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Effects of Return Migration on the Non-migrants' Wages and Employment

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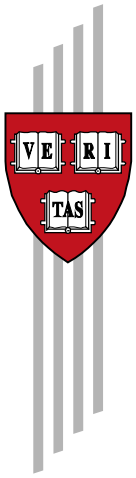

Working Papers

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Welcome Home in a Crisis: Effects of Return Migration on the Non-migrants' Wages and Employment*

Ricardo Hausmann† and Ljubica Nedelkoska‡

Abstract

The recent economic depression in Greece hit the population of Albanian migrants in Greece particularly hard, spurring a wave of return migration which increased the Albanian labor force by 5 percent in less than four years, between 2011 and 2014. We study how this return migration affected the employment chances and earnings of Albanians who never migrated. We find positive effects on the wages of low-skilled non-migrants and overall positive effects on employment. The gains partially offset the sharp drop in remittances in the observed period. An important part of the employment gains are concentrated in the agricultural sector, where most return migrants engage in self-employment and entrepreneurship. Businesses run by return migrants seem to pull Albanians from non-participation, unemployment and subsistence agriculture into commercial agriculture.

Keywords: Return migration; wages and employment of non-migrants
JEL codes: J21, J23, J24, J31, J61

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1. Introduction

How does return migration affect the labor market of non-migrants? The standard supply-demand model of the labor market of non-migrants would predict that wages should decline as a result of increased competition for the existing jobs and that the employment of non-migrants would initially decline, if wages or wage expectations are slow to adjust. In the long run, lower wages would attract capital investments, bringing the employment of non-migrants back to pre-migration levels (Borjas 2003; Borjas 2014). In this article we will demonstrate that there are important reasons why the outcomes of return migration, and some forms of migration too, may be much more positive than described in standard economic textbooks. We put forward the idea that return migrants bring in important knowhow and skills acquired in the hosting countries that they can mobilize in their home countries through entrepreneurial ventures. We test this hypothesis using a unique natural experiment of return migration to Albania prompted by the recent economic depression in Greece.

Since the early 1990s, when communism collapsed in Albania, Greece has been an attractive place for Albanians to work, given the fact that that GDP p.c. differences between Greece and Albania were a factor of 15 or higher. Some 600,000 Albanians (40 percent of the migrant population, or over 20 percent of its current population) were estimated to live in Greece before the 2009 sovereign debt crisis (Martin, Martin & Weil 2006). However, the working conditions for Albanians in Greece changed drastically as the crisis unfolded. Perhaps the clearest indication of this change is the rapid rise in the unemployment rate of Albanians in Greece. In 2008, the unemployment rate of both Albanian nationals in Greece and Greek nationals stood at about 6 percent. By 2013, the unemployment rate of the Albanians in Greece reached 40 percent, while that of Greek nationals reached 27 percent. These developments spurred a large wave of return migration to Albania, estimated at over 134,000 working age Albanians (Filipi et al. 2014). The suddenness and the magnitude of this return migration constitutes a natural experiment to study its impact on the home labor market.

We use data from the Quarterly Labor Force Surveys (QLFS) of Albania and Greece for our analysis. These data give us an advantage over previous studies in at least three respects. First, they allow us to observe the labor market dynamics on both sides of the border. Second, the panel structure of the data allows us to draw inferences from individual level changes in the employment status and earnings. Finally, the QLFS offers information which can be used as exogenous variation to the choice of the place of return, helping us make a causal statement about the impact of return migration on non-migrants' earnings. In addition to the data advantages, the paper exploits a situation where a negative shock to the host country spurs a large wave of forced return migration, reducing the selectivity among return migrants and disrupting the optimal or planned pattern of return migration (Dustmann and Kirchkamp 2002; Dustmann and Weiss 2007).

We find that the majority of Albanians return to their district of origin. There, they are disproportionally more likely to engage in self-employment and entrepreneurship, mainly in the agricultural sector, but also in construction, trade and hospitality (restaurants and hotels). Through entrepreneurship they do not only create jobs for themselves, but also for the non-migrants. In particular, they seem to pull non-migrants out of non-participation, unemployment and subsistence agriculture and into commercial

farming. Only in the formal sector we find evidence suggesting that migrants and non-migrants compete for the same jobs; in the labor market of the informal sector, migrants and non-migrants act as complements rather than substitutes. We conclude that our results are mainly at odds with the standard predictions of benchmark labor economics models, and more in line with models that see the two populations as complements. They are also in line with a migration model motivated by endogenous growth theory where migrants increase the stock of productivity-increasing skills and ideas in the economy.

We furthermore compare the non-migrants' gains from return migration in terms of wage growth and employment with the losses resulting from lower remittances. The estimates vary, depending on the assumptions, between 0.8 percent and 1.3 percent in GDP annually, offsetting between 51 percent and 79 percent of the annualized losses in remittances.

The rest of the article is organized as follows. Section 2 provides a background on the recent history of migration between Albania and Greece and explains the economic circumstances under which Albanians started the massive return migration. Section 3 gives the theoretical considerations about the impact of return migration on the home labor market. Section 4 reviews the literature on return migration. Section 5 explains the data, the sample and the definition of key variables. Section 6 offers the key descriptive analysis. In Section 7 we lay out the econometric specifications, while in Section 8 we discuss the econometric findings. Section 9 concludes.

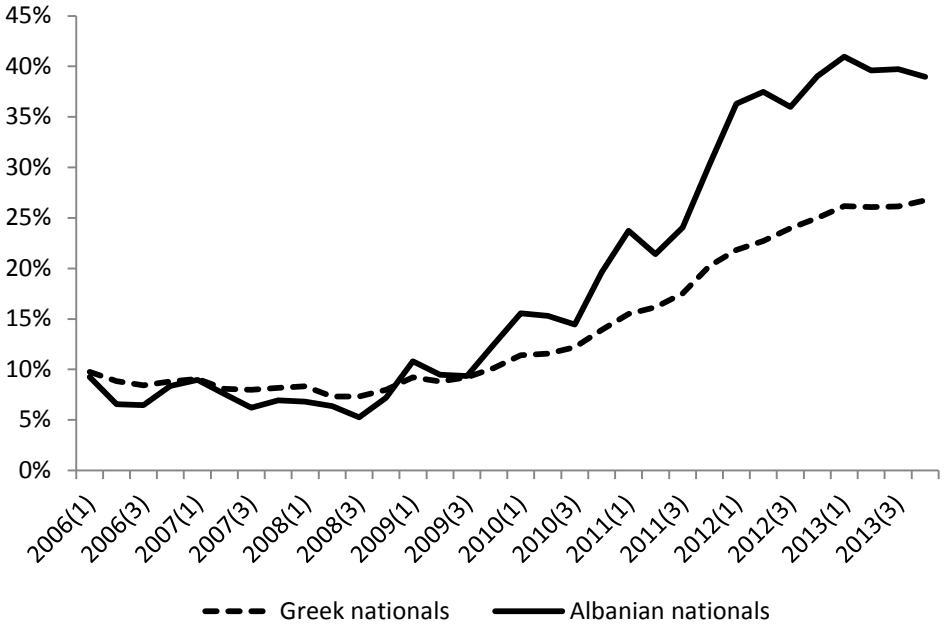
2. Background

In 1992, Albania broke away from its 46-year-long communist regime, which over time turned Albania into the most autarchic and closed regime in Europe and banned international migration altogether for decades (Vullnetari 2007). In the aftermath of the regime's collapse, Albanians left their country in large numbers, mainly to its wealthier neighbors: Greece and Italy. Prior to the Greek sovereign debt crisis of 2009, about a third of the people born in Albania lived outside the country, of which 80 percent moved to Greece and Italy. An estimated 600,000 Albanians resided in Greece in 2005 (Vullnetari 2007; Martin, Martin & Weil 2006). This corresponded to over 20 percent of the 2005 Albanian population.

The prospects for Albanians in Greece started to deteriorate at the onset of the Greek crisis. Figure 1 shows the changes in the unemployment rates in Greece of Greek and Albanian nationals. The two rates were similar and similarly downward trending between 2006 and 2008, but started to separate sharply afterwards. The unemployment rate of Albanians reached over 40 percent by 2013, while that of Greek nationals reached 27 percent. This development in the Greek labor market spurred a wave of return migration of Albanians. Filipi et al. (2014) show that the wave of mass return migration started already in 2009, and estimate that by 2013, some 134,000 working age Albanians returned home. Our data starts somewhat later, in 2011[1], and our estimates of the return migrants' flows hence differ.

[1] The annual Albanian Labor Force Survey (LFS) of 2011, conducted in November 2011, is the first LFS in which the question 'Have you ever worked abroad?' was asked.

Figure 1: Unemployment Rate of Albanian and Greek Nationals in Greece 2006-2013



Source: QLFS Greece

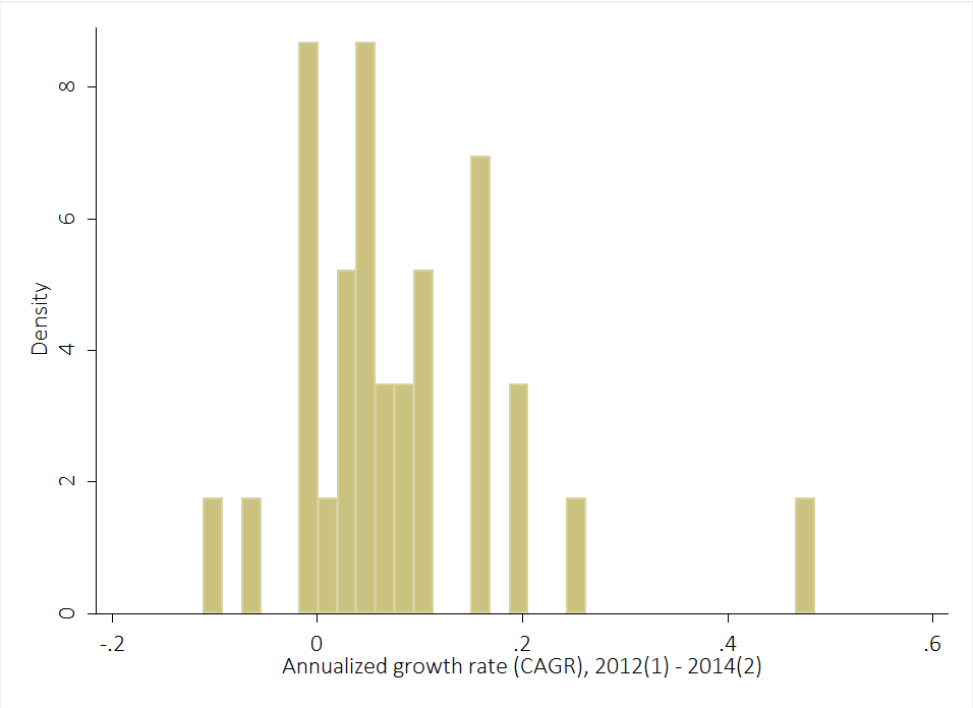
The share of working age Albanians reporting that they have worked abroad in our data increased significantly between 2011 and 2014. In the third quarter of 2011 about 7.3 percent of the surveyed population reported that they had worked abroad in the past. This share reached 10.7 percent by the last quarter of 2014. This translates into an increase of the working age population by over 87,000 (3.9 percent). Mainly due to their demographic structure (prime-age males), return migrants are more active in the labor market than non-migrants. Their share in the labor force increased from 10.5 percent to 15.9 percent between 2011 and 2014, causing an increase in the labor force of almost 65,000 individuals or 4.8 percent.[2]

The share of migrants grew in most districts between the first quarter of 2012 and the second quarter of 2014, the period for which we have district-level data. Figure 2 shows the distribution of the annualized growth rates by district. The median growth was 5 percent annually and the mean was 8 percent. Among those who returned, 81 percent say they returned from Greece and another 14 percent returned from Italy.[3] These trends were also reflected in the flows of remittances which Albania received. The flow peaked in 2008 at about USD 1,450 million or 11 percent of Albania's GDP and fell to USD 1,150 million in 2014 or 8.5 percent of GDP (Figure 3).

[2] Filipi et al. (2014) surveyed 2,000 return migrants in 2013 and based on this sample estimated that the number of returnees 18 years or older, between 2009 and 2013 was 133,500.

[3] The country from which the migrants returned was only asked among a subset of the QLFS samples, limiting the use of this information for analysis of the host-country aspects.

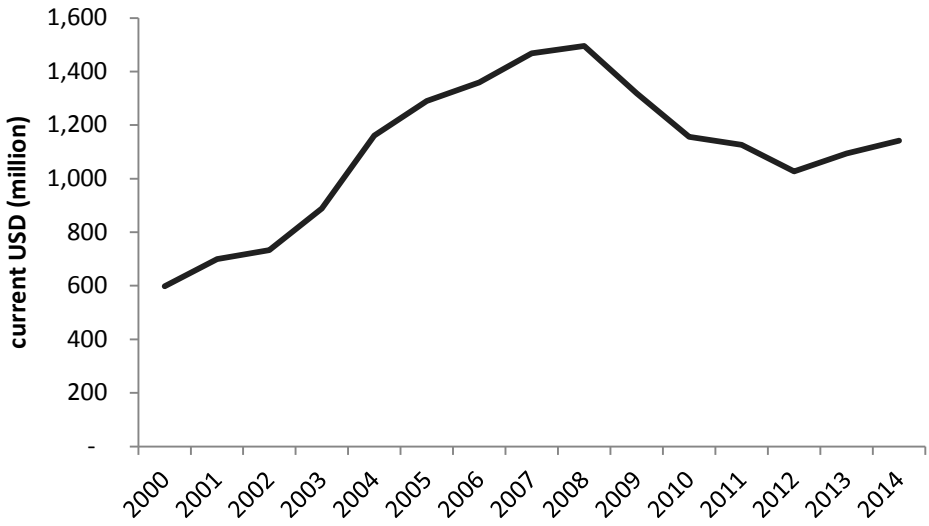
Figure 2: Annualized Growth Rates of Return Migration by District



Source: QLFS Albania, own calculations

Note: The district information is only available between Q1 of 2012 and Q2 of 2014.

Figure 3: Inflow of Remittances to Albania 2000-2014



Source: World Bank 2015

3. Theoretical Considerations about the Impact of Return Migration on the Home Labor Market

The scenario in which a labor market is confronted with a large inflow of labor in a rather short period of time reminds us of many situations documented by labor economists, in which a host country was faced with large immigration (e.g., Mariel Boatlift on the Miami labor market as documented in Card (1990) or the inflow of immigrants from the Soviet Union to Israel between 1990 and 1994 as documented in Friedberg (2001)). The theory of the effects of immigration on natives' wages and employment is well developed and is accompanied by abundant empirical research. This section borrows from that literature, but points out that there are certain aspects that make return migration different from immigration. Modern-day immigration tends to flow from less to more developed countries, while return migration flows in the opposite direction. While working abroad, migrants acquire human capital in countries that are richer and technologically more advanced than their home countries. There, they acquire more sophisticated skills, knowhow and learn how to operate more advanced technologies. They probably work in more complex organizational forms and teams and observe different managerial styles than those at home. Once they return, this accumulation of human capital distinguishes them from the non-migrants, making them their *complements, rather than their substitutes.* This is one channel through which return migration could boost, rather than depress real wage growth of the non-migrants. The other channel through which return migrants could contribute to the economic development of the home country is through *human capital spillovers*. As we will show later, return migrants are significantly more likely to start entrepreneurial ventures and to employ others. Such behavior is also driven by the human capital accumulation in foreign countries. Return migrants bring with them knowledge of more advanced technological solutions which increase the marginal productivity of their employees and may even stimulate other producers to adopt similar practices. In what follows, we will summarize the three common theoretical frameworks that immigration economics employs in order to predict the impact of migration on the non-migrants' labor market outcomes, while the next will summarize the empirical findings on the impact of return migration on the home country labor markets.

