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Are internal migrants in Albania leaving for the better?

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Abstract

While Albania is more known for its massive international migration flows, internal migration is also noteworthy and, more important, understudied. This paper tries to fill a gap in the migration literature by assessing the impact of internal migration on household wellbeing. Albania is an ideal case to study the phenomenon, since no migration, whether internal or international, was allowed before 1990 and, therefore, it constitutes a quasi-experimental setting. The study relies on a unique dataset, the 2005 Albania Living Standards Measurement Study (ALSMS) with a focus on the migrant households oversampled in peri-urban Tirana, which will be compared to rural households not migrated internally. We take advantage of detailed information on the residence duration of internal migrants, housing and wealth variables for 1990, as well as the current local economic and social conditions they are exposed to. The aim is to assess whether wellbeing in terms of income, consumption, health, education, and housing has changed owing to internal migration. Descriptive statistics confirm earlier studies on migrants in peri-urban Tirana and show that migrant households live in poor dwelling conditions, are employed in irregular and unstable jobs and experience low levels of health and schooling. However, their total per-capita income is significantly higher than for rural households, while differences in terms of consumption are unclear. Further analysis on the impact of internal migration is based on two econometric techniques. The propensity-score-matching (PSM) approach and a two-step instrumental variable (IV) procedure -through a zero inflated count model at the first stage, an innovative element in the migration literature- are used to gauge a systematic difference between rural migrant households in the destination communities with similar counterparts in rural Albania who did not move, taking their pre-migration wealth and living conditions into account. Empirical results confirm that households which moved to peri-urban Tirana experienced an income gain, while the differences in terms of consumption are lower, overall. The revenue increase is mostly due to higher but irregular wages which do not seem to completely offset rising living expenses (e.g. food, water, housing), as well as costs not occurring in rural areas.

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Keywords: internal migration, Albania, impact analysis, urbanisation, poverty

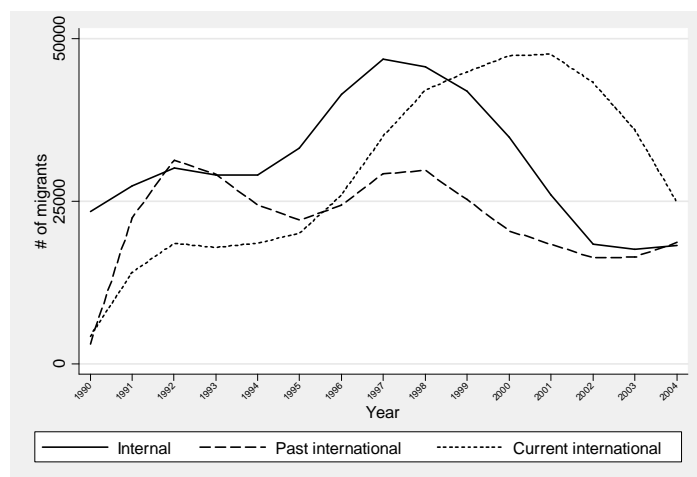
JEL classification: I32, O15, P36, R23

1. Introduction

While Albania is more known for its massive international migration flows, it is worth noting that there is also considerable internal migration that is very much understudied. Earlier studies on Albanian migration have shown that internal and international migration flows show distinctive patterns, both in terms of geography and poverty: Internal migrants mainly come from the mountain and North-Eastern districts, migrate to the peripheries of big urban centres, and are generally poorer (Zezza et al., 2005). Not much is known on the impact of internal migration, both in the case of Albanian and in general. This paper consequently tries to fill a gap in the migration literature by assessing the impact of internal migration on household wellbeing.

Albania was one of the most isolated and authoritarian communist countries. While international migration was officially forbidden, internal migration was allowed until the 1960s, when the Albanian government introduced a policy of rural retention and minimal urbanisation (Vullnetari, 2007). This meant that by the fall of communism in 1990, Albania was the most rural society of Europe (Cabiri, 2002). Albanians started migrating internally immediately after the fall of Communism, even though it was not legal to do so until 1993. Figure 1 shows internal and international migration trends between 1990 and 2004.

Figure 1. Internal migration flows 1990-2004



Note: Year refers to date of first move; past international migrants currently reside in Albania
Source: Own calculations, based on 2005 Albania ALSMS

Internal migration in 1990 was at a higher level than international migration but dipped after the regime change in 1992, peaking again after the collapse of the pyramid savings scheme in 1996-1997¹. Internal migration reacted much quicker to the shock than international,

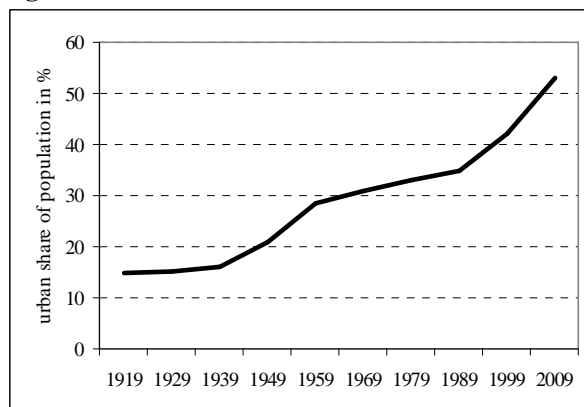
¹ From November 1996 several informal pyramid savings schemes started to fail, the losses amounting to about 50% of GDP in nominal terms. About two thirds of Albanians had invested in them and the event had immense financial and political effects. Albania was close to a civil war and many people lost all their savings and property.

presumably because it was a cheaper alternative. In recent years international migration flows have become more significant than internal flows, but all types of migration have declined and slowed down, possibly due to an improvement in economic conditions in the country (World Bank, 2007).

There has been little research into the links and interaction between international and internal migration, both in theory and in the Albanian case (King et al., 2008). Agorastakis et al. (2007) suggest that an initial international move (e.g., to Greece) is used as a mean to finance an internal move from a rural location to an urban area. However, our calculations based on the 2005 Albania Living Standards Measurement Survey (ALSMS) show that for individuals that have migrated both internally and internationally, internal migration precedes the international move by 2 years on average. Migration in this case follows the more traditional pattern of moving to the city as a stepping stone for international migration. In any case, as figure 1 above and other papers (e.g., Zezza et al., 2005) show, migration flows follow unequal patterns and are motivated by different reasons.

Focusing on internal migration, between the two Censuses in 1989 and 2001 182,600 individuals (5.7% of the population) moved from one region to another and twice that many people moved across prefectures (INSTAT, 2004). Almost one in three adults has migrated internally since birth (World Bank, 2007). Migration took different forms, but the most dramatic flows were rural to urban. A major consequence of internal migration is that urbanisation increased greatly, as figure 2 below shows.

Figure 2: Urbanisation trends 1919-2009

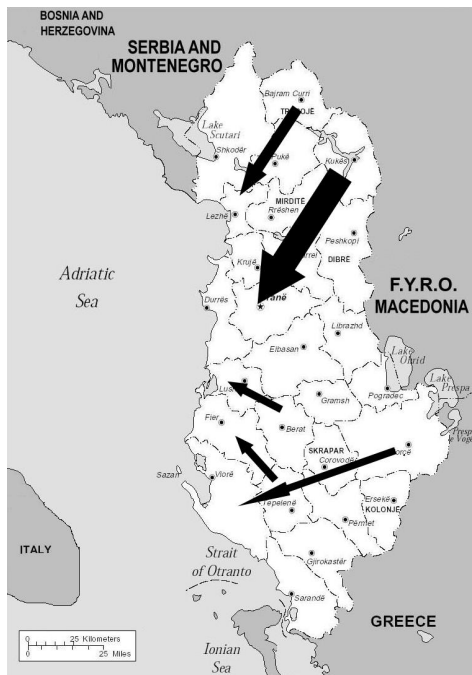


Source: Cabiri (2002); 2009 is predicted

Between 1989 and 2001 the rural population declined by 15%, while the urban population increased by 14% (INSTAT, 2002). The share of the urban population increased from 35% in 1980 to 45% in 2005 (Cila, 2006). In 2001, 60% of internal migration was rural to urban, with almost half of rural-urban flows going to the Tirana municipality (INSTAT, 2004). Internal migrants mainly come from the North-Eastern remote mountain districts (such as

Librazhd and Skrapar) and move to the coastal areas and the capital Tirana. It is the most important destination in absolute and relative terms, with Durres in second place (Carletto et al., 2004). Figure 3 below depicts a map of Albania showing the major internal migration trends, where the size of the arrows is proportional to actual migration flows.

