

**MIGRATION: NEW DIMENSIONS AND CHARACTERISTICS,
CAUSES, CONSEQUENCES AND IMPLICATIONS
FOR RURAL POVERTY**

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1. INTRODUCTION AND EXECUTIVE SUMMARY

Interactions between migration and poverty—both at migrant origins and destinations—are among the least researched and understood topics in economics. This is surprising, because the vast majority of the world’s migrations originate in rural areas, where most of the world’s poverty is also concentrated. How the migration of humans out of rural areas affects those left behind is not only important from a social welfare point of view. In light of the increasing integration of markets, it also may have ramifications for economic growth outside of rural areas (e.g., by affecting food production, agricultural exports, the rural demand for manufactured goods, and future economic surplus in agriculture available for investment anywhere in the economy). And the economic welfare of non-migrants certainly influences future migration pressures. At migrant destinations, immigrant labour enters into local production activities, complementing some factors while possibly competing with others (including some types of non-immigrant labour). It influences both the level and distribution of income in migrant-host economies.

The possible impacts of migration on poverty are bracketed by two extremes, which we might call the “optimistic” and “pessimistic” scenarios.

An optimistic view

The optimistic scenario is that migration reduces poverty in source areas by shifting population from the low-income rural sector to the relatively high-income urban (or foreign) economy. If income in the migrant-source economy does not fall (or falls only slightly) in migration’s wake—e.g. if the marginal product of migrants’ labour prior to migration and the capital migrants take with them are small—the loss of population to migration raises the average incomes of those left behind. In the destination economy, although migrant earnings may be lower initially than those of non-migrants, the earnings trajectory of migrants may be

steep, particularly if migration positively selects individuals on the basis of skills, entrepreneurial ability, etc. If this is the case, then relatively high poverty rates among immigrants at their destinations may be ephemeral.

Income remittances by migrants contribute directly to incomes of households in migrant-source economies. Official International Monetary Fund (IMF) estimates placed total worker remittances plus compensation of employees at \$95 thousand million in 1998 (the most recent year for which these numbers are available), far exceeding official development assistance. This figure understates remittances, which include in-kind and clandestine transfers. International migration represents only a small share of total world migration (which also includes internal migration). It is not clear what share of total remittances the receipts from migrants abroad represent. Nonetheless, household surveys typically find that remittances account for an important share of total income in less developed country (LDC) rural areas, and the little information available suggests that they constitute a large share of migrant earnings, as well. If migrants originate disproportionately from poor households, remittances may directly reduce poverty in migrant-source areas.

Migration and remittances also may contribute indirectly to incomes at migrant origins and destinations, in myriad ways. In the imperfect market environments characterizing LDC rural economies, they may loosen liquidity and risk constraints on production in migrant-source households (see the new economics of labour migration, below). Expenditures by remittance-receiving households may create income multipliers in migrant-source economies, perhaps increasing income in non-immigrant households. Even if migrants do not originate from impoverished households, the indirect effects of remittances, through expenditure linkages, may nonetheless favour the poor.

At migrant destinations, the arrival of immigrants may increase local economic activity and create or preserve good jobs for local residents, possibly including poor natives, by creating economies of scale and multiplier effects. Using single-equation models and census data from

United States metropolitan areas, a number of studies in the 1980s concluded that immigrants have few wage-depressing or unemployment-increasing effects in local labour markets. Instead, immigrants were found to have positive impacts on employment and wages in the urban labour markets they entered.

A pessimistic view

For each optimistic view summarized above, there is a pessimistic counterpart. In general, the most pessimistic studies on migration-development interactions in source areas appeared in the 1970s and 1980s; research findings on this topic were more optimistic in the 1990s. By contrast, studies of impacts of immigration on host economies, largely optimistic in the 1970s and 1980s, have become more pessimistic in recent years.

In order for migration to raise per-capita incomes in migrant-source economies, it is necessary for income not to fall—or else to fall only slightly—when migrants leave. Pessimistic studies argue that this is generally not the case; migration reduces income in migrant-sending areas because the marginal product of the migrant's labour is large prior to migration and migrants take productive capital (including human capital) with them when they go. Income remittances by migrants only partially compensate for these lost-labour and lost-capital effects. In this pessimistic scenario, poverty may increase if migrants originate from poor households, or if the labour of poor villagers—on their own or on others' farms—becomes less productive as a result of the lost migrants' labour (and capital). From the point of view of the source region, migration represents a “labour export,” and remittances are payment for that export. The availability of lucrative migration opportunities for some households may have a “Dutch disease” effect on source economies, as local production activities compete with migration for limited labour and other resources. Households and individuals participating in migration benefit (otherwise, it is not clear why they would participate). However, these beneficiaries of migration may not include the rural poor.

If migration is costly and risky, at least initially, migrants may come from the middle or upper segments of the income distribution in the source areas, not from the poorest households. If migration adversely affects local production, the incomes of the poor may fall, both relatively and absolutely.

Just as migrant remittances may generate positive income multipliers in source economies, decreases in production and income may create negative multipliers and even a downward spiral in local economic activity, adversely affecting the poor. Remittance-receiving households may not spend their income on goods or services offered by poor villagers, thereby limiting migration's potential to alleviate poverty through local expenditure linkages.

At migrant destinations, immigrants may compete with at least some workers in local labour markets, and native workers may respond to the arrival of immigrants by moving to less immigrant-impacted labour markets. The "flight" of native workers from immigrant-impacted labour markets tends to diffuse migration's impacts across regions and make it difficult to identify immigration's effects on employment and earnings. In the United States, immigrants are concentrated at the bottom (and also at the top) of the skill spectrum (they are underrepresented at the mid-skill levels). Those with few skills may compete with low-skilled native workers, who are most likely to be poor.

