern region and more located in the northern region and fewer speaking English, Greek or Italian.

On average, in comparison with non-migrants, return migrants are at least with 2 years younger, have a lower level of education (11% versus 18% have tertiary education) but are less likely to be unemployed or looking for a job (18% versus 22%) and are more likely to be self-employed (18% versus 16%). Regionally, return migrants are less likely to be located in Tirana and northern Albania and more likely to be located in the central and southern parts of the country, which might also explain the high proportion of returnees who speak Greek and Italian, the languages of the main destination countries of Albanian migrants.

#### Table 2 about here

In terms of average earnings return, the migrants interviewed in 2005 and 2008 earn more than non-migrants (290.475 versus 256.794 Lek and 305.193 versus 260.345 Lek, respectively). Breaking down the earnings by employment status indicates that return migrants who are self-employed or are simply employees earn more than non-migrants on average (Table 2). However, a return migrant who is engaged as employer or entrepreneur earns significantly less compared to non-migrants with the same employment status. The gap for the average level of earnings is more

pronounced for the group of individuals interviewed in 2005. Furthermore, a comparison of average earnings for different education levels reveals that return migrants interviewed in 2005 that have a primary or secondary education earn more than their counterparts, but those with high or tertiary education levels earn less. In contrast, the returnees who participated to LSMS 2008 have a higher level of earnings than non-migrants for any given education level. Thus, return migrants, despite having a lower education level than non-migrants, obtain higher average monthly earnings, at least for the category of primary- and secondary-educated migrants as well as those who are self-employed or work as wage-employees. Consequently, the difference in the average monthly earnings for the group of individuals with primary and secondary education or those who are self-employed or wage-employees might be due to the human capital acquired during migration.

In summary, the descriptive statistics suggest that fewer return migrants have highly skilled jobs and that return migrants earn more than non-migrants for all skill levels with the exception of the highly skilled sample from LSMS 2005. Accordingly, these labour market features raises important questions about what determines such outcomes, forming the basis of the investigation described in the following sections.

|                    |                              | 2005        |           |            |           | 2008       |           |            |           |
|--------------------|------------------------------|-------------|-----------|------------|-----------|------------|-----------|------------|-----------|
|                    |                              | Non-migrant | s         | Return mig | grants    | Non-migran | ts        | Return miş | grants    |
|                    |                              |             | Standard  |            | Standard  |            | Standard  |            | Standard  |
|                    | Variables                    | Mean        | deviation | Mean       | deviation | Mean       | deviation | Mean       | deviation |
|                    | Age                          | 38.33       | 11.31     | 36.38      | 8.64      | 38.19      | 11.99     | 36.70      | 9.62      |
| Gender             | Female                       | 0.42        | 0.49      | 0.06       | 0.24      | 0.42       | 0.49      | 0.08       | 0.27      |
|                    | Male                         | 0.58        | 0.49      | 0.94       | 0.24      | 0.58       | 0.49      | 0.92       | 0.27      |
| Marital status     | Married                      | 0.75        | 0.44      | 0.81       | 0.39      | 0.69       | 0.46      | 0.72       | 0.45      |
|                    | Divorced/separated           | 0.01        | 0.10      | 0.01       | 0.09      | 0.01       | 0.12      | 0.02       | 0.14      |
|                    | Living together              | 0.01        | 0.07      | 0.001      | 0.036     | 0.001      | 0.027     | 0.01       | 0.08      |
|                    | Widow/er                     | 0.01        | 0.12      | 0.01       | 0.09      | 0.02       | 0.15      | 0.01       | 0.12      |
|                    | Single                       | 0.23        | 0.42      | 0.17       | 0.38      | 0.27       | 0.44      | 0.24       | 0.43      |
| Education level    | Primary                      | 0.33        | 0.47      | 0.36       | 0.48      | 0.36       | 0.48      | 0.48       | 0.50      |
|                    | Secondary                    | 0.49        | 0.50      | 0.52       | 0.50      | 0.44       | 0.50      | 0.41       | 0.49      |
|                    | Tertiary                     | 0.17        | 0.38      | 0.11       | 0.32      | 0.20       | 0.40      | 0.11       | 0.31      |
| Employment status  | Employee                     | 0.59        | 0.49      | 0.60       | 0.49      | 0.59       | 0.49      | 0.64       | 0.48      |
|                    | Self-employed                | 0.16        | 0.37      | 0.21       | 0.41      | 0.17       | 0.37      | 0.14       | 0.35      |
|                    | Looking for work             | 0.22        | 0.42      | 0.16       | 0.37      | 0.23       | 0.42      | 0.20       | 0.40      |
|                    | Employer/entrepreneur        | 0.03        | 0.16      | 0.03       | 0.18      | 0.01       | 0.12      | 0.02       | 0.12      |
| Language skills    | Speak English                | 0.14        | 0.35      | 0.13       | 0.34      | 0.13       | 0.33      | 0.11       | 0.31      |
|                    | Speak Greek                  | 0.03        | 0.17      | 0.44       | 0.50      | 0.02       | 0.15      | 0.28       | 0.45      |
|                    | Speak Italian                | 0.18        | 0.38      | 0.24       | 0.43      | 0.12       | 0.33      | 0.16       | 0.37      |
| Region of origin   | Tirana                       | 0.25        | 0.44      | 0.18       | 0.39      | 0.26       | 0.44      | 0.14       | 0.34      |
|                    | Central                      | 0.24        | 0.43      | 0.26       | 0.44      | 0.23       | 0.42      | 0.38       | 0.49      |
|                    | South                        | 0.19        | 0.39      | 0.30       | 0.46      | 0.22       | 0.41      | 0.21       | 0.41      |
|                    | North                        | 0.23        | 0.42      | 0.18       | 0.39      | 0.29       | 0.46      | 0.27       | 0.44      |
|                    | Family member has become     |             |           |            |           |            |           |            |           |
|                    | unemployed                   | 0.130       | 0.336     | 0.129      | 0.335     | 0.109      | 0.312     | 0.114      | 0.318     |
|                    | Lives with partner           | 0.812       | 0.391     | 0.749      | 0.433     | 0.722      | 0.448     | 0.693      | 0.461     |
| Years on migration | At least 1 year              |             |           | 0.77       | 0.42      |            |           | 0.74       | 0.44      |
| -                  | 1-3 years                    |             |           | 0.13       | 0.34      |            |           | 0.14       | 0.35      |
|                    | 3-5 years                    |             |           | 0.05       | 0.23      |            |           | 0.06       | 0.24      |
|                    | 5-7 years                    |             |           | 0.02       | 0.14      |            |           | 0.02       | 0.15      |
|                    | More than 7 years            |             |           | 0.02       | 0.15      |            |           | 0.03       | 0.18      |
| Intentions to re-  |                              |             |           |            |           |            |           |            |           |
| migrate            | Yes                          |             |           | 0.32       | 0.47      |            |           | 0.37       | 0.48      |
|                    | No                           |             |           | 0.51       | 0.50      |            |           | 0.46       | 0.50      |
|                    | Do not know                  |             |           | 0.16       | 0.37      |            |           | 0.17       | 0.38      |
| Reasons for        | Could not obtain residence   |             |           |            |           |            |           |            |           |
| returning          | permit                       |             |           | 0.17       | 0.38      |            |           | 0.17       | 0.38      |
| -                  | Could not obtain work permit |             |           | 0.06       | 0.24      |            |           | 0.04       | 0.21      |
|                    | Permit expired               |             |           | 0.08       | 0.27      |            |           | 0.11       | 0.31      |