Figure 3. Main inter-district migration flows



Source: Adapted from Zezza et al. (2005)

The second major consequence of internal migration is the enormous growth of the capital. It is the financial, economic, cultural and educational centre of the country and has grown by more than 40% since 1989. The population of Tirana increased from 368,000 in 1989 to at least 600,000 in 2002 (INSTAT, 2004). Unofficial estimates place the current population at around 800,000 inhabitants (de Soto et al., 2002). More than 60% of population did not live there before 1989 (Zezza et al., 2005). Tirana experienced a building boom as a result of the population increase, and 51% of buildings have been constructed after 1990 (Agorastakis et al., 2007). Growth is focused in peri-urban areas due to cheaper housing and living costs. One of the most important peri-urban settlements is Bathore, in the Kamza municipality right next to the city. Here the number of inhabitants increased from about 7,000 in 1989 to 80,000 in 2005 (Cila, 2006). About 55% of the rural-urban internal migrants who moved to Greater Tirana in the 1990s still live in peri-urban areas (ALSMS, 2005).

Peri-urban areas lie on the fringes of urban Tirana, often occupying former agricultural communes or abandoned public industrial areas, and not much is known on the living conditions and wellbeing of their residents. About 55% of the population in Greater Tirana lives in casual dwellings. Settlement took place illegally and informally with no urban planning. This means that most households do not have proper documentation for their

houses, and often lack connections to basic utilities (e.g., running water). Infrastructure was non-existent at first, though recently international organisations and NGOs have made some investments in infrastructure. There is little access to schooling: schools are far away and over-crowded. In Bathore, as an example, 2,500 children attend the only primary school, which has a capacity of 1,200 (Deda, 2006). Consequently, many schools have started holding multiple shifts of classes per day and children only attend school for a couple of hours a day (World Bank, 2003). Access to health services is also limited, as hospitals are only located in urban Tirana and health centres are running beyond capacity (ibid.).

Internal migration in Albania is often characterised by whole family relocation, which means that the proportion of women migrants is also exceptionally large (54% according to INSTAT, 2004). Migrants are generally of working age and highly educated (World Bank, 2007). Earlier studies indicate that internal movers come from all socio-economic backgrounds (De Soto et al., 2002, Cila, 2006), and the main motivation behind the relocation seems to be economic, i.e. work-related (Carletto et al., 2004).

Our study will compare migrant households to rural non-migrant households using a series of wellbeing indicators, including a wide range of variables on the households' living standards in 1990, drawn from the 2005 Albania LSMS. Also, we make use of detailed information on the residence duration of internal migrants, as well as local economic and social conditions they are exposed to. The analysis will be enriched by the focus on the oversampled households in peri-urban Tirana. They represent the largest fraction and show a number of distinguishing characteristics compared to other internal migrants². We will assess whether, and to what extent, welfare conditions in terms of income, consumption, health, education, and housing changed after internal migration.

This paper goes beyond previous studies on the wellbeing of internal migrants in peri-urban Tirana (Cila, 2006 and Deda, 2006), by directly comparing migrant households to other groups in the population, in particular rural households, in terms of wellbeing. Appropriate econometric techniques are applied, namely the propensity-score-matching approach (PSM) and the instrumental variable (IV) method, to homogeneously compare rural migrant households in the destination communities with their similar counterpart in rural Albania who did not move, taking their pre-migration asset endowments into account. Through the PSM and IV we will show the impact internal migration has had on migrant households, thus making a new contribution to the literature. Furthermore, as we will note, the analysis is

² Most internal migrants went to urban areas. Those who moved to peri-urban areas are generally less educated, have worse housing conditions, lower income and consumption, but also a lower unemployment rate than migrants who moved to urban areas.

strengthened by the fact that Albania is a quasi-experimental case with virtually no internal migration before 1990, starting from which we can measure the impact.

The paper proceeds as follows. The next section reviews the theoretical and empirical literature on internal migration, focusing on the case of Albania. Section 3 elaborates on the data characteristics, and provides a descriptive overview of peri-urban migrants. Section 4 discusses the methodology and shows the empirical results. The last section concludes.

2. Literature review

This paper falls in between two major strands of the literature. While there is a vast body of literature on the impact of international relocation, the impact of internal migration has not been studied much. The majority of the literature on internal migration focuses on the determinants of the move. Most works analyze the family left behind, whereas our focus is on the internal migrant households at the new destination. Below we outline some of the most important theories on internal migration, and highlight the outcome predictions of internal migration. Where possible, we illustrate theory together with empirical applications Albania. Finally, we discuss the literature on the impact of internal migration and categorise the different effects.

2.1 Determinants of internal migration

In the theoretical literature migration is seen either as a consequence of economic and social development or as an individual response to wage differentials and employment prospects.

The neoclassical macro-economic migration theories explain migration as part of economic development. Internal migration occurs as a result of geographical differences in the supply and demand of labour, mostly between the rural traditional agricultural sector and the urban modern manufacturing sector. In the basic *dual economy model* (Lewis, 1954 and Ranis and Fei, 1961) rural workers are attracted by the positive wage differential and migrate to the urban sector until wage equalisation has occurred. Cabiri et al. (2000) and INSTAT (2004) argue that internal migration in Albania takes place due to a surplus of rural labour which migrates to urban areas until equilibrium is reached.

Todaro and Harris (Todaro, 1969; Harris and Todaro, 1970) refined the dual economy model to account for the significant urban unemployment found in many less developed countries. In the Harris-Todaro model rural-urban migration occurs as long as the expected real income differential, based on urban wages and the employment rate, is positive. Thus, migration increases as urban wages or employment rate increases (other things being equal). Extensions of this model generally represent the labour market more realistically, for example by

endogenising the urban wage. Isaah et al. (2005) include urban infrastructure as an additional factor that positively affects utility of potential migrants (together with expected income). Cattaneo (2006) applies the model to Albania using household survey data, finding that migrants are more likely to move the higher wages are and the lower unemployment differentials are.

Zelinsky's functionalist *hypothesis of mobility transition* (1971) argues that migration is part of economic and social changes inherent in the modernisation process. He hypothesizes that patterns and rates of migration can be closely linked to the stage of modernisation (e.g. industrialisation) and demographic factors (e.g. high birth rates). He emphasizes that the preference for more personal freedom is part of the modernisation process. The theory of mobility transition is powerful when looking at past migration patterns in industrialised nations, and might be applied to the Albanian economic transition. However, it is somewhat vague and does not allow for differentiation of migration types.

The *human capital approach* is the neoclassical micro-level migration theory. Based on the work of Sjaastad (1962), migration is treated as an individual investment decision to increase the productivity of human capital. Individuals make a rational cost-benefit calculation, migrating only when the expected discounted returns of migration over future time periods are positive. This model predicts that the young and educated migrate first. While the human capital approach is interesting and useful in explaining the selectivity of migrants, it is very hard to test empirically. It has not been specifically applied to Albania, although previous studies show that while internal migrants in Albania are generally young, they are not well-educated (see section 3).

The *job search approach* models migration and job search as a joint decision (Harris and Sabot, 1982; Vishwanath, 1991). In these models, a migrants decision to move depends on the job search mechanism e.g., whether he is already looking for job while still in the rural area. Thus, it goes beyond the Harris-Todaro assumption that rural migrants move to the cities uninformed, and work in the informal sector while searching for a formal job. This theory has not been applied to Albania, although Banerjee (1983) finds that in India most internal migrants already have a job in mind when they move, due to the network phenomenon.

2.2 Effects of internal migration

The effects of internal migration can be classified into five categories. They are *monetary returns* of internal migration, and impacts on *social mobility*, on *poverty*, on *labour market success*, and on *health*.

As already mentioned, the neoclassical migration models predict that migrants move due to an expected income gain. Most empirical papers test the income gain due to internal migration, by looking at the difference between earnings of migrants in urban areas to the ones of non migrants in rural areas. Yap (1977) reviews a number of papers and finds that, despite higher living expenses in urban and missed in-kind rural income, migrants generally experience income gains. Cila (2006) finds that the income of peri-urban migrants in Tirana increased as an effect of migration. Tunali (2000), on the other hand, shows that not everybody benefited from internal migration in Turkey in the 1960s, and that a sizeable fraction of internal migrants experienced shortfalls.

When rural-urban migration takes place *social mobility* may occur. Mohaditi (1986) disputes this claim. He measures income inequality as a result of internal migration in Iran, finding that rural inequalities are reproduced in urban areas. If migrants come from a landless family, urban inequality is increased.

The effect of internal migration on *poverty* has not been studied much empirically. Using a unique tracking survey of individuals, Beegle et al. (2008) show that internal migration is an effective way of moving out of poverty, regardless of the destination. Migrants experience a 36% consumption growth compared to those who stayed behind (ibid). Kundu and Sarangi (2007) show, with descriptive district statistics in India, that migrants are less poor than rural households while poorer than urban non-migrant households. They also show that, even for casual workers, rural-urban migration has a strong and negative effect on the likelihood of being poor.

Cila (2006) uses the livelihoods framework to assess the change in wellbeing for rural migrants in Bathore. She finds that, while income tends to be higher, it is more volatile, and living expenses are also greater, but in general migrants' livelihoods have improved. Furthermore, their human capital in terms of number of years of education and knowledge has increased (though there are still gender differences). Deda (2006) finds that, despite higher incomes, peri-urban households are, nevertheless, living in poverty as they need to pay for basic public services, such as electricity connection, sewage and garbage disposal.