The canonical model of the economic benefits of immigration, (e.g. Altonji and Card 1991, also Chapter 7 in Borjas 2014) illustrates a simple economic reasoning: increased labor supply must reduce the average wage of both natives and immigrants because the labor demand curve is downward sloping. This model assumes that they are perfect substitutes or that there is a high degree of substitution between natives and migrants. Hence the inflow of migrants is just a supply shock of a fairly homogenous factor of production. The model assumes that the supply of natives is inelastic, such that all adjustment to the shock happens through the wage rate. In the short run, capital is fixed and the expansion of the labor market increases overall output, but the net effects are small and mainly redistributive: by lowering average wages, immigration shifts the gains from the wage earners to capital owners. In the long run, the higher return to capital induced by cheaper labor will encourage capital inflows until the rental rate of capital is equalized across markets. This process brings the capital-labor ratio back to the pre-immigration level and restores the pre-immigration wages. This means that in the

long run, average wages do not depend on labor supply, and hence the effects of immigration on natives' wages is zero (Borjas and Katz 2007; Borjas 2014)[4].

While the canonical model is appealing, we argue that the skills of the non-migrants and the skills of the return migrants are different, and hence the key assumption of labor homogeneity does not hold. Greece is a country whose GDP p.c. is still higher than Albania's by a factor of five, implying much more advanced technology and higher productivity. Greece is a net exporter of agricultural products, indicating that they enjoy a comparative advantage in many products such as fruits, vegetables, olive oil, tobacco and fish. In Albania, agriculture represents 40% of employment and 16% of GDP (INSTAT 2017a and 2017b). Tourism, a sector in which Albania has a large unexploded potential, is more developed in Greece: tourism receipts per capita were 2.8 times higher in Greece than in Albania in 2014 (COMTRADE 2016). Albanians working in Greece were exposed to higher technological standards, more complex division of labor, better productive practices, better developed distribution networks, a second language, larger firm sizes and different management styles. The skills acquired at the average job in Greece were hence different from those acquired at the average job in Albania.[5]

Borjas (2014) considers two extensions to the basic model that relax the assumption of homogenous labor: *heterogeneous labor* and *human capital externalities* from immigration. The heterogeneous labor extension allows for two types of skills, high and low, among the natives and the migrants. What really matters here is not so much how we name the groups, but that the two groups are modeled as complements, specifically p-complements: the marginal product of one group increases when the quantity of the other group grows. He shows that, in the long run (i.e., allowing for capital to adjust), the impact of immigration on the wage structure depends entirely on how the skill distribution of migrants compares to that of natives. If the two distributions are the same, immigration has no long run effect on the wages of natives in the long run, and the immigration surplus is zero. If the immigrants are relatively unskilled, the wage of the native unskilled declines and the wage of the skilled rises. If immigrants are relatively skilled, the wage of the unskilled rises and that of the skilled declines. In both cases, the immigration surplus is positive, and its magnitude depends on the differences between the skill specializations of migrants and natives and on the share of migrants in the labor force. To maximize the immigration surplus, the skills of the immigrants should be as different as possible from the skills of the natives. This last conclusion has an intuitive appeal—a place can benefit from migration if the migrants' skills are different from those of the natives and if there exist complementarities between their skills. If the skill mix of migrants is similar to that of natives, there are no evident sources of complementarity between them and hence no evident sources of immigration surplus in the long run.

Borjas (2014) also presents a model of immigration with human capital externalities[6] borrowed from the theory of endogenous economic growth (Lucas 1988; Romer 1986) that comes closest to the idea that

[4] Also see Ottaviano and Peri (2012) for the estimates of the long-term trends in the capital-labor ratio in the US.
[5] USAID, which has been actively working with return migrants in Albania during the last decade, acknowledges the importance of the knowhow they acquired in Greece for the development of agriculture in Albania (Neven 2009; Barnhart 2012).
[6] Borjas' model is one of high-skilled migration, but the theory is equally valid for any group of migrants that brings about knowledge that is new and has the potential to make the native population more productive.

migrants' knowhow can actually create human capital spillovers for the non-migrants. The endogenous growth theory distinguishes between human capital, which is a rival good, and ideas, which are non-rival.[7] If migrants introduce new ideas, they can increase the marginal productivity of non-migrants. This mechanism is different from human capital complementarities. New ideas make non-migrants more productive not because non-migrants and migrants play specific complementary roles in the division of labor, but because they now have access to knowledge which they were lacking before migration took place. Acs et al. (2009) connect the accumulation of human capital in the endogenous growth theory with the rate of entrepreneurship. In their extension of the theory, knowledge spillovers increase the chances of entrepreneurs identifying business opportunities.

This brings us to our summary of the theoretical expectations. We argue that return migrants accumulated human capital in a more productive place (in this case Greece) that distinguishes them from the non-migrants. This human capital can contribute to job growth in the home country through return migrant entrepreneurship. It can also increase the wages of non-migrants through two mechanisms: p-complementarities between returnees and non-migrants, under the assumption that return migrants acquired skills abroad that are complementary to those of the non-migrants; and human capital spillovers, under the assumption that return migrants bring new ideas that make their enterprises, and potentially those of others, more productive.

4. Literature Review on Return Migration

The first economic studies on the labor market impact of return migration were published in the 1990s.[8] The results are mixed, from very encouraging in the case of rural China, mixed in Albania, southern Italy, and Mexico and somewhat negative in the case of French-Algerians. The results are highly encouraging when it comes to the high-tech diaspora entrepreneurs of Silicon Valley who connect their home worlds (China, India, Israel and Taiwan) with the one of Silicon Valley (Saxenian 2007), although Saxenian focused her attention on a very selected group of high impact individuals. In most cases, it seems that the outcomes depend on whether returnees show preference for jobs in existing businesses or for self-employment. The latter choice is typically made by returnees who manage to gain new skills abroad and who have returned to the place of origin.

Sowell (1996) reviewed a vast literature documenting the historical migration patterns of six groups of people (Germans, Japanese, Italians, Chinese, Jews and Indians). His book emphasizes the role that these groups played in "spreading skills, technology and manpower from where they were abundant to where they were scarcer." Migrants, often as a result of outright discrimination at the workplace in hosting countries, occupied positions of self-employment and perfected crafts and professions that

[7] Jones and Romer (2010) give the example of a carpenter (human capital) and of the Pythagoras's theorem (idea). The carpenter can work on only one house at one point in time because his human capital is a rival good. However, once discovered and taught, applying the Pythagoras's theorem makes any carpenter more productive.

[8] It is difficult to find economic studies of the labor market impact of return migration prior to the 1990s. Return migration has been subject of study in sociology and social anthropology for much longer (see e.g, Cerase 1974; Gmelch 1980; and Cassarino 2004). Cerase (1974) categorizes returnees into four types: return of failure, return of conservatism, return of innovation and return of retirement. Gmelch (1980) reviews case studies on the impact of return migrants on their home countries and shows mixed, but mainly discouraging results. However, very few of these studies make efforts to actually measure impact.

were not reserved for the native population. When forced to return, they transferred the acquired knowhow and skills, including managerial skills, back home. Sowell paints a complex picture of migration and return migration throughout history, showing that its outcomes depend on many specific conditions, but that the role of migrants in knowhow transfer is universal.

Hunt (1992) studied the impact of the repatriation of 900,000 French Algerians to France in 1962, after Algeria was granted independence from France. They represented 1.6 percent of the 1968 labor force and were overrepresented among the upper and middle skilled professionals and underrepresented among the production workers. They were granted special employment priorities in order to speed up their integration in France. Hunt exploited the differences in the geographic choice of their return similar to this study, and found that the repatriation had small negative effects on the non-migrants' employment (1 pp increase in the share of repatriates corresponded with 0.2 pp increase in unemployment). She found no effect on the participation rate, and a moderate negative effect on wages (1 pp increase corresponded with 0.8 percent lower wages at most). These results are mainly in line with the canonical model of immigration with homogenous labor.

Dustmann and Kirchkamp (2002) and Dustmann and Weiss (2007) study why migrants decide to return. Dustmann and Kirchkamp (2002) find that among the Turkish migrants that returned from Germany in the 1980s, those that stayed on the labor market upon return mainly engaged in entrepreneurial activities. In fact, they come to propose that one of the reasons why someone would return is because they may expect higher returns from self-employment opportunities at home in the long run. Dustmann and Weiss (2007) make a similar argument—migrants may return if the human capital acquired in the host country has a higher return at home. The other two reasons are preferences for consumption at home and higher purchasing power at home.

Zhao (2002) studied return migration from the urban to the rural areas in six Chinese provinces in the 1980s and the 1990s. She finds that return migrants invested significantly more in productive assets, and in particular in farm machinery. In this way, return migrants may be drivers of agricultural modernization in rural China, she concludes. Murphy (1999) analyzed the impact of return migrants from urban to two rural regions in China. She found that they are the drivers of economic diversification in these regions. By channeling urban skills, contacts, information and capital to their ventures at home, they brought about new industries such as production of furniture, shoes, clothing and toys. She found that their businesses mimic the ones in which they worked while in the cities, and that their ventures mainly create jobs for other returnees. Démurger and Xu (2011) come to similar findings about rural returnees in China: upon return, they engage in entrepreneurship, a key to this being return capital.

Diodato and Neffke (2017) measured the impact of return migration from the United States to Mexico on the Mexican local labor markets. They show that return migration by Mexicans with industry experience in the United States causes an expansion of that industry back in Mexico. They find mixed results when it comes to the impact on non-migrants' wages.

A number of studies focused specifically on Albania. De Coulon and Piracha (2005) study the characteristics and labor outcomes of return migrants in Albania in the late 1990s. They find that

Albanians who migrate are negatively selected among the general Albanian population. Had the non-migrants decided to migrate instead, they would have earned more than twice the wages of the return migrants, they conclude. Piracha and Vadean (2010) furthermore found that the migration experience increases the probability of becoming an entrepreneur upon return in Albania. Germenji and Milo (2009) studied the labor market behavior and economic impact of 1,000 migrants who returned to Albania between 1999 and 2006. They find that these mainly bring financial capital. Human capital is only transferred among those who become self-employed. The financial capital is mainly used for housing projects, but also partially for setting up small businesses. They did not find significant spillover effects on the non-migrants and argue that the development impact of return migration was limited.

Saxenian (2006) described the cases of high-tech diaspora entrepreneurs from China, India, Israel and Taiwan, who gained important knowhow and experience while working in Silicon Valley and started entrepreneurial ventures in their home countries. They benefited from their knowledge about the opportunities in both worlds, and their ventures at home were facilitated by the cultural and language similarities with their countrymen. Saxenian goes as far as to say that, through this `brain circulation', these "new Argonauts" are generating independent development of technological capabilities in the periphery, which is undermining the core-periphery model.

Finally, there is an emerging literature which documents the patterns of entrepreneurship among migrants more generally. They find that migrants too tend to be overrepresented among the self-employed and the entrepreneurs. For the United States, Fairlee (2008) finds that immigrants are about 30 percent more likely to start a business than non-immigrants and Lofstrom (2014) and Kerr and Kerr (2015) find that business ownership is higher and growing among immigrants in the United States.

5. Data and Sample

The primary source of data is the Quarterly Labor Force Survey (QLFS) of Albania 2012-2014. The sample includes all individuals 15 years or older in selected 5,040 households. The households are selected using a two-stage sampling procedure.[9] The survey uses a rotational sampling design, whereby a household once initially selected for interview, is retained in the sample for a total of five consecutive quarters. This means that in each quarter only 20 percent of the selected households are new (INSTAT 2012). The first and the fifth interview are exactly one year apart. This allows us to observe changes in wages and labor market status of individuals over time. The QLFS offers rich information regarding the employment status[10] of individuals. This is very important in the Albanian case because of the informal character of a large share of the jobs in the economy and the low threshold of the amount of work required in the employment definition. Employment can take one of the following forms:

[9] The first stage selects the geographic areas with a probability proportional to the area size. In the second stage, within each of the geographical areas, a fixed number of 8 households is selected with equal sampling probability.

[10] QLFS uses the following definition of employment:

- Persons who have worked even for one hour with a respective salary or profit during the reference week.
- Persons who were receiving a salary or wage while they were in training during their work.
- Persons temporarily not at work during the reference week for some reasons
- People who work on their small farm, who do not sell their products, but produce only for self-consumption, are also considered employed.

1. Regular job for pay for someone who is not a member of your household.
2. Job on a farm owned or rented by you or a member of your household, from which at least part of production is sold.
3. Job in non-agricultural sector for your business or an activity that belongs to you or someone in your family.
4. Occasional job for pay or profit such as sold goods in the street, helped someone for his business etc.
5. Job on a farm owned or rented by you or a member of your household, from which the whole production is only for own consumption.

The QLFS furthermore asks about the professional status of those with jobs, distinguishing among: (a) employees, (b) self-employed with employees, (c) self-employed without employees (own-account workers or freelancers) and (d) unpaid family workers. Another important type of information is pay. The QLFS asks about the net pay in the reference week and about the usual net pay. Most people choose to report monthly amounts. Information about the hours worked in the reference week and the usual hours worked is also available, allowing us to calculate the hourly wage in the reference week and the usual hourly wage.

In addition, we employ the QLFS Greece 2006-2013 in order to understand the employment dynamics, the stock of Albanian migrants and the self-selection of return migrants on the other side of the border. The Greek QLFS has a structure similar to Albania's. The survey includes a question about the country of birth of each interviewed individual and about the person's nationality, allowing us to identify Albanian nationals and Albanian-born individuals.

5.1. Sample Restrictions

Our data include the eleven quarters between the second quarter of 2012 and the fourth quarter of 2014. We only include observations for which we have non-missing information about the employment status, age, gender, educational attainment and information about their experience of working abroad. We only include individuals that we observe at least two times in the QLFS.

We noticed sampling problems in two of the 36 districts of Albania and decided to exclude these from the analysis.[11] In the district of Kolonje no one was interviewed in three consecutive quarters: 2012(Q3), 2012(Q4) and 2013(Q1). In the district of Tropoje, the sample weights are unreliable.[12] These restrictions result in a sample of 25,291 non-migrants (66,297 observations). Of these, 2,316 individuals (7,413 observations) also have information on hourly wages and information on the place of birth of return migrants, which we will use as an instrumental variable. The information about the place of birth was only collected in seven out of eleven quarters: 2012(Q3)-2014(Q1). Table A1 in appendix A has the summary statistics of the samples used in our econometric estimations.

[11] All our estimations and specifications are insensitive to the decision to exclude these districts. The results including these districts are available from the authors upon request.
[12] For instance, 78 sampled persons expand to 23,402 people in 2014(1) and 75 expand to only 3,043 in 2014(2).

Appendix B explains why the wage sample is only a fraction of the original sample and the potential consequences this attrition may have on our estimates of the effects of return migration on wages. The most important factors that cause attrition are: lack of information about place of birth in the quarters where this question was not asked (9.1 percent of the sample), non-participation and unemployment (another 50.5 percent of the sample), the fact that workers in subsistence agriculture do not have wages (additional 13 percent of the sample) and non-reporting (another 13.9 percent of the sample).[13] We then study the potential bias stemming from the fact that the majority of our sample does not report wages. To do this, we estimate Heckman selection equations (Heckman 1979) as explained in Appendix B. We show that the selection into work does not cause significant bias in our estimates.

5.2. Imputing the Education Variable and Defining Skill Groups

The variable indicating the highest educational attainment can take four levels:

1. Primary education or less;
2. Secondary general education;
3. Vocational Training;
4. University degree or higher.

Those with secondary general education, primary education or less are later categorized as low skilled and those with vocational training, university degree or higher are categorized as skilled. Almost 15 percent of the individuals who appear at least twice in our data report educational attainment that changes with time. The changes are more common among the young and these are probably reflecting the process of educational upgrading typical for young individuals. However, the educational attainment in our data does not always increase over time. Sometimes we observe higher educational attainment in the earlier quarters, and lower in the latter ones, and sometimes we even observe a person reporting two or more levels of attainment in no particular order. Among the 15 percent reported earlier, 7.4 percent belong to those who upgrade educational attainment, another 6.4 percent to those that "downgrade" their attainment and 1.2 percent to those that change their attainment in no particular order. In order to preserve a logical consistency, we establish a few simple rules and impute the educational attainment variable accordingly:

1. One cannot first have higher, then lower education. The opposite is allowed.
2. Those with primary education or less cannot obtain a university degree before obtaining a secondary degree.
3. Those with primary education or less cannot obtain vocational training before obtaining a secondary degree.
4. One cannot change the educational attainment more than once in the observed period (ten quarters).