Bridging the extremes

The true impacts of migration are likely to be found not at one extreme or another, but somewhere in between. A nascent body of migration research in recent years suggests that the interactions between migration and key economic variables, both at migrant origins and destinations, are multifaceted, representing a complex mixture of "optimistic" and "pessimistic" outcomes. For example, recent studies find that migration has both negative "lost-labour" and positive remittance effects on source economies. In the United States, new research indicates that the impacts of immigration are complex, operating through indirect channels largely

ignored by past research. New research methods generally are required to uncover interactions between migration and economic changes at migrant origins and destinations.

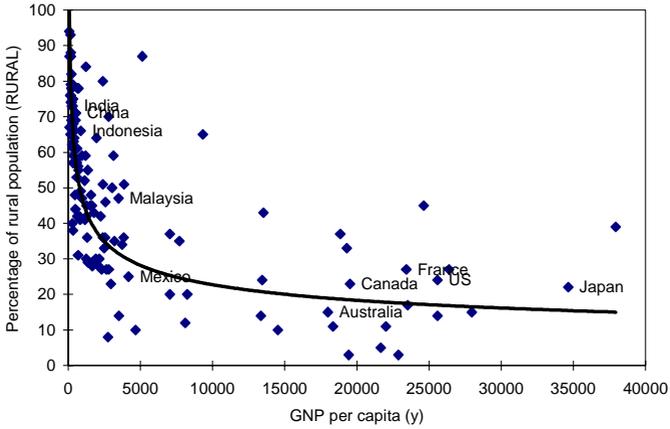
Some insights into migration-poverty interactions may be gleaned, mostly indirectly, from the existing literature. Nevertheless, almost no studies explicitly address this topic, and an agenda for future research is clearly needed. The overarching goal of this paper is to summarize the state of knowledge and provide a basis for identifying a future research agenda on migration, with a focus on poverty.

The remainder of this paper is organized into three sections. Section 2 presents a brief overview of rural out-migration and international migration, their dimensions and basic characteristics. Section 3 summarizes theories of internal and international migration and examines evidence on migration's impacts in source and destination areas. The migration literature is vast, and the aim throughout is to selectively synthesize rather than offer an exhaustive review of migration research. A more detailed review of migration research appears in a longer version of this report (Taylor, 2000). Section 4 presents a discussion of migration and rural poverty and priorities for future migration-and-poverty research.

2. OVERVIEW OF DIMENSIONS AND CHARACTERISTICS

The migration of labour geographically, out of rural areas, and occupationally, out of farm jobs, is one of the most pervasive features of agricultural transformations and of economic growth. This is true both historically in developed countries (DCs) and currently in less-developed countries (LDCs). Taylor and Martin (forthcoming) compare rural population and agricultural labour market shares of countries at different levels of per capita GNP (see Figure 1). Among nations, the share of rural population declines sharply as per-capita incomes increase, from 70 to 80 percent in countries with the lowest per-capita GNPs to less than 15 percent in the highest-income countries. The share of the national

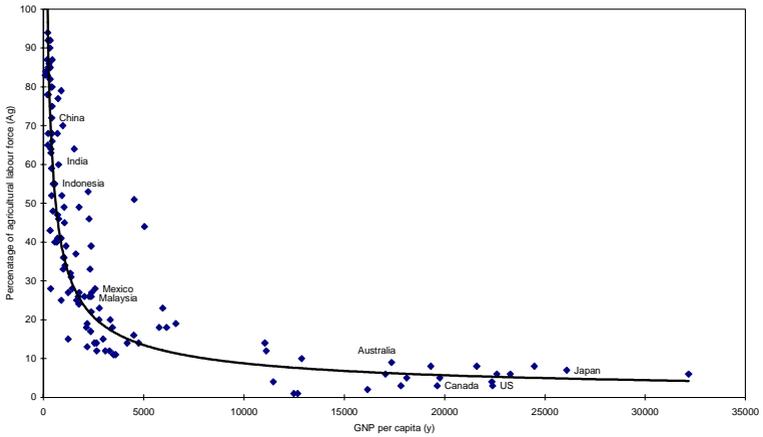
FIGURE 1
Rural population shares and GNP per capita, 1994



Regression line: $RURAL = 395.12 y^{-0.31}$ ($R^2 = 0.535$, $N = 127$)

Source: Taylor and Martin (forthcoming)

FIGURE 2
Agricultural labour shares and GNP per capita, 1994



REGRESSION LINE: $AG = 2672.9 y^{-0.6211}$ ($R^2 = 0.783$, $N = 122$)

Source: Taylor and Martin (forthcoming)

workforce in agriculture plunges even more sharply (Figure 2), from more than 90 percent in low-income countries to less than 10 percent in high-income countries. Developing countries from Mexico to India have experienced dramatic declines in their rural population shares over the past 3 decades, despite high rates of natural population growth in rural areas.

The world's great migrations out of rural areas are accelerating, making internal and international migration potentially one of the most important development and policy issues of the 21st Century. The most populous countries also are among the most rural (Figure 1). The most striking example of this, as well as of the controversies surrounding migration, is China. Approximately 70 percent of China's work force is in the agricultural sector. As a result, China's agricultural labour force share is well above the international trend line in Figure 1—that is, it is high for a country at this per-capita income level. If China follows the occupational migration pattern of other nations, a 10 percent increase in per-capita GNP can conservatively be expected to decrease the share of the workforce employed in agriculture by 3.1 percentage points, or approximately 14 million people. (This estimate is based on the equation presented at the bottom of Figure 2.) Despite barriers to labour mobility imposed by China's household registration (*hukou bu*) system, China currently has more migration than anywhere else, with between 50 and 100 million rural-to-urban migrants (Roberts, 1997). As urbanization and GNP growth proceed, the outflow of resources from the farm sector and rising demand for food increase the pressure to raise agricultural productivity, and questions about the role that migration plays in China's development grow more controversial and attract the attention of concerned policy-makers.