Table 1: Descriptive statistics: Non-migrants versus return migrants, LSMS survey year

| No intention to stay       |      | 0.15 | 0.36 |      | 0.08  | 0.27 |
|----------------------------|------|------|------|------|-------|------|
| Accumulated enough money   |      | 0.02 | 0.15 |      | 0.02  | 0.14 |
| Seasonal work              |      | 0.09 | 0.29 |      | 0.13  | 0.34 |
| Was expelled               |      | 0.12 | 0.33 |      | 0.09  | 0.28 |
| Family reasons             |      | 0.21 | 0.41 |      | 0.18  | 0.39 |
| Homesick                   |      | 0.01 | 0.07 |      | 0.01  | 0.10 |
| To attempt legalisation of |      |      |      |      |       |      |
| house or land              |      | 0.00 | 0.00 |      | 0.002 | 0.04 |
| Other                      |      | 0.08 | 0.27 |      | 0.16  | 0.37 |
| Total observations         | 3084 | 783  |      | 2655 | 654   |      |

# Table 2: Monthly net earnings by employment status and educational skill level: Non-migrants versus return migrants

|                               | 2005                |                    |              |        |         |                     | 2008   |                    |        |         |
|-------------------------------|---------------------|--------------------|--------------|--------|---------|---------------------|--------|--------------------|--------|---------|
|                               |                     | Non-migran         | ts           |        |         |                     |        | Non-migra          | ants   |         |
| Variable                      | No.<br>Observations | Mean               | Std,<br>Dev, | Min    | Max     | No.<br>Observations | Mean   | Std, Dev,          | Min    | Max     |
| Net monthly earnings (in Lek) |                     |                    |              |        |         |                     |        |                    |        |         |
| Whole sample                  | 2858                | 256794             | 418837       | 2000   | 2000000 | 1984                | 260345 | 183284             | 5000   | 3000000 |
| Employee                      | 1817                | 225755             | 158564       | 2000   | 2268000 | 1534                | 248232 | 133099             | 10000  | 1000000 |
| Self-employed                 | 491                 | 283275             | 222116       | 20000  | 2000000 | 413                 | 284760 | 221200             | 5000   | 2000000 |
| Employer/entrepreneur         | 84                  | 845119             | 2150671      | 100000 | 2000000 | 37                  | 490000 | 684669             | 30000  | 3000000 |
| Primary education             | 885                 | 206443             | 135385       | 2000   | 1500000 | 623                 | 203876 | 112072             | 5000   | 800000  |
| Secondary education           | 1432                | 240551             | 177154       | 10000  | 2268000 | 890                 | 261982 | 206918             | 10000  | 3000000 |
| Tertiary education            | 525                 | 389914             | 903556       | 50000  | 2000000 | 461                 | 334110 | 186332             | 10000  | 2000000 |
| Net monthly earnings (in Lek) |                     | Return<br>migrants |              |        |         |                     |        | Return<br>migrants |        |         |
| Whole sample                  | 718                 | 290475             | 200304       | 8000   | 2000000 | 518                 | 305193 | 234791             | 700    | 2000000 |
| Employee                      | 466                 | 289607             | 186180       | 10000  | 1300000 | 416                 | 300781 | 232584             | 700    | 2000000 |
| Self-employed                 | 162                 | 306179             | 205322       | 8000   | 1600000 | 92                  | 321467 | 248495             | 20000  | 1600000 |
| Employer/entrepreneur         | 27                  | 459630             | 353678       | 200000 | 2000000 | 10                  | 339000 | 207603             | 100000 | 640000  |
| Basic education               | 249                 | 251008             | 149293       | 10000  | 800000  | 242                 | 282619 | 229473             | 700    | 1200000 |
| Moderate education            | 381                 | 308659             | 222083       | 8000   | 2000000 | 207                 | 318691 | 225487             | 25000  | 2000000 |
| Advanced education            | 86                  | 321640             | 213001       | 70000  | 1300000 | 69                  | 343870 | 273106             | 28000  | 2000000 |

### Methodology

The question evaluated here is whether, upon return, migrants obtain a wage premium for the migration experience abroad. In this framework, the individual first chooses between temporary migration and returning home thereafter and no migration at all<sup>4</sup> and then chooses whether to participate in the local labour market upon return and consequently whether to report income. Furthermore, the log earnings of returnees versus non-migrants have to be corrected for the non-response of average monthly income, which might be the case for those who are unemployed or looking for work. In this type of problem, the endogeneity of employment decision and migration decision is an issue and can be addressed by introducing exclusion restrictions or the appropriate instrumental variables.

To address some of these issues, a probit model is first implemented with the aim of looking at the determinants of obtaining migration experience. Second, the analysis runs a conditional mixed process proposed by Roodman (2009)<sup>5</sup> to correct for the non-reporting of earnings. This is a version of the Heckman two-step procedure, where the CMP approach allows the estimation of a system of recursive equations by taking advantage of the full-information maximum likelihood (FIML) method. The next step is to compare the earnings of return migrants with those of non-migrants by applying propensity score matching (PSM)<sup>6</sup>, which allows the difference in the mean earnings for the returnees and non-migrants to be estimated. However, instead of the declared average monthly earnings, the predicted earnings obtained by the CMP estimate have been used for the analysis of the wage premium.

#### Correction for the non-reporting of earnings

Assuming that return migrants are randomly selected and employed upon return to the local labour market incorporates some bias. This study addresses this issue by simultaneously estimating the equation of employment and the reporting of monthly earnings, controlling whether the unobserved factors affecting employment decision and reporting of earnings are correlated. Thus, we estimate a system of equations where the selection equation corresponds to

<sup>&</sup>lt;sup>4</sup> Here, a return migrant is defined as a person who has migrated abroad for at least one month.

<sup>&</sup>lt;sup>5</sup> See Rodman (2009) for the application of conditional mixed process (CMP) modelling.

<sup>&</sup>lt;sup>6</sup> See Rosenbaum and Rubin (2003), Dehejia and Wahba (2002) and Steiner (2011).

the employment decision, taking a value of 1 if the individual is employed or unemployed and 0 otherwise. The explanatory variables included in the deterministic portion are age, education, employment status, sector of activity, occupation and matching of skill and occupation level, foreign languages spoken, job tenure, working in a company with more than 50 employees, regional location and a dummy for being a return migrant or not. The second equation corresponds to the reporting of monthly earnings. The explanatory variables, deterministic for the earnings reported, are age, gender, education and regional location.

The estimation results, which should mostly be treated as descriptive of the relationship between the explanatory and dependent variables, are presented in Table 3. The system of equations has been estimated by implementing the CMP for the Heckman two-step procedure.<sup>7</sup> The obtained estimates have been further used to calculate the predicted values of monthly earnings for the purpose of correcting for the earnings non-response.

The endogeneity of the return decision and wage premium outcome is one of the main difficulties in this analysis. Moreover, the estimations may suffer from reverse causality, self-selection to permanent return and omission of explanatory variables. For example, reverse causality may occur between the return intentions and wage premium: the decision to return permanently affects the wage premium, and the wage premium conditions affect the decision to return permanently. Consequently, to address these issues, different propensity score matching methods have been applied to allow the estimation of the earnings gap between return migrants and non-migrants. Considering that information about the average monthly earnings is missing for those who are unemployed or looking for work, instead of reported earnings, the predicted average monthly earnings obtained by the CMP estimates in Table 3 have been used.<sup>8</sup>

 $<sup>^{7}</sup>$  This approach takes into account the full covariance structure using the full-information maximum likelihood (FIML) method and therefore produces more consistent and efficient estimates. The results are presented in Table 3. Details about the estimation method can be found in Roodman (2009).