There is mixed evidence on the *labour market success* of internal migrants. Knight, Song and Huaibin (1999) and Meng and Zhang (2001) show that internal migrants in China are hampered by labour market segregation and they receive lower wages even when they have the same occupation and educational background as the natives. Davin (1999) confirms that the working conditions for migrant workers are tough and that they are granted fewer economic and social security benefits than the rest of the workers. Yamauchi (2004) also finds the returns to schooling being lower for Thai internal migrants than natives, although

the accumulation of destination experiences raises migrant's wages. Banerjee (1983) shows that mobility from the informal to the formal sector in India is low, but that within sectors the education and urban work experience of migrants and non-migrants is valued equally. In the studies that Yap (1977) reviewed, migrants have a lower unemployment rate than non-migrants, their education levels are adequately valued and they are not disproportionately more likely to work in the informal sector. Labour market outcomes for Albanian internal migrants have not been studied extensively, but descriptive statistics reveal that most of the employed workers are employed in casual, informal and low-paid work (see section 3).

The International Organization of Migration (2005) argues that migrants face greater health risks due to hazardous working and living conditions, peer pressure, easier access to drugs and the sex industry and because many migrants have only limited access to public health services. Shaokang et al. (2002) find that female internal migrants in Shanghai utilise antenatal care services at a much lower degree, and show worse pregnancy outcomes compared to non-migrant women, perhaps as a result of their illegal status. Davin (2002) confirms that in China temporary residents have inferior access to education and health services. Cila (2006) shows that although the health status of peri-urban migrants is fine in general, there are some health problems due to bad sanitary conditions, and the health infrastructure is insufficient (travel distances to hospital are far and under-the-table payments are often required).

3. Data and Descriptive Statistics

3.1 Data

We make use of the 2005 Albania Living Standards Measurement Survey (ALSMS) data, carried out by the Albania National Institute of Statistics (INSTAT) with the technical assistance of the World Bank. Data were collected at the household level, as well as at the community level, including detailed information on housing, health, migration, education, labour and consumption. A nationally representative sample of 3,640 households was interviewed, supplemented with an additional 200 households oversampled in peri-urban Tirana in order to allow a detailed analysis of peri-urban areas. A brief comparison between rural, urban and peri-urban households is presented in the next section.

Our study compares households by migration status of the head, as in Albania internal migration is often commenced by an initial move of the head. After (s)he is settled, the rest of the family follows, or (s)he sets up (her)his own family at the new location. Households in

peri-urban Tirana whose head migrated internally since 1990 are compared to rural households whose head did not move³.

Out of the 320 peri-urban households in the sample, the heads of 155 households did not move after 1990; 165 migrated after 1990 from rural areas⁴. There are 1,599 rural households whose head has not migrated since 1990. The differences between the latter two groups will be explored in section 3.3, while the peri-urban migrant group will be examined in section 3.4. However, we first show some descriptive statistics for the whole sample.

3.2 The Albanian households

This section provides an overview of the differences between rural, urban and peri-urban households in Albania. Table 1 below presents the mean values of some general characteristics.

Rural households have a greater incidence of married heads, are younger on average, larger, and with a higher number of dependant children than urban households. Moreover, peri-urban households which have migrated internally are even younger and have even more children. Rural households are more likely to have any migration exposure, as well as a higher number of migrants per household. Table 1 shows that rural households have lower wellbeing in most categories. Urban households and, to a lesser extent, peri-urban households are less likely to live in a single family house, as apartment buildings are more common in urban areas. However, urban households live in better quality dwellings, which are significantly more likely to have running water than peri-urban migrants. The latter have lower achievements, than even rural households in terms of housing.

Peri-urban households (especially those which have migrated internally) are significantly more likely to have household members with a sudden illness, and while rural households are located the furthest away from the closest doctor, peri-urban households are not far behind. Rural residents show much lower education levels, but a significantly lower unemployment rate, as more than 90% of households in rural areas are involved in agriculture. Peri-urban adults are much closer to rural adults than to urban adults, in terms of education levels.

³ We look at heads having both urban and rural origins, as this allows us to keep the sample as large and representative as possible. There is the slight possibility that a peri-urban household head was originally a family member of one of the rural households in the sample (e.g. a child). However, in a random sample of 3640 households this is very unlikely.

⁴ The following descriptive statistics are drawn on a slightly smaller sample, as 34 households show missing information on consumption and income.

Table 1. General household characteristics

	Urban households	Rural households	Peri-urban households not migrated	Peri-urban households migrated	Total
Whether head married	0.85***	0.91***	0.9	0.89	0.88
Average age of members	34.32***	32.30***	31.23	27.93***	32.97
Number of children	0.86***	1.20***	1.15	1.45***	1.05
Household size	3.83***	4.46***	4.59**	4.90***	4.19
Number of members living abroad	0.58	0.67***	0.21***	0.43*	0.61
Whether Single family house	0.49***	0.94***	0.84***	0.86***	0.73
Whether housing quality good	0.92***	0.87***	0.87	0.81***	0.89
Whether Running water	0.92***	0.53***	0.59***	0.33***	0.71
Whether someone has sudden illness	0.21***	0.26***	0.34**	0.36***	0.24
Distance to closest doctor in minutes	13.49***	23.82***	20.14	18.54	18.77
Average years of education of adults	10.14***	7.95***	8.73	8.17***	8.91
Unemployment ratio	0.15***	0.04***	0.06	0.1	0.09
Monthly per capita income (Leks) ¹	11219.07***	6852.80***	9075.59	9224.11	8857.03
Monthly per capita consumption (Leks) ¹	10761.09***	7847.93***	8465.4	7994.92**	9108.86
Poverty headcount	0.11***	0.25***	0.07***	0.17	0.18
Poverty gap	2.30***	5.67***	1.10***	2.17*	3.97
Poverty severity	0.80***	1.89***	0.24***	0.44**	1.32
Number of observations	1,938	1,551	153	164	3,806
Whether All children attend primary school ²	0.88***	0.84**	0.9	0.70***	0.85
Whether All children attend secondary school ³	0.62***	0.34***	0.57	0.34*	0.46
Time to school in minutes ⁴	10.55***	16.90***	15.2	18.37***	13.95

Note: stars indicate whether the mean for each group is statistically different from the rest (* significant at 10%; ** significant at 5%; *** significant at 1%). All figures are weighted.

¹ Income and consumption are corrected for regional price difference; 1 Lek = 0.01035 US\$ (2005)

² Number of observations are 800, 823, 74, 82 and 1779 respectively, as not all households have primary-school age children; ³ Number of observations are 608, 605, 54, 56 and 1323 respectively, as not all households have secondary-school age children; ⁴ Number of observations are 1114, 891, 96, 91 and 2195 respectively, as not all households have school age children

Source: Own calculations on 2005 ALSMS, including oversample.

Rural households have a greater incidence of married heads, are younger on average, larger, and with a higher number of dependant children than urban households. On Moreover, peri-urban households which have migrated internally are even younger and have even more children. Rural households are more likely to have any migration exposure, as well as a higher number of migrants per household.

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In terms of income, urban households are more affluent than rural, and their consumption is about 30% higher. They get most of their income from wages and self-employment, as opposed to rural households, whose largest share is from less profitable agricultural activities. Peri-urban households have higher incomes than rural ones, but do not consume more, especially those that migrated internally. 1 out of 4 rural individuals is poor, compared to 1 out of 10 urban individuals; urban poverty is also less severe (measured by the poverty gap, see Foster, Greer and Thorbecke, 1984).

Rural primary school attendance is significantly lower than urban, and the difference is even greater for secondary school attendance: only 34% of rural and peri-urban migrant households send all their children to secondary school. One reason might be the worse infrastructure: rural and especially peri-urban children have to travel further to school.

3.3 Rural and peri-urban households

In the following section, descriptive differences are explored between households in rural areas whose head did not migrate post 1990s (RNM) and households in peri-urban Tirana whose head migrated post 1990 (PM). Table 2 below shows some characteristics of their demographic composition.

Individuals and heads in PM households are significantly younger, on average, compared to rural households. This is consistent with the human capital approach to migration. There is no significant difference in terms of marital status and gender ratio. We can confirm that complete families moved, which explains the significantly larger family size of PM households. The latter also have the highest number of children per household. RNM households show a higher international migration exposure than PM, which could be interpreted as a substitute for internal migration.

