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**Do Agrarian Households use International Migration as an Income Diversification Strategy?
Evidence from Albania**

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Do Agrarian Households use International Migration as an Income Diversification Strategy? Evidence from Albania

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Outline

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- 2 Background on Albania
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“Migration is the oldest action against poverty” (Galbraith 1979).

Introduction

- Farming is a risky business; therefore, rural farm households have the incentive to **diversify** income sources.
 - through nonfarm work in the local economy.
 - by sending some household members away as migrant workers.
- Migration, an income diversification strategy, can have dramatic effects on the labor supply decisions of nonmigrating household members, through its **labor** and **income effects**.

Motivation

- Previous studies (McCarthy et al. 2009; Miluka et al. 2010) on international migration in Albania conclude that it has no impact on agricultural production; at best, it is being used to exit farming.
 - Gaps in these studies:
 - they do not model income effects through remittances.
 - they do not model the nonfarm sector.
 - As a result, earlier studies may not be providing the complete picture.

Objectives

- In this paper, I do fill the these gaps by estimating the **labor** and **income effects** of international migration among rural farm households in transitional Albania.
 - Specifically, I examine whether rural Albanian farm households use international migration as a means to exit farming or to further diversify their income sources.

Hypotheses

H1

International migration and remittances positively affect *participation* in local nonfarm activities.

H2

International migration and remittances positively affect *income* from the local nonfarm activities.

H3

International migration and remittances negatively affect *income* from farming.

What I found

- I find evidence in support of income diversification.
 - Remittances positively affect participation in nonfarm self-employment activities.
 - Remittances positively affect farm income.
 - This suggests that previous studies (McCarthy et al. 2009; Miluka et al. 2010) that only considered **labor effect** underestimated the overall impact of international migration in rural Albania.

Why should we care?

- Policy recommendations based on the previous partial analyses will advocate for measures to prevent the flow of labor out of rural Albania.
- However, this paper encourages policy makers in Albania to exercise caution in their efforts to reverse international migration since remittances that migrants send back home seem to have positive impacts on both the farm and nonfarm sectors.

Brief historical background

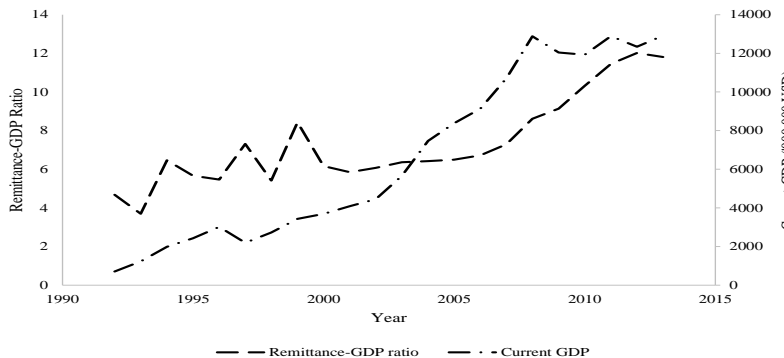
- End of communism in 1990
 - Contraction of the agricultural sector
 - Massive out-migration from the rural areas
- Land reforms
 - Redistribution (≈ 2.7 acres per household)
 - Fragmented farmland system
 - Small-scale agricultural system
- After two decades of reforms,
 - Rural poverty still prevails
 - Massive out-migration from the rural areas still persists, primarily to Greece and Italy (Carletto et al. 2006)

Geography of migration pattern



Remittances and the Albanian Economy

Figure 1: Remittances and GDP, Albania, 1992-2013.



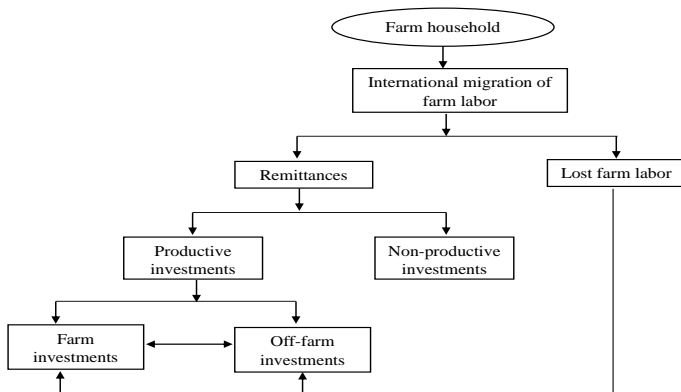
Economic theory

The New Economics of Labor Migration (NELM)

- The farm household is the decision-making unit rather than the individual migrant. Migration can be used as a risk-pooling strategy by the family (Stark and Bloom 1985).
- Farm household participates in migration to maximize expected income, to minimize risks, and to loosen constraints associated with a variety of market failures (Massey et al. 1993).
- Migration and remittances can create income growth linkages for the migrant-sending farm households.
 - “Push” and “pull” effects on labor allocation decisions of remaining family members.