<sup>&</sup>lt;sup>8</sup> As already mentioned, some returnees are working, and some are not. Thus, we correct for the non-reporting of earnings only for those returnees for whom employment status information is available, including those looking for a job. In contrast, those returnees for whom information about employment status and earnings is missing are excluded from the sample.

|                               | CMP estimate           | CMP estimate           | CMP estimate           |
|-------------------------------|------------------------|------------------------|------------------------|
|                               | Entire sample          | Female                 | Male                   |
|                               | log monthly earnings   | log monthly earnings   | log monthly earnings   |
| Female                        | -0.294***              |                        |                        |
|                               | (0.0402)               |                        |                        |
| Education level: secondary    | 0.228***               | 0.374***               | 0.146**                |
|                               | (0.0414)               | (0.0694)               | (0.0519)               |
| Education level: tertiary     | 0.656***               | 0.978***               | 0.383***               |
|                               | (0.0662)               | (0.0989)               | (0.0894)               |
| Age                           | 0.0930***              | 0.102***               | 0.0854***              |
|                               | (0.0111)               | (0.0193)               | (0.0136)               |
| Age squared                   | -0.000901***           | -0.000981***           | -0.000809***           |
|                               | (0.000152)             | (0.000267)             | (0.000185)             |
| Region: central               | -0.421***              | -0.498***              | -0.389***              |
|                               | (0.0583)               | (0.0925)               | (0.0755)               |
| Region: coast                 | -0.366***              | -0.448***              | -0.299***              |
|                               | (0.0614)               | (0.0943)               | (0.0815)               |
| Region: mountain              | -0.802***              | -0.794***              | -0.806***              |
|                               | (0.0558)               | (0.0904)               | (0.0713)               |
| _cons                         | -0.68/***              | -1.263***              | -0.508*                |
|                               | (0.188)                | (0.323)                | (0.232)                |
|                               | Selection equation:    | Selection equation:    | Selection equation:    |
|                               | Declaring income (P=1) | Declaring income (P=1) | Declaring income (P=1) |
| Female                        | -0.285***              |                        |                        |
| <b>F 1 1 1 1</b>              | (0.0188)               |                        |                        |
| Education level: secondary    | 0.174***               | 0.238***               | 0.155***               |
|                               | (0.0194)               | (0.0400)               | (0.0230)               |
| Education level: tertiary     | 0.434***               | 0.550***               | 0.369***               |
|                               | (0.0305)               | (0.0620)               | (0.0391)               |
| Age                           | 0.0519                 | 0.0139                 | (0.00668)              |
| A concerned                   | (0.00500)              | (0.0117)               | (0.00008)              |
| Age squared                   | $(0.000031^{+++})$     | -0.000127              | -0.000348****          |
| Employee                      | 0.120***               | 0.333***               | 0.0503                 |
| Employee                      | (0.0305)               | -0.555                 | (0.0443)               |
| Self-employed                 | -0.0139                | -0.165**               | 0.146**                |
| Sen-employed                  | (0.0358)               | (0.0549)               | (0.0496)               |
| Employer/entrepreneur         | 0.505***               | 0 542***               | 0 539***               |
| Employer/endeplenedi          | (0.0588)               | (0.0894)               | (0.0790)               |
| Employer: government sector   | -0 101***              | -0.0689+               | -0 119***              |
| Zinpisyen government sector   | (0.0249)               | (0.0411)               | (0.0316)               |
| Employer: private company     | 0.0543*                | 0.00221                | 0.0781**               |
| F ,                           | (0.0225)               | (0.0402)               | (0.0269)               |
| Region: central               | -0.158***              | -0.141***              | -0.179***              |
| C                             | (0.0228)               | (0.0404)               | (0.0287)               |
| Region: coast                 | -0.0699**              | -0.0658                | -0.0840**              |
| C                             | (0.0236)               | (0.0410)               | (0.0297)               |
| Region: mountain              | -0.0606*               | -0.0148                | -0.0984**              |
| C .                           | (0.0259)               | (0.0524)               | (0.0316)               |
| Returnee                      | 0.0702**               | -0.108                 | 0.0760**               |
|                               | (0.0252)               | (0.0760)               | (0.0273)               |
| Highly skilled job (ISCO 1-3) | -0.0918                | 0.0685                 | -0.104                 |
|                               | (0.190)                | (0.353)                | (0.225)                |
| Clerks (ISCO 4)               | -0.559+                | · · · ·                | -0.518                 |
|                               | (0.313)                |                        | (0.316)                |

#### Table 3: Estimation of earnings equation by gender<sup>9</sup>

<sup>&</sup>lt;sup>9</sup> Correct earnings for selection into employment and non-reporting earnings using CMP estimate. <sup>10</sup> Baseline: primary education, having a private individual as an employer, living in Tirana, looking for a job, having an entry-level job or elementary job and performing a low skilled job.

| Service workers, market sales workers      | 0.211       | 0.601+     | 0.181      |
|--|-------------|------------|------------|
| Skilled agricultural and fishery           | (0.129)     | (0,353)    | (0.139)    |
| workers                                    | (0.12))     | (0.555)    | (0.157)    |
| (ISCO 6)                                   | -0.192***   | 0.145      | -0.200***  |
|  | (0.0525)    | (0.354)    | (0.0538)   |
| Match education – occupation skill level 2 | 0.115       | -0.0263    | 0.168      |
|  | (0.0914)    | (0.183)    | (0.105)    |
| Match education – occupation skill level 3 | 0.128       | 0.136      | 0.182      |
|  | (0.117)     | (0.201)    | (0.143)    |
| Match education – occupation skill level 4 | -0.0227     | -0.0506    | 0.0329     |
|  | (0.0624)    | (0.0802)   | (0.0960)   |
| Match education – occupation skill level 5 | 0.208**     | 0.246+     | 0.264**    |
|  | (0.0722)    | (0.137)    | (0.0854)   |
| Job tenure                                 | 0.0117***   | 0.0129*    | 0.0109**   |
|  | (0.00319)   | (0.00526)  | (0.00399)  |
| Job tenure squared                         | -0.000318** | -0.000339* | -0.000298* |
| -  | (0.000106)  | (0.000169) | (0.000137) |
| Speak English                              | 0.133***    | 0.188***   | 0.0893*    |
|  | (0.0306)    | (0.0457)   | (0.0408)   |
| Speak Greek                                | 0.0545 +    | 0.108      | 0.0568 +   |
| _  | (0.0305)    | (0.0754)   | (0.0335)   |
| Speak Italian                              | 0.107***    | 0.0590     | 0.128***   |
|  | (0.0265)    | (0.0425)   | (0.0335)   |
| No. Employees >50                          | 0.0395 +    | 0.0396     | 0.0754*    |
|  | (0.0230)    | (0.0339)   | (0.0312)   |
| _cons                                      | 11.54***    | 11.65***   | 11.38***   |
|  | (0.104)     | (0.251)    | (0.122)    |
| lnsig_1                                    | -0.476***   | -0.517***  | -0.468***  |
| _cons                                      | (0.00920)   | (0.0156)   | (0.0114)   |
| atanhrho_12                                | 0.0702      | -0.0139    | 0.0901     |
| _cons                                      | (0.0690)    | (0.217)    | (0.0824)   |
|  |             |            |            |
| Ν  | 7176        | 2519       | 4657       |

Standard errors in parentheses.