While internal migration redistributes populations and workforces from rural to urban areas within LDCs, many countries—including those with the world's most dynamic fruit, vegetable, and horticultural crop production—turn to foreign-born migrants, frequently of rural origin, for labour. In the United States, for example, the National Agricultural Worker Survey (NAWS) found that an estimated 69 percent of the 1996

seasonal agricultural service (SAS) workers were foreign-born, and in California, far and away the nation's largest agricultural producer, more than 90 percent of the SAS workforce was foreign. The majority (65 percent) of United States migrant farmworkers originated from households in rural Mexico. Despite the high concentration of foreign-born workers in farm jobs, the vast majority of immigrants are employed outside of agriculture, mostly in low-skilled service and manufacturing jobs.

Worldwide, in 1995, there were about 150 million international migrants, or people living in countries other than their country of birth or nationality. If all of these individuals were brought together into a single country, they would form a "nation of immigrants" with the sixth largest population on earth, larger than the Russian Federation and exceeded in size only by China, India, the United States, Indonesia, and Brazil. However, looked at another way, immigrants constituted 2.3 percent of the world's population. That is, despite widening world income inequalities, nearly 98 percent of the world's population remains in its country of birth or nationality. Between 1965 and 1995, total international migration increased in absolute terms (from 76 to 150 million people), but not as a share of the world's population (2.3 percent in both 1965 and 1995).

The distribution of the world's immigrants is unequal. In 1990, most—55 percent—were in less developed countries. However, immigrants represented a larger share of developed country populations—approximately 5 percent, compared with 1.6 percent of LDC populations. The United States is the world's largest immigration nation, with 27 million immigrants, or about 18 percent of the world's total. Mexico is the world's largest country of emigration. An estimated 7.5 million Mexicans, or 8 percent of all Mexico-born persons alive today, reside in the United States. Within countries, new migrants tend to follow "networks" of contacts with family and friends who have already migrated (Massey et al., 1998). This results in a concentration of immigrant populations—and thus their impacts—within as well as between countries.

Migrant remittances

Migrant remittances represent the largest direct positive impact of migration on migrant-sending areas. If one considers labour as an export, then remittances are the part of the payment for exporting labour services that returns to the country of origin. Estimation of international migrant remittance flows is complicated by the fact that an unknown but probably large share of remittances are not channelled through formal banking systems. Micro-level field studies indicate that clandestine or in-kind transfers are substantial; however, remittance studies generally do not attempt to put a value on in-kind remittances.

The International Monetary Fund (1988) reports that the sum of workers remittances and compensation of employees¹—the most comprehensive definition of migrant remittances—increased from less than \$1.5 thousand million in 1970 to \$94.6 thousand million in 1998. The world distribution of migrant remittances is unequal. Combining workers' remittances and compensation of employees, India received far and away more than any other country from its residents abroad in 1998 (\$9.5 thousand million, almost all in workers' remittances). Mexico was second with \$6.5 thousand million, followed by Philippines (\$5.1 thousand million), France (\$4 thousand million), and Belgium (\$3.9 thousand million). These top five countries in combined remittances and compensation of employees accounted for about one-third (31 percent) of the world total in 1998. In a number of countries, remittances nearly match or exceed total income from merchandise exports, highlighting the importance of migrants for generating foreign exchange and savings.

Estimates of internal-migrant remittances are not available. Nevertheless, household surveys in rural communities suggest that internal migrant remittances frequently constitute a large share of total income in households with migrants. Internal-migrant remittance shares of 15 to 20 percent or higher are not uncommon (e.g. see Taylor and Martin, forthcoming).

¹ Compensation of Employees (previously called labour income), is defined as the gross earnings of foreigners residing abroad for fewer than 12 months, including the value of in-kind benefits such as housing and payroll taxes.

Public controversy and research priorities

One of the reasons for controversy with respect to migration in LDCs lies in the fact that both researchers and public officials differ in their answers to a series of fundamental questions concerning migration and development. What factors trigger migration and motivate migrants to remit? How does large-scale migration affect productivity in agriculture and in non-agricultural rural activities? Do remittances from migrants exacerbate or compensate for the labour leaving rural communities? Answers to these questions are critical for identifying the role that migration plays, and may potentially play, in countries' food needs, income objectives, poverty and inequality, and efficiency goals. Yet most economic models of agricultural households implicitly rule out impacts of migration and remittances on production activities in migrant-source areas.

As LDCs confront the implications of rural out-migration for development, in high-income countries, employers who rely on foreign-born migrant workforces find themselves at odds with an increasingly restrictionist public and policy stance towards immigration. Economic and fiscal impacts of immigration have been the subject of on-going controversy among researchers, both in the United States and in other major immigrant-receiving societies. Disagreement among researchers over basic empirical questions concerning immigration's impact makes it difficult to resolve public and policy debates. Voter backlashes against immigrants, including California's Proposition 187, often are fueled by misperceptions about immigration's impacts and the role of immigrants and their children in host economies. Interactions between immigration and host economies are complex and truly "interactive." For example, employment opportunities draw immigrants into host-country labour markets. However, the arrival of immigrants also may influence wages and the future creation of jobs in these same labour markets. Such simultaneous interactions are important to sort out, yet nearly all econometric research on immigration's impacts in local labour markets treats immigration as exogenous and economic variables like wages and employment as endogenous outcomes.

There has been some progress in recent years towards using new and more appropriate techniques to explore the interactions between migration and economic changes in migrant-source and host societies. However, this new genre of migration research is only beginning, and considerable work remains to be done. Future research must explicitly recognize the multiple causality shaping migration-development outcomes.