Table 2. Demographics

	RNM	PM	Total
Average age of members	32.63***	27.93***	32.33
Age of head	52.76***	46.31***	52.38
Whether head married	0.9	0.89	0.9
Ratio of males/females	1.21	1.08	1.2
Household size	4.47**	4.90**	4.49
Number of children	1.17**	1.45**	1.19
Whether household has permanent migrant	0.37**	0.26**	0.36
Whether household has temporary migrant	0.1	0.11	0.1
Number of members living abroad	0.69**	0.43**	0.68
Number of observations	1,486	164	1,650
Percentage of total households in ALSMS 2005	39%	4%	43%

Note: RNM = Rural household whose head did not migrate internally; PM = Peri-urban household whose head did migrate internally from rural area. Stars indicate whether the mean is statistically different across groups (* significant at 10%; ** significant at 5%; *** significant at 1%). All figures are weighted.

Source: Own calculations on 2005 ALSMS, including oversample.

Table 3 below provides some insights on education and employment for the two types of households under study.

Table 3. Education and employment

	RNM	PM	Total
Average years of education of adults	7.92	8.17	7.93
# of education years of head	7.98	8.2	7.99
Whether all working age members work	0.26***	0.06***	0.25
Whether head unemployed	0.01***	0.06***	0.02
Unemployment ratio	0.04***	0.10***	0.04
Average weekly hours worked by adults	25.17***	19.44***	24.8
Number of observations	1,486	164	1,650
Percentage of total households in ALSMS 2005	39%	4%	43%

Note: RNM = Rural household whose head did not migrate internally; PM = Peri-urban household whose head did migrate internally from rural area. Stars indicate whether the mean is statistically different across groups (* significant at 10%; ** significant at 5%; *** significant at 1%). All figures are weighted.

Source: Own calculations on 2005 ALSMS, including oversample

Adults and heads in PM households have a higher, but not significantly different, education level than rural households, so the two groups are very similar in terms of education level.

Individuals in peri-urban are more likely to be unemployed and work, on average, fewer hours per week than their rural counterparts. Peri-urban resident are mostly employed in casual and informal employment, and their female employment rates are low. Almost all

women in rural households work in agriculture, whereas migrant women are more likely to be constrained by traditional values with respect to formal employment. As a consequence, they do not seem to seek formal job.

Table 4 and Figure 4 below show different indicators of wellbeing across household types, including some indicators that refer to 1990, i.e. to the pre-migration situation.

Table 4. Wellbeing indicators

	RNM	PM	Total
Monthly per capita income (Leks) ¹	6894.90***	9224.11***	7045.02
Monthly per capita consumption (Leks) ¹	7865.35	7994.92	7873.7
Morris score index ⁵			
1990	0.26***	0.38***	0.26
2005	2.22	2.11	2.21
Whether life improved over past three years	0.27***	0.46***	0.28
Change in self-declared econ. status 90-05			
Worsened	0.14*	0.08*	0.14
Unchanged	0.57**	0.69**	0.58
Improved	0.29	0.24	0.29
Number of observations	1,486	153	1,650
Percentage of total households in ALSMS 2005	39%	4%	43%

Note: RNM = Rural household whose head did not migrate internally; PM = Peri-urban household whose head did migrate internally from rural area. Stars indicate whether the mean is statistically different across groups (* significant at 10%; ** significant at 5%; *** significant at 1%). All figures are weighted.

¹ Income and consumption are corrected for regional price difference; 1 Lek = 0.01035 US\$ (2005)

Source: Own calculations on 2005 ALSMS, including oversample.

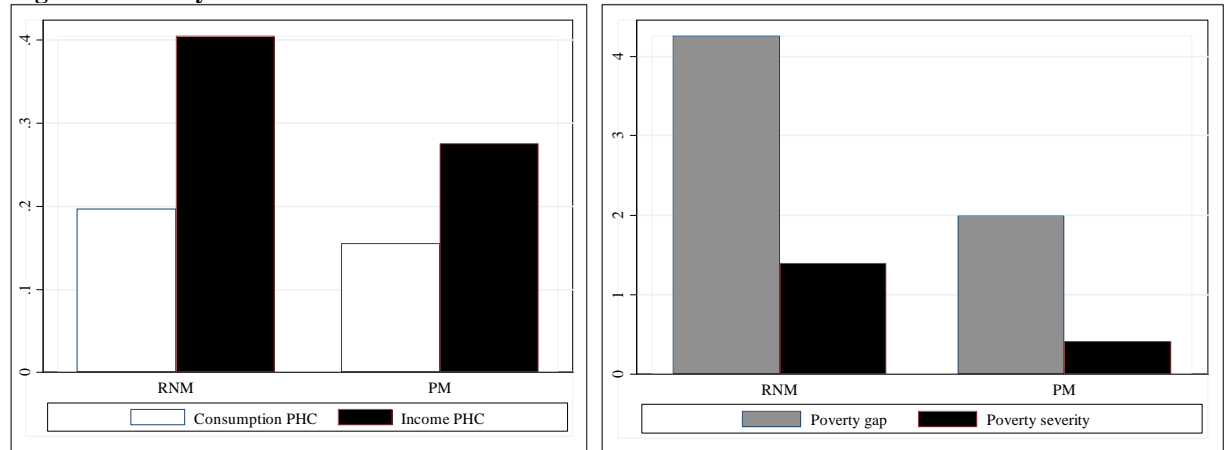
Peri-urban households enjoy a per-capita income significantly higher than rural households. The per capita income of the latter is about 75% of the income of PM. This is in line with the neoclassical macro theory, and provides some evidence that migration positively affects financial wellbeing. However, if one looks at differences in consumption level, a different picture emerges. PM households show as low consumption levels as rural households, which suggests that despite a significantly higher income the latter does not fully offset the elevated living expenses of the city. Also, PM families benefit to a lesser degree from free food products from agriculture than rural counterparts.

To compare the durable asset ownership (as a proxy of wealth) the Morris score index is used –see note 7-. PM migrants are not the least asset-deprived in 1990. By 2005 the Morris score index is similar for rural and peri-urban households, but has grown a lot for all groups during the 15 years period.

⁵ The Morris score index is a weighted asset indicator that weighs each durable asset owned by the household by the reciprocal of the number of households owning the asset, see Morris *et al.* (1999).

PM households feel, on average, more positively about their life having improved during the past three years. Looking at self-declared financial status, PM households are better off than the RNM group. Only 8% of households find that their status has worsened since 1990, and almost 70% that it is unchanged. Figure 4 below shows different poverty indicators.

Figure 4. Poverty indicators

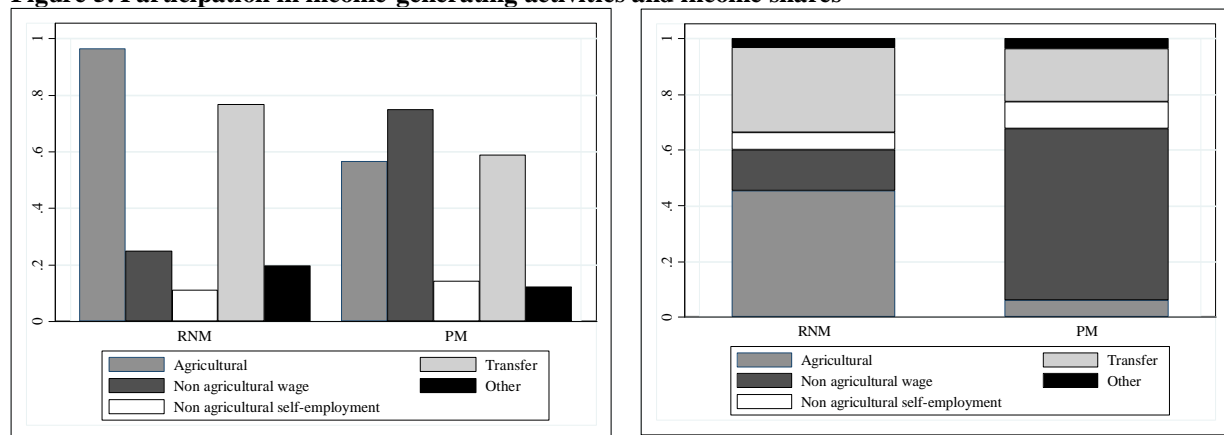


Note: RNM = Rural household whose head did not migrate internally; PM = Peri-urban household whose head did migrate internally from rural area

Source: Own calculations on 2005 ALSMS, including oversample

Rural households show higher poverty rates than PM, both in terms of income and consumption-based measures. However, the difference is greater -and more significant- when using the income-based poverty headcount (PHC). Furthermore, RNM households are also significantly worse off when looking at other poverty measures, -e.g., the mean poverty gap for RNM is 5.63 compared to 2.17 for PM households. This means that rural poverty is deeper than peri-urban's. Figure 5 below shows participation and shares of income, wage and self employment, transfers and other income generating activities for the two household groups.