[13] The actual non-reporting can almost fully be explained by the type of job one holds. The less formal a job is, the higher the share of people having difficulties reporting wages, presumably due to the lack of regularity in their monthly incomes. ANOVA exercise (not shown here) reveals that once we control for the type of job, region dummies explain very small additional share of the total variance.

In the spirit of the first rule, the cases in which the educational attainment is higher in the earlier quarters and lower in the latter ones are redefined such that the values of the latter quarters are recoded to the higher attainment reported earlier. In cases where there is an unexpected jump from primary education or less to university education or from primary education or less to vocational training, we recode the values of the high education back to primary education. Finally, it is very unlikely that someone can transition among three levels of educational attainment in two and a half years or less. This happens with 0.1 percent of the individuals that we observe more than once. We delete these individuals.

Finally, we will later divide non-migrants among skilled and low-skilled. We define skilled non-migrants as those with completed upper secondary education and vocational training or those with university education. Low-skilled non-migrants are those with not more than general secondary education. In 6.7 percent of all individuals we observe educational upgrading. In these cases, we need to decide which educational attainment to take when classifying the persons into low-skilled and skilled groups. In the reported results in this paper, we take the higher of the two, but the results do not change significantly when instead we take the lower of the two reported educational attainments.

6. Returnees, Non-migrants and the Albanian Labor Market

In this section, we first study the socio-demographic and economic differences between return migrants and non-migrants. We then turn to describing the labor market of non-migrants in order to set initial expectations about job creation and destruction.

6.1. Sociodemographic and Economic Characteristics of Returnees and Non-migrants

Return migrants differ from the non-migrants in many regards. While 46 percent among the non-migrants are prime age (25-54), this is the case with 79.1 percent of the return migrants (Table 1). Most return migrants are male (89 percent). Knowing that males are more active in the labor market than females (64.3 percent vs. 46.8 percent), these characteristics at least partially explain why returnees are have much higher labor force participation rates than non-migrants (Figure 4). Hence, part of what we are observing is the return of the family breadwinners.

In terms of education, the incidence of vocational training is significantly higher among return migrants, but return migrants are half as likely to hold a university degree (Table 1). Our data confirms the finding by De Coulton and Piracha (2005) that Albanian return migrants are negatively selected among the general Albanian population in terms of education. In 2008, only 6 percent of the Albanian nationals in Greece and only 4.9 percent of Albanian-born in Italy had a college degree or higher, while this was the case with 8.3 percent of the Albanians in Albania that year. However, our data also reveal that return migrants are much more likely to have vocational training than non-migrants (18.6 vs. 10.1 percent). We can hence say that in terms of education, the majority of return migrants resembled the low-educated Albanians at home. This is however not to be confused with the actual skills of return migrants, which we do not observe, but which were very likely affected by the experience of working abroad.

Table 1: Differences between migrants and non-migrants

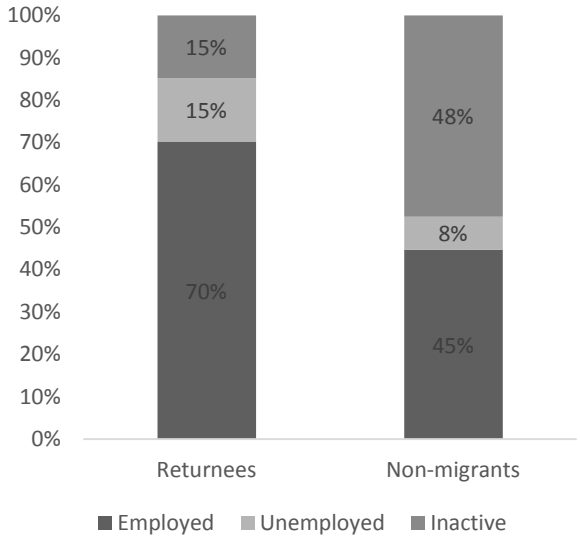
	Without controls	After matching on observables

	Non-migrants	Returnees	Non-migrants	Returnees	t-stat
%Prime age (25-54)	46.00	79.09			
%Vocational training	9.42	16.25			
%University degree	11.44	5.47			
%Male	45.13	89.02			
%Formal non-farm job	18.78	22.40	28.99	20.68	10.64
%Commercial farm job	5.01	8.84	6.29	8.42	(4.52)
%Subsistence farm job	9.50	16.06	14.32	17.51	(4.83)
%Self-employed	11.03	28.31	24.83	28.87	(5.88)
%Unemployed	7.79	14.98	10.93	13.79	(5.61)
%Employing others	0.71	2.03	1.52	2.19	(3.22)

Source: QLFS 2012-2014

Note: Exact matching on observables: gender, education, district; propensity score (nearest neighbor matching) on age. All variables are shares in the total working age population (15 years or older). Weighted averages over the observed period are used for the non-matched statistics.

Figure 4: Labor Market Status of Non-migrants and Return Migrants



Source: LFS 2011, QLFS 2012-2014.

Note: Average share over the observed period.

In terms of education, the incidence of vocational training is significantly higher among return migrants, but return migrants are half as likely to hold a university degree (Table 1). Our data confirms the finding by De Coulton and Piracha (2005) that Albanian return migrants are negatively selected among the general Albanian population in terms of education. In 2008, only 6 percent of the Albanian nationals in Greece and only 4.9 percent of Albanian-born in Italy had a college degree or higher, while this was the case with 8.3 percent of the Albanians in Albania that year. However, our data also reveal that return migrants are much more likely to have vocational training than non-migrants (18.6 vs. 10.1 percent). We

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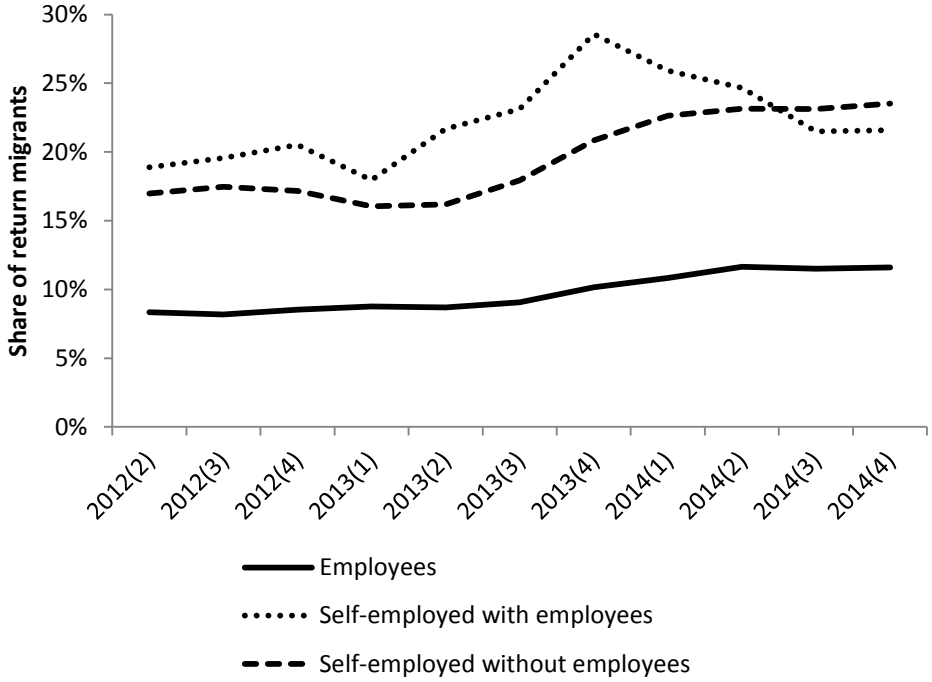
6.2. The Choice of Jobs

While the share of return migrants in the working age population varies between 10 and 16 percent, their share in the pool of self-employed *with* employees varies between 16 and 30 percent. This reveals that they are over-represented among employers. Similarly, their share among the self-employed *without* employees varies between 16 and 23 percent, suggesting that a disproportional share of them do not compete for jobs created by others. In fact, they are underrepresented among employees: their share among employees varies between 8 and 12 percent. Over time, as the overall share of return migrants in the working age population increased, so did their shares among the employees, employers and self-employed (Figure 5).

Figure 5: Share of Return Migrants by Job Type



Source: LFS 2011, QLFS 2012-2014.
Note: 3-period moving averages.

Among the employees, we pay particular attention to three types of jobs: paid non-farm, non-family business jobs (formal jobs); jobs in farms where at least part of the produce is sold on the market (commercial farm jobs) and jobs in subsistence farms. Return migrants are less likely to have a formal job after matching on observables (20.7 percent vs. 29 percent), but the opposite is true before matching (Table 1). They are furthermore more likely to engage in commercial farming (8.8 percent vs. 5

percent before and 8.4 percent vs. 6.3 percent after), but also in subsistence farming (16.1 percent vs. 9.5 percent before and 17.5 percent vs. 14.3 percent after matching).

When not employed by others, returnees are more likely to be unemployed, self-employed and work as employers of others, before and after matching. Returnees are much more likely to be self-employed (28.3 percent vs. 11 percent before and 28.9 percent vs. 24.8 percent after matching), and, what is more important, they are significantly more likely to employ others (2 percent vs. 0.7 percent before and 2.2 percent vs. 1.5 percent after matching).

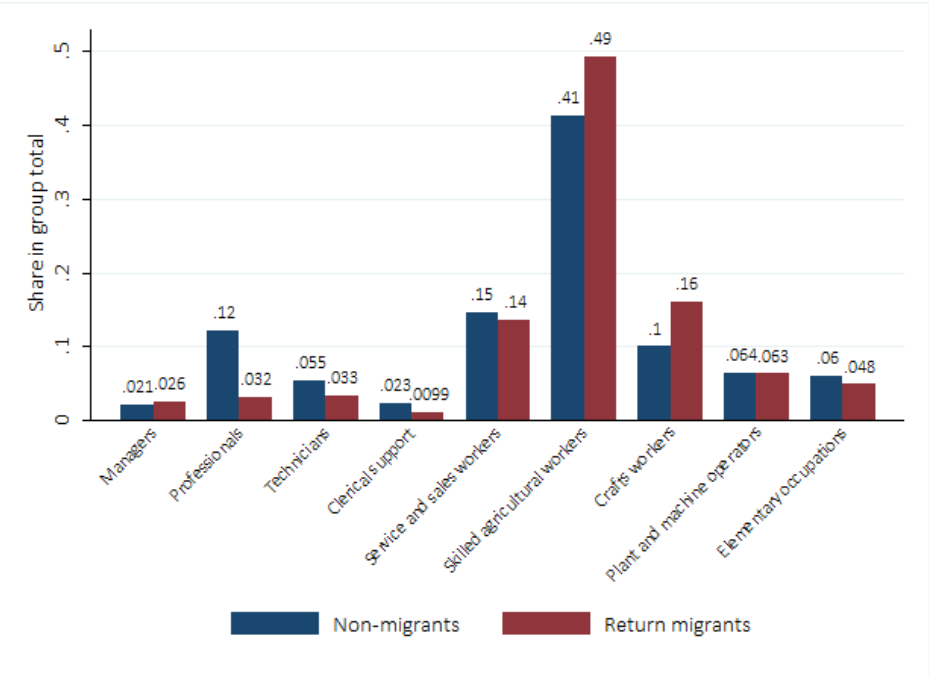
These results suggest that in addition to working as employees for others, return migrants create jobs through self-employment for themselves and through entrepreneurship for others more than non-migrants do. To a large extent this is due to the fact that these are the prime age male workers who are now returning home. However, even after matching on age, gender, district and educational attainment, we see higher tendency towards self-employment and entrepreneurship. This is in line with previous findings by Piracha and Vadean (2010) about the occupational choice of return migrants in Albania and the impact of the migration experience on the choice to become an entrepreneur.

Finally, we look at the differences in the occupational and industry distributions of jobs held by migrants and non-migrants. In terms of occupations, about half of the returnees report working as skilled agricultural workers, another 16 percent report crafts jobs (which include construction jobs) and another 14 percent say they work as service and sales workers (Sub-Figure 6a). Returnees are overrepresented among crafts workers, managers and agricultural workers (Sub-Figure 6b). For instance, returnees are 1.2 times more likely to work as managers than are non-migrants.

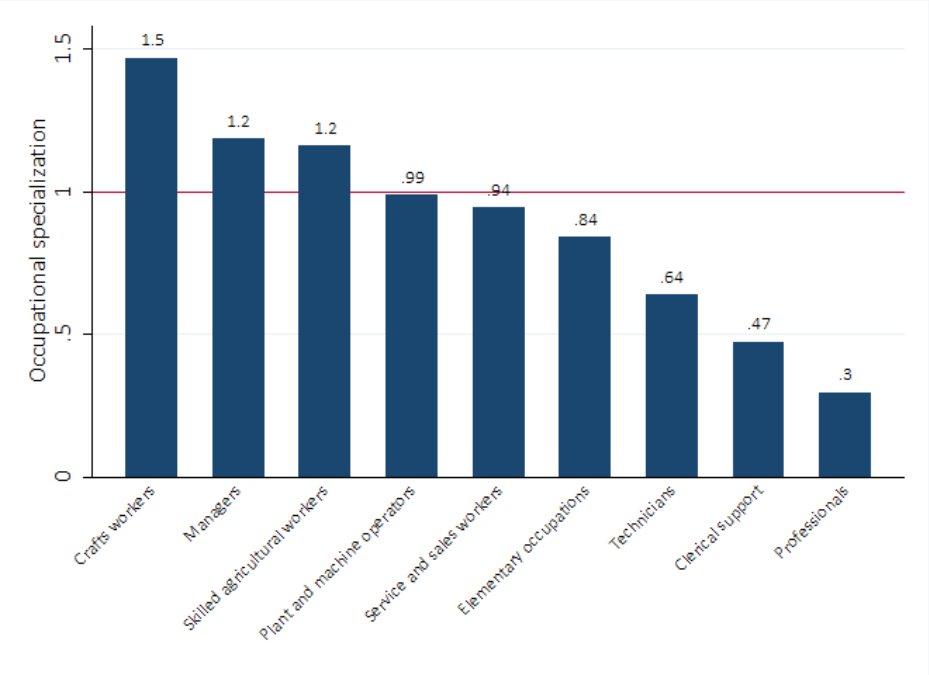
In terms of industries (Figure 7), about half of the returnees work in agriculture, 12 percent work in construction and another 12 percent work in the trade sector. They are almost twice more likely to be employed in mining and construction, and they are 1.2 times more likely to work in agriculture. An interesting observation is that returnees are rarely found among the professionals and the jobs associated with the public sector (e.g., health, education, utilities and other services), all of which are more likely to be formal jobs. They are also underrepresented in the manufacturing sector. All of this once again points out that in the observed period, return migrants did not rely heavily on jobs created by others, but ventured in sectors where self-employment and entrepreneurship were more common.