Channels of migration impacts

Figure 2: Impact of International Migration on the Farm Household.



Literature review

- Studies looking at the effect of migration on both the farm and nonfarm sector, within the NELM framework, are limited in the literature.
 - Taylor, Rozelle and de Brauw (2003) in China.
 - Wouterse and Taylor (2008) in Burkina Faso.
 - Arslan and Taylor (2012) in Mexico
- We aim to contribute to the empirical migration literature by testing the hypotheses H1 through H3 for farm households in rural Albania.

Data

- 2005 Albanian Living Standard Management Survey (ALSMS05)
 - Conducted by *Instituti I Statistikave* (INSTAT), with technical help from the World Bank.
 - **3,840** representative households were randomly sampled.
 - Detailed migration module with information households' migration profile and remittances receipts.
 - International migrant: the spouse or child of the household head, ≥ 15 years old, living outside of Albania (≈ 2 persons per household).
 - Remittances (cash and in-kind) in their foreign denominations are converted into Albanian Leks ($\approx \$1,616$ per migrant household).

Data

- Income variables are from Rural Income-Generating Activities (RIGA) database.
 - Collaborative effort by the Food and Agriculture Organization (FAO), the World Bank, and the American University.
 - We identify 3 (net) income sources: (i) Farm income, (ii) Nonfarm wage income, and (iii) Nonfarm self-employment income.
- **1,383** farm households with complete information are used for the empirical analysis.

Descriptive statistics

Table 1: Weighted means of nonfarm activity participation rates

	Overall	Migrant HH	Non-migrant HH
Total nonfarm	0.4	0.36**	0.42**
Wage employment	0.31	0.27*	0.33*
Self-employment	0.11	0.10	0.12
Observations	1,383	458	925

**,* denote significance at the 5% and 10% level, respectively.

Descriptive statistics

Table 2: Weighted means of incomes

	Overall	Migrant HH	Non-migrant HH
Farm income	1,838	1,991***	1,755**
Total nonfarm	1,929	1,636*	2,087*
Wage employment	1,065	845***	1,183***
Self-employment	864	791	903
Observations	1,383	458	925

***,**, * denote significance at the 1%, 5%, and 10% level, respectively; Incomes are in 2005 USD (\$1=98.37 Albanian Leks).

Descriptive statistics

Table 3: Weighted means of household characteristics

	Overall	Migrant HH	Non-migrant HH
Human capital			
If household head is female	0.06	0.08***	0.04***
Age of household head	51	57***	47***
Education of household head	8.13	7.18***	8.63***
Household size	4.7	4.5***	4.9***
Agricultural assets			
Land size cultivated (acres)	2.1	2.5***	1.9***
Number of farm plots owned	3.44	3.61***	3.35***
Observations	1,383	458	925

*** denotes significance at the 1% level.

Empirical framework

- The farm household maximizes one period, twice-differentiable utility function

$$\begin{aligned}
 U &= EU(C, \ell : \tau) \quad s.t. \\
 PC &= P_F Q + \sum_i Y_i + R(M) + A, \quad i = 1, 2
 \end{aligned} \tag{1}$$

- Stochastic farm production function (Just and Pope 1978):

$$Q = f(l, l_F : \tau) + v \tag{2}$$

- Access to nonfarm income-generating activities:

$$Y_i = [g(l_i : \tau)] S_i \quad i = 1, 2 \tag{3}$$

Empirical framework

- Nonfarm activity entry constraint:

$$\sum_i S_i \leq \Omega, \quad \Omega = h(M, R(M), \kappa), \quad i = 1, 2 \quad (4)$$

- Imperfect factor market imposes binding labor constraint:

$$\sum_i l_i + \ell + l_F \leq T - M \quad (5)$$

- The farm household maximizes the expected utility:

$$\text{Max}_{l_F, l_i} EU[\{P_F f(l, l_F) + g(l_i) + R(M) + A\}, \ell : \tau] + \lambda [T - l_F - l_i - M] \quad (6)$$

- Reduced-form solutions can be represented as:

$$Y_{n,F} = \psi(\gamma : M, R, \tau) \quad (7a)$$

$$Y_{n,i} = \vartheta(\delta : M, R, \tau), \quad i = 1, 2 \quad (7b)$$

Econometric issues

- Selectivity/censoring of the nonfarm income variables.
 - Due to the entry constraint, S_i
- Endogeneity of migration variable, M
- Censoring and endogeneity of remittance variable, R

Identification strategy

- I use an iterated system estimation, akin to 3SLS, to estimate the impact of international migration and remittances on farm and nonfarm incomes.