+ p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

#### **Propensity score matching methods**

The purpose of this study is to evaluate the effect of migration experience on wages and to determine whether individuals who have migrated abroad are rewarded with a wage premium for the human capital acquired during their migration. This evaluation requires the estimation of wage premiums for those particular individuals who have migrated compared with individuals with similar characteristics who did not migrate. In this case, migration is considered as a treatment for those individuals who report having migrated. Non-migrants represent the control group with similar observed characteristics but who have not received treatment. The unexplained difference in earnings between the treated and non-treated groups is attributed to the treatment effect. The estimation of the wage gap is possible through propensity score matching methods, which allow the comparison of the wages of treated individuals (those who have migrated) relative to similar non-treated individuals. In our particular case, the effect of migration experience on earnings for an individual *i*, denoted as  $g_i$ , is defined as the difference between the earnings with treatment and without treatment, such as

$$g_i = W_{1i} - W_{0i}$$

Because we are interested in obtaining the average treatment effect on the treated (ATT), which describes the impact of migration on the earnings of returnees, we need the following measure:

$$ATT = E (W_1 - W_0 | M = 1)$$
  
= E (W\_1 | M = 1) - E (W\_0 | M = 1)

where  $W_0$  and  $W_1$  stands for earnings without and with migration experience. Because we can observe the second variable but not the first then we can calculate the difference:

$$\Delta = E(W_1 | M = 1) - E(W_0 | M = 0)$$
  
= ATT + E(W\_0 | M = 1) - E(W\_0 | M = 0)

where the second and third components represent the self-selection bias that, to be reduced, must satisfy the condition of conditional independence or the unconfoundedness assumption, such as

$$E(W_{0i}|X_i, M = 1) = E(W_{0i}|X_i, M = 0)$$

This assumption is fundamental for obtaining a consistent estimate of the migration effect on earnings, as it allows the use of non-migrants to construct a counterfactual for return migrants such that they are similar in characteristics but differ with respect to migration experience. The observable characteristics  $X_i$  are used as comparison units, and a probit or logit model for receiving treatment (in this case, having migration experience) is estimated to identify the significant variables and the appropriate set of comparison units, as shown in Table 4.

|  | (Return migrant, P=1) |
|--|-----------------------|
| Age  | 0.178***              |
|  | (0.0158)              |
| Age squared                                | -0.00248***           |
|  | (0.000202)            |
| Female                                     | -1.203***             |
|  | (0.0557)              |
| Married                                    | 0.121+                |
|  | (0.0674)              |
| Education level: secondary <sup>11</sup>   | -0.0169               |
|  | (0.0458)              |
| Education level: tertiary                  | -0.161*               |
|  | (0.0793)              |
| Employee                                   | 0.273***              |
|  | (0.0619)              |
| Self-employed                              | 0.159*                |
|  | (0.0732)              |
| Employer/entrepreneur                      | 0.395**               |
|  | (0.148)               |
| Employer: government sector                | -0.209**              |
|  | (0.0695)              |
| Employer: private company                  | 0.104+                |
|  | (0.0558)              |
| Region: central                            | 0.517***              |
|  | (0.0578)              |
| Region: coast                              | 0.493***              |
|  | (0.0605)              |
| Region: mountain                           | 0.185**               |
|  | (0.0618)              |
| Match education – occupation skill level 2 | -0.364                |
|  | (0.305)               |
| Match education – occupation skill level 3 | 0.258                 |
|  | (0.317)               |
| Match education – occupation skill level 4 | 0.0399                |
|  | (0.200)               |
| Match education – occupation skill level 5 | -0.424+               |
|  | (0.222)               |
| Job tenure                                 | -0.0874***            |
|  | (0.00867)             |
| Job tenure squared                         | 0.00235***            |
|  | (0.000323)            |
| Speak English                              | 0.0459                |
|  | (0.0783)              |
| Speak Italian                              | 0.434***              |
|  | (0.0645)              |
| No. Employees >50                          | -0.215**              |
|  | (0.0712)              |
| _cons                                      | -3.855***             |
|  | (0.268)               |
| N  | 6942                  |
| $F \log likelihood = -2544.215$            |                       |
| Pseudo $R^2 = 0.2051$                      |                       |

Table 4: Estimation of the probability of receiving treatment

Standard errors in parentheses.

+ p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

<sup>&</sup>lt;sup>11</sup> Baseline: primary education, having a private individual as an employer, living in Tirana, looking for a job, having an entry-level job, and having a low-skilled job.

The next step is applying different propensity score matching methods, such as "one-toone" matching, "k-nearest-neighbour" matching and "kernel" matching (Gaussian and Epanechnikov kernel density). In nearest-neighbour matching, an individual from the control group is chosen as a match for a treated individual in terms of similar observed characteristics (Dehejia and Wahba 2002). The option of "with replacement" and "without replacement" allows the untreated individual to be used more than once (or not) for the matching. The option of "calliper" defines the maximum propensity score distance with which a match can be made. Kernel matching allows the comparison of the outcome of the treated individuals with the weighted average of the outcomes of all non-treated individuals, where greater weight is given to non-treated individuals most similar to treated individuals.

After applying various propensity score matching methods, as presented in Table A2 in the Annex, post-matching covariate balance tests are performed to determine the approach that performs best in terms of balancing the characteristics between the treated and control groups. The results, presented in Table A3 in the Annex, reveal the average percentage biased after matching. The evaluation of matching for different subgroups, e.g., gender, education, employment status, is performed by implementing the PSM that provides the best match, which in this case is the Epanechnikov kernel matching method.

## **Empirical results**

We start by presenting the estimation results regarding the correction for the nonreporting of earnings, distinguishing by gender (see Table 3). The results indicate that the likelihood of declaring monthly earnings increases with level of education and is higher for employers and entrepreneurs, those who work for a private company, return migrants (especially in the case of men), highly skilled workers who work jobs that match their level of qualification, those who speak foreign languages and those who work for large companies with more than 50 employees. Regarding the determinants of earnings, the estimates show that men, the highly educated and individuals living in Tirana are expected to earn more. These estimates and the respective predicted level of earnings are used to perform propensity score matching to evaluate any wage premium to be attributed to migration for different subgroups, e.g., by gender, education and employment status.

The estimation results, as shown in Table 4, illustrate the probability of receiving treatment, which, in our case, implies migrating and returning home, suggesting that the likelihood of having migration experience increases with age to a point and then decreases. Additionally, women are less likely to migrate. Moreover, highly educated individuals, highly skilled individuals with a job that matches their level of qualification, those who work for the government sector and those who work for large companies with more than 50 employees are less likely to have migrated and returned to their country of origin. In contrast, the self-employed, employees and especially entrepreneurs; those who work for a private company or have many years of work experience; and those who speak Italian are more likely to have migrated and returned home.

As mentioned above, the estimation of the probability of receiving treatment, presented in Table 4, is useful for identifying the comparison units to be used for the propensity score matching. As such, the significant variables obtained by the probit regression are part of the set of comparison units for performing different propensity score matching, as presented in Table A2 in the Annex. Instead of the declared average monthly earnings, the predicted earnings obtained by CMP estimation are used (i.e., those in Table 3), which correct for the non-reporting of monthly income and allow comparison of the earnings of return migrants with the level of earnings of non-migrants by applying the PSM.