3. INTERNAL AND INTERNATIONAL MIGRATION: THEORIES AND EVIDENCE

Modern economic research on migration often is traced to Lewis' (1954) seminal work on economic development with unlimited supplies of labour, even though Lewis does not propose an explicit migration model. The purpose of the Lewis model is to explain the mechanisms by which an unlimited supply of labour in traditional sectors of less developed countries (LDCs) might be absorbed through capital accumulation and savings in an expanding modern sector. Nevertheless, migration is usually the means by which labour is shifted between traditional and modern sectors. Migration implicitly plays a central role in Ranis and Fei's (1961) formalization and extension of the Lewis model, which was the precursor to neoclassical two-sector models that dominated the migration literature through the 1980s. Despite its popularity for some modelling purposes, wage-driven neoclassical analysis of rural out-migration has largely been discredited for a number of reasons. The most important reason is the continuation of migration despite high and increasing urban unemployment. This is the primary motivation for Todaro's (1969; also Harris and Todaro, 1970) expected income model of migration in the presence of labour-market imperfections.

Todaro proposed a modification of the neoclassical migration model in which migration is a function of both wage differentials and the probability of employment at origins and destinations. Econometric studies of aggregate migration flows from LDC rural areas generally support both neoclassical and Todaro expected-income migration

theories. (See reviews by Yap, 1977, and Todaro, 1980; Fields, 1979; Schultz, 1982; and Taylor, 2000.) However, despite its seminal contribution to understanding determinants and impacts of rural out-migration, the Todaro model makes a number of restrictive assumptions, and expected income differentials usually fall short of explaining most of the differences in migration between regions. Arguably the most critical restriction of Todaro models is their omission of influences, besides expected income, that shape potential migrants' decisions and also their potential impacts on rural economies (Williamson, 1988). It is the focus of the most recent wave of literature on migration determinants and impacts, which has become known as the new economics of labour migration.

The new economics of migration : conceptual framework

Typically, although individuals migrate, they do not sever ties with their source households. Source households may pay migration costs and support migrants until they become established at their destinations. Family members who remain behind (often, parents and siblings) may reorganize both their consumption and production activities in response to the migrant's departure, and migrants (often, children) typically share part of their earnings with their household of origin, through remittances. Continuing interactions between migrants and rural households suggest that a household model would be more appropriate than an individual-level model of migration decisions. Indeed, in the individual-level migration models discussed above, there is no rationale for migrants to share their earnings with the place of origin. The Todaro model and its precursors also leave us with the puzzle of why geographically extended families are prevalent in LDCs but less so in high-income countries (Rosenzweig, 1988), and it offers few insights into the likely impacts of migration and remittances on rural economies.

In the new economics of labour migration (NELM; see Stark, 1991 and Stark and Bloom, 1985) theory, migration decisions are not entirely the domain of individuals. They take place within a larger context—typically the household, which potentially consists of individuals with

diverse preferences and differential access to income—and they are influenced by the social milieu. The perspective that migration decisions are not taken by isolated actors but by larger units of related people, typically households or families, is a trademark of the NELM. So is the contention that people act collectively not only to maximize income, but also to minimize risks and loosen constraints created by a variety of market failures, including missing or incomplete capital, insurance, and labour markets.

Migrants frequently play the role of financial intermediaries for their source households. For example, consider an LDC farm household wishing to invest in a new technology or make the transition from familial to commercial production, but lacking access to both credit and income insurance. By placing a family member in a distant labour market, the household gains access to liquidity (through remittances) and income insurance (because of a low correlation between incomes in migrant labour markets and farm production; the correlation between remittances and farm production may even be negative, as when migrants respond to crop failure by increasing the share of earnings they remit). Mutual altruism reinforces an implicit contract for mutual support between migrant and household. So do inheritance motives (i.e., non-remitting migrants stand to lose their inheritance) and migrants' aversion to risk, which encourages them to uphold their end of the bargain in order to receive support from the household should they experience an adverse income shock (e.g., unemployment) or other misfortune in the future.

The NELM represents a fundamental departure from past migration research. Determinants and impacts of migration are explicitly recognized as interrelated. For example, if lack of liquidity or credit to invest in a new technology is a determinant of migration, then migrant remittances should provide liquidity and stimulate technological change. This kind of production effect is ruled out both by Todaro and by traditional, neoclassical agricultural household models that assume perfect markets (e.g. Singh, Squire and Strauss, 1986). In the standard neoclassical household-farm model, migrant remittances are simply an income transfer. They affect consumption, by shifting the budget

constraint outward. However, they do not affect production, because an income transfer leaves the conditions for farm profit maximization unchanged. In an NELM model, market imperfections result in household-specific “shadow prices” that transmit remittance impacts to the production side of the household-farm economy.

The spectrum of factors influencing migration decisions may extend beyond the household. For example, a household’s income position vis-à-vis its reference group (e.g., the village) may also influence its behaviour, including migration decisions. Similarly, the impacts of migration and remittances may extend beyond the migrant-source household, as a result of a variety of local general-equilibrium linkages.

Empirical evidence on the NELM

A growing body of research offers evidence consistent with the NELM view that migration decisions take place within a family or household context and are influenced by families’ efforts to overcome poorly-functioning or missing risk and credit markets. (See Taylor, 2000). This section focuses on the implications of the NELM for agricultural production, asset accumulation, and investment in non-agricultural activities.

Empirical evidence has shown that migration has a mixed impact on agricultural production. In the first instance, labour available for farm (and non-farm) production decreases when family members migrate. Perfect substitutes for the “lost” labour of migrants are not likely to be available in the imperfect market environments characteristic of migrant-sending, rural economies. Unless there was surplus family labour to begin with (a Lewis-type scenario), migration’s immediate impact on agricultural production may be negative. Once migrants become established at their destinations, income remitted back to their households of origin offset, at least partially, this negative lost-labour effect, by providing households with new funds to invest in agricultural as well as non-agricultural production. Migrants influence production in other ways, for example, by offering rural families a new source of income

security, if the correlation between remittances and farm income is low. By contributing to family income, remittances increase the demand for normal goods, possibly including some locally produced goods. In this way, migration creates expenditure linkages that generate local and regional income multipliers and transmit impacts of remittances from migrant to non-migrant households. These remittance-related effects have the potential to stimulate rural incomes and production. Remittances also may increase families' demand for leisure, which in imperfect labour market environments may discourage production. Some examples of NELM research findings follow.