Figure 5. Participation in income-generating activities and income shares



Note: RNM = Rural household whose head did not migrate internally; PM = Peri-urban household whose head did migrate internally from rural area

Source: Own calculations on 2005 ALSMS, including oversample

As expected, rural households show the highest share (96%) of income from agricultural activity. On the opposite, wage income is the most important activity for PM households, while self-employment is also common for PM, though the difference is not significant. The share of income from both wage and self-employment is the highest and the most significant for PM households. More than 50% of households in all categories receive some kind of transfer. RNM have the highest share of income from transfers -mostly due to public flows, the share of private being about 15% for both groups-. This could be related to the fact that many PM households are illegally settled, hence less likely to be eligible for public transfers. Cila (2006) confirms that, despite the high poverty rates amongst peri-urban migrant households, only 10% receive state economic assistance. Table 5 displays differences in housing and infrastructure for RNM and PM households.

Table 5. Housing outcomes

	RNM	PM	Total
Whether single family house			
1990	0.96	0.97	0.96
2005	0.94***	0.86***	0.93
Whether good quality house in 2005	0.87*	0.81*	0.87
Number of rooms per household member			
1990	0.49***	0.39***	0.48
2005	0.73***	0.49***	0.72
Whether running water			
1990	0.41	0.33	0.4
2005	0.53***	0.33***	0.52
Whether indoor toilet			
1990	0.22***	0.39***	0.23
2005	0.48***	0.79***	0.5
Number of observations	1,486	153	1,650
Percentage of total households in ALSMS			
2005	39%	4%	43%

Note: RNM = Rural household whose head did not migrate internally; PM = Peri-urban household whose head did migrate internally from rural area. Stars indicate whether the mean is statistically different across groups (* significant at 10%; ** significant at 5%; *** significant at 1%)

Source: Own calculations on 2005 ALSMS, including oversample

Rural households show significantly better housing conditions than peri-urban. RNM are most likely to live in a high-quality, freestanding house, and enjoy a significantly larger number of rooms per capita. In terms of house type, in 1990 RNM and PM households lived in a very similar situation, mostly residing in single family houses. PM households are now more likely to reside in apartment blocks, more frequent in urban settings. They have a number of rooms per household member lower than for rural households, both in 1990 and now. Both groups show low incidence of availability of running water in 1990, although the situation improved for rural households only. However, PM's are now more likely to have an indoor toilet, both compared to own situation in 1990 and to rural households. Differences in

access to other utilities (e.g., electricity) are not significant. Generally, in terms of housing and access to basic utilities, rural-to-peri-urban migration does not seem to improve living conditions. No clear pattern of health outcomes and infrastructure for the two groups emerges from Table 6 below.

Table 6. Health outcome and infrastructure

	RNM	PM	Total
Whether someone in household has sudden illness	0.26**	0.36**	0.27
Whether health of household members good	0.97	0.99	0.98
Distance to closest doctor in minutes	23.87*	18.54*	23.55
Number of observations	1,486	153	1,650
Percentage of total households in ALSMS 2005	39%	4%	43%

Note: RNM = Rural household whose head did not migrate internally; PM = Peri-urban household whose head did migrate internally from rural area. Stars indicate whether the mean is statistically different across groups (* significant at 10%; ** significant at 5%; *** significant at 1%). All figures are weighted.

Source: Own calculations on ALSMS 2005, including oversample

PM households show higher incidence of having a member with a sudden illness. This could be related to the fact that only 70% of PM households have access to drinking water. Cila (2006) confirms that there are health problems in peri-urban Tirana due to bad sanitary conditions. In terms of health infrastructure, Cila (2006) also finds that peri-urban households still have to travel far to secondary health care providers, despite the household's move to the city. Our data do not fully confirm this; rural households actually travel significantly further to the closest doctor.

Table 7 focuses on schooling outcomes and education expectations for the different groups, keeping in mind that the number of compulsory school age children is highest for PM households, as Table 2 showed. Despite the high number of school age children, primary school attendance is significantly lower for PM households. Secondary school attendance is as low as for rural households, where one would expect low secondary school participation. There are several reasons why attendance could be lower for PM households: they cannot afford school costs and are forced to send their children to work. Teens of PM households work a number of hours per week similar to rural teens, who are expected to help the family out in agriculture. Finally, it could be that schools are not adequately sized or flexible enough. Albanian children need to be registered to attend school, and probably not all peri-urban parents register their children at the municipality, due to the illegal relocation. However PM's are more satisfied with the quality of education, despite the capacity problems mentioned earlier. Finally, it could be that migrant households are not fully aware of the value of education.

In previous figures and tables we showed that PM households are worse off, in terms of most wellbeing indicators, than the rural ones, being better off only in terms of income. We now look at whether there are differences related to the year of arrival.

Table 7. Schooling outcomes and expectations

	RNM	PM	Total
Whether all of household's children attend primary school ¹	0.84**	0.70**	0.83
Whether all of household's children attend secondary school ²	0.33	0.34	0.33
Average weekly hours worked by teens of the household ³	14.75	12.81	14.62
Time to school in minutes by members ⁴	16.7	18.37	16.8
Whether members satisfied with school ⁴	0.73**	0.85**	0.73
Whether head considers education very important ⁴	0.73	0.79	0.74
Number of observations	827	90	917
Percentage of total households in ALSMS 2005	22%	2%	24%

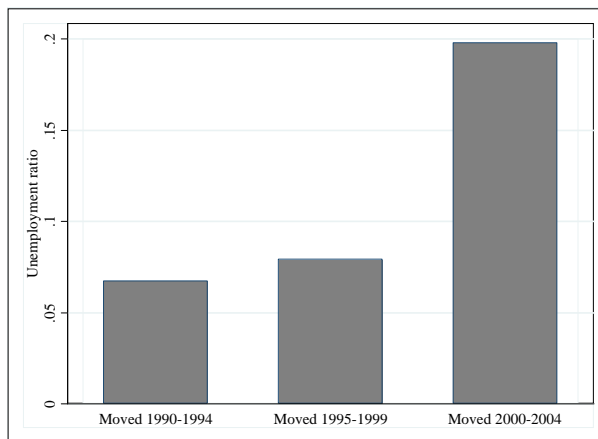
Note: RNM = Rural household whose head did not migrate internally; PM = Peri-urban household whose head did migrate internally from rural area Stars indicate whether the mean is statistically different across groups (* significant at 10%; ** significant at 5%; *** significant at 1%). All figures are weighted. ¹ Number of observations are 782, 82 and 938 respectively as not all households have primary-school age children; ² Number of observations are 586, 56 and 696 respectively as not all households have secondary-school age children; ³ Number of observations are 572, 57 and 690 respectively as not all households have teenage children; ⁴ Not all households have school age children or answered these questions.

Source: Own calculations on 2005 ALSMS, including oversample

3.4 Peri-urban migrant households: is there a time effect?

The previous section showed some puzzling and possibly contradicting results for peri-urban migrant households. They do not seem to perform well in many aspects of their livelihoods, but migration flows continue, although at a lower level, as figure 1 showed. In this section we will analyse PM in more detail in order to explain the puzzling results. More specifically, we will compare selected wellbeing indicators for three migrant cohorts according to the timing of the move: households arriving between 1990-1994, 1995-1999, and 2000-2004. Figure 6 below displays the unemployment ratio for the three groups.

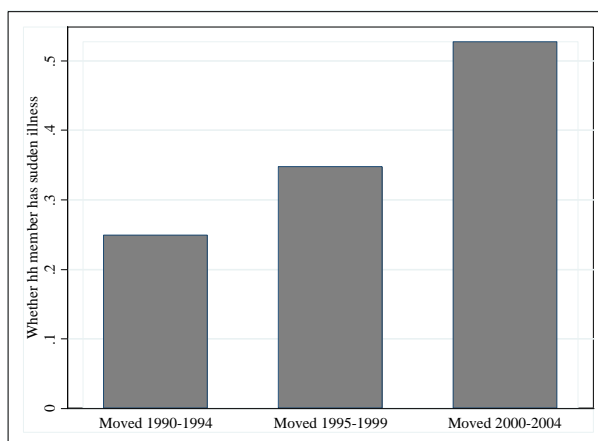
Figure 6. Unemployment ratio for adults of the household



Source: Own calculations on 2005 ALSMS, including oversample

The unemployment ratio is almost three times higher for late arrivals. This might be attributed to their lower education levels -although our data show no significant difference-, or to the fact that it takes some time to find a steady fulltime job. Despite having difficulties to find a permanent job, late arrivals work, on average, approximately as many hours per week as the other groups. This means that late arrivals probably work even more than the other two groups in casual work, for example in the construction sector. Figure 7 shows possible links between employment and health.

