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Migration and Income Diversification: Evidence from Burkina Faso

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Summary. — This paper uses limited-dependent variable methods and new data from Burkina Faso to test the impact of inter-continental and continental migration on activity choice and incomes in rural households. Econometric evidence supports our theoretical expectation that the impact of emigration varies both by migrant destination and production activity. We find no evidence of either positive or negative effects of continental migration on agricultural or livestock activities, and only a small negative impact on nonfarm activities. However, inter-continental migration, which tends to be long-term and generates significantly larger remittances, stimulates livestock production while being negatively associated with both staple and nonfarm activities.

Key words — West Africa, Burkina Faso, rural livelihoods, migration, income diversification

1. INTRODUCTION

The diversification of incomes into noncrop production has been identified as a critical livelihood strategy for rural households, particularly in Africa (Barrett, Reardon, & Webb, 2001). Recent research suggests that household members who migrate can facilitate investments in new activities by providing rural households with liquidity, in the form of remittances, as well as income security, in the form of a promise to remit in the event of an adverse income shock. That is, migration enables rural households to overcome imperfect credit and insurance markets. If this hypothesis is correct, then other things being equal, the presence of migrants in rural households should be positively correlated with the diversification of production into nonstaple activities.

However, migration itself represents a diversification strategy with characteristics that may resemble those of other investments. Usually it entails costs (transportation, maintenance of the migrant until s/he becomes established at the migrant destination, diversion of the migrant's time away from household production activities, and in the case of international migration, the costs of border crossings). It also entails risks (that the migrant may fail to find work and/or send remittances to the household). Costs and risks are likely to be greater for international migration, which often entails travel over long distances and long periods of separation between migrant and

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household, and which always entails legal or illegal border crossings. Because of this, the relationship between migration and diversification into nonstaple activities is theoretically ambiguous; it must be determined empirically.

This paper uses econometric methods and new data from Burkina Faso to explore the relationship between migration and rural income diversification. The analysis is based upon unique new data collected by one of the authors (Wouterse) in a 2003 survey of 223 households in four villages situated on the Central Plateau of Burkina Faso. Rural households in these villages send out migrants within the African continent but also inter-continentally, primarily to Europe. Many also derive income from cash crops and diversify their household production into livestock and nonfarm activities. In the West African context, cash crop and nonfarm production activities tend to be both risky and labor intensive. In contrast, livestock production tends to be relatively labor extensive, with high output per worker-day, but it is costly in terms of capital inputs (purchase of livestock) and entails risks as well (e.g., loss of animals to disease or drought). We test separately the effects of African and inter-continental migration on participation in cash crop, livestock and nonfarm activities and on income from these activities. Our findings offer tentative evidence in support of the New Economics of Labor Migration (NELM) view. Results show that inter-continental migration enables households to shift into riskier but higher-return activities. A loss of labor to continental and inter-continental migration, however, negatively affects labor-intensive activities, a finding consistent with missing labor markets.

We begin by presenting, in Section 2, a discussion of diversification and migration theory, including the role of migration in a context of missing or incomplete rural markets, as posited by the NELM. Section 3 describes the study area and data. Section 4 presents the agricultural household model used to explore the role of continental and inter-continental migration in determining household activity choice and activity incomes. It provides the conceptual basis for the empirical analysis. Section 5 reports our econometric results, followed by a discussion of econometric issues related to the use of cross-section data. We conclude in Section 6 by discussing some of the implications of our findings for understanding the influences of migration on rural income diversification and welfare.

2. DIVERSIFICATION, MIGRATION, AND INCOMPLETE MARKETS

(a) *"Push" and "pull" motives for diversification*

Rural households in developing countries typically derive their income from a number of sources (Reardon, 1997). Motives for income diversification can be categorized as "push" and "pull". Push factors prompting diversification often are linked with risk reduction (Barrett *et al.*, 2001). Frequently, rural households have to cope with both poverty and a high degree of income variability. In the face of incomplete insurance markets, income diversification is viewed as a household strategy to minimize income variability and ensure a minimum level of income (Reardon, Delgado, & Matlon, 1992). Pull factors refer to an effort by rural households to exploit strategic complementarities between activities, such as crop-livestock integration (Barrett *et al.*, 2001). Despite the advantages of having a diversified "income portfolio", rural households without access to credit frequently find themselves in the conundrum of lacking the liquidity to invest in nonstaple activities.

(b) *Migration determinants and impacts*

Many explanations for why people migrate have been advanced, and each has its own implications for predicting migration's impacts on sending households, including on income diversification. [1] In neo-classical migration models (e.g., Todaro, 1976) a rational individual bases the decision to migrate on the expected wage at the destination and the costs involved in migrating. Migration in such models affects the migrant sending area only through a loss of labor, the opportunity cost of which depends on local labor supply, as well as through a loss of human or financial capital. However, when migrants and households maintain ties with each other after migration, it is more appropriate to analyze migration in a household model (Stark, 1991). According to the NELM theory, migration may represent an effort by households to overcome market failures constraining local production. An implicit contractual arrangement exists, wherein the household foregoes the migrant's labor and may even finance migration in order to receive remittances at a later stage. Household members who migrate can facilitate investments in new activities by providing liquidity,