The results obtained by different PSMs differ because of the considerable heterogeneity in the comparison units for the groups of individuals with and without migration experience. Therefore, to select the appropriate method for estimating the average treatment effect on the treated, we run post-matching covariate balance tests and check for the significance of standardised bias before and after the regression of comparison units, which should not be more than 5% (see Table A3 in the Annex). Among the PSM applied, Epanechnikov kernel matching

has only one variable with a standardised bias above 5%.<sup>12</sup> Thus, we choose this PSM to evaluate the wage premium for different subgroups, e.g., by gender, education and employment status.

| Baseline model: | Kernel matching (Epanec         | chnikov), no calliper                 |          |          |            |         |        |                 |
|-----------------|---------------------------------|---------------------------------------|----------|----------|------------|---------|--------|-----------------|
|                 | B C I                           | I I I I I I I I I I I I I I I I I I I |          |          |            |         |        | Earnings        |
|                 |                                 | Variable                              | Treated  | Controls | Difference | S.E.    | t-stat | gap in %        |
| Entire sample   |                                 | Earnings: Unmatched                   | 240040.1 | 210188.9 | 29851.2    | 2209.0  | 13,51  | 14,20%          |
|                 |                                 | ATT                                   | 239605.6 | 220686.6 | 18919.0    | 2675.3  | 7,07   | 8,57%           |
| Gender          | Female                          | Earnings: Unmatched                   | 218535.6 | 180642.3 | 37893.4    | 5679.1  | 6,67   | 20,98%          |
|                 |                                 | ATT                                   | 218535.6 | 195492.5 | 23043.1    | 8074.6  | 2,85   | 11,79%          |
|                 | Male                            | Earnings: Unmatched                   | 241779.0 | 232068.2 | 9710.8     | 2495.6  | 3,89   | 4,18%           |
|                 |                                 | ATT                                   | 241303.3 | 221662.6 | 19640.8    | 2862.3  | 6,86   | 8,86%           |
| Region          | Region: Tirana                  | Earnings: Unmatched                   | 286700.9 | 246554.8 | 40146.1    | 7104.7  | 5,65   | 16,28%          |
|                 |                                 | ATT                                   | 284544.8 | 260465.6 | 24079.2    | 7863.2  | 3,06   | 9,24%           |
|                 | Region: central                 | Earnings: Unmatched                   | 214601.6 | 183810.3 | 30791.3    | 2730.1  | 11,28  | 16,75%          |
|                 |                                 | ATT                                   | 214145.2 | 195853.1 | 18292.0    | 3596.7  | 5,09   | 9,34%           |
|                 | Region: coastal                 | Earnings: Unmatched                   | 252361.6 | 203746.8 | 48614.8    | 4028.5  | 12,07  | 23,86%          |
|                 |                                 | ATT                                   | 250143.5 | 233998.2 | 16145.3    | 5509.0  | 2,93   | 6,90%           |
|                 | Region: mountain                | Earnings: Unmatched                   | 227497.9 | 200992.4 | 26505.5    | 3451.6  | 7,68   | 13,19%          |
|                 |                                 | ATT                                   | 227274.7 | 209758.4 | 17516.3    | 3818.0  | 4,59   | 8,35%           |
| Education       | Primary education               | Earnings: Unmatched                   | 194485.7 | 169371.6 | 25114.1    | 1574.3  | 15,95  | 14,83%          |
|                 |                                 | ATT                                   | 194459.9 | 181101.4 | 13358.5    | 2226.7  | 6      | 7,38%           |
|                 | Secondary education             | Earnings: Unmatched                   | 256095.4 | 209993.6 | 46101.8    | 2309.3  | 19,96  | 21,95%          |
|                 |                                 | ATT                                   | 255311.0 | 233922.7 | 21388.3    | 2945.8  | 7,26   | 9,14%           |
|                 | Tertiary education              | Earnings: Unmatched                   | 343858.4 | 286366.0 | 57492.4    | 8893.8  | 6,46   | 20,08%          |
|                 |                                 | ATT                                   | 343117.8 | 314549.8 | 28567.9    | 11130.7 | 2,57   | 9,08%           |
| Employment      |                                 |                                       |          |          |            |         |        |                 |
| status          | Employee                        | Earnings: Unmatched                   | 227680.4 | 207802.5 | 19877.8    | 2315.2  | 8,59   | 9,57%           |
|                 |                                 | ATT                                   | 227280.4 | 209317.3 | 17963.1    | 2933.3  | 6,12   | 8,58%           |
|                 | Self-employed                   | Earnings: Unmatched                   | 259724.1 | 225423.9 | 34300.2    | 4289.6  | 8      | 15,22%          |
|                 | Deady to start                  | ATT                                   | 259077.5 | 241872.9 | 17204.6    | 4468.2  | 3,85   | 7,11%           |
|                 | working                         | Earnings: Unmatched                   | 229651.7 | 184256.1 | 45395.6    | 3489.8  | 13.01  | 24,64%          |
|                 | U                               | ATT                                   | 228424.0 | 207102.1 | 21321.9    | 3918.2  | 5.44   | 10.30%          |
|                 | Employer or                     |                                       |          |          |            |         | - 7    | - ,             |
|                 | entrepreneur                    | Earnings: Unmatched                   | 508375.0 | 396605.1 | 111769.9   | 25517.2 | 4,38   | 28,18%          |
| <b>D</b>        |                                 | ATT                                   | 493018.8 | 434921.0 | 58097.8    | 34976.8 | 1,66   | 13,36%          |
| Employment      | Employer:                       | Farnings: Unmatched                   | 252338 5 | 209288 7 | 43049.8    | 5005.8  | 8.6    | 20.57%          |
| sector          | government sector               |                                       | 252550.5 | 231744.9 | 19825 7    | 5562.4  | 3 56   | 20,57%<br>8 55% |
|                 | Employer: private               | AII                                   | 251570.0 | 231744.) | 19825.7    | 5502.4  | 5,50   | 0,5570          |
|                 | company                         | Earnings: Unmatched                   | 232488.5 | 215199.7 | 17288.9    | 3569.5  | 4,84   | 8,03%           |
|                 |                                 | ATT                                   | 233240.0 | 217229.9 | 16010.1    | 4374.3  | 3,66   | 7,37%           |
|                 | Employer: private<br>individual | Earnings: Unmatched                   | 210042.2 | 185067.9 | 24974.3    | 2933.7  | 8,51   | 13,49%          |
|                 |                                 | ATT                                   | 208103.2 | 188867.1 | 19236.1    | 4004.3  | 4,8    | 10,18%          |
|                 | LSMS 2005                       | Earnings: Unmatched                   | 249272.0 | 214096.5 | 35175.4    | 3426.0  | 10,27  | 16,43%          |
|                 |                                 | ATT                                   | 47476.9  | 229861.9 | 17614.9    | 3954.5  | 4,45   | 7,66%           |
|                 | LSMS 2008                       | Earnings: Unmatched                   | 32290.3  | 205649.8 | 26640.5    | 2802.7  | 9,51   | 12,95%          |
|                 |                                 | ATT                                   | 32865.3  | 215950.4 | 16915.0    | 3642.7  | 4,64   | 7,83%           |
|                 |                                 |                                       |          |          |            |         |        |                 |

Table 5: Matching results: average treatment effect on the treated (ATET) by different characteristics

 $<sup>^{12}</sup>$  Rosenbaum and Rubin (1985) propose that the standardized bias before and after matching should be less than 5% after matching.

The results, which are presented in Table 5, show the matching results for various subgroups. The earnings gap for different subgroups is provided first as the difference in terms of earnings before the match and second after having estimated the average treatment effect of the treated by the selected PSM.

The overall results indicate that the wage gap of individuals with migration experience versus those without migration experience is 8.6%. This outcome suggests that the group that receives treatment attains a level of monthly earnings that is almost 19.000 Lek greater than the monthly earnings of those who did not participate in the treatment (in this case, did not migrate). The results by gender indicate that the wage gap between women is greater than that between men (12 and 9%, respectively), suggesting that women who migrate abroad obtain a higher wage premium for the migration experience than their male counterparts. However, in terms of education level, the decomposition reveals that individuals with primary education who have migrated obtain a higher (by at least 7%) wage after returning, whereas those with secondary and tertiary education receive a wage premium of approximately 9%. In absolute terms, the wages of return migrants with primary education increased by 13.000 Lek, the wages of those with secondary education increased by 21.000 Lek, and the wages of those with tertiary education increased by 28.000 Lek. One interpretation is that highly educated individuals attain a higher wage premium because they might have higher wage requirements for accepting a job upon return compared to lowly and moderately educated migrants. Moreover, the human capital and experience acquired abroad might be highly valued at home, especially if the highly educated individuals have been performing work that matches their level of qualification or skills.