Figure 6: Occupational Distributions of Non-migrants and Return Migrants

a) Employment Shares by Occupation



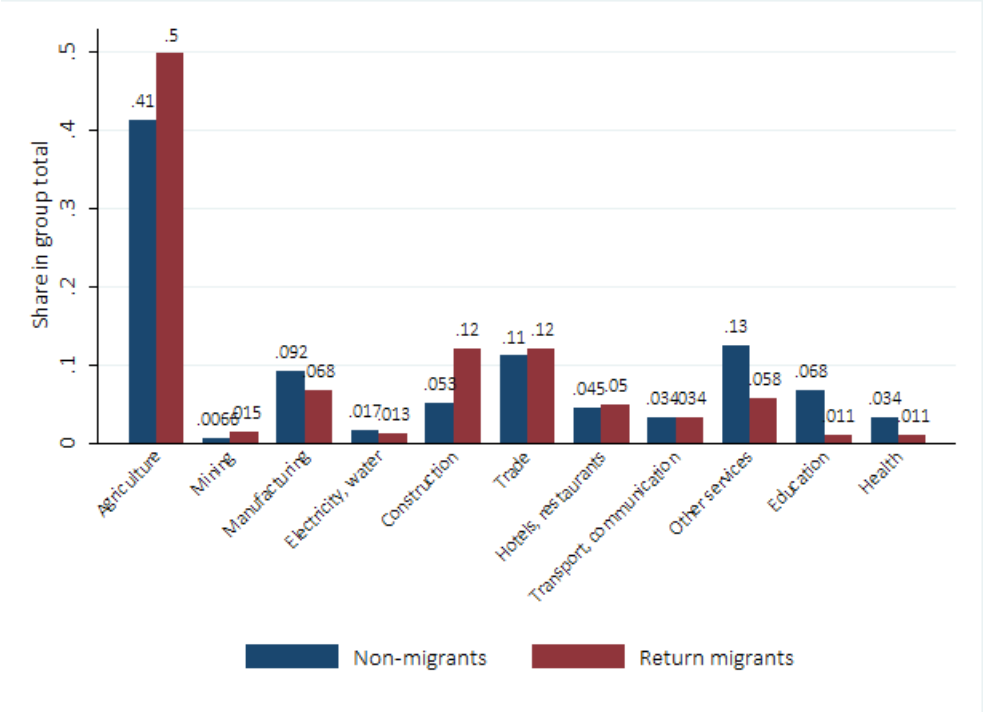
b) Occupational Specialization (Location Quotient)



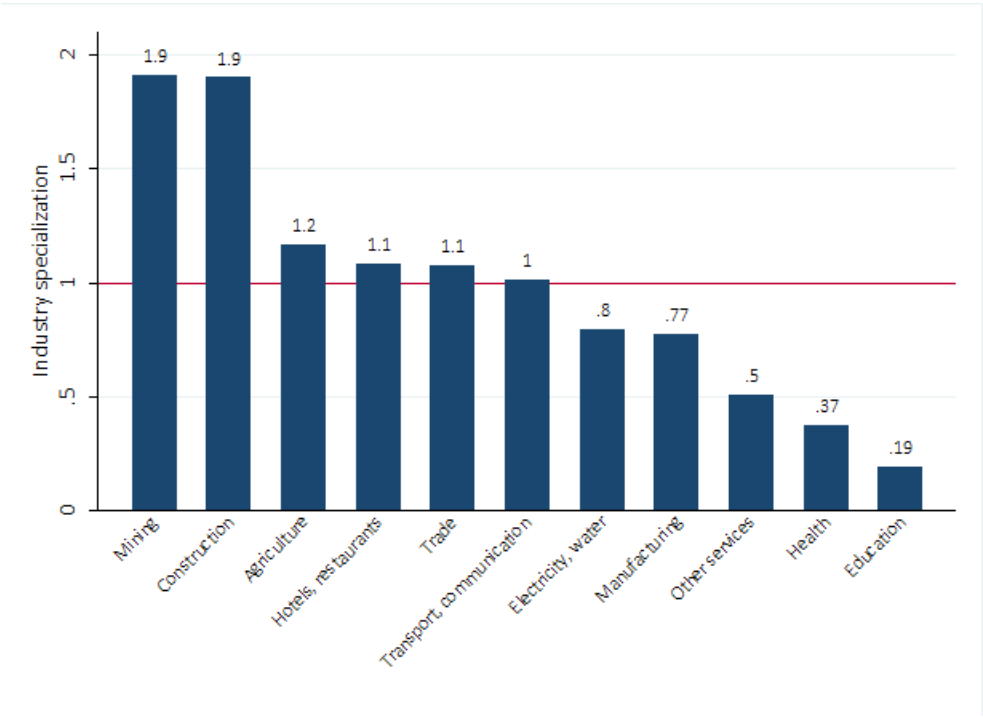
Source: QLFS 2014, all quarters

Figure 7: Industry Distributions of Non-migrants and Return Migrants

a) Employment Shares by Industry



b) Industry Specialization (Location Quotient)



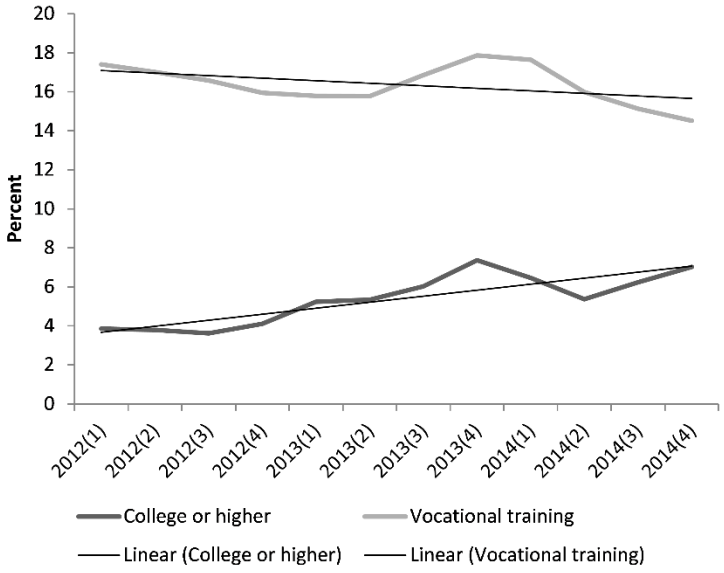
Source: QLFS 2014, all quarters

6.3. Who Returned?

Our analysis of the sample of return migrants indicates that they were negatively selected in terms of university education and positively selected in terms of vocational training as compared to the non-migrants. In terms of educational attainment, those with vocational training and those without university education returned sooner, (see Figure 8) suggesting that it was not a case that the most educated were more likely to return first.

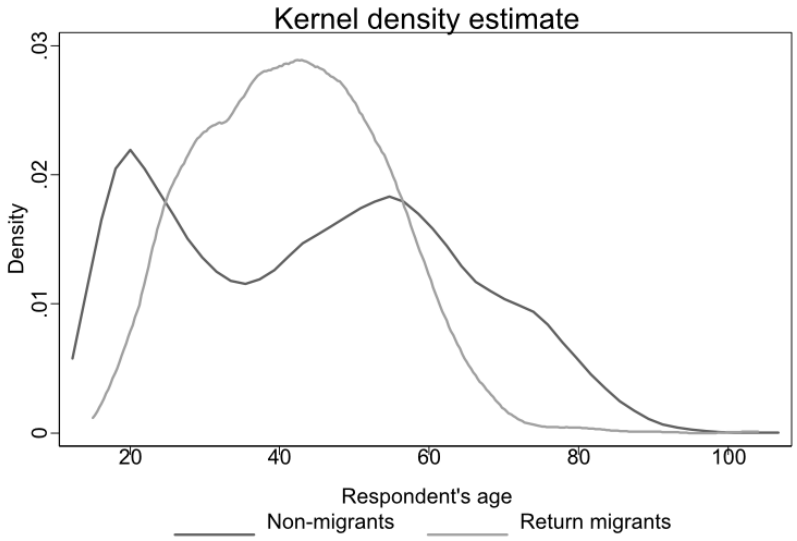
In terms of age (a proxy for experience), the return migrants complemented the missing part of the Albanian age distribution (the prime-age workers) as shown in Figure 9. This pattern does not reveal particular experience bias among the return migrants from the general population of migrants. Theorizing in terms of expectations, one would expect that Greek firms would try to retain their best and most experienced workers in periods of crisis, and layoff those with less skill and experience. This pattern finds an analogy in a firm experiencing a negative demand shock. Such a firm can still choose who to layoff and would probably try to retain their core and most experienced employees first (Gibbons and Katz 1991; Wang and Weiss 1998). Hence, if anything, those who were laid off first during the Greek crisis, were probably more likely to be less experienced and less skilled.

Figure 8: Educational Achievement of Return Migrants



Source: QLFS 2012-2014
Note: 2-period moving averages

Figure 9: Age Distributions of Non-migrants and Return Migrants



Source: QLFS, 2014

7. Econometric Specification

In what follows we propose a measurement of the impact of return migration on the local labor market, and are interested in two particular labor market outcomes: wages and employment of non-migrants. The literature on the measurement of the impact of immigration on natives' labor market outcomes is instructive, but needs to be applied with caution.[14] In a recent study, Dustmann, Schönberg and Stuhler (2016) compare the three widely used approaches to measuring the effects of the immigration on natives' wages and employment: the *national skill-cell approach* as in Borjas (2003); the *pure spatial approach* as in Altonji and Card (1991), Dustmann, Frattini and Preston (2013) and Card (2009); and the *mixed skill-spatial approach* as in Card (2001) and Dustmann and Glitz (2015). They conclude that only the pure spatial approach measures the *total* effect (as opposed to partial, group-specific) effect of immigration on natives' labor market outcomes and it is hence the only approach whose estimates have a clear interpretation. The spatial approach is immune to misclassifications of natives and migrants into what seem homogenous groups[15]. In addition, the motivation for the mixed skill-spatial approach in

[14] The more established choice of theoretical models and derived empirical set up is best elaborated by George Borjas (e.g., Borjas 2003; Borjas 2014). This work, however, has recently been challenged by several scholars, most prominently by David Card and Giovanni Peri, (Card 2012; Card and Peri 2016). They dispute the choice of assumptions in the modelling (no adjustment of capital over long periods, assumed degree of substitutability among natives and migrants, and the susceptibility of the results outcomes to the assumptions about the relative productivity trends), all of which change the impact predictions significantly. Moreover, Card and Peri raise serious concerns about how Borjas and followers translate the theory into empirics, and show that the proposed econometric specifications induce spurious relationships between the changes in the share of migrants on the one hand, and wages and native employment on the other (Card and Peri 2016).

[15] The source of misclassification in the case of immigration is downgrading of immigrants with higher skills to positions that formally require lower ones. This is often a result of language barriers. In our case, the misclassification would stem from the different quality of skills acquired in the Greek vs. the Albanian market.

both camps of scholars (Borjas and followers and Card, Peri and followers) is to test the hypothesis of substitutability between migrants and natives. This is why all empirical specifications divide the population into skill-experience groups within which people are likely to enter in direct competition for jobs. In our work, we have little descriptive evidence suggesting substitutability as a dominant pattern, and hence we do not find it useful to introduce such narrow groupings into the analysis, at the cost of interpretability. We hence adopt a spatial approach, with only broad skill distinctions in the case of non-migrants, and without attempt to bunch migrants and non-migrants into similar skill-experience categories.

While most of this literature uses repeated cross-sections data (e.g., Borjas 2003; Borjas and Katz 2007; Borjas, Grogger and Hanson 2008; Ottaviano and Peri 2008 and 2012; Card 2012), we have access to time-variant individual-level data. The proposed empirical specifications which aggregate data at the regional level would leave out a lot of useful variance available in our data. We therefore opt for individual-level analysis.

7.1. Wages

In the case of the impact of return migration on wages, the supply-demand model can be translated into a Mincer equation:

$$\ln(w_{irt}) = \alpha + \beta R_{rt} + \boldsymbol{X}'_{irt}\boldsymbol{\gamma} + \boldsymbol{X}'_{rt}\boldsymbol{\delta} + \boldsymbol{u_i} + \boldsymbol{T_t} + \epsilon_{irt} \quad (1)$$

The novel term in the regression is R_{rt}, which is the share of working age return migrants in the working age population in a region r at time t, and where $r = \{1, \dots, 34\}$ corresponds to 34 districts in Albania and $t = \{2012(3), 2012(4), \dots, 2014(1)\}$ corresponds to seven quarters over which we observe the labor market of non-migrants and returnees and for which we have information about the place of birth of the return migrants. X_{irt} is a set of variables which vary at the individual level i: potential labor market experience and its square term, education and gender. X_{rt} is set of variables which vary at the level of districts and over time, but not at the individual level: in the current specification, this only includes the working age population as a control for the size of the labor market. The term u_i is an individual fixed effect which is introduced in the fixed effects regression models, but is absent in the pooled OLS estimations. u_i controls for time invariant individual characteristics, such as personality or individual traits that could affect both the probability to live in a region with high migration and the earnings potential. In the fixed effects models, some of the regional and individual level characteristics which do not vary over time (population size, gender and education) become redundant. T_t are quarter dummies, controlling for macroeconomic developments like the business cycle. We cluster the standard errors at district-quarter level because the regional share of return migrants varies by district and quarter. Not doing so results in understated standard errors and overstated statistical significance.[16] The OLS estimates of the effect of return migration on the labor market of non-migrants would be biased if

[16] The clustering of the standard errors should ideally be done at the level of districts. However, with only 34 districts, we are running into the problem of `few clusters' (e.g., Cameron and Miller 2015). Partially, the within-district error correlation is controlled in the FE models, where the individual fixed effects are collinear with the district fixed effects because the QLFS, by design, only follows people who stayed in the same district in subsequent surveys.

those returning back home are very different from those who do not. They would also be biased if the regions[17] to which they return offer systematically different economic opportunities for non-migrants than the regions in which fewer of them return. In the next two subsections we discuss the implications of the selectivity and explain how we address it.

7.2. Selection into Districts of Return and Instrumental Variables

Our variable of interest is the share of return migrants in the Albanian districts (R_{rt}). That is, we study how the level of return migration in a region affects the wages (and employment chances) of non-migrants living in those regions. Therefore, understanding the choice of return district is a key aspect of our identification strategy. There are at least two possible scenarios where non-random choice of districts could induce a spurious relationship between wages and return migration. On the one hand, if migrants were mainly selected from poor districts and after the shock returned back to these districts, we may observe a negative spurious relationship between return and the wages of non-migrants. Similar argument could be made about the growth of these districts. If migrants return to districts which are further deteriorating, we may observe a spurious negative relationship between return and non-migrants' wages. On the other hand, if migrants anticipate that they will be better-off in richer and growing districts, they will be more likely to choose these districts for their return. In such case, we will observe a positive relationship between return and wages of non-migrants even in the absence of a causal relationship between the two.

To address this problem of regional sorting, we use an instrumental variable approach. We look for variables in our data that directly impact the shares of return migrants in a region, but which do not have an impact on the labor market outcomes of the non-migrants, other than through affecting return migration. Our first instrument is the share of return migrants who were born in a district ($R_{r_b t}$). We find that 80 percent of the return migrants reside in their districts of birth upon return. This means that the place of birth is a very strong determinant of the district of choice upon return. One reason for this pattern is the fact that the migrants still have families there, and the other could be the ownership of property, including arable land.[18] Our second instrumental variable is the kilometer distance between the district of birth[19] and the closest border-crossing with Greece (distance to border). De Coulon and Piracha (2005) argue that the Albanians from the South were more likely to migrate because of the proximity to Greece and the lower uncertainty about the labor market conditions on the other side of the border. This is also confirmed in King (2005) and Labrianidis and Kazazi (2006). We see this pattern in our data too. Figure 10a shows the correlation between the share of return migrants by region in 2014(Q1) and the distance to the nearest border-crossing with Greece. The coefficient of correlation, $\rho = -0.40$ ($p = 0.02$), suggesting that the share of return migrants in the total regional population is significantly higher in districts closer to the Greek border. This finding is robust to using driving time

[17] We will use the terms districts and regions interchangeably, but they refer to the same regional units.

[18] The latest land reform in Albania which took place in the 1990s resulted in extreme fragmentation of arable land, such that each family could own a piece of land. The result of the reform was the creation of approximately 1.8 million small parcels averaging 0.25 hectares owned by 480,000 families which farm each parcel (see Stanfield and Marquart, 1997).

