

## MIGRATION AND LABOUR CHOICE IN ALBANIA

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### Abstract

Very little analysis exists of the income-generating strategies of Albanian households, and how this relates to income dynamics, people's mobility and poverty. Results show that agricultural, migration and human capital assets have a differential impact across livelihood choices, and that this impact varies by gender and age. Two areas of policy concern derive from this analysis. First, migration is clearly crucial for the economic future of Albania, in terms of fuelling economic development in rural areas, and in reducing excess labour supply and poverty. The suggestion of a potential disincentive effect on labour effort and participation is, however, worrying, as it would have implications in terms of missed opportunities for development. Second, agriculture appears to be more of a survival strategy than part of a poverty exit strategy.

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## 1. Introduction

A decade and a half into the socio-economic and political transition to an open, market-oriented democracy, Albania has changed dramatically. The economy has grown at an average annual rate of about 6 percent since 1993, and its structure has gradually changed as state-owned agriculture and manufacturing, the pillars of the socialist economy, have given way to services and construction. GDP per capita in constant Purchasing Power Parity (PPP) dollars has doubled to US\$ 4,330 in just over 10 years (WDI, 2005).

This growth was both stimulated and accompanied by profound changes in the economic structure and social fabric of the country. Albania was one of the countries in Eastern Europe that followed a “shock therapy” as opposed to a gradual approach to transition. Price controls were lifted, internal and international markets were liberalised quickly and privatization, at least for small scale enterprises, was also rapid. The magnitude and speed of the growth in the importance of the private sector is best exemplified by its share in employment, which jumped from nil in 1989 to 64 percent in 1993 to 80 percent in 1995.

While under communism over 99 percent of agricultural land was allocated to cooperatives or state farms, by 1994, 94 percent of all agricultural land was being farmed by individual farmers<sup>1</sup>. As a result, Albania’s farm structure went from being organised into 550 farms with an average size of over 1,000 ha, to an atomised structure with 470,000 farm units averaging 1.1 ha in size (Kodderitzsch, 1999)<sup>2</sup>. Almost overnight, approximately 600,000 cooperative and state farm workers became independent farmers.

While the agricultural sector has entered into a long decline compared to other sectors of the economy, the share of the economically active population (EAP) in agriculture has actually increased over time<sup>3</sup>. In absolute terms the number of agricultural workers has stayed constant. By contrast, the total number of EAP has decreased due not only to migration, but also to a higher share of inactive adults. The current

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1. For a full account of land privatization in Albania see Cungu and Swinnen (1997a; 1997b; 1999).

2. Average farm size has been estimated at 0.9 ha in 1999 (EU PHARE, 2001), and with ALSMS data at 0.7 ha in 2002.

3. Alternative estimations show that the share of EAP in agriculture has grown from approximately 40 percent in 1990 to 60 percent in 2002. Official data (Table 1) show growth from 37 percent in 1990 to 57 percent in 2002, with a peak of 71 percent in 2000. Between 2000 and 2001 a change in statistical methods occurred, resulting in a lower estimation of the role of agriculture. An alternative series estimated by Swinnen *et al.* (2003) shows an increase from 46 percent in 1990 to 59 percent in 1995, since when it has stayed constant until 2001.

high level of agricultural employment is generally regarded as hiding pervasive underemployment in rural areas.

Despite these changes, Albania remains among the poorest countries in Europe. Approximately 25 percent of Albanians, and 30 percent of rural Albanians, live in poverty (World Bank, 2003), and while having undergone significant urbanization since 1990, Albania remains predominantly a rural country, with 58 percent of the population still residing in rural areas (INSTAT, 2002). Persistent poverty, poor access to basic services, dismal infrastructure and high levels of unemployment and underemployment serve as constant push factors for domestic and international migration. Coupled with the attraction of a number of European Union member countries next door, migration has become the single most important political, social and economic phenomenon in post-communist Albania.

**Table 1.** Domestic employment, by sector, 1990-2002

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total domestic employment (000)	1434	1434	1020	986	1083	1144	1116	1107	1085	1065	1068	920	926
State sector %	63	64	63	41	30	26	21	20	20	19	18	20	20
Agricultural sector %	37	34	31	49	48	51	68	69	70	71	71	57	57
Non agricultural private sector %	0	2	6	9	22	23	10	11	10	10	11	22	22
Total private %*	0	2	37	59	70	74	79	80	80	81	82	80	79
% of employment in agricultural sector	46	48	49	56	55	59	60	59	60	60	59	60	

Source: IMF, 2005; Swinnen *et al.*, 2003

With the fall of the government, the end of the controls on internal and external migration and the unravelling of the centrally planned economy unleashed a demographic shift at an unprecedented pace, as individuals and entire households started migrating to the cities or leaving the country altogether. As a result, between 1989 and 2001, the total population fell by 3.5 percent. Emigration was particularly evident among males, whose population dropped over 20 percent (Carletto *et al.*, 2006).

These large migration flows have contributed to the growing importance of remittances as a major source of income for many Albanian households and for the national economy. Officially, private transfers are estimated to have reached US\$ 1 billion annually in 2004, constituting 14 percent of GDP. Remittances thus serve as the most important source of foreign exchange, over 1.7 times larger than the value of exports (IMF, 2005)<sup>4</sup>.

4. This is likely to be an underestimate, since it does not account for the money not remitted from abroad but brought back by Albanians returning home temporarily or permanently, including the large flows of seasonal migrants to Greece, or money not sent through the official banking system.

While sustainable economic growth, poverty reduction, and the management of migration flows are among the most pressing items on the policy agenda of the Albanian government (and of its international partners, for that matter), very little systematic analysis exists of the income-generating strategies of Albanian households within the emerging market economy, and within the context of massive international migration.

Several aspects, implications, and consequences of the recent Albanian diaspora have been studied but very little – to our knowledge – has been said on the impact of the migration phenomenon on the livelihood strategies of the families that stay in Albania (with the exception of McCarthy *et al.*, 2006; Germenji and Swinnen, 2005). Many of these have relatives that are living abroad and send back remittances, have household members who migrate seasonally (mostly to Greece), or who have migrated in the past and are now back in Albania (sometimes preparing for further migration). Some of these households (or of their members) may also be planning to join other relatives or families who have already migrated.

It is easy to see how there are many ways whereby household economic strategies, and those of their members individually, may be influenced by the consequences of these migratory movements and of the resulting remittance flows.

In this paper we explore some of these issues. Part of the explanation for the lack of analytical work on this subject is linked to gaps in the availability of statistical information. In this paper we take advantage of the 2002 Albania Living Standards Measurement Study (ALSMS) survey to identify the principal income strategies of Albanian households and investigate the role of migration, and access to migration networks, in different livelihood strategies and individual labour activity choice. In addition to migration, we also focus on the role of agricultural and livestock activities, given their still predominant role in the economic strategies of the poor. Our main goal is to identify the principal income strategies of Albanian households, and how international migration conditions these strategies.

We begin by focusing on the role of agriculture and migration in household economic strategies, based on an analysis of income shares. We then posit how international migration may affect labour market participation including activity choice, and use multivariate analysis to identify the determinants of participation in different labour activities. Here we focus on the complementary role of human capital, agricultural and migration assets across labour activities.

## **2. The data**

The 2002 ALSMS was carried out by the Albania Institute of Statistics (INSTAT) with the technical assistance of the World Bank. The survey, conducted on a sample of 3,599 households and based on a two-stage cluster design, is nationally representative. The sampling frame was stratified in four regions (Coastal, Central, Mountain

and the city of Tirana). The survey instruments included a household questionnaire with detailed information on expenditure and income sources (labour, self-employment, agriculture, public and private transfers), as well as a community questionnaire which included price data.