A household perspective

NELM-inspired research finds evidence that migration unleashes an array of indirect effects on migrant-sending households that are largely outside the realm of neoclassical migration models. Lucas (1987) found that output in southern African migrant-sending households fell as labour was withdrawn from farm production. However, he also found a positive feedback of migrant remittances on production. Adams (1991) found that rural Egyptian households containing foreign migrants have a higher marginal propensity to invest than do their non-migrant counterparts. Policy biases against agriculture, however, discouraged agricultural investments. Taylor (1992) found that initially (in 1982), the marginal effect of remittances on household income in rural Mexico was less than unity—that is, a \$1 increase in remittances produced less than a \$1 increase in total income within remittance-receiving households, echoing the lost-labour effect in Lucas (above). In a later period (1988), however, the marginal impact of remittances on total income was greater than unity: a \$1 increase in remittances stimulated a \$1.85 increase in total household income. This finding is consistent with the view that remittances loosen constraints on local production, once migrants become established abroad. Remittances promoted the accumulation of livestock over time and increased the rate of return to livestock assets (through complimentary investments). Consistent with NELM theory, the effect of remittances on income was greatest in the most liquidity-constrained households (Taylor and Wyatt, 1996).

The micro impacts of migration and remittances on agricultural productivity are complex and have been little explored. Rozelle, Taylor and deBrauw (1999), using simultaneous-equation methods and a unique data set from China, found that the loss of labour to migration significantly reduced grain yields, reflecting an absence of on-farm labour markets. However, migrant remittances significantly increased yields, partially offsetting the negative lost-labour effect. Overall, Rozelle et al.'s findings suggest that constraints in the operation of on-farm labour and capital or insurance markets both provide households with a motivation to migrate and distort on-farm operations when labour leaves. Policies alleviating these market constraints could increase production efficiency while reducing households' need to send migrants out into the labour force to finance on-farm activities and/or insure against income shocks.

These studies, while offering econometric evidence in support of the new economics of labour migration, also suggest that the relationship between migration and development is not invariant over time or across settings. Over time there appears to be a pattern first of negative and then of positive effects of migration on non-migration income in sending households. Across settings, the extent of the positive effect depends on the profitability of investments in new production activities, which in turn depend on other local conditions.

In agricultural economies, negative lost-labour effects of migration are likely to be concentrated in farm production, where most migrants are employed prior to migration. However, positive remittance effects may manifest themselves in other sectors, where the returns from investing may be high and family labour demands low relative to agriculture. Studies focussing on agriculture are therefore likely to miss many, and possibly most, of the impacts of migration on migrant-sending, rural economies.

Very little research examines differential impacts of migration on farm and non-farm activities in rural areas. An exception is DeBrauw, Taylor and Rozelle (2000), for rural China. Their findings indicate that the loss of labour to migration negatively affects both farm and self-

employed incomes in source areas. However, the remittances sent home by migrants compensate, partially or fully, for this lost-labour effect, contributing to household incomes directly and also indirectly by stimulating local production. The positive remittance effect on production is largest for self-employed activities. There is evidence that households invest remittances in self-employed activities that may not immediately return profits in order to realize higher incomes in the future, once the migrant returns home. Imperfections in capital or insurance markets (or institutions) could be providing households with a motivation to migrate as part of a dynamic strategy to invest in new non-agricultural ventures. Additional longitudinal data are necessary to explicitly test this hypothesis.

Impacts beyond the migrant household

The migration and remittance effects discussed above, as complex as they may seem, represent only the direct or first-round impacts of migration on source economies. Changes in production and expenditure patterns in migrant-source households transmit the impacts of migration to other households inside and outside the rural economy. Migrant households may be closely integrated with local product and factor markets, supplying inputs to local production and demanding locally produced non-tradables. In this case, changes in migration and remittances may affect local prices, production, and incomes, including for non-immigrant households. As a result, many and perhaps most of the impacts of migration and remittances are found in households that do not participate directly in migration.

A number of studies utilizing micro economy-wide modelling techniques explore the role of migration and the impacts of economic integration policies on incomes, employment, and expenditures in migrant-sending regions. Findings from these studies point to four broad conclusions regarding impacts of migration and remittances in migrant-sending regions:

First, migrant remittances create income and employment multipliers in migrant-sending villages and towns, and the size of these multipliers can be large. For example, a \$100 increase in remittances from the United States led to a \$178 increase in total income in a migrant-sending village in Mexico (Adelman, Taylor and Vogel, 1988; for evidence from other countries see Taylor, 2000). Both the magnitudes of remittance multipliers and the distribution of income gains across household groups and production sectors are sensitive to rural economic structures.

Second, in general, the more closely integrated migrant-sending villages and towns are with outside markets, the smaller the village or town income multipliers resulting from migrant remittances. Through trade, the impacts of remittances on local economies are transferred to other parts of the country (or world!), and studies focussing on individual migrant-sending communities, like studies focussing on migrant-sending households, miss many, if not most, of migration's impacts. It is likely that a large part of the benefits from migration become concentrated in regional urban centres of migrant-sending countries, even if the remittances, themselves, do not go there initially.

Third, the multiplier effects of remittances upon incomes in migrant-sending areas appear to depend critically on the supply response of local production activities. They are smaller when agricultural supply response is inelastic. This highlights the importance of policies to remove technological constraints on production, promote investment, and develop markets as a means to make remittances more productive in migrant-sending economies (see e.g. studies by Lewis and Thorbecke, 1992, for Kenya, Subramanian and Sadoulet, 1991, for India and Parikh and Thorbecke, 1996, for Pakistan).