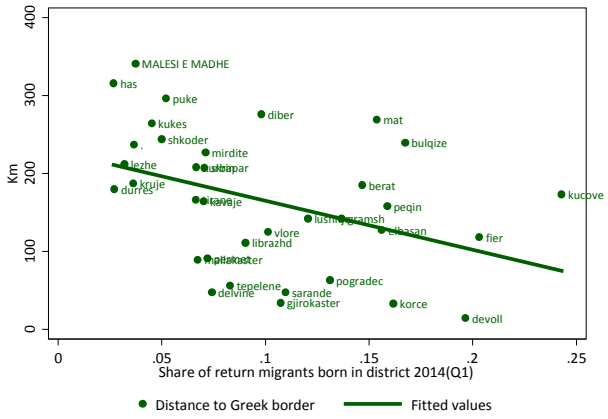
[19] More specifically, this is the center of the municipality in the district of birth. Each district is organized around a single municipality. We estimated the kilometer and time distance in July 2015 using Google Maps.

instead of kilometers to measure the distance. This variable does not vary over time. Hence, while both instruments will be used in the 2SLS estimators, only the first instrument is used in the FE 2SLS estimator.

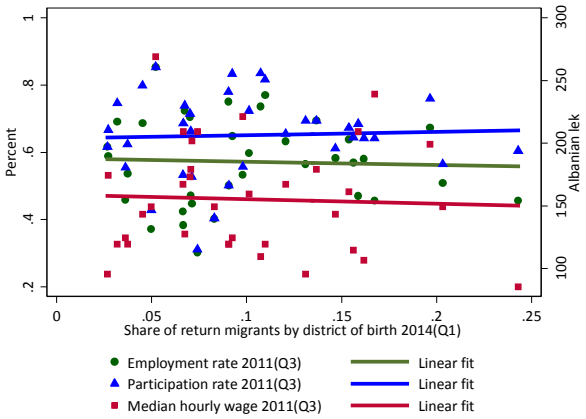
We should still worry if the instrumental variables have a direct effect on the labor market outcomes of non-migrants. This could be the case if the districts in which most return migrants were born are systematically more (or less) prosperous than other districts. A similar case could be made for the distance from the Greek border. To study if these arguments hold in the data, we estimated the correlations between $R_{r_b t}$ as estimated in 2014(Q1), the latest quarter in our wage sample, and the initial economic conditions in these districts as of 2011(Q3), the first survey wave with district-level information. For 2011(Q3) we observe the labor market participation rate, the employment rate (share of employed in the working age population) and the median hourly wage. Figure 10b shows the scatterplots and the linear fits of these relationships. The district-level correlations ($N = 34$) are weak and statistically insignificant, suggesting that return migrants did not cluster in initially more or initially less prosperous regions. The correlation coefficients are as follows: $\rho = 0.05$ ($p = 0.80$) for wages, $\rho = -0.04$ ($p = 0.82$) for the employment rate, and $\rho = 0.04$ ($p = 0.80$) for the labor participation rate. Similarly, all correlations between the distance to the border and the economic characteristics of districts are statistically insignificant: wages ($\rho = 0.24, p = 0.28$), employment rate ($\rho = -0.06, p = 0.73$) and participation rate ($\rho = -0.03, p = 0.87$).

Figure 10: Share of Return Migrants by Region and Regional Characteristics

a) Distance to Greek Border



b) Employment, Participation and Median Wages



Source: LFS 2011 and QLFS 2014; Kilometer distance estimated using Google Maps

7.3. Job Creation

As baseline models, we estimate duration (Cox proportional hazard) models for the following individual-level transitions among the non-migrants: (a) from inactivity to labor market participation, (b) from inactivity or unemployment to employment, (c) from any labor market state to a regular paid job outside the household, and (d) from non-participation, self-employment, subsistence farming or

unemployment to commercial farming, as a function of the fraction of the return migrants in a district. We choose these models because when time-to-event data is available, duration models have two important advantages over the logit model: they take into account right-censoring of the data and also make use of the information about the survival time.

We can define the proportional hazards model as follows:

$$\frac{h(t|X)}{h_0(t)} = \exp(\beta_1 R_{rt} + \beta_2 expp_{it} + \beta_3 expp_{it}^2 + \beta_4 male + \beta_5 pop_r + \boldsymbol{T_t} + \boldsymbol{edu_i'\beta}) \qquad (2)$$

Where $h(t|X)/h_0(t)$ is the relative risk or the hazard ratio of an event (e.g., employment) occurring at time t. The impact of the included variables R_{rt} and controls ($expp$, potential labor experience; $male$, male dummy; pop, population size of the district; $\boldsymbol{T_t}$, quarter dummies, and edu, education dummies) on the baseline risk is hence multiplicative. Since we are not using instrumental variables in these specifications, we are not restricted to the 7 quarters as in the wage regressions. The samples for this analysis employ 11 quarters of data, 2012(2)-2014(4).

Moreover, for the subset of quarters for which we have available instruments, we estimate instrumental variable models. To avoid complications stemming from the use of instrumental variables in limited dependent models (Angrist and Pishke 2009, p. 197), we approximate the relationships using linear regression. In appendix C, we first show that the linear regression in most cases gives a good approximation of the non-linear relationship.

8. Results

8.1. Effects on Wages

The results of estimating equation 1 are shown in Tables 2, 3 and 4. Table 2 shows the results for all non-migrants, Table 3 for the skilled non-migrants and Table 4 for the low-skilled non-migrants. In the estimates of the effects on wages for all non-migrants, the positive coefficient observed in the pooled OLS becomes statistically insignificant in the pooled 2SLS estimates, although the size of the effect is not reduced by much. Hence, the IV correction only makes the estimates less efficient, but does not reveal a strong estimation bias in the OLS. However, adding person fixed effects results in significant coefficient reduction (model 2), suggesting that the OLS results are upward biased and that the observed positive effect is largely a result of higher average individual fixed effects among non-migrants in the district of return.

Once we split the sample between highly and low skilled non-migrants, a clearer pattern appears. The inflow of return migrants did not have any effects on the wages of the skilled non-migrants. The IV correction (models 3 and 4) almost halves the OLS coefficient and the inclusion of individual fixed effects (model 2) reduces it almost to zero. Hence, an upward bias in the OLS coefficient of this group comes from either higher average individual fixed effects in the districts in which they return or from other district-specific unobservable characteristics. Qualified returnees are less bounded to their place of birth and more likely to seek employment in the Tirana-Durres agglomeration where higher paying jobs are available. The first stage results are strong. The F statistic in models 3 and 4 are 87.9 and 89.5, and both

the share of return migrants in the district of birth, and the distance to the Greek border are significant predictors of the share of return migrants. The Hansen J statistic of over-identification is small and insignificant, confirming the validity of the two instruments.

In the case of low skilled non-migrants, most estimates (except for the 2SLS FE) suggest a positive impact of return migration on wages. In these estimates, the IV correction marginally increases the size of the OLS-estimated coefficient on return migration, while the FE estimate is slightly lower than the one estimated by OLS, however the coefficient estimates across the models are not statistically different. The models suggest a range of estimates between 2 percent and 2.5 percent increase in real wages for 1 pp increase in share of return migrants in the region. The F statistics of the included instruments are large (322.6 in model 3 and 228.9 in model 4). The Hansen J statistic of over-identifying restrictions in model 4 is small, meaning that we cannot reject the null hypothesis that the instruments are valid. The last model (model 5) combines the FE and the 2SLS. Here the estimate is close to zero, but (looking at the standard error) it is not statistically different from the estimates in the previous columns. Already in model 2 we see that the estimate becomes very imprecise when adding fixed effects. Hence, it is no surprise that instrumenting the variable of interest as part of a FE model will lead to even higher standard errors and render the estimate statistically insignificant. For completeness, however, we report these results as well.

Table 2: Effects of Return Migration on Non-migrants' wages, All Non-migrants

	(1) OLS	(2) FE	(3) 2SLS	(4) 2SLS	(5) 2SLS FE
Second stage (dependent variable: ln(hourly wages)					
R_{rt}	0.0207**	0.00873	0.0172	0.0186	-0.0116
	(0.00894)	(0.0103)	(0.0139)	(0.0133)	(0.0138)
Population	1.78e-07		1.51e-07	1.62e-07	
	(2.14e-07)		(2.40e-07)	(2.38e-07)	
Expp	0.0221***	0.0134	0.0218***	0.0219***	0.0128
	(0.00429)	(0.0295)	(0.00434)	(0.00433)	(0.0295)
Expp^2	-0.000332***	-0.000240	-0.000328***	-0.000330***	-0.000226
	(7.93e-05)	(0.000683)	(7.99e-05)	(7.97e-05)	(0.000683)
Male	0.0144		0.0129	0.0135	
	(0.0374)		(0.0362)	(0.0363)	
Primary education	-0.0478		-0.0508	-0.0496	
	(0.0714)		(0.0693)	(0.0692)	
Secondary education	0.311***		0.313***	0.312***	
	(0.0585)		(0.0573)	(0.0574)	
Tertiary education	0.606***		0.604***	0.605***	
	(0.0660)		(0.0649)	(0.0650)	
Quarter dummies	Yes	Yes	Yes	Yes	Yes
Constant	3.791***	4.353***	3.827***	3.813***	
	(0.200)	(0.289)	(0.227)	(0.223)	
R-squared	0.111	0.776			
First stage (dependent variable: R_{rt})					
$R_{r_b t}$			0.734***	0.695***	0.543***
			(0.0607)	(0.0618)	(0.0808)

Distance to border				-0.00956***	
				(0.00260)	
Expp			-0.0800***	-0.0791***	0.0647
			(0.0192)	(0.0193)	(0.0442)
Expp^2			0.00124***	0.00119***	-0.00136
			(0.000333)	(0.000336)	(0.000859)
Population			4.58e-06***	4.42e-06***	
			(1.26e-06)	(1.23e-06)	
Male			-0.133	-0.135	
			(0.0878)	(0.0861)	
Education dummies			Yes	Yes	No
Quarter dummies			Yes	Yes	Yes
Constant			2.770***	4.699***	
			(0.952)	(1.227)	
Observations	7,413	7,413	7,413	7,413	7,413
Weighted observations	1,903,493	1,891,518	1,903,493	1,903,493	1,891,518
Shea Partial R-squared			0.6103	0.6289	0.4107
F-statistic			146.18	134.01	45.14
Kleibergen-Paap Wald rk F statistic			2543.22	2809.07	382.17
Hansen J test of overidentification				1.22	
Hansen J statistic p-value				0.2694	

Standard errors clustered by district and quarter (total of 233 clusters). All observations are weighted using final survey weights. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table 3: Effects of Return Migration on Non-migrants' wages, Skilled Non-migrants

	(1) OLS	(2) FE	(3) 2SLS	(4) 2SLS	(5) 2SLS FE
Second stage (dependent variable: ln(hourly wages)					
R_{rt}	0.0183**	0.00146	0.0102	0.0119	-0.0140
	(0.00864)	(0.0122)	(0.0153)	(0.0146)	(0.0153)
Population	1.27e-07		6.29e-08	7.66e-08	
	(2.01e-07)		(2.34e-07)	(2.32e-07)	
Expp	0.0205**	-0.0543	0.0199*	0.0200*	-0.0532
	(0.0101)	(0.0441)	(0.0103)	(0.0103)	(0.0443)
Expp^2	-0.000276	0.00113	-0.000268	-0.000269	0.00111
	(0.000194)	(0.000955)	(0.000196)	(0.000196)	(0.000963)
Male	-0.0596		-0.0651*	-0.0639*	
	(0.0382)		(0.0366)	(0.0366)	
Secondary education			-0.281***	-0.282***	
			(0.0688)	(0.0689)	
Tertiary education	0.288***				
	(0.0732)				
Quarter dummies	Yes	Yes	Yes	Yes	Yes
Constant	4.191***	5.321***	4.562***	4.544***	
	(0.216)	(0.438)	(0.281)	(0.277)	
R-squared	0.039	0.738			
First stage (dependent variable: R_{rt})					
R_{r_bt}			0.685***	0.650***	0.477***

			(0.0730)	(0.0731)	(0.0864)
Distance to border				-0.00990***	
				(0.00294)	
Expp			-0.113***	-0.102***	0.189**
			(0.0310)	(0.0307)	(0.0954)
Expp^2			0.00171***	0.00151***	-0.00378*
			(0.000546)	(0.000543)	(0.00194)
Population			4.17e-06***	3.96e-06***	
			(1.51e-06)	(1.48e-06)	
Male			-0.348***	-0.340**	
			(0.135)	(0.135)	
Education dummies			Yes	Yes	No
Quarter dummies			Yes	Yes	Yes
Constant			3.461***	5.235***	
			(1.256)	(1.493)	
Observations	4,195	4,195	4,195	4,195	4,195
Weighted observations	1,055,884	1,042,028	1,055,884	1,055,884	1,042,028
Shea Partial R-squared			0.5389	0.5588	0.3748
F-statistic			87.91	89.54	30.44
Kleibergen-Paap Wald rk F statistic			1112.45	1239.28	
Hansen J test of overidentification				1.064	
Hansen J statistic p-value				0.3024	

Standard errors clustered by district and quarter (total of 226 clusters). All observations are weighted using final survey weights. Significant at: *** p<0.01, ** p<0.05, * p<0.1

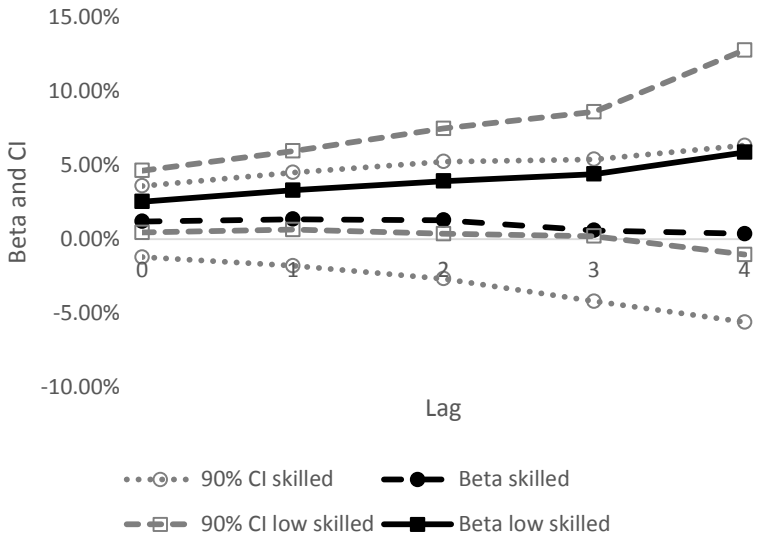
Table 4: Effects of Return Migration on Non-migrants' wages, Low-skilled Non-migrants

	(1) OLS	(2) FE	(3) 2SLS	(4) 2SLS	(5) 2SLS FE
Second stage (dependent variable: ln(hourly wages)					
R_{rt}	0.0225**	0.0200*	0.0244*	0.0254**	-0.00417
	(0.00980)	(0.0102)	(0.0131)	(0.0127)	(0.0150)
Population	2.34e-07		2.48e-07	2.55e-07	
	(2.50e-07)		(2.69e-07)	(2.66e-07)	
Expp	0.0241***	0.0768**	0.0243***	0.0244***	0.0743**
	(0.00683)	(0.0336)	(0.00675)	(0.00679)	(0.0327)
Expp^2	-0.000406***	-0.00161*	-0.000409***	-0.000411***	-0.00155*
	(0.000147)	(0.000844)	(0.000145)	(0.000146)	(0.000820)
Male	0.106**		0.106**	0.106**	
	(0.0487)		(0.0485)	(0.0486)	
Primary education	-0.0565		-0.0548	-0.0539	
	(0.0727)		(0.0710)	(0.0709)	
Quarter dummies	Yes	Yes	Yes	Yes	Yes
Constant	3.692***	3.406***	3.672***	3.662***	
	(0.204)	(0.356)	(0.217)	(0.215)	
R-squared	0.065	0.779			
First stage (dependent variable: R_{rt})					

R_{r_bt}			0.804***	0.763***	0.725***
			(0.0448)	(0.0467)	(0.0601)
Distance to border				-0.00848***	
				(0.00228)	
Expp			-0.0569***	-0.0615***	-0.00131
			(0.0169)	(0.0178)	(0.0439)
Expp^2			0.000974***	0.000987***	0.000393
			(0.000318)	(0.000332)	(0.000846)
Population			4.94e-06***	4.86e-06***	
			(1.03e-06)	(1.01e-06)	
Male			0.131	0.119	
			(0.103)	(0.101)	
Education dummies			Yes	Yes	No
Quarter dummies			Yes	Yes	Yes
Constant			1.481**	3.269***	
			(0.662)	(0.925)	
Observations	3,218	3,218	3,218	3,218	3,218
Weighted observations	847,609	849,490	847,609	847,609	849,490
Shea Partial R-squared			0.7138	0.7283	0.523
F-statistic			322.59	228.94	145.77
Kleibergen-Paap Wald rk F statistic			322.6	1730.25	428.05
Hansen J test of overidentification				0.915	
Hansen J statistic p-value				0.3388	

Standard errors clustered by district and quarter (total of 223 clusters). All observations are weighted using final survey weights. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Figure 11: Effects of Return Migration on Non-migrants Wages – Results using Lagged R_{rt}



Note: Results from 2SLS. The dependent variable is the natural log of hourly wages. Each coefficient estimate corresponds to a separate regression. Each lag corresponds to a quarter of a year. 90%

confidence intervals are calculated using standard errors clustered by district and quarter. The observations are weighted using final survey weights.