### 3. The structure of household income in Albania

In this section, we look at the structure of household income and household participation in labour activities to document the principal economic activities utilized by Albanian households. The initial impression from the data is that, despite the documented changes at macro-level, agricultural activities are still pervasive in Albania. As can be seen in Table 2, while only 29 percent of total household income comes from on-farm activities, 62 percent of all households, urban and rural, had some on-farm income. Approximately 50 percent of income among rural households derives from agriculture, and over 90 percent of all rural households are involved in some form of on-farm activity, reaching virtually 100 percent in the Mountain region, the poorest region of the country.

Agricultural income and activities are more important for poor households than for wealthier ones (Figures 1 and 2). On average, 38 percent of income among households in the bottom consumption quintile derives from on-farm activities, while agriculture accounts for only 19 percent of income in the top quintile. Similarly, it is indicative that 3 out of 4 households in the poorest quintile carried out on-farm activities. Surprisingly, and although the percentage is significantly lower, more than half of the top 20 percent of wealthiest households also had agricultural activities.

Not surprisingly, urban households depend primarily on wage labour, with approximately two thirds of all households having some kind of wage activity. Among rural households this percentage drops to one third. Self-employment activities play a relatively minor role, comprising only 10 percent of total household income and with only 15 percent of households reporting a self-employment activity<sup>5</sup>.

As mentioned, public transfers are widespread across all population groups. More than half (57 percent) of all households received a public transfer in 2002, comprising 20 percent of total income. For the most part households received pensions (46 percent) and *ndihma ekonomike* (11 percent). Pensions are evenly distributed among quintiles and regions. *Ndihma ekonomike*, however, appears relatively well targeted, with 25 percent of households in the bottom quintile receiving benefits, compared to only 2 percent in the top quintile. *Ndihma ekonomike* is geographically concentrated in the Mountain region, particularly in rural areas, where 38 percent of households

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5. Given the informal, and at times illegal, nature of some self-employment activities, we speculate that the real figures may be substantially higher.

participated in the program. This is the region with the highest concentration of poverty (50 percent).

**Table 2.** Shares of and participation in income-generating activities, by consumption quintiles and regions

● **Participation rates**

in shares	obs.	Off-farm income					public transfers							
		farm income	Wage			Self-employ	Remit.	Public Transfers	Other social			Public or private		
			off-farm income	Wages	Agr wages				Nonagr wages	Pension	NE		Other social	Public & private
All	3,599	0.62	0.55	0.45	0.02	0.44	0.15	0.28	0.57	0.46	0.11	0.05	0.67	0.18
<b>QUINTILES</b>														
1	720	0.72	0.45	0.38	0.02	0.36	0.08	0.25	0.63	0.43	0.25	0.04	0.71	0.17
2	720	0.66	0.54	0.48	0.03	0.46	0.11	0.22	0.60	0.48	0.13	0.06	0.68	0.15
3	720	0.61	0.59	0.49	0.01	0.48	0.15	0.28	0.54	0.42	0.11	0.05	0.66	0.17
4	720	0.58	0.56	0.45	0.01	0.44	0.15	0.30	0.57	0.51	0.05	0.06	0.67	0.20
5	719	0.52	0.60	0.44	0.01	0.44	0.23	0.34	0.51	0.48	0.02	0.05	0.63	0.23
<b>REGION</b>														
tirana	600	0.09	0.80	0.70	0	0.70	0.15	0.16	0.54	0.48	0.03	0.08	0.59	0.10
coast urban	480	0.36	0.73	0.62	0	0.61	0.20	0.35	0.53	0.43	0.09	0.05	0.66	0.22
coast rural	520	0.91	0.38	0.31	0.03	0.29	0.10	0.30	0.49	0.44	0.03	0.04	0.60	0.18
central urban	479	0.16	0.73	0.58	0.01	0.57	0.23	0.32	0.64	0.49	0.16	0.07	0.71	0.24
central rural	520	0.98	0.40	0.30	0.02	0.28	0.13	0.31	0.57	0.48	0.09	0.05	0.69	0.19
mountain urban	400	0.21	0.71	0.64	0.03	0.61	0.13	0.12	0.55	0.36	0.20	0.07	0.61	0.06
mountain rural	600	0.99	0.30	0.28	0.02	0.26	0.03	0.15	0.74	0.45	0.38	0.04	0.78	0.11

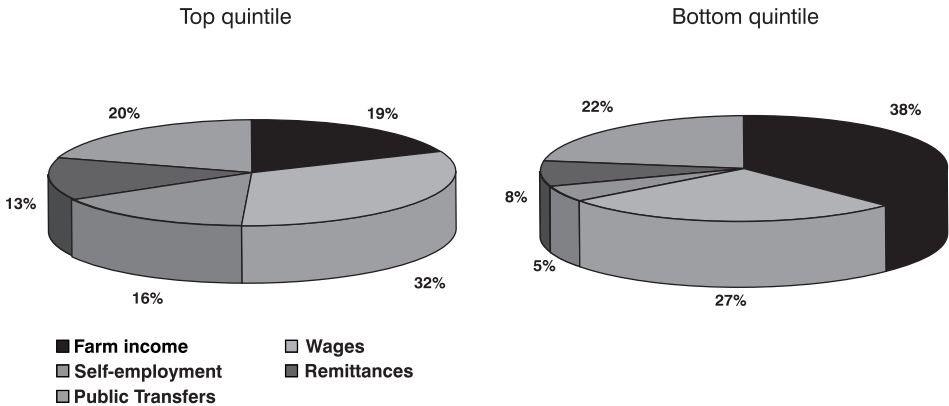
Source: own calculations, 2002.ALSMS

● **Income shares**

in percentages	obs.	Off-farm income										Poverty headcount			
		farm income	off-farm income	Wage					Self-employ	Remit.	Public Transfers		public transfers		
				Wages	Agr wages	Nonagr wages	Pension	NE					Other social		
All	3,599	0.29	0.41	0.31	0.01	0.30	0.10	0.10	0.10	0.20	0.16	0.03	0.01	0.25	
<b>QUINTILES</b>															
1	720	0.38	0.31	0.27	0.02	0.25	0.05	0.08	0.08	0.22	0.14	0.06	0.01	1.00	
2	720	0.33	0.41	0.33	0.01	0.32	0.08	0.08	0.18	0.13	0.13	0.03	0.02	0.03	
3	720	0.28	0.42	0.33	0.01	0.32	0.09	0.10	0.19	0.14	0.14	0.02	0.01	0.00	
4	720	0.23	0.43	0.32	0.01	0.31	0.11	0.11	0.22	0.19	0.19	0.01	0.01	0.00	
5	719	0.19	0.47	0.30	0.00	0.30	0.16	0.13	0.20	0.16	0.16	0.01	0.02	0.00	
<b>REGION</b>															
tirana	600	0.01	0.69	0.58	0.00	0.58	0.12	0.07	0.23	0.18	0.01	0.02	0.01	0.18	
coast urban	480	0.06	0.59	0.45	0.00	0.45	0.14	0.12	0.23	0.19	0.03	0.01	0.01	0.20	
coast rural	520	0.49	0.26	0.20	0.01	0.19	0.05	0.12	0.14	0.12	0.01	0.01	0.01	0.21	
central urban	479	0.04	0.57	0.39	0.01	0.38	0.16	0.10	0.31	0.23	0.04	0.02	0.02	0.19	
central rural	520	0.48	0.24	0.18	0.01	0.17	0.08	0.11	0.15	0.12	0.02	0.01	0.01	0.29	
mountain urban	400	0.04	0.62	0.51	0.02	0.49	0.10	0.06	0.29	0.17	0.10	0.02	0.02	0.25	
mountain rural	600	0.56	0.17	0.16	0.01	0.15	0.02	0.06	0.20	0.13	0.06	0.01	0.01	0.50	