Figure 7. Whether someone in household has a sudden illness



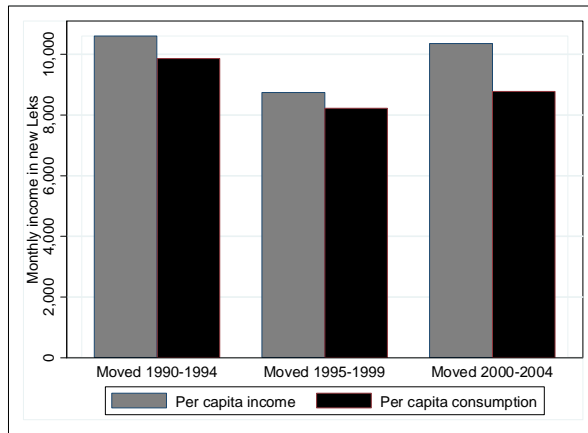
Source: Own calculations on 2005 ALSMS, including oversample

Latest arrivals are twice more likely to have a sudden disease or accident than earlier ones. This is not because they have worse sanitary conditions⁶. We posit the high rate of sudden diseases being caused by employment in dangerous jobs, which long-term residents shun, leaving them over to recent arrivals. This is in line with other literature on internal migration (e.g. Knight et al., 1999).

⁶ More than 80% of late arrivals have access to drinking water, whereas only 61% of pioneers do.

Most interesting to our purposes are differences in income and consumption reported in Figure 8.

Figure 8. Wellbeing indicators



Source: Own calculations on 2005 ALSMS, including oversample

Income is the lowest for households that moved in the period 1995-1999. Our hypothesis is that internal migration was a reaction to the pyramid savings scheme shock. Consumption is significantly higher for the pioneer group and, again, lower for the middle group. Thus, earlier arrivals are faring the best in terms of income and consumption. They have had enough time to adjust, to finish constructing their house and to find a steady job. Their relative success might have contributed to the migration desire of later migrant groups. This also corroborates the Harris-Todaro type migration models.

In the next section we include the time dimension in the impact assessment of rural-to-peri-urban migration on household wellbeing using econometric techniques.

4. Empirical analysis

4.1 Methodology

We use the Propensity Score Matching approach and the Instrumental Variable method to assess the impact of migration on the household wellbeing in peri-urban areas, while taking into account a possible self-selection bias. To estimate the impact of migration we use the model specified in equation (1) below

$$Y_i = \alpha + \beta * migration_i + \gamma * X_i + \varepsilon_i \quad (1)$$

where i represents the household, Y the outcome of interest (such as income or consumption), α the constant term, β the parameters of interest (having migrated), X other explanatory or control factors, and finally ε_i the error term.

However, we have reasons to believe that β might be biased due to reverse causality and endogenous placement between migrant and non-migrant households due to observable and

non observable characteristics. This means that estimating (I) through the Ordinary Least Squares (OLS) will violate the zero conditional mean assumption (i.e., the independence of all explanatory variables) of the error term, and we need to correct for selection bias. In terms of equation (I) a latent variable, e.g. ability, might contemporaneously affect income –on the left-hand side- and migration -on the right-hand side- (see also McKenzie and Sasin, 2007). Since ability is unobserved, it is included in the error term, which is correlated with migration (ibid.). Reverse causality also arises, making it hard to disentangle the effect of migration on income because the latter, in turn, can be an important determinant of the migration decision in the first place⁷. OLS regressions, in this case, result in biased results as they do not correct for these pitfalls. On the other hand, the two methods applied partially take selection bias into account (unobservable heterogeneity cannot be controlled for), bringing unbiased estimates of the impact of internal migration. Nakosteen and Zimmer (1980) provide the rationale for using two-stage estimation procedures, and we provide an additional modelling strategy in the case of overdispersion and excess zero of the endogenous variable.

The Propensity Score Matching (PSM) approach (Rubin, 1974; Rosenbaum and Rubin, 1983) tries to eliminate the observable bias, comparing each migrant household to a non-migrant counterpart very similar based on characteristics that do not influence the outcome variable - usually pre-treatment factors-. A number of controls are used to estimate the propensity score, as shown in equation (2)⁸.

$$p(Z) \equiv \Pr\{T = 1|Z\} \equiv E\{T|Z\} \tag{2}$$

The propensity score is the conditional probability of receiving treatment T given pre-treatment characteristics Z . In our case the treatment is whether household moved internally from a rural area to peri-urban Tirana. In PSM one looks for covariates of participation, i.e. factors having a positive effect on the migration decision. Our pre-treatment characteristics are: dwelling type in 1990, whether the household had running water or an indoor toilet in 1990, how many rooms per capita in 1990, the Morris Score index in 1990, the education level of the head's parents and household size in 1990 in different age categories. These variables are assumed to influence the probability of receiving the treatment -i.e. having migrated-, though not the outcome variables –such as income and consumption-.

One crucial condition PSM needs to satisfy is the balancing property, according to which households with the same propensity score must show the same distribution of observable

⁷ One would expect internal migration positively affecting income, but income negatively affecting migration, as more needy households migrate -internal migration does not entail the high costs of an international move-. Hence, due to the negative reverse causal channel, the OLS coefficient is likely to underestimate the effect of migration on income.

⁸ The household subscript i is omitted.

characteristics. Migrant households are then matched to non-migrant counterparts with a similar propensity score using various techniques, such as the nearest neighbour, radius, kernel and stratification matching. Finally, the Average Treatment on the Treated (ATT) effect is calculated, which measures the average impact migration has had on the treated (i.e. migrants).

Another condition PSM requires is the “Stable Unit Treatment Value Assumption”, which assumes that treatment does not affect outcome (Rubin, 1978). In our case, we are ruling out the fact that internal migration could have affected local labour market conditions, both in the place of origin and in peri-urban areas. In general, unemployment rates in Albania increased between the 1989 -pre-migration situation- and the 2001 Censuses. However, this is clearly the result of the transition from a planned to a market economy. It is generally believed that migration took place as a reaction to unemployment rates (see also Mancellari et al., 2006), and it is unlikely that migration *leads* to higher unemployment rates in the areas of origin.

The second approach, the Instrumental Variable (IV) method, corrects for the correlation bias between migration and error term ε_i in (1) replacing migration with another variable, the instrument, correlated with migration but not with ε_i –i.e. motivation, ability, risk aversion-. The instrument, then, is assumed to affect the outcome only through migration. The impact of migration is estimated in two stages. In the first stage, migration is estimated using one or more instrumental variables, see equation (3).

$$\hat{m}_i = \delta + \phi * IV_i + \vartheta * X_i + u_i \quad (3)$$

In the second stage, the estimate of migration \hat{m}_i -predicted value of migration coming from the first stage regression- is inserted into the equation of interest⁹, see equation (4).

$$Y_i = \alpha + \beta * \hat{m}_i + \gamma * X_i + \varepsilon_i \quad (4)$$

Two instrumental variables are used: a dummy of whether the household had an indoor toilet and asset ownership of the household -measured by the Morris index-, both referred to the year 1990. These characteristics reflect living conditions and wellbeing of the household before the move and can explain potential migration intensity. Due to the political situation in Albania, few households had moved internally before 1990, and since that year migration grew very quickly within a short time. Therefore, the 1990 housing variables are good proxies for the housing situation before the move¹⁰. The main assumption is that it is unlikely

⁹ The not-consistent standard errors associated with the second-stage estimates need to be adjusted, what we compute taking also the sampling design into account -intra-cluster correlation of households at the Primary Sampling Unit (PSU) level and two-stage stratified random sample effect-.

¹⁰ A number of other housing variables as instruments -e.g. rooms per capita in 1990- were also tried, bringing similar results.

that household asset ownership in 1990¹¹ still affects income and consumption possibilities today, in the light of the dramatic changes that occurred in the Albanian economy during the past 15 years. Furthermore, migrants in peri-urban are now exposed to a totally different labour market than in the rural areas, so past assets are unlikely to influence income and consumption patterns in peri-urban Tirana today.

4.2 Empirical results

Through the PSM, households are matched using the five nearest neighbour matching technique, limiting the observations to the common support region, which makes the results more robust¹². Furthermore, same dependent variable and data source for both control and treatment group are used, ruling out the Smith and Todd's (2005) critique. In the second specification, following Abadie and Imbens (2001), four matches and bias-corrected and heteroskedasticity-robust estimates are computed. In Figure 1 of Appendix 1 a histogram of the propensity score for migrant and non-migrant households (treated and un-treated) is displayed, as suggested by Heckman, Ichimura and Todd (1997) and discussed in Negri and Porto (2008). This graph shows a remarkable density of migrant and non-migrant households in the area of common support for each interval of the propensity score. This provide and indication of the reliability of the estimates presented, drawn from a high number of observations with similar characteristics.

The table below displays the PSM set of results, its standard error and significance using both specifications, as described above. Bootstrapped-standard errors are not included, as bootstrapped matching estimators are not valid in the nearest neighbour matching method due to the “extreme non-smooth nature of matching estimators and the lack of evidence that the estimator is asymptotically similar” (Abadie and Imbens, 2001). Results for per capita income and consumption as well as a range of other outcome measures are shown.

¹¹ To avoid possible endogeneity between past asset ownership and current wellbeing, we also tried land plot size owned before the move -and current land plot owned for non-movers- as instrument. However, it turned out to be a non-valid and weak instrument variable, according to the empirical tests performed. Moreover, we excluded two assets, washing machine and sewing machine, which only well-off households might have owned in 1990.