The effects of return migration are likely to happen with a lag. It takes time for return migrants to start a business and make a measurable change in a place. This is why we furthermore explore the lag structure of the impact. Figure 11 summarizes our findings for the cases of low-skilled and high-skilled non-migrants. In the case of the low-skilled, the coefficients gradually increase with the lag, from 2.5 percent without a lag to 5.9 percent with a lag of four quarters. However, at the fourth lag, the standard errors increase sharply and the coefficient is statistically insignificant. In the case of the skilled non-migrants, the coefficients fall from 1.2 to 0.4 and remain statistically insignificant throughout.

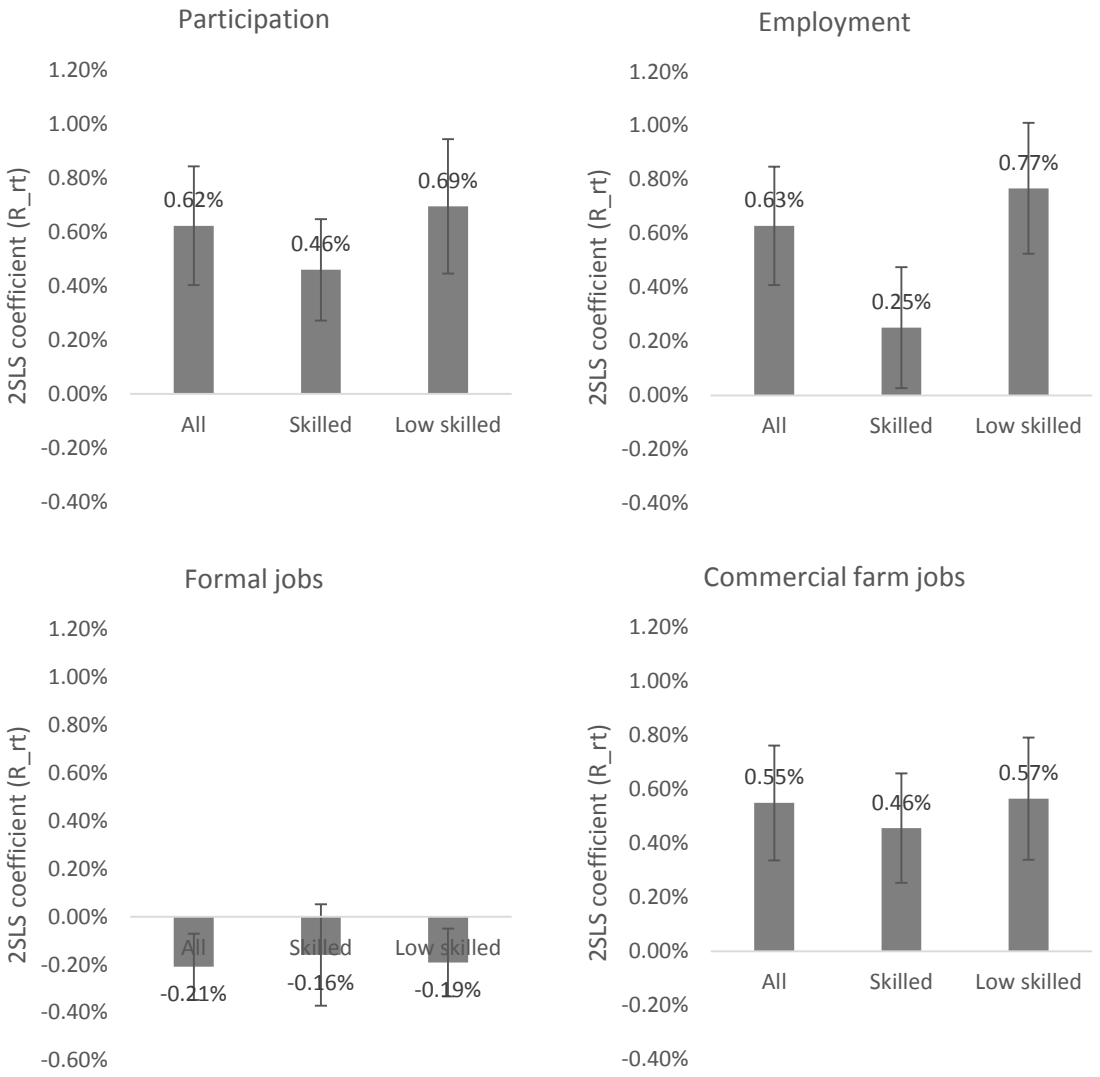
8.2. Job Creation

The results of estimating the impact of return migration on labor market participation, employment, formal jobs and commercial farm jobs are summarized in Figure 12. These are the coefficients from the 2SLS estimates. The comprehensive tables containing the estimates from the Cox hazard models, the logit models, the OLS and the 2SLS are provided in Appendix C. Starting with labor market participation, we find that 1 pp increase in the share of return migrants corresponds with 0.6 percent increase in the probability of participating among non-migrants. The effect is higher for the low-skilled non-migrants (0.7 percent) and lower for the skilled non-migrants (0.5 percent). Moreover, 1 pp increase in the share of return migrants results in 0.6 percent increase in the chances of becoming employed among the non-migrants. Here as well, the effect is higher among the low-skilled non-migrants (0.8 percent) and lower among the skilled ones (0.3 percent). We furthermore study the impact on two types of more specific types of jobs that we can identify in our data (formal jobs and commercial farm jobs). We find that a percentage point increase in the share of return migrants corresponds with a modest decline in the probability of finding a formal sector job of 0.2 percent. The effect is not significant for the skilled non-migrants, but it is significant for the low-skilled (also estimated at 0.2 percent). Finally, we find that 1 pp increase in the share of return migrants in a district results in 0.6 percent increase in the probability of finding a commercial farm job. The estimated coefficient for the skilled non-migrants is somewhat lower than the one for low-skilled non-migrants (0.5 vs. 0.6 percent).

Similar to the analysis of wages, we explore the lag structure of the effects on labor participation and jobs. Figure 13 summarizes the findings. As in the case of wages, the effects tend to increase with the lag of R_{rt}, but the results here are less straightforward than in the case of wages. The impact on the probability of participation increases for both groups when we allow for up to four lags, from 0.5 to 0.7 percent for the skilled and from 0.7 to 0.9 for the low skilled non-migrants, with the fourth lag of R_{rt} being statistically insignificant in the case of the skilled non-migrants. The impact on employment first increases until the second lag (from 0.8 to 1 percent), and then declines (to 0.6 percent) for the low skilled, with the forth lag becoming statistically insignificant. For the skilled non-migrants, the impact becomes larger (from 0.3 percent to 0.9 percent), but only the zero and the first lags are statistically significant. Looking at the type of job, the impact on formal jobs for the skilled non-migrants remains around zero and is statistically insignificant independent of the choice of lag, while in the case of low-skilled non-migrants, the effect becomes more negative, from -0.2 to -0.3 percent, with the fourth lag being insignificant. Finally, similar to the overall impact on employment, the impact on the probability of

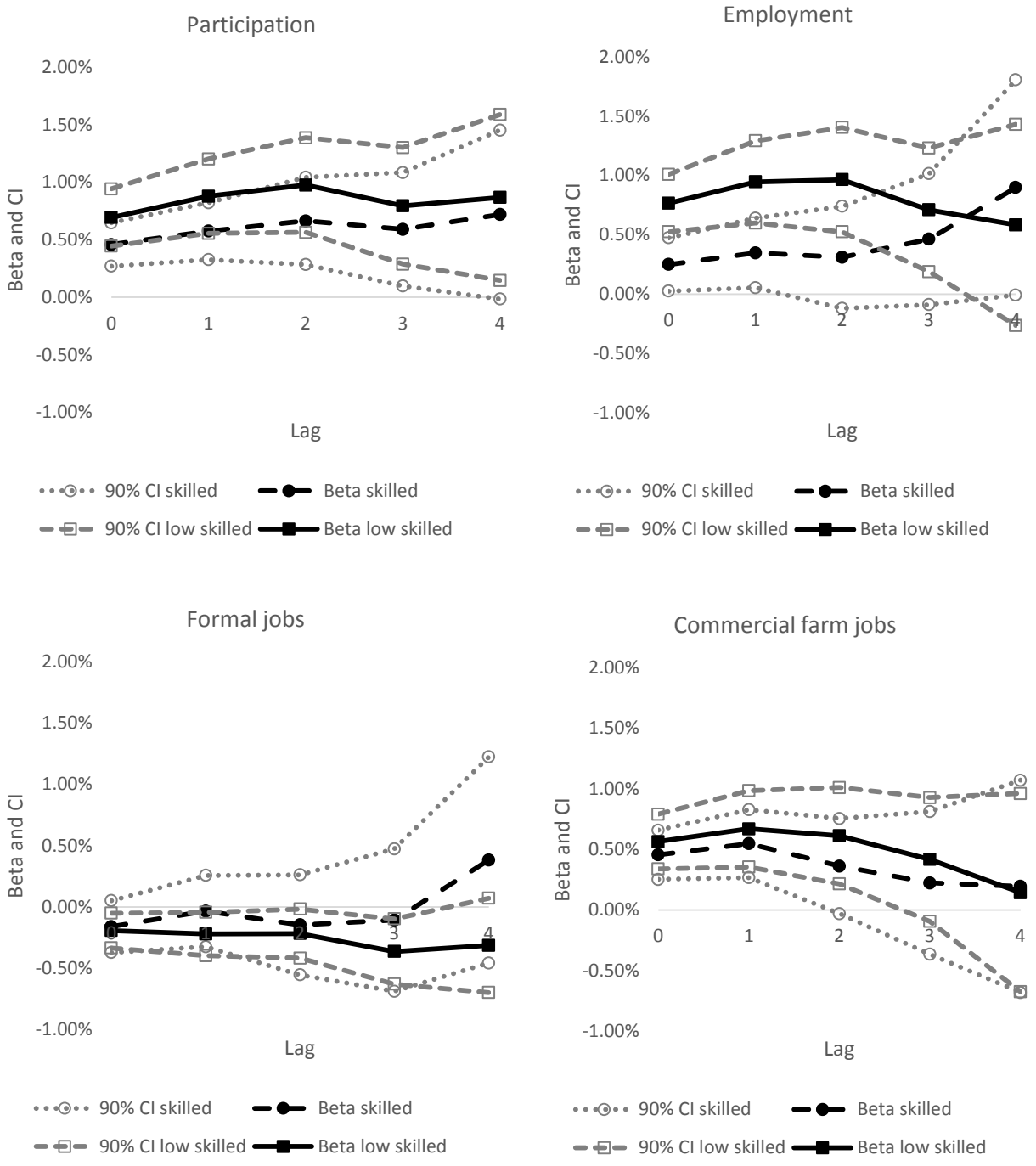
finding a commercial farm job first increases (from 0.6 to 0.7 percent, and then declines to 0.14 percent in the fourth lag), with the third and the fourth lag being statistically insignificant. Similar is the case of the skilled non-migrants, where the impact first increases (from 0.5 to 0.6 percent and then declines to 0.2 percent), with only the zero and the first lag being significant. Overall, the lagged effects show high level of consistency and broadly confirm the estimates summarized in Figure 12.

Figure 12: Effects of Return Migration on Non-migrants Labor Participation, Employment, Formal Jobs and Commercial Farm Jobs



Note: Results from 2SLS. The dependent variable changes as indicated in each figure. 90% confidence intervals are calculated using standard errors clustered by district and quarter. The observations are weighted using final survey weights.

Figure 13: Effects of Return Migration on Non-migrants Labor Participation, Employment, Formal Jobs and Commercial Farm Jobs – Results using Lagged R_{rt}



Note: Results from 2SLS. The dependent variable is the natural log of hourly wages. Each coefficient estimate corresponds to a separate regression. Each lag corresponds to a quarter of a year. 90% confidence intervals are calculated using standard errors clustered by district and quarter. The observations are weighted using final survey weights.

Combined, the estimates of the effects of return migration on the labor market of non-migrants are quite positive. The effects on wages are either positive (for the low-skilled) or non-negative (for the skilled non-migrants). They also tend to increase with the time-distance from the arrival of the return migrants. Moreover, we show robust evidence of positive effects for both skill groups when it comes to labor market participation and employment. Only in the case of formal sector jobs we find modest negative effects among the low-skilled non-migrants, but these are dominated by the positive contribution of return migration to the non-formal sector jobs.

8.3. Remittance Losses vs. Gains in Wages and Employment

In the course of the Greek depression and the wave of return migration, Albania was on average losing about 1.6 percent of its 2009 GDP in remittances each year. This is a direct negative effect of the return migration on the economic wealth of non-migrants. The positive effect of return migration on the wages of low skilled estimated above, however, translates into annual gains between 0.6 percent and 1 percent of the 2009 GDP depending on the choice of estimated coefficient (FE - lower bound or 2SLS - upper bound estimate), and whether we use net or gross wages. Wage increases alone offset up to 61 percent of the negative effect of reduced remittances or 1 percent in the 2009 GDP. If to this we add the positive effects on employment, the total positive effects offset up to 79 percent of the loss in remittances, i.e., they add up to 1.3 percent in 2009 GDP. See Table A2 in Appendix A for the details of this calculation.

9. Conclusions and Discussion

We analyze the consequences of the wave of return migration from Greece to Albania, spurred by the recent economic depression in Greece, on the wages and employment of Albanians who never migrated (non-migrants). We argue that for up to two and a half decades, the Albanians in Greece accumulated knowhow and skills in a more productive economy than their home country. Migrating back, they now transfer this knowhow and skills home, creating enterprises that are more productive than those run by the non-migrants.

We find that most migrants return to the district of birth where they are disproportionally likely to engage in self-employment and entrepreneurship: return migrants are significantly more likely than non-migrants to employ others, work as managers and be self-employed. We use an instrumental variable approach to measure the effects of return migration on the wages and employment of non-migrants. We find positive effects of return migration on wages of the low-skilled non-migrants which increase with the time-distance from the arrival of the return migrants, and no significant impact on the wages of the skilled non-migrants. We also find that return migration, on average, improved the labor market participation and the employment chances of the Albanians who never migrated. This is in particular true in the non-formal sector, which comprises the majority of jobs in Albania. About half of the working return migrants are active in the agricultural sector, where they pull non-migrants out of non-participation, unemployment and subsistence agriculture and towards commercial farming, our findings suggest. In the formal sector, we find modest negative effects on the employment of low skilled non-migrants, but no significant effects on the skilled non-migrants. The overall effects are positive and large enough (between 0.8 and 1.3 percent of the 2009 GDP) to offset between 60 and 80 percent of the negative shock of lower inflow of remittances during the crisis period.