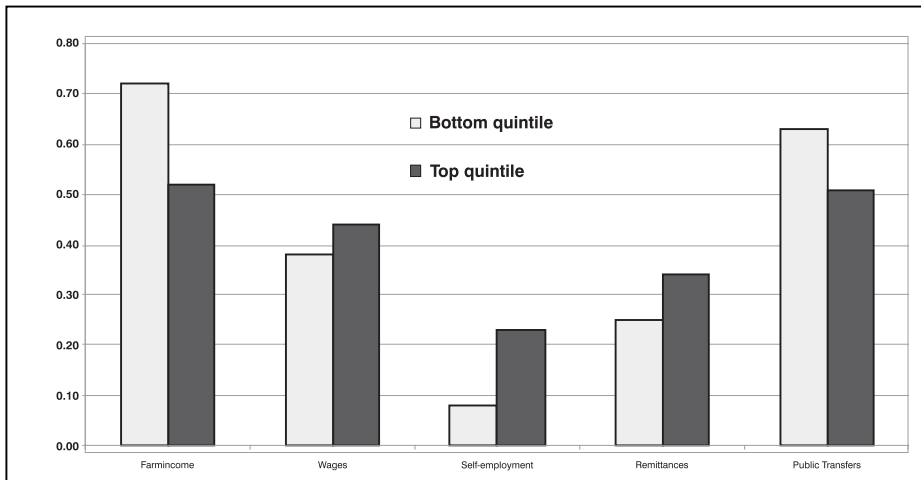
Source: own calculations, 2002 ALSMS

**Figure 1.** Income composition, top and bottom quintiles



Source: 2002 ALSMS.

**Figure 2.** Share of households receiving income from source, top and bottom quintiles



Source: 2002 ALSMS.

Finally, private transfers are also relatively widespread. More than a quarter (28 per cent) of all households reported receiving remittances in 2002, comprising 10 percent of total income<sup>6</sup>, the bulk of these households residing in the Coastal and Central

6. Given the relatively high level of migration assets in Albania, these figures may seem to underestimate the incidence of remittances among families with international migrants. Further work needs



regions. This does not include income brought back from current temporary migration, considered as domestic wage income, but no information is available on the place of work. The share of households receiving remittances increases somewhat across quintiles, ranging from 25 percent in the first quintile to 34 percent in the fifth. Greater heterogeneity is found among regions, with over 30 percent of the households in the Coastal and Central regions receiving remittances, compared to around 12-16 percent in the Mountain region and Tirana.

A high share of private transfers comes from remittances from abroad. These are thought to be generally underestimated, and the real magnitude of this phenomenon is probably much higher than what both official foreign exchange statistics as well as survey figures suggest. Access to migration assets is very important, and varies by income level and region<sup>7</sup>. Households in the upper quintile have two to three times the number of former household members (permanent migrants) living in Greece (9 to 20 percent) and Italy and further afield (11 to 27 percent) compared to households in the bottom quintile, as seen in Table 3.

The opposite is true for temporary migrants to Greece. Twice as many households in the first quintile had at least one current household member with experience in migrating to Greece (17 to 9 percent). Instead, both permanent and temporary migrants to Italy and beyond show increasing percentages at higher quintiles, witnessing higher migration returns in farther countries. In terms of regions, permanent migrants to Greece are found in the Central region and the rural Coast, while permanent migrants to Italy are found predominantly among households in Tirana, the Coastal and urban Central regions. Temporary migrants to Greece are located principally in the Central and Mountain rural areas, while temporary migrants to Italy and further afield are evenly distributed.

While nearly two thirds of all households have some farm income, low productivity and small farm size remain major problems for the development of the sector. Despite small average land sizes, Albanian farmers show great diversity in terms of types of crops grown as the vast majority of agricultural production, albeit with differences across regions, continues to be for home production. This is particularly so for staple crops and livestock production, of both large and small animals, which are widespread and largely oriented towards own-consumption, providing an important share of farm household food consumption. Within this framework of small land sizes and subsistence production, many farming households still do not have access

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to be carried out comparing these figures with those from other studies.

7. We characterize two types of migration assets: temporary (adults who spent at least one month outside the household during the last 12 months) and permanent (all children of the women in a household who are still alive but are not living in the household). Elsewhere we have discussed the importance of these networks for the decision to migrate (Stampini *et al.*, 2008).

to modern inputs, such as fertilizers and mechanization, and this is a factor behind the persisting low average land productivity.

**Table 3.** Access to international migration assets, by quintiles and regions.

in shares	obs.	Permanent		Temporary	
		Greece	Italy and beyond	Greece	Italy and beyond
All	3,599	13	20	13	5
<b>QUINTILES</b>					
1	720	9	11	16	4
2	720	11	16	17	4
3	720	13	19	13	4
4	720	15	26	10	6
5	719	19	27	9	7
<b>REGION</b>					
	( <i>umw</i> )				
tirana	600	6	23	5	3
coast urban	480	10	25	8	7
coast rural	520	17	25	13	7
central urban	479	15	20	10	6
central rural	520	17	17	20	3
mountain urban	400	6	14	11	5
mountain rural	600	12	8	19	6

Source: own calculations, 2002 ALSMS

#### 4. Focus on key assets: Education, land, and migration

The objective of this section is to analyze the individual labour decision, focusing in particular on the role of assets across different options. Our interest lies in understanding which factors lure individuals off the farm, or conversely encourage intensification of farm activity. We focus on the three key assets available to rural Albanian households: agricultural land, human capital (i.e. education) and migration.

There are a number of ways and reasons whereby access to these assets can be expected to influence labour participation and occupational choice decisions, so that it is not always clear *a priori* what form the relationship should be expected to take.

##### *Migration*

In the framework proposed by the New Economics of Labour Migration (NELM; Stark, 1991) migration is viewed as a mechanism the household can use to diversify economic activities in the face of risk and obtain liquidity and capital in the presence of credit and insurance market failures. In this vein, there are a number of potential

avenues through which migration may have an impact on labour participation and occupational choice.

First, access to migration assets can be expected to ease the constraints in access to capital and lead to more investment and more labour being allocated to self-employment activities, including agriculture. Similarly, migration could cover other transaction costs or help hedge against risks which limit participation in wage or other riskier activities. The evidence on the effect of migration on productive investment is mixed, with some studies finding a positive impact of migration on investment in the place of origin and others finding no significant impact on productive investment<sup>8</sup>.

The extra-income earned by the migrant members may also induce other members of the household to work less, as the marginal value of the additional income diminishes and they may decide to substitute work for leisure. Evidence of this is provided by Azam and Gubert (2005) for Western Mali. In a study on Albania Germenji and Swinnen (2005) find a negative link between remittances and farm efficiency due to a drop in labour efforts. Also, seasonal or potential migrants may reduce their participation in the labour force while at home (or display a preference for casual as opposed to long term jobs) as they are waiting for their first or next migration experience. Anecdotal evidence suggests this may be the case in Albania (Carletto *et al.*, 2004).

Migration may also result in young people opting for more years of education and thus postponing entrance into the labour force, either because their families are now richer and can afford it (Cox Edwards and Ureta, 2003), or because of the higher returns to education that the prospect of migrating may induce. Some studies do however suggest the opposite effect, as returns to education for migrants in destination countries are found to be lower than in the sending country (McKenzie, 2005, for Mexico; Lucas, 2006<sup>9</sup>).

The migration of some household members will in general affect the time endowment of the household, with implications that cannot be determined *a priori*. In short, it is difficult to predict the net effect of migration on household productive activities and this becomes therefore a largely empirical matter. The available evidence is in fact mixed. Some studies find a net positive impact of migration on household farm production, as the remittance effect more than offsets the negative effect of migration on labour supply (Stark, 1991; Taylor *et al.*, 1996; Taylor and Wyatt, 1996). A recent study looking at the impact of migration on farm allocation in Albania also goes in

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8. Studies in the former group include Lucas (1987) in South Africa; Dustmann and Kirchkamp (2001) in Turkey; Woodruff and Zenteno (2001) in Mexico; Black *et al.* (2003) in Ghana; and Konseiga (2004) in Burkina Faso. Studies in the latter group are Mines and de Janvry (1982); Durand *et al.* (1996) and Taylor *et al.* (1996) in Mexico; and De Brauw and Rozelle (2003) in China.