Fourth, migration may compete with local production for scarce family resources, at least in the short run. Migrant-sending economies reorganize themselves around migration, adjusting to the loss of migrants' labour and the receipt of migrant remittances. In the long run, remittance-induced investments may compensate for negative lost-labour effects, increasing local production and incomes—including incomes of the poor. The

effects of migration on rural poverty depend critically on how remittances and the losses and gains of human resources through out-migration are distributed across households, on production constraints facing different household groups, and on expenditure linkages within the rural economy.

Micro economywide models highlight the importance of having local capital markets that can make remittance-induced savings in migrant households available for investing by others in the local economy. Otherwise, individual households are constrained to self finance their investments, and the possibility of some families specializing in migration while others specialize in productively investing remittance-induced savings is ruled out.

Impacts on migrant-host economies

Economic and fiscal impacts of immigration have been the subject of a prolific literature and on-going controversy among researchers, both in the United States and in other major immigrant-receiving societies. (For a number of examples, see Taylor, 2000.) In the United States, the immigration debate has been bracketed by two extremes. The optimistic view is that immigrants bring valuable human capital with them to the United States. (This mirrors the pessimistic brain-drain perspective prevalent in emigration countries.) Immigrants are economically mobile, with an earnings trajectory that is steeper than that of otherwise similar native-born workers. They complement native workers in ways that stimulate economic growth and create jobs. Finally, their expenditures generate income multipliers that revitalize the economies in which they settle, including distressed urban neighbourhoods.

The other extreme contends that the human-capital benefits from migration are declining over time, as more low-skilled immigrants arrive on United States shores. As a result, immigrants are increasingly locked into poorly-paying jobs, with few prospects for mobility, an earnings trajectory that is flattening out over time, and limited potential for setting in motion economic-growth multipliers. They compete with other, low-skilled United States workers and create fiscal burdens associated with their low incomes and large family sizes.

A number of studies in the 1980s produced optimistic conclusions about the effect of immigration (number of foreign-born in the decennial census) on wages and unemployment in United States metropolitan areas. They found few wage-depressing or unemployment-increasing effects of immigration in local labour markets. Instead, more immigrants were found to have positive impacts on employment and wages in the urban labour markets they entered.

More recent studies suggest that the impacts of immigration are more complex, operating through indirect channels largely ignored by 1980s research (Borjas (1994), Taylor and Martin, 1998). Native workers who compete with immigrants may move to less immigrant-impacted labour markets, diffusing migration's impacts across labour markets and making these impacts difficult to quantify. Employment stimulates immigration, but the arrival of new workers into local labour markets, in turn, may stimulate employment, by suppressing real wages for local workers and discouraging the adoption of labour-saving production practices, or alternatively, by creating positive employment multipliers.

Taylor and Martin (2000) examine the interrelationship between U.S. farm employment and immigration, and its implications for poverty and welfare use. They estimated a simultaneous-equation model with data from a national random sample of census tracts for the 1970, 1980 and 1990 census years. The findings reveal a circular relationship between immigration and farm employment that reduced both poverty and welfare payments during the 1970s. However, this virtuous circle was reversed in the 1980s, when more farm jobs were associated with more immigration as well as more poverty and welfare.

In 1990, the United States Congress appointed a Commission on Immigration Reform to review U.S. immigration policies and laws and to recommend changes. In 1995, the Commission requested that the National Research Council convene a panel of experts to assess the demographic, economic, and fiscal ramifications of immigration in the United States. The panel was asked to provide a scientific foundation for policymaking on specific issues and a background for the

Commission's deliberations. This panel established a record of key findings on demographic, economic, fiscal, and social impacts of immigration in the United States, including: (1) Migration will play the dominant role in United States demographic growth between now and 2050, accounting for two-thirds of that nation's total population increase and significantly altering the country's age distribution; (2) Although there are winners and losers, immigration yields net economic gains for United States residents, but these gains are small relative to the total United States economy; (3) Immigrants' fiscal impacts are negative at the state and local levels but positive at the federal level, and fiscal costs are concentrated in a few states and localities, resulting in conflicts over who should bear the fiscal costs of immigration²; and (4) Social integration of immigrants and their descendants into the United States and the effects of immigration on host-country institutions are extraordinarily complex and vary across immigrant groups.

Policy influences on migration-development interactions

The NELM perspective leads to broader arenas for impacts of migration upon rural economies; for policy interventions to influence migration, rural production, and poverty; and for the potential list of variables influencing migration decisions. For example:

- Rather than intervening directly in labour markets, governments that wish to reduce out-migration should attempt to correct failures in local capital and risk markets, offering households credit and insurance alternatives to migration. This could enable households to invest in new technologies and activities without suffering temporary production declines because of the loss of labour to migration.

² The net state and local fiscal burden results from the fact that immigrants "consume" education and other services provided at the state and local level, but pay few taxes due to their low income and lack of property. The net fiscal gain at the federal level derives mainly from contributions to the social security system.

- In the medium to long run, contrary to both classical and neoclassical theories, the loss of labour to migration may increase (rather than decreasing or, in the case of Lewis, leaving unchanged) production in rural economies, by enabling households to overcome credit and risk constraints on production. This is good news for policy makers worried about “who will feed the cities” if rural-to-urban migration continues. In today’s developed countries, the exodus of population from rural areas (concurrent with technological change and market development) was associated historically with a substantial increase in food supplies.
- A positive income (or expected income) differential between urban and rural areas is not a necessary condition for migration. Migration in the presence of a negative urban-rural income differential is consistent with the NELM (provided that the variance of urban incomes and/or income covariance between the two sectors is sufficiently low).
- The individuals who migrate are not necessarily those whom a traditional human capital model would predict; the impact of an individual’s out-migration on the productivity of other family members also matters.
- While constituting a motivation for migration, imperfections in capital and insurance markets also may constrain migration, resulting in the seeming paradox that increases in rural incomes (which enable households to self-finance migration costs and self-insure against migration risks) may promote, rather than impede, migration (e.g., see Schiff, 1996).
- Equal expected income gains from migration across individuals or households does not imply equal propensities to migrate, as predicted by a Todaro model, when risk and/or relative income considerations also influence migration decisions.
- From a migration policy point of view, the NELM shifts the focus of migration policy from intervention in rural or urban labour markets

to intervention in other (most notably, rural capital and risk) markets, in which an underlying motivation for migration is found.