We conclude that the standard supply-demand model of migration on the labor market, which assumes perfect substitutability between migrants and non-migrants, does not hold in our data. Our findings are more in line with heterogeneous labor models of migration, i.e., models that allow for complementarity between migrants' and non-migrants' skills, and models that allow for positive human capital externalities from migration. Moreover, the study suggests that, the less educated, negatively selected part of the population is capable of adding significant value through learning-by-doing in more productive economic environments and transferring these learnings to the home location.

Could these findings be a result of mechanisms different than the ones analyzed in this study? One could argue that the increased participation rate among non-migrants was a result of the lower inflow of remittances. The reduction of such external financial support forced non-migrants to seek employment. The shock in remittances may indeed play a role, but this shock on its own cannot explain the positive effects on job creation and wage growth. Increased participation in the absence of job creation would have lowered wages, which is not what we observe in the data. Alternatively, Bodvarsson et al. (2008) argue that migration affects the demand for local labor simply through a population growth effect, exerting an upward pressure on local wages. While we cannot rule out this channel, ours and previous findings about the entrepreneurial tendencies of return migrants assure us that this cannot be the sole channel through which return migrants improve local labor market outcomes.

How generalizable are our findings? The impact of return migration on the home labor market broadly depends on two types of factors: the characteristics of the migrants and the characteristics of the place of return. In environments that are hostile to entrepreneurship, return migration might have a lower impact than in start-up friendly environments. The fact that entry barriers to entrepreneurship in Albania were low, that agricultural land ownership was spread out, that low-cost labor was widely available, and that sector regulations were low, probably facilitated firm start-up and growth. Another factor that affects the impact on the local labor market is the degree to which the skills acquired abroad are transferrable and novel back home. Friedberg (2000), for instance, found little returns to the education and experience acquired abroad of the immigrants coming to Israel in the 1990s, arguably because their human capital was not valuable in the Israeli labor market. By contrast, knowledge of greenhouse farming acquired in Greece allowed for new forms of intensive agriculture to spread in Albania.

Do these findings suggest that governments should put budgetary resources into programs that encourage return migration? This question requires a more nuanced understanding of the conditions of return. In our specific case, if the economic state of Greece would not have deteriorated, many return migrants would have probably been better off, at least in the short run, in Greece. This is reflected in the fact that the income gains in Albania did not fully cover the remittance losses. To make return worthwhile, return migrants may need minimum conditions that enable them to maximize the returns on their knowhow. If this necessitates to have the capacity to start a business, it will require access to the necessary complementary assets and to have some assurances of the appropriability of the returns. In the cases of impactful diaspora entrepreneurship in the IT sectors, as documented in Saxenian (2007) and for India by Pandey et al. (2006), strong skill complementarity with local engineers facilitated entrepreneurship. In Albania, the returnees found complementary low-cost labor and land. Future

research should study the long run effect of the return migration once more data becomes available. Anecdotal evidence also points towards positive effects of return migration on exports, which should be studied further. Incentivizing return migration would be more desirable if it could transform the long-term growth of sectors, such that the long term benefits dominate over the short term losses in foreign income.

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Appendix A – Summary Statistics

Table A1: Summary Statistics of Samples and Variables used in the Econometric Analyses

Wages

Variable	Observations	Mean	Std. Dev.	Min	Max
ln(hourly wages)	7,413	4.78	1.04	(1.56)	6.50
R_{rt}	7,413	7.73	5.93	-	32.17
R_{r_bt}	7,413	8.14	7.58	-	64.14
Distance to border	7,413	168.08	79.22	14.00	393.00
Potential experience	7,413	27.13	11.83	-	58.00
Working age population in district	7,413	173,952	178,303	1,849	581,064
Male	7,413	0.57	0.49	-	1.00
Educational attainment	7,413	2.72	1.18	1.00	4.00

Employment

A. Labor Market Participation and Employment Sample					
R_{rt}	66,297	8.55	6.30	-	37.29
Potential experience	66,297	30.66	18.86	-	86.00
Male	66,297	0.43	0.50	-	1.00
Working age population in district	66,297	146,582	159,730	695	581,064
Educational attainment	66,297	1.79	1.05	1.00	4.00
B. Formal Jobs (Paid Non-farm, Non-family Jobs)					
R_{rt}	59,840	8.39	6.27	-	37.29
Potential experience	59,840	31.05	19.26	-	86.00
Male	59,840	0.44	0.50	-	1.00
Working age population in district	59,840	149,272	163,074	695	581,064
Educational attainment	59,840	1.81	1.06	1.00	4.00
C. Commercial Farm Jobs					
R_{rt}	53,347	8.66	6.37	-	37.29
Potential experience	53,347	31.62	19.99	-	86.00
Male	53,347	0.41	0.49	-	1.00
Working age population in district	53,347	137,439	151,545	695	581,064
Educational attainment	53,347	1.61	0.93	1.00	4.00

Table A2: Comparing the Gains and Losses from Return Migration

Inputs			
Average annual loss compared to 2009, in 2009 ALL mln	18,233		
Annualized pp increase in the fraction of return migrants	1.42		
2009 employment	1,160,545		
2009 low skilled employment	852,414		
2009 average annual net wages in ALL	336,803		
2009 average annual gross wages in ALL	432,900		
2009 low skilled average annual net wages in ALL	286,070		
2009 low skilled average annual gross wages in ALL	367,691		
2009 GDP (ALL mln)	1,143,936		
Estimated coefficients			
Wage effects (low skilled) per pp increase in the fraction of return migrants			
Lower bound (FE)	2.0%		
Upper bound (2SLS)	2.5%		
Employment effects per pp increase in the fraction of return migrants			
All	1.2%		
Highly skilled	0.3%		
Low skilled	1.5%		
List of losses and gains from return migration		**ALL mln**	**% of 2009 GDP**
Annual remittance losses (ALL mln)	A	18,233	1.6%
Annual net wage gains (lower bound)	B	6,908	0.6%
Annual net wage gains (upper bound)	C	8,773	0.8%
Annual gross wage gains (lower bound)	D	8,879	0.8%
Annual gross wage gains (upper bound)	E	11,276	1.0%
Annual employment effects (net wages)	F	4,495	0.4%
Annual employment effects (gross wages)	G	5,778	0.5%
Net wage and employment effect (lower bound)	B+F	11,403	1.0%
Net wage and employment effect (upper bound)	C+F	13,268	1.2%
Gross wage and employment effect (lower bound)	D+G	14,656	1.3%
Gross wage and employment effect (upper bound)	E+G	17,054	1.5%
2009 GDP (ALL mln)		1,143,936	
Net losses(gains) as % GDP		**% of 2009 GDP**	
Annual losses in remittances as % of GDP		-1.6%	
Net wage offset (lower bound)	B-A	-1.0%	
Net wage offset (upper bound)	C-A	-0.8%	
Gross wage offset (lower bound)	D-A	-0.8%	
Gross wage offset (upper bound)	E-A	-0.6%	
Net wage and employment effect (lower bound)	(B+F)-A	-0.6%	
Net wage and employment effect (upper bound)	(C+F)-A	-0.4%	
Gross wage and employment effect (lower bound)	(D+G)-A	-0.3%	
Gross wage and employment effect (upper bound)	(E+G)-A	-0.1%	

Source: Employment and net wages estimated using LFS 2009; Gross wages estimated using the Annual Business Structural Survey 2009 as reported by INSTAT; Remittances as reported by the World Bank; GDP as reported by the Albanian Ministry of Finance.

Appendix B – Sample Attrition

Our largest sample has 66,297 observations, while our wage sample has only 7,413 observations. This appendix explains the factors behind this attrition and how the selection into wage employment may bias our estimates of the effects of return migration on wages. The most important factors that cause attrition are: the lack of information about place of birth in three quarters where this question was not asked (9.1 percent of the sample), non-participation and unemployment (another 50.5 percent of the sample), the fact that workers in subsistence agriculture do not have wages (additional 13 percent of the sample) and non-reporting (another 13.9 percent of the sample).

Table B1: Factors of Sample Attrition

	Observations left	Observations lost	Percent lost
Original sample	66,297		
Observations left after:			
Excl. quarters for which info. about place of birth is unavailable	60,236	6,061	9.1%
Excl. those who are not employed	26,732	33,504	50.5%
Excl. subsistence agriculture workers (these do not have wages)	18,095	8,637	13.0%
Excl. those who did not report wages	8,911	9,184	13.9%
Excl. those reporting zero wages	8,831	80	0.1%
Requirement of min 2 observations per person (panel data)	7,413	1,418	2.1%

To study if the selection into wage employment induces important bias in our estimates of the effects of return migration on wages, we use a Heckman correction model (Heckman 1979). The first stage (the selection equation) models the probability of working (more specifically the probability of being in employment which pays wages). Its sample includes all non-migrants, working and non-working. The estimation is a probit model which models this probability as a function of all independent variables included in the second stage, and an additional variable indicating marital status. Marital status, we argue, affects the labor market participation directly, while wages only indirectly, through the decision to take work. Married men in particular are more likely to work, while the effect of marriage on women is usually negative (Mincer 1962; Kimmel and Kniesner, 1998; Lee, Jang, and Sarkar, 2008) and insignificant in our estimates for Albania. This is why we estimate Heckman equations for men only.[20] Ideally, we would have included additional variables that affect labor participation, but not wages (e.g., number of children is commonly used in these models), but such information is not available in our survey. The second stage is an OLS regression (as specified in equation 1, section 7), which additionally includes the estimated inversed Mills ratio from the first stage equation and has a proper standard error correction (Wooldridge 2010, p. 806).

[20] To see if the OLS estimated coefficients for the male sample and the full sample are statistically different, we estimate them jointly using seemingly unrelated regressions. The estimated coefficients of return migration on wages are not different statistically for the full sample and the sample of skilled workers. The coefficient of return migration for the male sample (0.0299) is statistically different at the 5 percent level from the one for the full sample (0.0231).

As evident from the results presented in Table B2, the selection correction does not change the OLS coefficients of the share of return migrants in a statistically significant way. In all three groupings of non-migrants, the second stage Heckman estimates are statistically the same as in the pooled OLS.

Table B2: Heckman Correction of the OLS wage regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	All non-migrants		Skilled non-migrants		Low-skilled non-migrants	
VARIABLES	OLS	Heckman	OLS	Heckman	OLS	Heckman
Second stage (dependent variable: ln(hourly wages)						
R_{rt}	0.0229**	0.0172**	0.0157*	0.0233***	0.0299**	0.0300***
	(0.00995)	(0.00832)	(0.00908)	(0.00809)	(0.0115)	(0.0116)
Population	2.29e-07	-8.83e-07***	1.62e-07	-2.24e-07	3.14e-07	3.29e-07
	(2.60e-07)	(1.83e-07)	(2.34e-07)	(1.76e-07)	(3.06e-07)	(3.24e-07)
Expp	0.0282***	-0.155***	0.0443***	-0.132***	0.0211**	0.0231**
	(0.00560)	(0.0175)	(0.0142)	(0.0144)	(0.00903)	(0.0110)
Expp2	-0.00043***	0.00312***	-0.00064**	0.00264***	-0.00038**	-0.00042**
	(0.00011)	(0.00033)	(0.00027)	(0.00027)	(0.00017)	(0.00020)
Education dummies	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.690***	8.443***	4.021***	7.429***	3.719***	3.666***
	(0.232)	(0.391)	(0.281)	(0.278)	(0.263)	(0.381)
R-squared	0.088		0.043		0.061	
First stage (dependent variable: missing wage)						
R_{rt}		-0.00368		-0.0156***		0.00638
		(0.00422)		(0.00411)		(0.00467)
Population		5.83e-07***		2.86e-07**		1.01e-06***
		(1.01e-07)		(1.12e-07)		(1.14e-07)
Expp		0.105***		0.119***		0.101***
		(0.00329)		(0.00785)		(0.00455)
Expp2		-0.00210***		-0.00227***		-0.00211***
		(6.13e-05)		(0.00013)		(8.65e-05)
Education dummies		Yes		Yes		Yes
Quarter Dummies		Yes		Yes		Yes
Marital status: married		0.160***		0.0508		0.322***
		(0.0280)		(0.0462)		(0.0728)
Marital status: widowed		0.0560		-0.0392		-0.165
		(0.0362)		(0.0646)		(0.113)
Marital status: separated		0.0680*		-0.0867		-0.00749
		(0.0409)		(0.0600)		(0.140)
Constant		-2.146***		-1.700***		-2.296***
		(0.0958)		(0.141)		(0.101)

Observations	4,476	23,288	2,261	6,344	2,215	16,944
Observations (weighted)	1,147,463	5,251,592	570,680	1,525,249	576,783	3,726,343
Lambda		-1.689		-1.431		0.0211
SE		0.164		0.132		0.0956
Wald chi2		294.7		285.6		51.91

Standard errors clustered by district and quarter (total of 233 clusters) and weighted using survey weights. Significance: *** p<0.01, ** p<0.05, * p<0.1

Appendix C – Econometric Results on Labor Market Participation and Employment

Table C1a: Effects of return migration on the probability of labor market participation – all non-migrants