9. These papers also provide a discussion and references to additional studies.

that direction (McCarthy *et al.*, 2006). De Brauw and Rozelle (2003) find that the loss of household labour from migration negatively affects household crop income, although it does not negatively affect crop yields. On the other hand, they provide evidence that the remittances sent home by migrants partially compensate for this lost-labour effect, contributing to household incomes directly and also indirectly by stimulating crop production.

Similarly, Rozelle *et al.* (1999) also show that remittances accumulated abroad partially compensate for lost labour and allow households to improve their agricultural productivity. However, the net impact is negative as the effect of migration on labour supply more than offset the remittance effect.

### *Education*

The effects of education on labour market participation and occupational choice are in principle more straightforward to predict.

Regarding labour market participation the evidence is unambiguous in pointing to educational attainment (and human capital in general) as perhaps the single major determinant of labour market participation. Shaw (1989) and Glick and Sahn (1997) give evidence of this.

When it comes to occupational choice, the bulk of the evidence unsurprisingly points to more education being associated to white collar as opposed to blue collar jobs, and to off-farm as opposed to on-farm jobs (Christiadi and Cushing, 2006; Soopramanien and Johnes, 2001; Huffman and Lange, 1989 are some examples). A study by Tiefenthaler (1994) on the rural Philippines, however, argues that in less developed regions, and particularly for informal sector jobs, these effects may be much less significant.

### *Land*

Ownership of land assets is, on the contrary, expected to lead to more on-farm labour participation (as for instance in Mathse and Young (2004) for Zimbabwe). At a certain level of farm size, land ownership could also be associated with more off-farm activity, due to a technology effect (as in Mwabu and Evanson (1997) for Kenya, and Ooms and Hall (2005) for the Netherlands). The latter effect is, however, unlikely in Albania, given the uniformly small land sizes resulting from land privatization.

## **5. Modelling labour participation and activity choice**

In order to test these hypotheses, we first model participation in the labour force and then, for employed working-age individuals, we predict their choice of occupation. Over the past 30 years, an increasing body of literature has been focusing on estimat-

ing behavioural models in labour economics. Moffitt (1999) provides a good review of the econometric practices in this field.

A first strand of literature has looked at labour supply and its elasticity to wages, particularly for women. In this context binary choice models have been widely used as the first stage of a Heckman type choice model to investigate the decision to participate in the labor force (Heckman, 1980; Hill, 1989; Tiefenthaler, 1994). Following a similar approach we use a probit model to investigate the probability of having performed any work in the twelve months prior to the survey<sup>10</sup>. The model is specified as follows:

$$\Pr(W_i = 1) = \Phi(\beta_0 + \beta^T R_i) \quad (1)$$

where

$\Phi(\cdot)$  denotes the  $N(0,1)$  distribution function;  $W_i$  is the labor participation binary dependent variable, which is equal to 1 if the individual has performed any work in the 12 month prior to the survey, and 0 if she has not worked; and  $R_i$  is a set of regressors, including:

- a vector of individual-level demographic characteristics, including age and gender;
- a vector of household-level demographic characteristics, including gender of the household head, whether the household head is a widow(er), age of the head of the household, household size, marital status, and the number of children of age 0-5;
- a vector of human capital assets, which is proxied by individual years of education;
- a variable for total land owned, in hectares. Given the thinness of land markets described earlier, we consider landholdings as exogenous;
- following Morris *et al.* (2000), a variable referring to a household asset index, or proxy for wealth, calculated as

$$A_j = \sum_{g=1}^G f_{jg} * w_g \quad (2);$$

where  $g$  refers to the asset item,  $w$  is a weight equal to the reciprocal of the proportion of the study households who owned one or more of that item ( $w_g$ ) and  $f$  is the number of units of asset  $g$  owned by the household ( $f_{jg}$ ). The product is then summed over all possible assets  $G$ . The score includes only non agricultural assets;

- a dummy variable for whether the household has a fixed phone or not;

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10. We do not however have the data to investigate wage or effort/hours-of-work equations which is the ultimate goal of much of this literature.

- a variable referring to relative deprivation, that is, a household's wealth position relative to other households in a given geographical area, which is calculated following Stark and Taylor (1989). The reference community is the village, which is feasible given access to data from the 2001 Population and Housing Census. Whether a family experiences a high relative deprivation may influence the specific labour activity choice<sup>11</sup>;
- a variable expressing the headcount poverty index at the district level (INSTAT, 2004);
- a vector of migration assets, which include a dummy for previous temporary individual migration to Greece and Italy by the individual making the choice, a dummy for previous temporary migration to Greece and Italy by another member of the household, and the number of permanent migrants to Greece and Italy;
- a vector representing local labour market conditions. These include the structure of employment by sector (services, construction and industry, with agriculture as the default) and unemployment rates at the district level, all taken from the 2001 Census;
- dummy location variables for the three major regions (Coast, Central and Mountain), further disaggregated by urban/rural.

As it is standard practice, we estimate our model separately for men and women in our sample<sup>12</sup>.

Our second equation aims at investigating the choice of occupations of the individuals (again separately for men and women) who are working. Since Boskin's (1974) paper, conditional or multinomial logit (MNL) models have been standard practice for this type of analysis<sup>13</sup>. A recent application to a transition economy is Verme (2000). Examples of studies that have used the MNL model to investigate occupational choice in the rural sector of developing countries include Mwabu and Evanson (1997) in Kenya, and Knight and Song (2003) for rural China.

The occupational choice model we estimate is specified as follows:

$$\Pr(L_i = j) = \frac{\exp(\beta_j^T R_i)}{\sum_{k=0}^2 \exp(\beta_k^T R_i)} \quad (3)$$

where:

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11. See Stampini *et al.* (2008) for a detailed description of the construction of this variable.

12. Summary statistics are shown in Table A1 in the Appendix.

13. Among some exceptions, there is Keane and Wolpin (1997) who use simulation and interpolation in estimating a discrete choice dynamic programming model.

- $L_i$  is the employment choice dependent variable, in which alternative  $j$  ranges from  $k=1$  if she is a wage worker to 2 if she is self-employed. Working on-farm is the reference category  $k=0$ ;
- all other notations are as in Equation (1) and (2), with the only addition of age interaction terms in the total land owned variable and in the migration assets vector.

We introduce some age interaction terms in the model in order to gauge how the impact of migration and agricultural assets vary with age. In all regressions we account for autocorrelation among observations in the same household by correcting the calculation of the standard errors<sup>14</sup>.

The reason for modelling participation and occupational choice separately is that we think these can be correctly seen as part of a single decision-making process. Ideally, we would have liked to correct for sample selection bias in the second equation, by introducing a selection term derived from the first equation, as it is normally done in Heckman-type choice models. However, we do not have any good instrument at hand to use as an exclusion restriction in the second equation. We have therefore decided to run the two models separately. We emphasise, however, that running occupational choice models on employed individuals only is standard practice in empirical labour economics applications<sup>15</sup>.

## 6. Regression results

### 6.1 Participation Probit Model

The results of our model estimates for the labour participation probit are reported in Table 4. The coefficients on the demographic and family characteristics return the expected results. Having more children below six years of age is associated with lower labour market participation for women but not for men. Being married, conversely, makes men more likely to work but not women.

Turning now to the main assets that form the focus of this paper, it is interesting to note how the square term on the education variable is negative for men (as expected) but positive for women, suggesting that further years of schooling have an increasingly positive effect on female labour participation. Agricultural land displays the expected positive effect on labour participation for both sexes, and in both cases with diminishing marginal ‘returns’, as shown by the negative sign on the quadratic

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14. The Hausman test could not reject the null hypothesis that the Independence of Irrelevant Alternatives (IIA) assumption holds; that is, that the odds of outcomes in the model do not depend on other available choices.