When controlling for employment status, the wage premium is 9% for employees, 7% for the self-employed, 10% for those looking for work and 13% for those working as employers or entrepreneurs. These results suggest that in terms of employment status, those who are most rewarded by the migration experience are returnees who work as employers or entrepreneurs. This finding is also in line with the findings of Piracha and Vadean (2010), who argue that return migrants in Albania tend to become entrepreneurs or start their own business as the best option for investing their savings and obtaining higher returns for the experience gained abroad. However, the results obtained by the working sector show that, relative to their counterparts, migrants obtain a wage premium of 8.5% if they work in the governmental sector, 7% if they work for a private company and 10% if the employer is a private individual, suggesting that the private sector is less rewarding than the public sector or a company owned by an individual. One explanation of why the government sector provides higher wage premiums than the private sector could be the participation of highly skilled returnees in the reintegration programmes introduced by the Albanian government in 2006. Such programmes have the scope to motivate highly qualified migrants to return to and integrate into the public sector and the private sector by offering wage premiums and leadership positions to return migrants who further improved their education level and qualifications during their migration abroad. An example of such a programme is the "Brain Gain Programme", which is thought to have attracted a great number of highly educated migrants to return home and invest the human capital gained abroad, especially in those sectors that offer higher earnings and better employment or career opportunities.<sup>13</sup> This is also confirmed by the fact that when controlling for the employment sector of highly skilled returnees, 45% are employed in the government/public sector, 25% in a private company and the rest in state-owned enterprises, NGOs or companies owned by private individuals.

Regarding the disaggregation by region, the study indicates that being located in Tirana and the central part of the country offers higher wage premiums than working in the northern or coastal areas. The divergence in wage premiums between Tirana and other regions is particularly high compared to the northern mountain areas as well as southern coastal areas. In Tirana and the central region of the country, the wage premium is approximately 24.000 Lek, whereas the wage premium in other regions is not more than 17.000 Lek. This divergence in terms of wage premium and regional location can be explained by the fact that almost one third of the population is concentrated in Tirana and the surrounding areas, which offer higher employment opportunities. As a consequence, because of the high unemployment prevailing in the northern and southern regions, return migrants are expected to obtain a lower wage increase because of their experience gained abroad.

### Main findings and conclusions

This study analyses the effect of migration experience on obtaining a wage premium in the local labour market upon return. The hypothesis that return migrants should be able to obtain

<sup>&</sup>lt;sup>13</sup> See <u>http://www.akti.gov.al/bgp.html</u> for information about the "Brain Gain Programme".

higher wages than their counterparts without migration experience is confirmed, and the findings indicate that the wage premium increases with education level.

The hypothesis is tested by implementing propensity scoring methods, which allow the estimation of the average treatment effect of migration experience on earnings. Different PSMs have been performed and tested for the post-matching covariate balance to select the appropriate matching approach. The analysis uses data from the LSMS-2005 and LSMS-2008, which contain detailed information for non-migrants and return migrants, their employment history in the local labour market, migration experience and level of earnings.

The results suggest that migration experience contributes to obtaining a wage premium, with higher premiums being obtained by those with higher education and skill levels, those who are employed in the government sector or in companies owned by a private individual and those who work as employers or entrepreneurs. One explanation of these results is the successful implementation of the reintegration programs introduced by the Albanian government in 2006, which provide wage premiums and better career opportunities to highly educated return migrants who have enhanced their human capital abroad with further education and decide to return and become employed, particularly in the government/public sector. As the statistics confirmed, more than 45% of highly educated returnees work in the government/public sector. This effect might also explain why women tend to obtain a higher wage premium than men, as 22% of returning women work for the public sector compared to 16% of returning men.

In addition, location in the central region of the country, where the employment opportunities are greater and unemployment is lower, is important for obtaining a wage premium as a result of the experience gained abroad. In conclusion, policies that target the return of highly skilled migrants are expected to obtain the desired effect if such policies take into account the wage premium and the reward for the human capital built abroad. At the same time, the fact that the government sector is more rewarding than the private one indicates that the latter sector should offer more competitive wages to attract highly skilled return migrants.

Other policy implications emerging from this study are that further improvement of the business climate, promotion of entrepreneurship and guidance to assist new businesses with becoming profitable might motivate migrants to return and invest their savings in new businesses at home.

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#### Annex A

| Table A        | 1: Standard classification of occupation and education lev | el: ISCO-88 and | ISCED        |
|----------------|--|-----------------|--------------|
| Education ISCI | ED   |                 |              |
| Skill level    | Age (years)  | Total yea       | rs of school |
| 1st            | 5-7  | 5               |              |
| 2nd            | 11-12  | 8               |              |
| 2nd            | 14-15  | 11              |              |
| 3rd            | 17-18  | 15              | Only award   |
| 4th            | 17-18  | above 15        | Degree       |
|                |  |                 |              |
| Skill level    | ISCO-88: occupations by skill level                        |                 |              |
| 5th            | Legislators, senior officials and managers                 | 1               |              |
| 4th            | Professionals  | 2               |              |
| 3rd            | Technicians and associate professionals                    | 3               |              |
| 2nd            | Clerks   | 4               |              |
| 2rd            | Service workers and shop and market sales workers          | 5               |              |
| 2nd            | Skill agricultural and fishery workers                     | 6               |              |
| 2nd            | Craft and related workers                                  | 7               |              |
|                | Plant and machine operators and assemblers                 | 8               |              |
| 1st            | Elementary occupations                                     | 9               |              |
| -              | Armed forces   | 0               |              |

### Table A1: Standard classification of occupation and education level: ISCO-88 and ISCED

|                                 |                       |                 |              |            |            |        | Earnings |
|---------------------------------|-----------------------|-----------------|--------------|------------|------------|--------|----------|
| Methods                         |                       | Return migrants | Non-migrants | Difference | S.E.       | t-stat | gap      |
| One-to-one matching             | earnings<br>unmatched | 240040,057      | 210188,864   | 29851,1933 | 2209,03703 | 13,51  | 14,20%   |
| no calliper                     | ATT                   | 239605,616      | 221589,784   | 18015,8318 | 5498,62046 | 3,28   | 8,13%    |
| calliper (0,001)                | ATT                   | 239638,035      | 220224,354   | 19413,6819 | 6172,56168 | 3,15   | 8,82%    |
| calliper (0,001), trimming (5%) | ATT                   | 239682,842      | 220210,128   | 19472,7141 | 6180,73721 | 3,15   | 8,84%    |
| K-nearest neighbours matching   |                       |                 |              |            |            |        |          |
| no calliper                     | ATT                   | 240040,057      | 220595,439   | 19444,6183 | 3108,21458 | 6,26   | 8,81%    |
| calliper (0,001)                | ATT                   | 239638,035      | 220961,085   | 18676,9502 | 3184,51197 | 5,86   | 8,45%    |
| calliper (0,001), trimming (5%) | ATT                   | 239682,842      | 220871,675   | 18811,167  | 3193,36291 | 5,89   | 8,52%    |
| Kernel matching: Gaussian       |                       |                 |              |            |            |        |          |
| no calliper                     | ATT                   | 239605,616      | 220115,482   | 19490,1332 | 2566,20481 | 7,59   | 8,85%    |
| calliper (0,001)                | ATT                   | 239605,616      | 211100,227   | 28505,3882 | 2253,62568 | 12,65  | 13,50%   |
| calliper (0,001), trimming (5%) | ATT                   | 239373,619      | 212052,201   | 27321,4188 | 2286,81833 | 11,95  | 12,88%   |
| Kernel matching: Epanechnikov   |                       |                 |              |            |            |        |          |
| no calliper                     | ATT                   | 239605,616      | 220686,635   | 18918,9806 | 2675,33776 | 7,07   | 8,57%    |
| calliper (0,001)                | ATT                   | 239605,616      | 213041,54    | 26564,0754 | 2259,49679 | 11,76  | 12,47%   |
| calliper (0,001), trimming (5%) | ATT                   | 239373,619      | 213579,349   | 25794,2705 | 2290,95584 | 11,26  | 12,08%   |