¹² Different matching specifications, including radius, kernel and stratification were also applied, results produced being qualitatively similar.

Table 8. Propensity Score Matching results

<i>Dependent variable</i>	Per capita monthly income	Per capita monthly consumption	Whether all adult hh members work	Average weekly hours worked by adult hh members	Whether household poor	Household poverty gap	Household poverty severity
Average Treatment on the Treated (ATT) ¹	2953.69*** Lek (588.56) US\$ 30.84	740.69 Lek (50982) US\$ 7.73	-0.20*** (0.03)	-5.36*** (1.33)	-0.07** (0.03)	-2.66*** (0.80)	-1.00*** (0.32)
Average Treatment on the Untreated (ATU) ¹	2377.43	607.38	-0.16	-5.14	-0.05	2.01	-0.73
Average Treatment Effect (ATE) ¹	2434.10	620.44	-0.16	-5.16	-0.05	2.07	-0.76
Average Treatment on the Treated (ATT) ²	2281.62*** (592.01) US\$ 23.82	356.60 (526.48) US\$ 3.72	-0.14*** (0.03)	-3.13** (1.26)	-0.08** (0.03)	-2.78*** (0.84)	-0.98*** (0.33)
Number of observations (treated, untreated)	155, 1421	155, 1427	155, 1427	155, 1427	155, 1427	155, 1427	155, 1427

¹ 5 Nearest Neighbours method; ² Bias-corrected and heteroskedasticity-robust adjusted estimates

Note: stars indicate significance levels: * .1 level, ** .05 level, *** .01 level

Source: Own calculations on 2005 ALSMS, including oversample

The bias and heteroskedasticity-robust adjusted estimates show the same patterns of significance as those obtained through the five nearest neighbour matching method, although generally associated with lower coefficients. PSM results are statistically significant for per capita income but not for consumption differences. As a consequence, one cannot infer that consumption for migrants in peri-urban areas is higher than that for non-migrant households in rural areas. These results confirm the descriptive statistics of section 3.3.

The Average Treatment effect for the Treated (ATT) is positive, meaning that migration has had a positive effect on income per capita of the moved households. More specifically, migrant households enjoy on average a monthly income 24 to 30 US\$ higher than that of the rural ones.

Adults in migrant households are less likely to be employed, and work on average 3-5 hours less per week. This also confirms previous results. Peri-urban migrant households have a 7% lower poverty rate, less than the difference we found in the descriptive statistics. The poverty gap and poverty severity are also much lower for peri-urban migrant households, witnessing a similar level, but higher deepness of poverty than the rural households.

In Table 9 Instrumental Variables and OLS estimated are presented. The dependent variable instrumented is the number of years since migration to peri-urban areas, which is zero for the not-migrated households, and this is the motivation for using the Zero Inflated Poisson (ZIP) model in the first stage of the two-step procedure.

Table 9. Ordinary Least Squares (OLS) and Instrumental Variable (IV) results

Model <i>dependent variable</i>	OLS		Zero Inflated Poisson				IV	
	<i>log of income</i>		<i># of years</i>		<i>inflate</i>		<i>log of income</i>	
	coef	rob. se	coef	rob. Se	coef	rob. se	coef	rob. se
household size	-0.210***	0.056	-0.146*	0.076	0.101	0.299	-0.204***	0.021
household size squared	0.020***	0.004	0.004	0.006	0.018	0.019	0.021***	0.001
household head age	0.028*	0.016	-0.011	0.018	0.012	0.052	0.029***	0.006
household head age squared	-0.000	0.000	0.000	0.000	0.001	0.001	-0.000***	0.000
unemployment ratio	-0.233*	0.121	-0.080	0.155	0.861*	0.515	-0.231***	0.046
household head education	0.020	0.022	0.040*	0.024	0.149	0.158	0.021***	0.008
household head education squared	0.001	0.001	-0.001	0.001	-0.005	0.009	0.001**	0.000
household head is working	0.143**	0.068	0.012	0.060	1.481***	0.282	0.174***	0.025
head is female	-0.054	0.092	0.014	0.084	-0.258	0.566	-0.051	0.034
Number of children <=5 yrs old	-0.160***	0.060	0.139**	0.066	-0.320	0.266	-0.172***	0.023
Number of children 6-10 yrs old	-0.191***	0.059	0.126	0.079	0.074	0.231	-0.192***	0.022
Number of boys 11-14 yrs old	-0.231***	0.062	0.001	0.075	-0.052	0.331	-0.232***	0.023
Number of girls 11-14 yrs old	-0.255***	0.062	0.136*	0.073	-0.834*	0.436	-0.280***	0.025
Number of males 15-19 yrs old	-0.189***	0.059	0.048	0.055	-0.513	0.326	-0.201***	0.023
Number of females 15-19 yrs old	-0.169***	0.053	0.041	0.073	-0.541	0.354	-0.178***	0.021
Number of males 20-34 yrs old	-0.106*	0.055	0.037	0.074	-0.433	0.312	-0.115***	0.021
Number of females 20-34 yrs old	-0.150***	0.049	0.032	0.057	-0.811**	0.324	-0.170***	0.019
Number of males 35-59 yrs old	-0.008	0.069	0.113	0.095	0.071	0.392	-0.011	0.026
Number of females 35-59 yrs old	0.032	0.069	0.131	0.135	-0.569	0.368	0.017	0.026
household Social Capital Index	-0.021	0.028	-0.109***	0.030	0.004	0.163	-0.016	0.010
household has either temp or perm migration	0.104*	0.055	-0.063	0.058	0.657***	0.236	0.117***	0.020
% of males 20-39 by municipality	-0.034**	0.016	0.011	0.026	0.049	0.065	-0.034***	0.006
number of property-loss related shocks prior to move (until now if non-mover)	0.017	0.028	-0.545***	0.082	1.385***	0.368	0.032***	0.011
Morris score index 1990			-0.126	0.111	-2.838***	0.436		
whether indoor toilet in 1990			-0.059	0.050	-0.679**	0.319		
number of years since internal move (0 years for not-mover)	0.041***	0.012					0.090***	0.014
constant	8.723***	0.481	2.310***	0.473	-1.010	1.716	8.588***	0.188
Number of observations	1,623		1,623		1,623		1,623	
Number of zero observations			1,459					
Number of Primary Sampling Unit	228		228				228	
R2	0.256						0.251	
chi2	18.067		41.208				18.221	
P-value of Vuong test	0.000		0.000				0.000	

note: *** p<0.01, ** p<0.05, * p<0.1

Note: stars indicate significance levels: * .1 level, ** .05 level, *** .01 level. Estimates are corrected for intra-cluster correlation and sampling design; heteroskedasticity-robust and consistent standard errors are then reported.

Source: Own calculations on 2005 ALSMS, including oversample

To be valid, IV estimates have to pass a number of empirical diagnostic tests. Some tests are not available when the first-stage is a Zero Inflated Poisson model, in which cases they are based on the linear case. First, the variable to be instrumented has to be endogenous, justifying the use of IV. The Anderson-Rubin test of endogenous regressors performs the check, where a rejection of the null hypothesis means that the coefficient of the endogenous regressor is statistically different from zero in the structural equation. Both income and consumption coefficients show a p-value of 0.000, a sign that migration is highly endogenous and needed to be instrumented for. This also confirms that the OLS coefficient of migration is biased.

Then, we need to prove that our instrumental variables are valid and strong. The Hansen J-statistic measures over-identification of the instrument, i.e. its validity. The null hypothesis is that the instruments are valid and uncorrelated with the error term, and that the tested instruments are correctly excluded from the estimated equation. This null hypothesis should not be rejected, which is the case for income (p-value of 0.91), but not for consumption (0.00). Our instruments are strong since the F-test of joint significance of the instruments is around 10, the rule of thumb indicated in the literature (Staiger and Stock, 1997). Finally, our instruments are valid in the first stage regression, as both instruments are highly significant for income and consumption, and our instrumented variable is significant in the second stage. In addition to the standard tests, in the case of the first stage ZIP model some additional statistics are provided. The Vuong (1989) likelihood-ratio (LR) test of Poisson versus ZIP model is strongly rejected, providing an empirical proof of the use of ZIP estimation - confirming the intuition of overdispersion of the distribution due to the excess zeros-. Another LR test of a parameter α indicating the heterogeneity of the observations being statistically equal to zero is not rejected, favouring the ZIP over the Zero Inflated Negative Binomial (ZINB) model, which assumes unobserved heterogeneity among observations.

Since the over-identification test fails when the dependent variable is the logarithm of total household per-capita consumption, our econometric results cannot point to a statistically reliable impact of migration on household per capita consumption. This confirms earlier results of PSM and descriptive statistics of section 3.3.