15. There are exceptions of course. One of them is Soopramanien and Johnes (2001), who use a nested logit to model the two choices as a sequential process.

**Table 4.** Selected regression results. Clustered Probit on labor market participation

		MALE		FEMALE	
		Coef.	Rob. Z*	Coef.	Rob. z*
Individual	Age	0.198	13.86	0.153	13.60
	Age squared	-0.002	-13.29	-0.002	-11.57
	Years of education	0.127	4.53	0.022	0.94
	Years of education squared	-0.003	-2.42	0.004	3.03
	Dummy: Married	0.676	6.72	0.078	1.19
Household	# of children <6 yrs	-0.049	-1.00	-0.068	-1.97
	Household size	0.007	0.13	-0.007	-0.13
	Household size squared	-0.003	-0.66	-0.004	-0.83
	Age of household head	-0.009	-0.59	-0.002	-0.14
	Age of household head squared	0.000	0.48	0.000	0.33
	Dummy: female headed hh	-0.426	-2.29	0.299	2.92
	Dummy: widow/er headed hh	0.353	1.88	-0.145	-1.30
	Hh: non-agriculture asset score index	-0.069	-2.50	0.035	1.65
	Hh: dummy, hh has a fixed phone line	0.097	1.42	0.133	2.31
	Hh: size (ha.) of agr land owned	0.633	4.29	0.666	5.80
	Hh: size (ha.) of agr land owned squared	-0.142	-2.97	-0.161	-4.31
	Household: relative deprivation	-0.027	-0.48	0.230	5.46
	Area	Community: share of jobs in industry (excluded agr.)	-1.102	-1.99	-1.322
Community: share of jobs in constructions (excluded agr.)		0.557	0.83	-1.512	-2.96
Community: share of jobs in services (excluded agr.)		-0.874	-2.69	-1.864	-6.98
District: unemployment rate		-0.029	-6.15	-0.013	-3.50
District: headcount ratio		0.009	1.92	0.018	4.57
External mig.	Individual temp mig to Greece 1997-2001	-0.535	-5.37	-0.005	-0.03
	Individual temp mig to Italy and other countries 97-01	-0.793	-5.86	-0.234	-0.96
	Other members temp mig to Greece 1997-2001	-0.082	-0.77	-0.082	-1.20
	Other members temp mig to Italy and other countries 97-01	-0.177	-1.07	-0.201	-2.00
	Hh: permanent migration. Number of children in Greece	0.054	1.27	0.033	0.93
	Hh: permanent migration. Number of children in Italy and other	-0.064	-1.53	-0.104	-3.10
Region	Dummy: costal urban region	0.108	1.03	0.020	0.23
	Dummy: costal rural region	-0.042	-0.19	-0.787	-4.13
	Dummy: central urban region	0.235	2.16	0.286	3.20
	Dummy: central rural region	0.344	1.45	-0.567	-2.93
	Dummy: mountain urban region	-0.553	-3.90	-0.594	-5.16
	Dummy: mountain rural region	-0.085	-0.36	-0.783	-3.99
	Constant	-2.900	-5.27	-2.379	-5.38
N. observations	4,477		4,995		
Log pseudo-likelihood	-1,499		-2,576		
Chi2	1,001		1,048		
Pseudo-R2	0.34		0.21		
McFadden's Adj R2	0.33		0.20		
McKelvey and Zavoina's R2	0.50		0.38		

\* Standard errors are corrected for intra-cluster correlation at the household level, to relax the assumption of independence of individuals within the same household. Parameters highlighted are significant at 90% significance level or higher.



term. Interestingly, relative deprivation also has a positive effect on female participation rates. The more relatively deprived a household, the more likely that its female members will engage in some productive activity.

The effects of local labour market conditions at the district levels are also interesting. As expected, higher district level unemployment rates are associated with lower participation rates for both sexes. Higher unemployment means more surplus labour and it is therefore logically more likely that individuals in these areas will have a higher reservation wage than what they can expect to earn in the market<sup>16</sup>. The composition of labour demand also has an impact, with lower labour participation in those districts that have a lower share of non-agricultural jobs. This may reflect the buffer role agricultural employment can play, and the large phenomenon of underemployment that is a well known fact of Albanian agriculture. Labour force participation is also higher in poorer districts.

The effects of the migration variables are also very interesting to observe. In the case of previous individual temporary migration, we show a substantial negative effect on labour participation for men. This is consistent with the wait-for-the-next-migration effect we hypothesised earlier. Elsewhere it has been shown that previous migration experience is a very important determinant of temporary international migration from Albania (Carletto *et al.*, 2006), supporting the view of a cyclical/seasonal process. It is therefore more than plausible that many temporary migrants are either waiting for the next episode of seasonal migration, or are planning a more permanent migration, and for this reason decide not to engage in work while in Albania. We do not observe this effect in our sample of women.

We do on the contrary observe a disincentive effect on female participation of migration to Italy by other household members, whether temporary or permanent. This may be explained by a number of the reasons we have outlined earlier (or a combination of them): an income effect which reduces the marginal value for women of entering the labour market, or a general reallocation of time and tasks at the household level as the time endowment of the household is altered by migration. The fact that migration to Italy appears significant, whereas migration to Greece is not, may be suggestive of the presence of an income effect via migrant remittances, as migrants to Italy tend to remit significantly larger amounts. We do not find these effects to be significant for men at the conventional significance levels, although the coefficient on the permanent migration to Italy variable would be significant at the 87 percent level.

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16. We are modelling labour participation as a choice. However, we cannot fully account for bottlenecks on the demand side, and for the fact that some of the individuals in our sample can be truly rationed on the labour market and hence involuntarily unemployed. A similar caveat applies to the possible mismatch between supply and demand when it comes to occupational choice.

We therefore find confirmation of the hypothesis that previous experience with migration reduces men's incentive to be in the labour force in Albania, while migration by another household member to Italy reduces the probability of entering the labour force for women. By distinguishing between various types of migration, and by separating own migration from migration of other household members, we are however able to shed some light on the gender differences concerning the ways in which these effects come to play.

### *6.2 Occupational choice multinomial logit*

The results of the occupational choice model, separated by gender, are reported in Table 5. Labour activity choice depends on a mix of individual, household and community level characteristics. In our sample, women are much less likely than men to participate in any labour activity. Among activities, women are least likely to participate in self-employment activities, followed by wage employment, then on-farm labour. That is, of all labour activities, women are most likely to be found working on the family farm.

Besides gender, other individual demographic characteristics are clearly important in the choice of labour activity. Age positively affects the probability of participation in wage and self-employment compared to farming, although, as expected, this effect decreases as age increases. Among working adults having more children below six years of age makes men more likely to be engaged in agriculture as opposed to wage work, whereas the opposite is true for women. Marital status also matters, but again in quite opposite ways for the two sexes: married men are more likely to be salaried workers than farmers, whereas married women who work tend to 'get stuck' on the farm and are less likely to engage in wage employment. Working on-farm for women may be considered more compatible with rearing children.

The impact of assets varies across labour activities. Human capital assets are proxied through individual level of education. As expected, education has a strong and increasingly positive impact on the probability of being in wage employment as opposed to farming for women. This reinforces the positive and increasing effect we observed in the participation probit. The negative relationship between education and on-farm activity for men only kicks in at relatively high levels of education, around 10 to 12 years.

Agricultural assets (as measured by the size of agricultural landholding) are associated, as expected, with a higher probability of participation in on-farm labour activities, though this decreases with increasing land size. Some evidence of a reverse effect is found for land and age in the female model: the older the individual, for a given amount of land, the lower the relative odds that the individual will work in wage activities. Non-agricultural assets, on the other hand, increase the probability of being self-employed compared to working on-farm.

The composition of labour demand at the community level, which translates into different opportunities, also affects occupational choice. A higher share of non agricultural employment in the community (services, industry and construction) is associated with a lower probability of participating in on-farm activities. The unemployment rate, a proxy for labour market conditions at the district level that was found to be significant and negative in the participation model, does not seem to have a large impact on occupational choice. However, it does increase the likelihood of having women employed as wage earners.