## Table A2: Propensity score matching: use of different methods

|             |              | One-to-one   | e-to-one K- |       | K-neighbour  |       |        |                |            |        | Kernel matchi | ng:    |        |
|-------------|--------------|--------------|-------------|-------|--------------|-------|--------|----------------|------------|--------|---------------|--------|--------|
| Methods     |              | matching     |             |       | matching     |       |        | Kernel matchin | ıg: Gaussi | an     | Epanechnikov  | -      |        |
|             |              | %            |             |       | %            |       |        | %              |            |        | %             |        |        |
|             |              | standardised |             |       | standardised |       |        | standardised   |            |        | standardised  |        |        |
|             | Variable     | bias         | t           | p> t  | bias         | t     | p >  t | bias           | t          | p >  t | bias          | t      | p >  t |
| No calliper | age          | -10,2        | 4,87        | 0     | 0,7          | 7,12  | 0      | -3             | 4,16       | 0      | -1,7          | 5,46   | 0      |
|             | age2         | -15,8        | 5,11        | 0     | 0,7          | 8,85  | 0      | -3,3           | 5,85       | 0      | -1,5          | 7,37   | 0      |
|             | female       | -74          | -5,39       | 0     | -3           | 18,32 | 0      | -11            | 11,1       | 0      | -5,4          | 15,63  | 0      |
|             | married      | 10,3         | 0,68        | 0,496 | -0,5         | -4,1  | 0      | -0,2           | -2,72      | 0,007  | -0,7          | -3,2   | 0,001  |
|             | edu_med      | 1,6          | 0,7         | 0,484 | 3,1          | -1,82 | 0,068  | 2              | -1,47      | 0,142  | 2,1           | -1,97  | 0,049  |
|             | edu_high     | -16,5        | 2,93        | 0,003 | -0,5         | 10,11 | 0      | -3,6           | 6,81       | 0      | -2,6          | 8,77   | 0      |
|             | emp1         | 9,6          | -3,94       | 0     | 0,8          | -4,96 | 0      | 2,5            | -4,1       | 0      | 1,4           | -4,69  | 0      |
|             | emp3         | 0,6          | 3,8         | 0     | -1,7         | 2,33  | 0,02   | -1,6           | 1,15       | 0,252  | -1,9          | 0,84   | 0,399  |
|             | emp5         | 2,9          | 5,55        | 0     | 1,8          | 0     | 0,998  | 1,3            | -0,35      | 0,729  | 1,4           | 0,09   | 0,932  |
|             | emplr_gov    | -28          | 1,62        | 0,106 | 2,7          | 12,48 | 0      | -2,8           | 7,63       | 0      | -0,3          | 9,53   | 0      |
|             | emplr_priv~p | 13,5         | -2,77       | 0,006 | -5,2         | -6,09 | 0      | -0,4           | -4,67      | 0      | -3,1          | -5,41  | 0      |
|             | region_cen~l | 19,4         | -2,23       | 0,026 | 0,2          | -9,23 | 0      | 2,4            | -7,56      | 0      | 0             | -8,64  | 0      |
|             | region_coast | 10,8         | -0,17       | 0,866 | -2,9         | -6,79 | 0      | -0,4           | -4,83      | 0      | -1,3          | -5,62  | 0      |
|             | region_mont  | -7,9         | -4,73       | 0     | 3,8          | 0,92  | 0,36   | 1,6            | 1,9        | 0,058  | 3,1           | 1,01   | 0,312  |
|             | match2       | -3,9         | 1,31        | 0,19  | 2,3          | 1,79  | 0,074  | 0,1            | 0,57       | 0,57   | 0,6           | 1,17   | 0,242  |
|             | match3       | -0,8         | 2,33        | 0,02  | 1,6          | 1,83  | 0,067  | -0,2           | 0,58       | 0,564  | 0,1           | 1,1    | 0,27   |
|             | match4       | -9,1         | -4,72       | 0     | -5           | 1,39  | 0,164  | -2,4           | 1,63       | 0,103  | -2,2          | 1,75   | 0,08   |
|             | match5       | -6,8         | 0,93        | 0,354 | -1,6         | 3,73  | 0      | -1             | 3,04       | 0,002  | -0,6          | 3,86   | 0      |
|             | job_tenure   | -29,7        | 2,84        | 0,004 | 1            | 13,25 | 0      | -3,8           | 9,35       | 0      | -0,8          | 10,94  | 0      |
|             | job_tenure_2 | -26,5        | -1,37       | 0,172 | 0,3          | 9,89  | 0      | -3,2           | 6,64       | 0      | -1            | 7,95   | 0      |
|             | speak_eng    | -2,8         | 9,45        | 0     | 0,4          | 7,88  | 0      | -1,8           | 3,74       | 0      | -1,9          | 5,56   | 0      |
|             | speak_it     | 7,4          | 10,26       | 0     | -2,7         | 2,1   | 0,035  | -2,2           | -1,01      | 0,314  | -4            | -0,41  | 0,681  |
|             | nr_empl_50   | -19          | -0,52       | 0,604 | 1,9          | 9,17  | 0      | -1,1           | 5,32       | 0      | 0,7           | 6,77   | 0      |
|             |              | many         |             |       | 2            |       |        | 1              |            |        | 1             |        |        |
| calliper    |              | -            |             |       |              |       |        |                |            |        |               |        |        |
| (0,001)     | age          | -9,4         | 4,07        | 0     | 2,3          | 6,58  | 0      | -15,5          | -4,88      | 0      | -13,1         | -3,46  | 0,001  |
|             | age2         | -14,5        | 4,35        | 0     | 1,9          | 7,92  | 0      | -21,6          | -6,79      | 0      | -18,4         | -4,76  | 0      |
|             | female       | -71,7        | -5,63       | 0     | -3,2         | 17,46 | 0      | -81,9          | -30,71     | 0      | -67           | -22,96 | 0      |
|             | married      | 8,6          | 0,27        | 0,788 | -0,6         | -2,68 | 0,007  | 8,7            | 2,32       | 0,02   | 8,1           | 1,27   | 0,204  |
|             | edu_med      | 0,1          | 0,04        | 0,964 | -0,6         | -1,05 | 0,296  | 0,8            | 0,25       | 0,801  | 0,6           | 0,13   | 0,897  |
|             | edu_high     | -14,4        | 3,63        | 0     | 1,3          | 8,31  | 0      | -20,7          | -6,49      | 0      | -17,8         | -4,62  | 0      |
|             | emp1         | 6,8          | -4,3        | 0     | -1,8         | -4,98 | 0      | 9,1            | 2,23       | 0,025  | 8,6           | 0,77   | 0,442  |
|             | emp3         | 2,7          | 4,78        | 0     | 1,5          | 2,66  | 0,008  | 0              | 0,45       | 0,651  | -0,9          | 1,05   | 0,293  |
|             | emp5         | 2            | 5,14        | 0     | 0,5          | 1,76  | 0,079  | 1,2            | 0,2        | 0,84   | 1,1           | -0,14  | 0,889  |
|             | emplr_gov    | -25,4        | 1,56        | 0,12  | 3            | 10,66 | 0      | -33,8          | -10,88     | 0      | -28,7         | -7,85  | 0      |