The progression of migration theory from the relatively simple, perfect-markets neoclassical model to NELM models involves both increasing complexity and more generality in how we think about migration determinants and impacts. Just as the wage-driven neoclassical model is a special case of the Todaro model, both may be viewed as special cases of NELM models, in which some or all market constraints that influence migration are non-binding (e.g., households are risk-neutral or have access to efficient insurance markets), relative income considerations do not affect utility, and the effect of household variables on migration are negligible.

4. MIGRATION AND RURAL POVERTY, WITH AN EMPHASIS ON POLICY IMPLICATIONS

Economists have given little attention to estimating impacts of migration on poverty in migrant-source and host areas. Their focus instead has been principally on how migration and remittances affect rural labour markets and household incomes in migrant-sending economies, not rural poverty, and how immigration affects various labour market variables in host countries, including aggregate economic growth, unemployment and wages.

Impacts on poverty in source areas

Prior to the emergence of the new economics of labour migration (NELM), research on source-area impacts focused on how rural labour markets adjusted to labour—and possibly capital—lost to migration, not on poverty implications of migration. Most of this research was theoretical rather than empirical, and it did not attempt to isolate impacts on the poorest rural households. Studies challenging Lewis' surplus labour assumption found evidence of negative impacts of migration on

rural production (see above), but they did not focus on rural poverty, either. Most of the evidence on migration's influence on rural poverty is indirect and incidental to the focus of the studies producing the evidence.

Migration can influence rural poverty in many different ways suggested by the various migration theories examined above. If production does not fall when migrants leave the rural sector, production per capita in migrant-source areas increases with migration. If some migrants come from impoverished households, or if local institutions redistribute the higher per-capita output in favour of the poor, rural-to-urban migration may decrease rural poverty.

However, the findings in the literature suggest that the loss of family labour to migration has a negative effect on agricultural production, at least in the short run. If the loss of workers to migration drives up wages for those left behind, non-immigrant workers may benefit. If these workers are poor, rural poverty may decrease. However, if migrants take capital with them, or if the loss of labour to migration causes total output to fall, the rural poor may be adversely affected.

Migrant remittances may alleviate poverty, both directly and indirectly, if they favour poor rural households. Directly, they provide households with income. Indirectly, they may loosen liquidity and possibly risk constraints on production by the poor, creating new sources of local income for these households. In general, however, it appears that rural migrants do not originate disproportionately from the poorest households, who lack assets needed to increase production. They are more likely to come from the middle of the village income distributions (Taylor *et al.*, 1995). Poor rural households may be willing to sacrifice production temporarily, in order to obtain remittances to invest in new technologies or production activities. Or they may be willing to sacrifice production permanently, if they expect the family migrant's remittances to exceed the income s/he could contribute by working on the farm.

Finally, if some households curtail production after sending family members off as migrants, this might adversely affect poor households,

who could find the demand for their labour services fall or suffer income losses through various other local market linkages.

Although poverty has not been a focus of migration research, a number of researchers have examined the distributional effects of migrant remittances. The empirical link between inequality and poverty is tenuous. For example, remittances may decrease poverty (if some remittances flow to poor households) while increasing inequality (if most remittances flow to rich households). They also may decrease inequality without affecting poverty (by flowing to middle-income households).

Studies offer conflicting findings about the effect of remittances on income inequality. In some cases, remittances have the direct effect of decreasing inequality in the size distribution of income. In others, remittances increase inequality. There may be a theoretical explanation for these conflicting findings. Rural out-migration, like the adoption of a new production technology, initially entails high costs and risks. The costs and risks are likely to be especially high in the case of international migration. Because of this, pioneer migrants tend to come from households at the upper portions of the sending-area's income distribution, and the income they send home in the form of remittances is therefore likely to widen income inequalities. This initial unequalizing effect of remittances may be dampened or reversed over time as access to migrant labour markets becomes diffused across sending-area households through the growth and elaboration of migrant networks. A study from Mexico (Stark, Taylor and Yitzhaki, 1986) found that migrant remittances had an unequalizing effect on the income distribution in a Mexican village that recently had begun to send migrants to the United States, but an equalizing effect on another village that had a long history of participating in Mexico-to-U.S. migration. Taylor (1992) found that negative lost labour effects of migration made the effects of remittances less unequalizing in the short run. The positive indirect effects of migration on household income in poorer families (achieved by loosening constraints on local production) made migration more of an income equalizer in the long run.

Over time, the indirect effects of migration on both income and inequality become increasingly important. Poor households have the largest capital and risk constraints on investing in local income-generating activities. If the Stark-Taylor-Yitzhaki hypothesis is correct, then we would expect poor households to have the largest incentives to send family members off as migrants in an effort to overcome these constraints. Initially, however, barriers to migration—especially international migration—in the form of high costs, poor information, and uncertainty may discourage poor households from participating in migration, especially abroad.

Even if remittances do not flow disproportionately into poor households, the local income multipliers they create may benefit the poor. Taylor et al. (1995) concluded that, in Mexico, remittances have indirect, multiplier effects that favour the poor. Even though the poorest rural households may face barriers to participating in migration, nationwide, most remittances flow into lower or lower-middle income households, including poor urban households and rural households with income well below the national per-capita level. Expenditure linkages transmit many of the benefits of these remittances to households other than the ones that receive them, both inside and outside the rural economy. The beneficiaries of these remittances include poor rural households. Regional economywide studies tend to mirror these findings.