VARIABLES	(1) Cox	(2) Logit	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.011***	0.00892	0.00587***	0.00622***	
	(0.00151)	(0.0149)	(0.000977)	(0.00133)	
Population	1.000***	-2.14e-07	-1.52e-07***	-1.49e-07***	4.53e-06***
	(6.47e-08)	(3.57e-07)	(2.29e-08)	(2.42e-08)	(1.49e-06)
Expp	1.107***	0.0610	0.0369***	0.0369***	-0.0183***
	(0.00220)	(0.101)	(0.000664)	(0.000661)	(0.00516)
Expp2	0.998***	-0.00116	-0.000670***	-0.000670***	0.000282***
	(4.27e-05)	(0.00193)	(9.05e-06)	(9.03e-06)	(8.46e-05)
Male	1.402***	0.267	0.173***	0.173***	-0.317***
	(0.0151)	(0.211)	(0.00615)	(0.00612)	(0.0610)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.644***
					(0.0709)
Distance to border					-0.0146***
					(0.00326)
Constant			0.587***	0.246***	6.415***
			(0.0169)	(0.0330)	(1.327)
Obs. (not weighted)	66,297	53,625	53,625	53,624	53,624
Obs. (weighted)		11,840,351	11,840,351	11,840,140	11,840,140
R-squared			0.287	0.287	0.629
No of events	35602				
Chi square	3657				
Pseudo-R2		0.270			
Log likelihood		-5.976e+06			
Cragg-Donald/Kleibergen-Paap				18100	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C1b: Effects of return migration on the probability of labor market participation – skilled non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.006***	0.00608***	0.00447***	0.00459***	
	(0.00121)	(0.00126)	(0.000887)	(0.00114)	
Population	1.000**	-5.93e-08**	-4.16e-08**	-4.06e-08*	3.84e-06**
	(5.04e-08)	(2.53e-08)	(1.90e-08)	(2.10e-08)	(1.52e-06)
Expp	1.102***	0.0666***	0.0439***	0.0439***	-0.0505***
	(0.00300)	(0.00221)	(0.00152)	(0.00151)	(0.0161)
Expp2	0.998***	-0.00131***	-0.000850***	-0.000850***	0.000658***
	(5.42e-05)	(4.26e-05)	(2.11e-05)	(2.09e-05)	(0.000252)
Male	1.266***	0.200***	0.137***	0.137***	-0.252**
	(0.0131)	(0.0102)	(0.00758)	(0.00757)	(0.100)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.691***
					(0.0668)
Distance to border					-0.0116***
					(0.00295)
Constant			0.355***	0.354***	5.953***
			(0.0299)	(0.0298)	(1.626)
Obs. (not weighted)	15,417	12,463	12,463	12,463	12,463
Obs. (weighted)		2,982,553	2,982,553	2,982,553	2,982,553
R-squared			0.273	0.273	0.646
No of events	10528				
Chi square	2164				
Pseudo-R2		0.261			
Log likelihood		-1.366e+06			
Cragg-Donald/Kleibergen-Paap				5676	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C1c: Effects of return migration on the probability of labor market participation – low skilled non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.013***	0.00933***	0.00649***	0.00694***	
	(0.00185)	(0.00161)	(0.00113)	(0.00151)	
Population	1.000***	-2.58e-07***	-1.85e-07***	-1.83e-07***	4.91e-06***
	(7.87e-08)	(4.01e-08)	(2.93e-08)	(3.04e-08)	(1.50e-06)
Expp	1.109***	0.0568***	0.0361***	0.0361***	-0.0138***
	(0.00237)	(0.00115)	(0.000720)	(0.000717)	(0.00514)
Expp2	0.998***	-0.00107***	-0.000643***	-0.000644***	0.000240***
	(4.53e-05)	(2.25e-05)	(1.06e-05)	(1.05e-05)	(8.12e-05)
Male	1.473***	0.280***	0.192***	0.193***	-0.327***
	(0.0216)	(0.0121)	(0.00845)	(0.00842)	(0.0630)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.631***
					(0.0721)
Distance to border					-0.0155***
					(0.00334)
Constant			0.591***	0.219***	6.732***
			(0.0187)	(0.0387)	(1.179)
Obs. (not weighted)	50,880	41,162	41,162	41,161	41,161
Obs. (weighted)		8,857,798	8,857,798	8,857,587	8,857,587
R-squared			0.270	0.270	0.626
No of events	25074				
Chi square	3133				
Pseudo-R2		0.255			
Log likelihood		-4.565e+06			
Cragg-Donald/Kleibergen-Paap				13049	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C2a: Effects of return migration on the job finding probability – all non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.011***	0.00665***	0.00487***	0.00629***	
	(0.00182)	(0.00131)	(0.000986)	(0.00133)	
Population	1.000***	-2.65e-07***	-2.10e-07***	-2.00e-07***	4.53e-06***
	(5.63e-08)	(2.87e-08)	(2.12e-08)	(2.21e-08)	(1.49e-06)
Expp	1.121***	0.0535***	0.0356***	0.0357***	-0.0183***
	(0.00273)	(0.000976)	(0.000691)	(0.000691)	(0.00516)
Expp2	0.998***	-0.000980***	-0.000619***	-0.000620***	0.000282***
	(4.89e-05)	(1.87e-05)	(1.04e-05)	(1.04e-05)	(8.46e-05)
Male	1.360***	0.186***	0.132***	0.133***	-0.317***
	(0.0159)	(0.00835)	(0.00606)	(0.00596)	(0.0610)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.644***
					(0.0709)
Distance to border					-0.0146***
					(0.00326)
Constant			0.620***	0.177***	6.415***
			(0.0166)	(0.0217)	(1.327)
Obs. (not weighted)	66,297	53,625	53,625	53,624	53,624
Obs. (weighted)		11,840,351	11,840,351	11,840,140	11,840,140
R-squared			0.235	0.235	0.629
No of events	31189				
Chi square	3608				
Pseudo-R2		0.216			
Log likelihood		-6.393e+06			
Cragg-Donald/Kleibergen-Paap				18100	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C2b: Effects of return migration on the job finding probability – skilled non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.003**	0.00243*	0.00174*	0.00251*	
	(0.00147)	(0.00135)	(0.000997)	(0.00136)	
Population	1.000***	-9.41e-08***	-6.57e-08***	-5.88e-08**	3.84e-06**
	(4.04e-08)	(3.17e-08)	(2.37e-08)	(2.68e-08)	(1.52e-06)
Expp	1.132***	0.0744***	0.0490***	0.0491***	-0.0505***
	(0.00329)	(0.00218)	(0.00135)	(0.00134)	(0.0161)
Expp2	0.998***	-0.00139***	-0.000879***	-0.000880***	0.000658***
	(5.52e-05)	(4.18e-05)	(1.87e-05)	(1.87e-05)	(0.000252)
Male	1.296***	0.185***	0.130***	0.131***	-0.252**
	(0.0168)	(0.0102)	(0.00773)	(0.00779)	(0.100)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
R_{r_bt}					0.691***
					(0.0668)
Distance to border					-0.0116***
					(0.00295)
Constant			0.140***	0.133***	5.953***
			(0.0239)	(0.0252)	(1.626)
Obs. (not weighted)	15,417	12,463	12,463	12,463	12,463
Obs. (weighted)		2,982,553	2,982,553	2,982,553	2,982,553
R-squared			0.228	0.228	0.646
No of events	9178				
Chi square	3153				
Pseudo-R2		0.208			
Log likelihood		-1.592e+06			
Cragg-Donald/Kleibergen-Paap				5676	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C2c: Effects of return migration on the job finding probability – low skilled non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.014***	0.00785***	0.00617***	0.00768***	
	(0.00223)	(0.00139)	(0.00112)	(0.00147)	
Population	1.000***	-3.23e-07***	-2.60e-07***	-2.50e-07***	4.91e-06***
	(8.01e-08)	(3.27e-08)	(2.45e-08)	(2.49e-08)	(1.50e-06)
Expp	1.119***	0.0474***	0.0336***	0.0337***	-0.0138***
	(0.00299)	(0.000974)	(0.000775)	(0.000775)	(0.00514)
Expp2	0.998***	-0.000862***	-0.000580***	-0.000580***	0.000240***
	(5.23e-05)	(1.78e-05)	(1.25e-05)	(1.25e-05)	(8.12e-05)
Male	1.396***	0.185***	0.138***	0.139***	-0.327***
	(0.0204)	(0.00918)	(0.00684)	(0.00671)	(0.0630)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.631***
					(0.0721)
Distance to border					-0.0155***
					(0.00334)
Constant			0.632***	0.187***	6.732***
			(0.0187)	(0.0263)	(1.179)
Obs. (not weighted)	50,880	41,162	41,162	41,161	41,161
Obs. (weighted)		8,857,798	8,857,798	8,857,587	8,857,587
R-squared			0.220	0.220	0.626
No of events	22011				
Chi square	2710				
Pseudo-R2		0.206			
Log likelihood		-4.752e+06			
Cragg-Donald/Kleibergen-Paap				13049	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C3a: Effects of return migration on the probability of finding a formal sector jobs – all non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	0.995*	-0.000787*	-0.00144**	-0.00208**	
	(0.00282)	(0.000435)	(0.000625)	(0.000838)	
Population	1.000***	7.62e-08***	1.21e-07***	1.16e-07***	4.46e-06***
	(6.89e-08)	(8.00e-09)	(1.51e-08)	(1.59e-08)	(1.49e-06)
Expp	1.182***	0.0177***	0.0145***	0.0144***	-0.0204***
	(0.00392)	(0.000644)	(0.000585)	(0.000579)	(0.00557)
Expp2	0.997***	-0.000343***	-0.000250***	-0.000250***	0.000328***
	(5.44e-05)	(1.24e-05)	(1.19e-05)	(1.18e-05)	(9.29e-05)
Male	1.642***	0.0582***	0.0754***	0.0749***	-0.306***
	(0.0365)	(0.00390)	(0.00522)	(0.00516)	(0.0648)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.639***
					(0.0716)
Distance to border					-0.0144***
					(0.00330)
Constant			-0.0539***	-0.0481***	6.347***
			(0.0140)	(0.0149)	(1.335)
Obs. (not weighted)	59,840	49,098	49,098	49,098	49,098
Obs. (weighted)		10,853,450	10,853,450	10,853,450	10,853,450
R-squared			0.215	0.215	0.620
No of events	10048				
Chi square	4894				
Pseudo-R2		0.278			
Log likelihood		-3.785e+06			
Cragg-Donald/Kleibergen-Paap				15179	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C3b: Effects of return migration on the probability of finding a formal sector jobs – skilled non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	0.994**	-0.00419***	-0.00343***	-0.00159	
	(0.00228)	(0.00116)	(0.000923)	(0.00128)	
Population	1.000**	9.96e-08***	9.22e-08***	1.08e-07***	3.81e-06**
	(5.59e-08)	(2.69e-08)	(2.22e-08)	(2.44e-08)	(1.53e-06)
Expp	1.178***	0.0710***	0.0413***	0.0415***	-0.0488***
	(0.00470)	(0.00206)	(0.00146)	(0.00146)	(0.0156)
Expp2	0.997***	-0.00132***	-0.000722***	-0.000724***	0.000623**
	(6.32e-05)	(3.50e-05)	(1.85e-05)	(1.85e-05)	(0.000244)
Male	1.220***	0.0879***	0.0642***	0.0655***	-0.250**
	(0.0238)	(0.0104)	(0.00869)	(0.00877)	(0.106)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.684***
					(0.0679)
Distance to border					-0.0117***
					(0.00300)
Constant			0.129***	0.113***	5.953***
			(0.0329)	(0.0308)	(1.631)
Obs. (not weighted)	14,264	11,642	11,642	11,642	11,642
Obs. (weighted)		2,786,958	2,786,958	2,786,958	2,786,958
R-squared			0.199	0.199	0.636
No of events	5668				
Chi square	2986				
Pseudo-R2		0.203			
Log likelihood		-1.508e+06			
Cragg-Donald/Kleibergen-Paap				4975	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C3c: Effects of return migration on the probability of finding a formal sector jobs – low-skilled non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	0.995	-0.000235	-0.000555	-0.00191**	
	(0.00487)	(0.000385)	(0.000639)	(0.000857)	
Population	1.000***	6.66e-08***	1.50e-07***	1.41e-07***	4.82e-06***
	(1.20e-07)	(6.59e-09)	(1.67e-08)	(1.74e-08)	(1.50e-06)
Expp	1.188***	0.00925***	0.0101***	0.0100***	-0.0166***
	(0.00573)	(0.000511)	(0.000580)	(0.000573)	(0.00580)
Expp2	0.997***	-0.000184***	-0.000173***	-0.000172***	0.000300***
	(8.82e-05)	(9.76e-06)	(1.05e-05)	(1.04e-05)	(9.40e-05)
Male	2.370***	0.0506***	0.0856***	0.0847***	-0.310***
	(0.0963)	(0.00343)	(0.00581)	(0.00576)	(0.0677)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.625***
					(0.0729)
Distance to border					-0.0153***
					(0.00340)
Constant			-0.0764***	-0.0639***	6.659***
			(0.00966)	(0.00896)	(1.183)
Obs. (not weighted)	45,576	37,456	37,456	37,456	37,456
Obs. (weighted)		8,066,492	8,066,492	8,066,492	8,066,492
R-squared			0.101	0.101	0.617
No of events	4380				
Chi square	2364				
Pseudo-R2		0.196			
Log likelihood		-2.234e+06			
Cragg-Donald/Kleibergen-Paap				10816	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C4a: Effects of return migration on the probability of finding commercial farm jobs – all non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.040***	0.00268***	0.00442***	0.00549***	
	(0.00886)	(0.000604)	(0.00112)	(0.00129)	
Population	1.000***	-1.87e-07***	-1.56e-07***	-1.49e-07***	4.65e-06***
	(5.55e-07)	(2.88e-08)	(2.31e-08)	(2.19e-08)	(1.55e-06)
Expp	1.129***	0.00577***	0.00686***	0.00689***	-0.0126**
	(0.00611)	(0.000647)	(0.000762)	(0.000763)	(0.00491)
Expp2	0.998***	-0.000107***	-0.000122***	-0.000122***	0.000208**
	(8.40e-05)	(1.23e-05)	(1.38e-05)	(1.38e-05)	(8.18e-05)
Male	1.298***	0.0104***	0.0120***	0.0129***	-0.355***
	(0.0557)	(0.00246)	(0.00345)	(0.00352)	(0.0700)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.641***
					(0.0716)
Distance to border					-0.0153***
					(0.00332)
Constant			0.905***	0.0208	6.409***
			(0.0191)	(0.0229)	(1.321)
Obs. (not weighted)	53,347	43,992	43,992	43,991	43,991
Obs. (weighted)		9,405,914	9,405,914	9,405,703	9,405,703
R-squared			0.063	0.062	0.620
No of events	5111				
Chi square	1423				
Pseudo-R2		0.132			
Log likelihood		-2.378e+06			
Cragg-Donald/Kleibergen-Paap				14616	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C4b: Effects of return migration on the probability of finding commercial farm jobs – skilled non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.049***	0.00206***	0.00421***	0.00456***	
	(0.0114)	(0.000446)	(0.000962)	(0.00123)	
Population	1.000***	-1.29e-07***	-1.06e-07***	-1.03e-07***	4.65e-06***
	(6.29e-07)	(2.20e-08)	(2.27e-08)	(2.34e-08)	(1.55e-06)
Expp	1.102***	0.00258***	0.00279***	0.00281***	-0.0126**
	(0.0122)	(0.000575)	(0.000704)	(0.000703)	(0.00491)
Expp2	0.998***	-5.88e-05***	-6.19e-05***	-6.23e-05***	0.000208**
	(0.000189)	(1.25e-05)	(1.28e-05)	(1.29e-05)	(8.18e-05)
Male	1.398***	0.00857**	0.0103*	0.0105*	-0.355***
	(0.107)	(0.00345)	(0.00616)	(0.00609)	(0.0700)
Education dummies	Yes	Yes	Yes	Yes	
Quarter dummies	Yes	Yes	Yes	Yes	
$R_{r_b t}$					0.641***
					(0.0716)
Distance to border					-0.0153***
					(0.00332)
Constant			-0.0227	-0.0286*	6.409***
			(0.0223)	(0.0147)	(1.321)
Obs. (not weighted)	8,952	7,436	7,452	7,452	7,452
Obs. (weighted)		1,717,109	1,721,222	1,721,222	1,721,222
R-squared			0.060	0.060	0.620
No of events	689				
Chi square	566.9				
Pseudo-R2		0.145			
Log likelihood		-370308			
Cragg-Donald/Kleibergen-Paap				4453	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1

Table C4c: Effects of return migration on the probability of finding commercial farm jobs – low-skilled non-migrants

VARIABLES	(1) Cox	(2) Logit_dydx	(3) OLS	(4) 2SLS	(5) First stage
R_{rt}	1.039***	0.00281***	0.00447***	0.00565***	
	(0.00887)	(0.000672)	(0.00121)	(0.00137)	
Population	1.000***	-2.01e-07***	-1.69e-07***	-1.62e-07***	5.09e-06***
	(5.54e-07)	(3.23e-08)	(2.46e-08)	(2.32e-08)	(1.56e-06)
Expp	1.131***	0.00638***	0.00733***	0.00736***	-0.0119**
	(0.00628)	(0.000681)	(0.000791)	(0.000793)	(0.00519)
Expp2	0.998***	-0.000117***	-0.000129***	-0.000129***	0.000228***
	(8.56e-05)	(1.26e-05)	(1.40e-05)	(1.40e-05)	(8.38e-05)
Male	1.286***	0.0107***	0.0125***	0.0136***	-0.401***
	(0.0545)	(0.00283)	(0.00386)	(0.00400)	(0.0752)
Education dummies	Yes	Yes	Yes	Yes	Yes
Quarter dummies	Yes	Yes	Yes	Yes	Yes
$R_{r_b t}$					0.629***
					(0.0729)
Distance to border					-0.0158***
					(0.00338)
Constant			0.902***	0.0235	6.556***
			(0.0204)	(0.0263)	(1.190)
Obs	44,395	36,540	36,540	36,539	36,539
Observations		7,684,692	7,684,692	7,684,481	7,684,481
R-squared			0.064	0.063	0.616
No of events	4422				
Chi square	1231				
Pseudo-R2		0.130			
Log likelihood		-2.004e+06			
Cragg-Donald/Kleibergen-Paap				11191	

Standard errors clustered by district and quarter (total of 233 clusters) in brackets. Observations are weighted (in all but Cox models) using survey final weights. 11 quarters are included in the baseline cox model, while all other models include 7 quarters for which we can define the instrumental variables. Significant at: *** p<0.01, ** p<0.05, * p<0.1