# Table A3: Sensitivity analysis: post-matching covariate balance by different methods

|                                  | emplr_priv~p | 12,2  | -2,35 | 0,019 | -4,5  | -6,1  | 0     | 16,1  | 4,45   | 0     | 14,3  | 3,02   | 0,003 |
|----------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------|-------|
|                                  | region_cen~l | 17    | -1,48 | 0,139 | 2,5   | -7,68 | 0     | 22,9  | 6      | 0     | 20,9  | 3,53   | 0     |
|                                  | region_coast | 7,7   | -0,9  | 0,369 | -4,1  | -4,57 | 0     | 11,2  | 3,05   | 0,002 | 10    | 1,87   | 0,062 |
|                                  | region_mont  | -4,9  | -4,31 | 0     | 5,2   | -0,18 | 0,857 | -8,9  | -2,17  | 0,03  | -8,6  | -0,78  | 0,438 |
|                                  | match2       | -3,2  | 1,77  | 0,076 | 2,5   | 1,24  | 0,214 | -4,9  | -1,75  | 0,081 | -4    | -1,41  | 0,16  |
|                                  | match3       | 0     | 2,76  | 0,006 | 1,8   | 1,05  | 0,293 | -1,5  | -0,41  | 0,678 | -1,4  | -0,21  | 0,831 |
|                                  | match4       | -7,5  | -4,36 | 0     | -5,5  | 0,26  | 0,797 | -8,1  | -2,62  | 0,009 | -6,9  | -1,72  | 0,085 |
|                                  | match5       | -6,7  | 1,05  | 0,295 | -1,8  | 2,83  | 0,005 | -7,9  | -2,66  | 0,008 | -7    | -1,9   | 0,058 |
|                                  | job_tenure   | -26,2 | 3,74  | 0     | 0,8   | 12,39 | 0     | -39,7 | -13,09 | 0     | -34,4 | -8,86  | 0     |
|                                  | job_tenure_2 | -24,5 | -0,47 | 0,635 | 0,3   | 8,93  | 0     | -32,9 | -12,24 | 0     | -27,9 | -8,82  | 0     |
|                                  | speak_eng    | -1,5  | 10,71 | 0     | -1,6  | 6,79  | 0     | -4,1  | -1,39  | 0,165 | -3,3  | -1,35  | 0,176 |
|                                  | speak_it     | 5,2   | 10,38 | 0     | -10,2 | 1,22  | 0,223 | 9,1   | 2,16   | 0,031 | 8,4   | 0,56   | 0,578 |
|                                  | nr_empl_50   | -20,4 | -0,54 | 0,589 | -1,9  | 7,5   | 0     | -22,8 | -7,58  | 0     | -19,3 | -5,74  | 0     |
|                                  |              | many  |       |       | 3     |       |       | many  |        |       | many  |        |       |
| calliper<br>(0,001),<br>trimming |              |       |       |       |       |       |       |       |        |       |       |        |       |
| (5%)                             | age          | -8,1  | 3,16  | 0,002 | 2,1   | 5,53  | 0     | -11,7 | -3,62  | 0     | -10,2 | -2,68  | 0,007 |
|                                  | age2         | -13   | 3,42  | 0,001 | 1,6   | 6,82  | 0     | -17   | -5,26  | 0     | -15   | -3,87  | 0     |
|                                  | female       | -68,1 | -5,79 | 0     | -3,2  | 16,39 | 0     | -75,3 | -27,72 | 0     | -63,5 | -21,62 | 0     |
|                                  | married      | 8,5   | 0,67  | 0,501 | -0,7  | -2,44 | 0,015 | 8,9   | 2,33   | 0,02  | 8,6   | 1,31   | 0,189 |
|                                  | edu_med      | -0,3  | -0,19 | 0,852 | -1,2  | -1,22 | 0,223 | 0,4   | 0,1    | 0,923 | 0,2   | -0,01  | 0,994 |
|                                  | edu_high     | -13,3 | 4,75  | 0     | 2,1   | 8,81  | 0     | -18,7 | -5,78  | 0     | -16,4 | -4,37  | 0     |
|                                  | emp1         | 6,7   | -3,17 | 0,002 | -1,5  | -4,11 | 0     | 8,6   | 2,11   | 0,035 | 8,2   | 0,89   | 0,374 |
|                                  | emp3         | 2,2   | 4,18  | 0     | 1,3   | 2,45  | 0,014 | 0     | 0,38   | 0,702 | -0,7  | 0,89   | 0,374 |
|                                  | emp5         | 3,1   | 5,93  | 0     | 0,5   | 1,85  | 0,064 | 0,5   | 0,09   | 0,932 | 0,3   | -0,09  | 0,929 |
|                                  | emplr_gov    | -23   | 2,24  | 0,025 | 3,4   | 10,44 | 0     | -29,2 | -9,23  | 0     | -25,5 | -6,99  | 0     |
|                                  | emplr_priv~p | 10,7  | -2,07 | 0,038 | -4,5  | -5,3  | 0     | 11,6  | 3,32   | 0,001 | 10,5  | 2,58   | 0,01  |
|                                  | region_cen~l | 15,7  | -1,26 | 0,207 | 2,3   | -7,04 | 0     | 18,3  | 4,79   | 0     | 17    | 3,06   | 0,002 |
|                                  | region_coast | 7,2   | -0,64 | 0,524 | -3,4  | -3,97 | 0     | 11,1  | 2,89   | 0,004 | 10,3  | 1,76   | 0,079 |
|                                  | region_mont  | -4,3  | -4,07 | 0     | 4,9   | -0,37 | 0,711 | -7,8  | -1,87  | 0,061 | -7,6  | -0,76  | 0,447 |
|                                  | match2       | -3,4  | 1,77  | 0,076 | 2,5   | 1,27  | 0,203 | -4,5  | -1,59  | 0,112 | -3,8  | -1,35  | 0,178 |
|                                  | match3       | -0,2  | 2,76  | 0,006 | 1,8   | 1,09  | 0,277 | -1,7  | -0,47  | 0,64  | -1,6  | -0,29  | 0,77  |
|                                  | match4       | -7,3  | -4,1  | 0     | -5,6  | 0,33  | 0,738 | -7,3  | -2,34  | 0,019 | -6,4  | -1,61  | 0,107 |
|                                  | match5       | -6,4  | 1,29  | 0,195 | -1,8  | 2,89  | 0,004 | -7,7  | -2,53  | 0,011 | -6,9  | -1,91  | 0,056 |
|                                  | job_tenure   | -22,5 | 6,3   | 0     | 1,2   | 12,86 | 0     | -33,3 | -10,81 | 0     | -29,7 | -7,61  | 0     |
|                                  | job_tenure_2 | -21,2 | 1,68  | 0,093 | 0,7   | 9,25  | 0     | -27,3 | -10,07 | 0     | -23,9 | -7,51  | 0     |
|                                  | speak_eng    | -2    | 11,19 | 0     | -2,1  | 7,16  | 0     | -5    | -1,63  | 0,103 | -4,3  | -1,5   | 0,134 |
|                                  | speak_it     | 4     | 10,72 | 0     | -10,5 | 1,82  | 0,069 | 5,7   | 1,31   | 0,19  | 5,3   | 0,26   | 0,796 |
|                                  | nr_empl_50   | -18,8 | -0,89 | 0,376 | -2,1  | 6,93  | 0     | -21,5 | -7,03  | 0     | -19   | -5,31  | 0     |
|                                  |              | many  |       |       | 2     |       |       | many  |        |       | many  |        |       |