In general, it appears that migration is likely to have the largest positive effect on rural poverty in migrant-source areas when: (a) negative lost-labour effects of migration on production activities employing the poor are small; (b) remittances flow disproportionately to poor households; (c) remittances loosen constraints on local production activities in which poor households are involved; and (d) remittances (and the production they stimulate) create large local income multipliers favouring the poor.

Migration and rural poverty in host areas

The findings on impacts of immigration on rural communities in the United States reported earlier raise the troubling possibility that, through migration, poverty may be transferred from rural sending to host societies.

This poses difficult policy challenges. For example, in the past, technological advances in fruit, vegetable, and horticultural production in California have focused on raising the productivity of land, not labour. This explains the high labour intensity of many farm operations, evident to anyone who observes, for example, a Fresno grape harvest. Despite California's harvest of plenty, the productivity of individual workers is lower than it would be with more capital-intensive practices. This, together with a ready supply of new immigrants willing to work at low wages, keeps real wages for farm workers from rising when the demand for field hands increases.

The availability of inexpensive and flexible immigrant labour, in turn, discourages farmers and labour contractors from mechanizing and "stretching out" labour demands to provide workers with more stable employment. As a result, California's agricultural prosperity is reflected in the price of land, not labour, and rural California has poverty rates that are among the highest in the United States. Without policy interventions to encourage labour productivity-enhancing technological changes, a farm employment-immigration-poverty cycle will almost certainly continue.

5. AN INTERACTIVE APPROACH: TOWARDS A RESEARCH AGENDA

The potential impacts of migration on rural poverty are complex and diverse, and economic theory does not offer any clear predictions about the direction of these impacts. A nascent empirical literature inspired by the new economics of labour migration (NELM) is just beginning to reveal the complex ways in which migration and remittances reshape rural economies, including:

- How the loss of labour to migration may reduce agricultural production.
- How remittances sent home by migrants may—partially or wholly—compensate for these negative lost-labour effects, maintaining food production in the face of rising rural-to-urban migration.

The two points above, have important implications for the types of technologies “promoted “ by national and international research institutions. The presence of migration opportunities affects the uptake of technologies and activities that are labour intensive. On the other hand, migration remittances, by alleviating credit constraints may facilitate the adoption of more capital-intensive (and/or riskier) technologies. Data and research are needed to permit the assessment of impacts of migration on labour availability and wages and, consequently on “appropriate” technologies for migrant-sending areas.

- How migration and remittances influence the transition from agricultural production to other activities
- How expenditure linkages transmit the impacts of migration and remittances from migrant households to others within regional and national economies
- How migration and remittances reshape local income distributions
- How immigration both influences and is influenced by employment and poverty in migrant-host economies

Despite substantial progress in the last 15 years, our understanding of these questions is built on a fairly thin foundation of empirical research. Much more work is needed to address these questions in the future.

The interaction between migration and rural poverty is largely a neglected area in economic research. New empirical research is needed both to sign the migration-poverty effects and to estimate their magnitude, drawing from the theoretical and empirical innovations described above. Recent years have witnessed a rapid development of agricultural household models and some applications of these models to migration analysis. They have also seen the development and use of local economy-wide models to estimate impacts of migration and remittances on rural economies. Poverty indices and their decompositions have been used for several purposes, but not to analyse migration impacts. To date, these methods have not been brought together to examine the effects of migration on poverty at migrant origins or destinations. A surge in agricultural household surveys in recent years provides data that can be

used to estimate migration-poverty interactions in many different LDC rural settings, if the resources to do so are made available.

New research on migrant-host economies is also needed to test immigration-poverty interactions in both urban and rural labour markets and extend the rural poverty analysis described above.

Research on the impacts of migration on source and on host economies has been carried out separately in the past and most likely will continue to be so in the future. Nevertheless, a common theme emerges from the most recent research at both ends of the migration stream: the impacts and causes of migration are interconnected and cannot be examined in isolation from one another. Increasingly, the questions of greatest policy interest are global, not local: How do economic changes in migrant-host societies influence agricultural production, incomes, and poverty in migrant-source areas? How do policy reforms, including market liberalization, influence migration and its impacts in migrant-host and migrant-source economies? As the inevitable trend of rural out-migration continues, will technological change in agriculture provide food for burgeoning urban populations—as it did historically in today’s developed countries—or will LDCs become increasingly dependent on developed countries—including the world’s major countries of immigration—for food imports?

China is a case in point on that respect. Policy makers have become concerned about the increase in migration and, in particular, how it will affect source communities. As labour flows away from farms, will food production and crop income decline, threatening China’s food security? What are migration’s effects on other forms of rural production? Policy makers’ concern is mounting over the increasing gap between urban and rural household incomes. If this gap continues to increase and is exacerbated by migration, some fear an uncontrollable flood of rural residents to cities ill-equipped to absorb it. Others fear that discontent over a rising urban-rural income gap could spill over into political unrest (Roselle, Taylor and DeBraw, 1999).

As this review has emphasized, migration links host and source communities in complex ways that have become recognized by some development practitioners and researchers as well as by migrants, themselves. For example, in recent years, a proliferation of migrant “hometown associations” in the United States focused on promoting development in Mexico have attracted researchers’ and policy makers’ interest. There has also been interest among international organizations and source-area governments (including Mexico’s President-elect Fox) in finding new ways to mobilize migrant earnings for development, taking advantage of the transnational economic linkages that already exist between migrants and their source communities. Such initiatives are likely to be a focus of future development policy in migrant-source and host regions. They highlight the importance of understanding not only the impacts of migration in source and host economies, but also the connections between the two.

Addressing these key questions will require new research, together with an interactive approach encompassing migrant origins and destinations and tracing through the implications for poverty at each end of the migration stream.

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