A higher incidence of poverty at the district level is associated with relatively higher female participation in on-farm activities, most likely as an underemployed labourer. Relative deprivation has a differential impact on labour force participation. The more relatively deprived a household, the more likely they are to work on-farm, and less likely to work in wage labour or self employment. Thus not only the poorer the community, but the poorer a household is within a given community, the more likely an individual is to be trapped in an on-farm activity<sup>17</sup>.

Migration assets, which we have shown above to appear to be largely substitutes, not complements, for labour activities, also affect occupational choice. Once again, there are some interesting, marked gender differences. For both men and women, individual temporary migration leads towards more self-employment, particularly for younger individuals. We find the same effect for women, whose relative odds of working in the wage sector also increase if they have had some migration experience on their own. One explanation is that migration opens up the possibility of increased labour market activity for women, or conversely, the same unobservable individual – or familial – factors that led to a women migrating also motivate or allow her to work as a wage labourer. In the model of female occupational choice, however, we also find evidence that permanent migration to Italy reduces the relative probability of being self-employed, and that this effect increases with age.

## 7. Conclusions

Structural change in agriculture and the migration explosion have characterized the Albanian transition towards a market economy. Both features are of particular interest for poverty reduction policies because of their pervasiveness in household livelihood strategies of the poor, and because their continued evolution will be crucial in shaping the future structural transformation of Albania in the coming years.

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17. Of course causal links are hard to disentangle here, as the very fact of being stuck in farming may be what is causing the household's relative deprivation to be high.

Table 5. Selected regression results. Clustered multinomial logit

	MALE				FEMALE			
	wage		self-empl.		wage		self-empl.	
	Coef.	Rob. z**	Coef.	Rob. z**	Coef.	Rob. z**	Coef.	Rob. z**
Individual								
Age	0.26	5.36	0.42	6.75	0.17	2.97	0.29	2.59
Age squared	0.00	-5.29	-0.01	-6.88	0.00	-2.58	0.00	-2.66
Years of education	-0.12	-1.33	0.01	0.06	-0.35	-4.16	-0.18	-1.32
Years of education squared	0.01	2.66	0.00	0.29	0.03	6.25	0.02	2.53
Dummy: Married	0.57	1.84	0.08	0.23	-0.87	-2.85	-0.35	-0.88
Household								
# of children <6 yrs	-0.26	-2.63	-0.07	-0.54	0.09	0.57	0.01	0.02
Household size	0.03	0.22	0.12	0.63	0.19	0.91	0.11	0.41
Household size squared	0.01	0.75	0.00	0.27	-0.01	-0.75	0.01	0.75
Age of household head	-0.04	-1.06	0.00	0.05	0.08	1.48	0.09	1.29
Age of household head squared	0.00	0.70	0.00	-0.31	0.00	-1.26	0.00	-1.40
Dummy: female headed hh	0.89	1.54	0.56	0.88	0.99	2.28	0.76	1.35
Dummy: widow/er headed hh	-0.39	-0.73	-0.39	-0.68	-1.09	-2.05	-0.03	-0.05
Hh: non-agriculture asset score index	-0.03	-0.49	0.34	4.18	0.07	0.80	0.35	2.91
Hh: dummy, hh has a fixed phone line	0.02	0.05	0.35	0.85	0.63	1.72	0.83	2.04
Hh: size (ha.) of agr land owned	-1.53	-3.69	-1.08	-1.83	-3.48	-5.80	-0.89	-1.36
Hh: size (ha.) of agr land owned squared	0.35	4.07	0.26	2.94	0.41	3.36	0.37	3.58
Hh: size (ha.) of agr land owned*age	-0.01	-0.79	0.00	-0.38	0.03	2.78	-0.01	-0.88
Household: relative deprivation	-3.09	-10.88	-3.71	-10.63	-1.92	-7.48	-2.86	-6.72
Area								
Community: share of jobs in industry (excluded agr.)	14.78	5.33	13.43	4.54	5.14	2.30	3.55	1.26
Community: share of jobs in constructions (excluded agr.)	5.37	2.29	4.26	1.66	-0.53	-0.23	3.21	0.94
Community: share of jobs in services (excluded agr.)	8.12	7.57	8.61	7.14	6.07	5.84	4.72	3.16

District: unemployment rate	0.01	0.79	-0.02	-1.19	0.03	2.35	-0.01	-0.29
District: headcount ratio	0.02	1.42	0.02	1.04	-0.04	-2.47	-0.07	-2.94
External mig								
Individual temp mig in 1997-2001	0.75	0.73	1.86	1.76	3.60	2.22	4.23	2.38
Individual temp mig in 1997-2001*age	-0.04	-1.36	-0.07	-2.21	-0.09	-2.83	-0.09	-2.28
Other members temp mig to Greece 1997-2001	-0.07	-0.21	0.38	0.98	0.45	1.58	-0.27	-0.70
Other members temp mig to Italy and other countries 1997-2001	0.20	0.48	0.26	0.53	-0.14	-0.33	-0.28	-0.54
Hh: permanent migration. Number of children in Greece	0.04	0.11	0.59	1.19	-0.05	-0.14	-0.29	-0.48
Hh: permanent migration. Number of children in Greece*age	0.00	0.04	-0.01	-0.91	0.00	0.43	0.01	0.53
Hh: permanent migration. Number of children in Italy/other	0.35	1.13	-0.04	-0.08	-0.30	-0.76	-2.08	-2.66
Hh: permanent migration. Number of children in Italy/other*age	0.00	-0.61	0.01	0.55	0.01	1.51	0.04	2.58
Region								
Dummy: costal urban region	1.66	1.62	2.34	2.26	-0.47	-0.39	0.77	0.62
Dummy: costal rural region	0.97	1.02	1.30	1.27	-1.86	-1.48	-1.31	-0.89
Dummy: central urban region	1.54	1.18	2.51	1.90	0.26	0.21	1.05	0.80
Dummy: central rural region	0.49	0.52	1.21	1.18	-2.29	-1.83	-1.32	-0.90
Dummy: mountain urban region	-1.08	-0.98	-0.89	-0.79	-0.96	-0.76	-0.45	-0.33
Dummy: mountain rural region	-0.16	-0.17	0.02	0.02	-2.49	-1.97	-1.84	-1.28
Constant	-5.51	-3.46	-12.19	-5.35	-4.13	-2.13	-8.02	-2.73
N. observations	3,557				3,204			
Log pseudo-likelihood	-1,790				-935			
Chi2	606				771			
Pseudo-R2	0.48				0.66			
McFadden's Adj R2	0.46				0.63			

\* Standard errors are corrected for intracluster correlation at the household level, to relax the assumption of independence of individuals within the same household. Parameters highlighted are significant at 90% significance level or higher.

Farming is still key to the livelihoods of the many Albanian households that remain heavily dependent on low-productivity agriculture. An important share of household income – as well as home-produced food consumption – comes from the small farm sector. A majority of Albania's economically active population continues to work in agriculture, despite the decreasing importance of agriculture in the national economy over time. Very few farmer households – less than a third – market production, implying that for the majority of farming households cash income derives from public and private transfers, or from diversified income strategies.

Migration is used by Albanian households as a mechanism to diversify economic activities in the face of risk and obtain liquidity and capital in the presence of credit and insurance market failures. While we are unable to ascertain the direction of causality between migration and poverty, access to migration assets appears to play a particularly important role.

While low levels of assets limit successful livelihood strategies, the multivariate analysis shows that access to household and individual level assets conditions individual labour participation and labour activity choices. We find that agricultural, migration and human capital assets have a differential impact across livelihood choices, and that this impact varies by gender and age. By distinguishing between various types of migration, and by separating own migration from migration of other household members, we are able to shed some light on the gender differences concerning the ways in which these effects come to play.