- In stage 1, I apply a two-step procedure to first estimate

$$M = \zeta(\alpha : \tau, Z_M) + \varepsilon_M$$

$$R = \varpi(\beta : \tau, M, Z_R) + \varepsilon_R$$

- Negative Binomial (NB2) is used to estimate M .
- Migration instruments
 - a dummy=1 if a household member spoke Greek/Italian in 1990—cultural affinity (Kilic et al. 2009; Miluka et al. 2010).
 - minimum distance (Km) from Greece cross point (Miluka et al. 2010).
 - minimum distance (Km) from Italy ferrycross point.

Identification strategy



Identification strategy

- I correct for censorship in R .
 - A lognormal tobit model is used to estimate R .
 - Given migration, motivations to remit are complex. Following Taylor et al. (2003), I use village norms to remit as an instrument (Z_R). This is proxied by average total remittances in the district, dropping the observed household.

Structural model—System of income equations

- When we estimate the system of income equations, we apply Lee's (1978) generalization of Amemiya (1974) two-stage estimator for limited dependent variables (e.g., see Taylor and Wouterse 2008).
 - It gives me the flexibility to estimate the impacts of both M and R on nonfarm activity choice (to test for H1).
 - This allows me to estimate the farm and nonfarm incomes as a system to exploit possible information in the cross-equation error terms for efficiency purposes.

Structural model—System of income equations

- I estimate the mapping from the latent participation decision to observed participation with a probit model to generate inverse Mills ratio—generalized residuals—for each $Y_{n,i}$.
- The inverse Mills ratios are included to the nonfarm income equations as additional covariates

$$Y_{n,F} = \psi(\gamma : \hat{M}, \hat{R}, \tau) + \eta_{n,F} \quad (8a)$$

$$Y_{n,i} = \vartheta(\delta : \hat{M}, \hat{R}, \tau, \lambda_{n,i}) + \eta_{n,i}, \quad i = 1, 2 \quad (8b)$$

- Then, I estimate the system above by OLS.

1st stage estimation—Validity of instruments

- Theoretical arguments—intuitive explanation (Murray 2006).
- Test of significance, especially for Z_M . Wald test does not reject the joint significance of the migration instruments at the 5% level.
- The remittance instrument is found to be positive and statistically significant at the 1% level.

International migration, remittances, and nonfarm activity choice (H1)

Table 4: Marginal effects from probit estimation of nonfarm activity participation

	Self-employment	Wage employment
No. migrants	-0.035 (0.045) [†]	-0.003 (0.068)
Remittances	0.019* (0.011)	-0.00 (0.017)

[†] Bootstrapped standard errors in the parentheses.

* denotes significance at the 10% level.

International migration, remittances, farm and nonfarm Incomes (H2 & H3)

Table 5: Elasticities from system estimation of farm and nonfarm incomes

	Self-employment	Wage income	Farm income
No. migrants	0.189 (0.313) [†]	0.022 (0.155)	-0.015 (0.051)
Remittances	0.000 (0.168)	0.001 (0.067)	0.078*** (0.025)

[†] Bootstrapped standard errors in the parentheses.

*** denotes significance at the 1% level.

Summary of results

H1

Positive and significant effect of remittances on participation in nonfarm self-employment activities (e.g., see Funkhouser 1992; Acosta 2007).

H2

No significant impact of the number of international migrants and remittances on nonfarm activity incomes.

H3

Positive and significant effect of remittances on farm income (e.g., see Rozelle et al. 1999; Taylor et al. 2003).

Conclusions

- I find that international migration affects farm and nonfarm incomes via remittances. The impact through reduced labor is insignificant.
- I find limited evidence to support the assertion that international migration is being utilized by farm households in rural Albania to leave the farm sector.
- The findings support the basic tenets of income diversification.
 - These form complex livelihood strategies employed by the farm households in a diversified rural economy.
- Policy makers need to exercise caution in their efforts to reverse out-migration; remittances that migrants send back home seem to have positive impacts on both farm and nonfarm sectors.
 - Since 2010 Albanians can travel to European Union countries without a visa, following, *candidate for accession* status in October 2013.

Specific policy recommendations

- Measures should be put in place to maximize the developmental potential of remittances. Specifically, policy makers should
 - improve the regulation and integrity of money transfer industry
 - reduce remittances fees
 - improve banking services in rural Albania.

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Questions?