However, we find a strong positive effect of the number of years since migration took place on income per capita. Evaluated at the average value, one additional year the household spends in peri-urban Tirana increases income by 9%¹³, provided that the household made the

¹³ It should be kept in mind that the instrumented variable measures the local average treatment effect. So, households moved first probably had the worst living conditions -i.e. low wealth, no indoor toilet- and moving made the biggest difference for them.

decision to migrate. A two-step procedure using an endogenous dummy variable was also applied, whose results can be found in Appendix 2. For the indicator variable, we find that household migrated internally have an income increased by 92%. The comparison to the OLS results shows the extent of the bias, as the migration effect is notably underestimated without instrumenting for it. Furthermore, control variables have the expected effect on income per capita: it is negative for household size and positive for age of the head, size of land owned, and for any international migration exposure. Overall, our econometric analysis confirms that income of migrant households is higher than for rural non-migrant's, controlling for other crucial factors being equal. However, this has not resulted in superior living standards, as consumption levels have not necessarily increased.

6. Conclusions

This study highlights significant differences, in terms of socio-economic characteristics, between households that moved from rural areas to peri-urban Tirana and rural households that did not migrate internally. Income per capita has increased as an effect of migration, and a larger fraction of internal migrant households declare their life as having improved. In line with the human capital approach, individuals of internally migrated households are younger. This confirms the Harris-Todaro migration theory, providing empirical evidence of a positive financial return to migration in case of Albania.

Conversely, our results do not show statistically reliable effects of the internal move on consumption. Income has grown more than consumption with the move to peri-urban Tirana. Migrant households in peri-urban Tirana are able to earn higher wages but they are irregular, and have to cover higher living expenses, as well as costs not occurring in rural areas. Water and some food products are almost free in some rural areas, but have to be bought at a high cost by migrant families. Furthermore, migrants have to finance the construction of their new house, which can often take a long time. It is also possible that households are saving to migrate internationally. A final reason for this discrepancy between income and consumption is that migrants are financially helping their families back home. More research is needed to test these hypotheses.

Looking at housing quality and asset ownership compared to 1990, internal migration has had a negative impact. Migrant households are also significantly worse off than other groups in terms of housing, health, and access to clean and running water. While the economic situation has improved, it seems to be accompanied by worsened living conditions.

Furthermore, access to the formal labour market seems extremely difficult for internal migrants in Greater Tirana. Working age adults in peri-urban migrant households are more likely to be unemployed, and to work fewer hours, than their counterpart in rural households. However, migrant households do show higher expectations regarding accessing higher education for their children being, in general, satisfied with the quality of education. Nevertheless, school attendance is still low for migrant children, possibly due to household poverty or infrastructure bottlenecks.

Our findings highlight that the impact of internal migration of rural households to peri-urban Tirana has been less positive than one would expect, although their income increases by 9% a year provided that they decide to move. Migrant households are still vulnerable due to unfavourable living conditions and unstable employment. They do not have higher consumption levels than their rural counterparts who did not migrate.

An important question arises from our analysis: why does internal migration continue, even though its impact on poverty is unclear? It might have become clear recent to potential migrants that life is not necessarily better in Tirana than in rural settings. However, other literature shows that migrants in peri-urban areas expect improved conditions in the medium-term. This is confirmed by the fact that longer-term residents and earlier migrants enjoy higher income than recent movers. However, structural changes in infrastructure and labour markets still need to take place to improve the livelihood of migrants in peri-urban Tirana.

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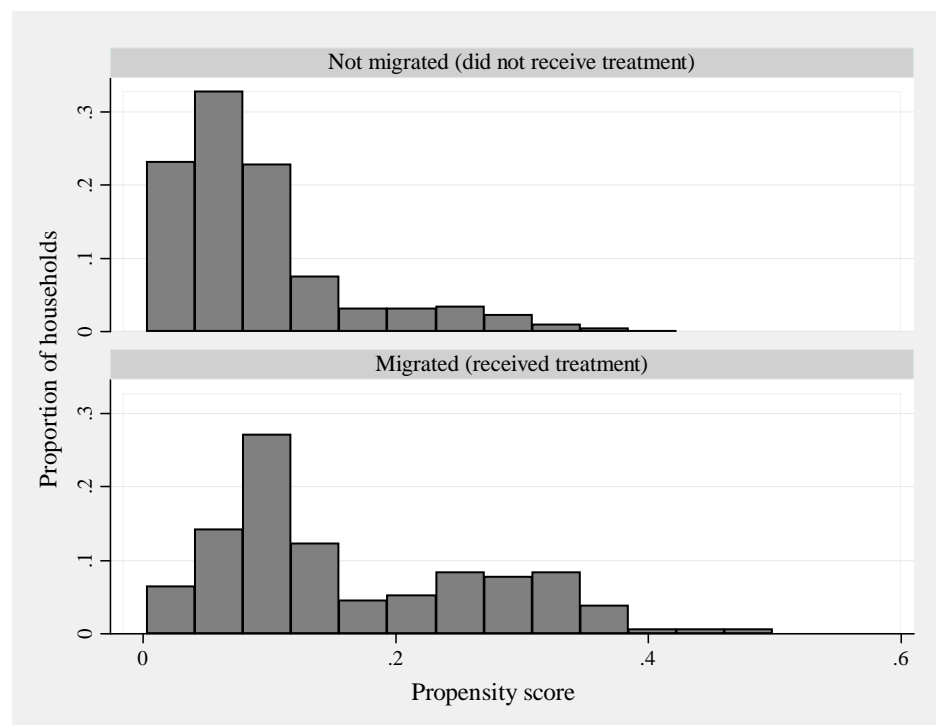
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Appendix 1

Figure 1: The distribution of the propensity score by treatment group



Source: Own calculations on 2005 ALSMS, including oversample

Appendix 2

Alternative specification with migration as dummy endogenous variable

Model <i>dependent variable</i>	OLS <i>log of income</i>		Probit <i>whether head mig.</i>		IV <i>log of income</i>	
	coef	rob. se	coef	rob. se	coef	rob. se
household size	-0.211***	0.056	-0.084	0.147	-0.208***	0.021
household size squared	0.020***	0.004	-0.007	0.010	0.021***	0.001
household head age	0.028*	0.016	-0.009	0.028	0.029***	0.006
household head age squared	-0.000	0.000	-0.000	0.000	-0.000***	0.000
unemployment ratio	-0.240**	0.121	-0.328	0.257	-0.243***	0.046
household head education	0.021	0.022	-0.075	0.078	0.023***	0.008
household head education squared	0.001	0.001	0.003	0.004	0.001**	0.000
household head is working	0.150**	0.067	-0.759***	0.141	0.185***	0.026
head is female	-0.054	0.092	0.129	0.255	-0.057*	0.034
Number of children <=5 yrs old	-0.158***	0.060	0.156	0.128	-0.164***	0.023
Number of children 6-10 yrs old	-0.188***	0.059	-0.047	0.113	-0.182***	0.022
Number of boys 11-14 yrs old	-0.230***	0.062	0.009	0.157	-0.228***	0.023
Number of girls 11-14 yrs old	-0.256***	0.062	0.445**	0.224	-0.276***	0.025
Number of males 15-19 yrs old	-0.189***	0.058	0.246	0.152	-0.198***	0.023
Number of females 15-19 yrs old	-0.170***	0.053	0.239	0.166	-0.175***	0.020
Number of males 20-34 yrs old	-0.106*	0.054	0.197	0.149	-0.112***	0.021
Number of females 20-34 yrs old	-0.154***	0.049	0.426***	0.154	-0.172***	0.019
Number of males 35-59 yrs old	-0.007	0.069	0.009	0.167	-0.009	0.026
Number of females 35-59 yrs old	0.028	0.069	0.291	0.181	0.020	0.026
household Social Capital Index	-0.022	0.028	0.000	0.083	-0.021**	0.010
household has either temp or perm mig	0.104*	0.055	-0.328***	0.116	0.115***	0.020
% of males 20-39 by municipality	-0.034**	0.016	-0.022	0.032	-0.033***	0.006
Number of property-loss related shocks prior to move (until now if non-mover)	0.018	0.028	-0.651***	0.136	0.030***	0.011
Morris score index 1990			1.381***	0.223		
whether indoor toilet in 1990			0.386**	0.161		
whether head migrated	0.413***	0.101			0.819***	0.133
constant	8.701***	0.481	0.487	0.853	8.561***	0.191
Number of observations	1,623		1,623		1,623	
Number of Primary Sampling Units (PSU)	228		228		228	
R-squared	0.259				0.251	
χ -squared	18.205		9.226		18.298	

note: *** p<0.01, ** p<0.05, * p<0.1

Note: stars indicate significance levels: * .1 level, ** .05 level, *** .01 level. Estimates are corrected for intra-cluster correlation and sampling design; heteroskedasticity-robust and consistent standard errors are then reported.

Source: Own calculations on 2005 ALSMS, including oversample

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