Human capital assets increase the relative odds of participating in productive activities, and this effect is particularly strong for women. Among working males, the impact of education on the relative odds of staying on-farm, on the other hand, is initially positive but decreases as years of education increase. In Albania, a country which inherited from socialism good average schooling and literacy rates, education becomes a factor in facilitating individuals to leave farming only at relatively high levels (10 years of education or more). For women, this effect kicks in earlier, and increases with further years of education.

We also find some migration assets to reduce the probability of choosing any labour activity. For men it is the own previous migration experience that leads to lower participation in labour activities, for women it is the migration of other members to Italy (whether temporary or permanent) that acts as a disincentive to labour participation. In the case of men the most plausible explanation seems to be that this is due to the fact that those with previous migration experience are likely to be in Albania planning a future migration episode, and therefore decide (and can afford) not to work. In the case of women both an income effect (via the remittances) and a reallocation of time and occupations at the household level may be responsible for the lower level of labour participation of those with migration assets.

Besides having this negative effect on overall participation in the labour force, migration assets also appear to have an impact on occupational choice. For both males and females (and more so for the younger ones), previous individual migration experience makes people more likely to work off-farm, and particularly as self-employed. This is consistent with the story often reported anecdotally of returning or temporary migrants being able to start up their own business thanks to the saving accumulated when working abroad. However, labour choice is not the same as investment, and thus further research is required to shed light on this issue.

For female workers we also find an opposite effect of having permanent migration assets in Italy, which makes them more likely to opt for on-farm work than engage in self-employed activities, and more so with age.

Two areas of policy concern derive from this analysis of household and individual economic strategies in Albania. First, migration is clearly crucial for the economic future of Albania, both in terms of financing economic development, serving as an informal safety net, and in reducing excess labour supply and poverty. The suggestion of a potential disincentive effect on labour effort and participation is, however, worrying, as it would have implications in terms of missed opportunities for development. More research is needed to shed light on this issue.

Second, agriculture appears to be more of a survival strategy than part of a poverty exit strategy. Agricultural activities are too atomized, and largely subsistence-oriented, with the possible exception of the more fertile coastal plains where a greater commercial orientation emerges. Education may play a role in encouraging diversification out of agriculture, and in Albania this means promoting a relatively higher level of education, beyond the high school level. However, this, regrettably, contrasts with recent trends and performance of the educational system.

One implication of these two findings is that local occupation and migration need not necessarily be substitutes within a household livelihood strategy. They may be complements if engaging in some kinds of business at home requires dealing with risk or liquidity constraints in a way that migration can cater for. As the economy grows and modernizes it is easy to forecast a substantial reduction in the share of agricultural employment in the future. It is also likely that the patterns and roles of migration will keep evolving as the push and pull factors driving migration change (wage differentials with neighbouring economies; employment opportunities at home). A better understanding of what this means for household livelihood strategies is crucial for designing policies that are more effective in stimulating growth and reducing poverty and social exclusion.

## Appendix

Table A1 Summary statistics

Variable	PROBIT				MULTINOMIAL LOGIT (MNL)			
	-MALES-		-FEMALES-		-MALES-		-FEMALES-	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Dummy: being employed	0.79	0.40	0.64	0.48	1.00	0.00	1.00	0.00
Activity: on-farm	-	-	-	-	0.38	0.48	0.52	0.50
Activity: wage	-	-	-	-	0.50	0.50	0.43	0.50
Activity: self-employed	-	-	-	-	0.12	0.33	0.05	0.22
Age	37.01	14.12	35.67	13.94	39.61	12.85	38.07	12.82
Years of education	9.75	3.40	9.20	3.34	9.96	3.41	9.40	3.40
Dummy: Married	0.69	0.46	0.69	0.46	0.79	0.41	0.76	0.42
# of children <6 yrs	0.47	0.76	0.49	0.76	0.51	0.76	0.47	0.74
Household size	4.97	1.87	4.92	1.89	4.93	1.83	4.83	1.84
Age of household head	50.40	12.09	50.85	12.62	50.11	12.36	51.13	12.62
Dummy: female headed hh	0.06	0.24	0.12	0.32	0.06	0.23	0.12	0.33
Dummy: widow/er headed hh	0.07	0.26	0.10	0.30	0.07	0.26	0.10	0.30
Hh: non-agriculture asset score index	3.19	1.29	3.20	1.26	3.14	1.30	3.18	1.26
Hh: dummy, hh has a fixed phone line	0.29	0.45	0.29	0.45	0.27	0.44	0.26	0.44
Hh: size (ha.) of agr land owned	0.37	0.63	0.38	0.64	0.41	0.64	0.47	0.67
Household: relative deprivation	0.52	0.55	0.53	0.57	0.51	0.54	0.54	0.55
Community: share of jobs in agriculture	0.40	0.41	0.40	0.41	0.43	0.42	0.47	0.42
Community: share of jobs in industry	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07
Community: share of jobs in constructions	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07
Community: share of jobs in services	0.43	0.31	0.43	0.31	0.41	0.31	0.38	0.31
District: unemployment rate	12.85	6.83	12.90	6.92	12.59	6.76	12.71	6.84
District: headcount ratio	30.62	8.83	30.84	9.08	30.56	8.85	31.02	8.99



Individual temp mig to Greece in 1997-2001	0.10	0.30	0.02	0.13	0.10	0.30	0.02	0.13
Individual temp mig to Italy/other countries in 1997-2001	0.04	0.19	0.01	0.09	0.03	0.18	0.01	0.08
Other members temp mig to Greece 1997-2001	0.07	0.25	0.13	0.34	0.07	0.25	0.13	0.34
Other members temp mig to Italy/other countries 1997-2001	0.03	0.17	0.05	0.21	0.02	0.15	0.04	0.21
Hh: permanent migration. Number of children in Greece	0.22	0.67	0.26	0.71	0.23	0.68	0.29	0.73
Hh: permanent migration. Number of children in Italy/other	0.24	0.63	0.28	0.69	0.23	0.62	0.28	0.67
Dummy: Tirana	0.16	0.37	0.16	0.36	0.15	0.36	0.14	0.35
Dummy: costal urban region	0.12	0.32	0.12	0.33	0.11	0.31	0.11	0.31
Dummy: costal rural region	0.14	0.35	0.15	0.35	0.16	0.36	0.17	0.37
Dummy: central urban region	0.13	0.33	0.12	0.33	0.12	0.33	0.12	0.33
Dummy: central rural region	0.15	0.36	0.15	0.36	0.17	0.37	0.18	0.39
Dummy: mountain urban region	0.11	0.31	0.11	0.32	0.09	0.29	0.07	0.26
Dummy: mountain rural region	0.19	0.39	0.19	0.39	0.20	0.40	0.21	0.41
# of observations	4,477		4,995		3,557		3,204	

\* Shaded cells indicate whether the mean is statistically different at the 10 percent level, or lower.

## References

- Azam J.P. and F. Gubert, 2005, "Those in Kayes. The Impact of Remittances on Their Recipients in Africa", *Revue Économique*, 56(6): 1331-1358.
- Black, R., R. King and R. Tiemoko, 2003, "Migration, Return and Small Enterprise Development in Ghana: A Route of Poverty?", Sussex Centre for Migration Research, Working Paper No.9, Brighton UK
- Boskin, M. J., 1974, "A Conditional Logit Model of Occupational Choice", *The Journal of Political Economy*, 82(2): 389-398.
- Carletto, C., B. Davis, M. Stampini and A. Zezza, 2006, "A Country on the Move: International Migration in Post Communist Albania", *International Migration Review*, 40(4): 767-785.
- Carletto, C., B. Davis, M. Stampini, S. Trento and A. Zezza, 2004, "Internal mobility and external migration in Albania", ESA Working Paper No. 04-13, FAO, Rome.
- Christiadi, A. and B. Cushing, 2006, "The Interaction between Individuals' Destination and Occupational Choice. A Simultaneous Equation Approach", University of the Pacific Research paper 2006-1, Stockton, CA.
- Cox Edwards, A. and M. Ureta, 2003, "International Migration, Remittances and Schooling: Evidence from El Salvador", *Journal of Development Economics*, 72(2): 429-461.
- Cungu, A. and J. Swinnen, 1999, "Albania's Radical Agrarian Reform", *Economic Development and Cultural Change*, 47(3): 605-619.
- Cungu, A. and J. Swinnen, 1997a, "Agricultural privatization, land reform and farm restructuring in Albania", in J. Swinnen, A. Buckwell and E. Mathijs (eds.) *Agricultural Privatisation, Land Reform and Farm Restructuring in Central and Eastern Europe*, Ashgate, Aldershot, pp 1-21.
- Cungu, A. and J. Swinnen, 1997b, "Agricultural Privatisation, and Decollectivization in Albania: A Political Economy Perspective", in J. Swinnen (ed.) *Political Economy of Agrarian Reform in Central and Eastern Europe*, Ashgate, Aldershot, pp 55-89.
- de Brauw, A. and S. Rozelle, 2003, "Migration and Household Investment in Rural China", University of California, Davis, Department of Agricultural and Resource Economics, Davis, CA, USA.
- Durand, J., W. Kandel, E.A. Parrado, and D.S. Massey, 1996, "International migration and development in Mexican communities", *Demography*, 33(2): 249-264.
- Dustmann, C. and O. Kirchkamp, 2001, "The Optimal Migration Duration and Activity Choice after Re-migration", *IZA Discussion Paper*, No. 266.
- EU PHARE, 2001, "Micro-economic analysis of farm restructuring in Central and Eastern Europe. Albania", EU Phare ACE Programme, Contract Number P97-8158-R, Final Report.
- Germenji, E. and J. Swinnen, 2005, "Human Capital, Market Imperfections, Poverty and Migration: Evidence from Albania", *LICOS Discussion Papers*, No. 175, Katholieke Universiteit Leuven, Belgium.
- Glick, P. and D.E. Sahn, 1997, "Gender and Education Impacts on Employment and Earnings in West Africa: Evidence from Guinea", *Economic Development and Cultural Change*, 45(4): 793-823.
- Heckman, J.J., 1980, "Sample Selection Bias as a Specification Error with an Application to the Estimation of Labor Supply Functions", in J.P. Smith (ed.), *Female Labor Supply: Theory and Estimation*, Princeton University Press, Princeton.

- Hill, M. A., 1989, "Female Labour Supply in Japan: Implications of the Informal Sector for Labor Force Participation and Hours of Work", *The Journal of Human Resources*, 24(1): 143-161.
- Huffman, W.E. and M.D. Lange, 1989, "Off-Farm Work Decisions of Husbands and Wives: Joint Decision Making", *Review of Economics and Statistics*, 471-480.
- IMF, 2005, "Albania: Selected Issues and Statistical Appendix", IMF Country Report No. 05/90. Washington, DC.
- INSTAT, 2002, "The Population of Albania in 2001: Main Results of the Population and Housing Census", Tirana.
- INSTAT, 2004, "Poverty and Inequality Mapping in Albania", Tirana.
- Keane, M.P. and Wolpin, K.I., 1997, "The Career Decisions of Young Men", *Journal of Political Economy*, (105)3: 473-522.
- Knight, J. and L. Song, 2003, "Chinese Peasant Choices: Migration, Rural Industry or Farming", *Oxford Development Studies*, 31(2): 123-148.
- Kodderitzsch, S., 1999, "Reforms in Albanian Agriculture. Assessing a Sector in Transition", World Bank Technical Paper No. 431, Washington, DC.
- Konseiga, A., 2004, "Adoption of Agricultural Innovations in the Sahel: the Role of Migration in Food Security", Center for Development Research (ZEF), University of Bonn, Germany.
- Lucas, R.E.B., 2006, "Migration and Rural Development", paper prepared for the Conference *Beyond Agriculture*, January 15-17, FAO, Rome.
- Lucas, R.E.B., 1987, "Emigration to South Africa's Mines", *The American Economic Review*, 77(3): 313-330.
- Mathse, I. and T. Young, 2004, "Off-farm labour allocation decisions in small-scale rural households in Zimbabwe", *Agricultural Economics*, 30: 175-186.
- McCarthy, N., C. Carletto, B. Davis and I. Maltoglou, 2006, "Unlocking the Potential of Agriculture in Albania: the Role of Migration", paper prepared for the Conference *Beyond Agriculture*, January 15-17, FAO, Rome.
- McKenzie, D., 2005, "Beyond Remittances: The Effects of Migration on Mexican Households", in C. Odzen and M. Schiff (eds.), *International Migration, Remittances and the Brain Drain*, World Bank, Washington, DC.
- Mines, R. and A. de Janvry, 1982, "Migration to the United States and Mexican Rural Development – A Case Study", *American Journal of Agricultural Economics*, 64(3): 444-454.
- Moffitt, R.A., 1999, "New Developments in Econometric Methods for Labor Market Analysis", in O. Ashenfelter and D. Card (eds.) *Handbook of Labor Economics*, Volume 3, Elsevier Science.
- Morris, S., C. Carletto, J. Hoddinott and L. Christiaensen, 2000, "Validity of Rapid Estimates of Household Wealth and Income for Health Surveys in Rural Africa", *Journal of Epidemiology and Community Health*, No. 54.
- Mwabu, G. and R.E. Evanson, 1997, "A Model of Occupational Choice Applied to Rural Kenya", *African Development Review*, 9(2): 1-14.
- Ooms, D.L. and A.R. Hall, 2005, "On- and Off-Farm Labour Supply of Dutch Dairy Farmers: Estimation and Policy Simulations", paper prepared for presentation at the 99th seminar of the European Association of Agricultural Economists.

- Rozelle, S., E. Taylor and A. de Brauw, 1999, "Migration, Remittances and Agricultural Productivity in China", *The American Economic Review*, 89(2): 287-291.
- Soopramanien, D. and G. Johnes, 2001, "A New Look at Gender Effects in Participation and Occupation Choice", *Labour –Review of Labour Economics and International Relations–*, 15(3): 415-443.
- Shaw, K., 1989, "Life-cycle labour supply with human capital accumulation", *International Economic Review*, 30(2): 431-457.
- Stampini, M., C. Carletto and B. Davis, 2008, "International Migration from Albania: the Role of Family Networks and Previous Experience", *Eastern European Economics*, (46)2: 50-87.
- Stark, O., 1991, *The Migration of Labor*, Cambridge: Basil Blackwell.
- Stark, O. and J.E. Taylor, 1989, "Relative Deprivation and International Migration", *Demography*, 26(1): 1-14.
- Swinnen, J., L. Dries and J. Macours, 2003, "Transition and agricultural labour", *Agricultural Economics*, 29(4): 501-522.
- Taylor, J.E., J. Arango, G. Hugo, A. Kouaouci, D.S. Massey and A. Pellegrino, 1996, "International Migration and Community Development", *Population Index*, 62(3): 397-418.
- Taylor, E.J. and T.J. Wyatt, 1996, "The Shadow Value of Migrant Remittances, Income and Inequality in a Household-Farm Economy", *Journal of Development Studies*, 32(6): 899-912.
- Tiefenthaler, J., 1994, "A Multisector Model of Female Labor Force Participation: Empirical Evidence from Cebu Island, Philippines", *Economic Development and Cultural Change*, 42(4): 719-742.
- Verme, P., 2000, "The choice of the working sector in transition. Income and non-income determinants of participation in Kazakhstan", *Economics of Transition*, 8(3): 691-673.
- WDI, 2005, World Development Indicators online, consulted on July, 20, 2005.
- Woodruff, C. and R. Zenteno, 2001, "Remittances and Microenterprises in Mexico", University of California at San Diego working paper.
- World Bank, 2003, "Albania Poverty Assessment". Report No. 26213-AL, Washington, DC.