

The Relationship between International Migration, Trade and Development: Some Paradoxes and Findings*

J. Edward Taylor

University of California, Davis

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The interactions among trade, international migration and economic development in migrant-sending areas are complex, and paradoxes abound. This paper summarizes global trends in world migration and remittances, discusses some paradoxes surrounding the trade-migration-development relationship, and reports findings from new research on Mexico-to-U.S. migration, using data from rural Mexico. It concludes with some thoughts about designing policies to raise the development potential of remittances in migrant-sending areas.

1. Trends in International Migration and Remittances

The international migration of labor is critical to how globalization and economic development are experienced by many less developed countries (LDCs). The number of international migrants, or people residing in a country other than their country of birth, has increased more or less linearly over the past 40 years, from an estimated 76 million in 1965 to 188 million in 2005, as illustrated in Figure 1. About one half of the world’s international migrants are women. However, some international migrant flows are

* J. Edward Taylor is Professor of Agricultural and Resource Economics and Director of the Rural Economies of the Americas Program (www.reap.ucdavis.edu) at the University of California, Davis, CA, 95616. I am grateful to the United Nations and the William and Flora Hewlett Foundation for supporting parts of this research and to Peri Fletcher and Catherine Taylor for their valuable comments and editorial assistance.

dominated by males, others by females. For example, more men than women immigrate to the United States from India and El Salvador, but U.S. immigration from China and South Korea is dominated by females. The differences in international migration between the genders are just now becoming a focus of international migration research.

International migration creates both losses and gains for the LDCs from which international migrants originate. LDCs lose millions of highly educated people where human capital often is already scarce (e.g., see Özden and Schiff, 2005). LDCs also lose significant numbers of relatively low skilled workers whose productivity and wages are far higher abroad than at home.

International migrants send substantial amounts of remittances back to their countries of origin. The flow of international migrant remittances has increased more rapidly than the number of international migrants, themselves: from an estimated US\$2 billion in 1970 to US\$216 billion in 2004.¹ While the growth in international migration has been linear, the growth in remittances has been nonlinear, as one can see in Figure 2. In other words, on average, each of the world's international migrants is sending home more remittances today than in the past. There is not a single convincing explanation for this phenomenon. Nearly 70% of all remittances go to LDCs. It is likely that remittance figures understate true international remittance flows, which include an unknown amount of cash that does not enter countries through formal banking channels as well as goods that migrants send or carry home. There is evidence, however, that more migrants are using formal channels to remit today than in the past.

Remittances make people the most important “export” of many LDCs in terms of the foreign exchange that they generate. In 2004, remittances were equivalent to 78% of the total value of exports in El Salvador and 108% in Nicaragua. International migrant remittances are also an increasing share of *national income* in many countries. For example, in 2004, remittances represented 11% of the gross domestic product of Guatemala, more than double the share in 2001. In the same year, remittances constituted 16% of the total GDP of El Salvador.

There is little information on where, within countries, international migration originates and remittances flow. Data from the limited number of national income and expenditure and regional surveys that include migration reveal that both migration and remittances are concentrated within, as well as among, LDCs. This means that international migration affects some countries and some regions within these countries more than others.

2. International Migration and Development Puzzles and Paradoxes

Recent economic studies suggest that migration and development—and thus, trade integration affecting development—are closely linked to one another. Development

¹ Part of this sharp increase is probably due to an improved accounting of migrant remittances; however, the actual amount of remittances probably is higher than these numbers indicate, for reasons detailed below.

shapes migration, and migration, in turn, influences development, sometimes in ways that are surprising and not recognized by researchers and policy makers.² Paradoxes and puzzles abound.

Does Migration Affect Development or the Reverse?

A big problem for researchers trying to test whether migration affects development is that underdevelopment also drives emigration. One usually does not see streams of migrants leaving economies that are dynamic centers of employment. If migration and underdevelopment seem to go hand in hand, it might be because the loss of people to migration retards development, as pessimistic studies of migration and development assert (and new research findings contest; see below). Or it might be that people migrate away from underdeveloped areas, which have little to offer them if they stay. Naturally, both may be true; the question is which dominates. It is difficult to separate cause from effect.

Do Higher Incomes Mean Less Emigration?

Low incomes create an incentive for people to emigrate, but paradoxically, there are many cases where both incomes and international migration are increasing in poor regions of LDCs. Usually it is not the poorest households that send migrants abroad. The very poorest households have an incentive to send migrants abroad and reap the reward of remittance income that is higher than what family members could earn at home. However, international migration is costly and risky, and the poorest households often cannot afford the costs and risks. At the other extreme, relatively well-off households in poor regions have the liquidity to pay the international migration bill and are often more willing to assume risks (or else have ways to insure themselves against risks). However, while they are more likely to have the means to migrate abroad, they are less likely to have the will. As a result, in poor areas of LDCs, international migrants tend to come from the upper-middle part of the income distribution, not from the poorest households. This raises some questions about the effectiveness of remittances at reducing poverty (see below).

When There Is No Brain Drain (and Maybe a Brain Gain)

The loss of human capital to international migration, commonly known as the “brain drain,” is well documented.³ If individuals who migrate abroad are more skilled

² A few surveys include Massey, et al. (1998), Taylor and Martin (2000) and Stark (1991).

³ For example, see The World Bank’s recent study, International Migration, Remittances, and the Brain Drain (Çağlar Özden and Maurice Schiff, Eds., 2005).

and highly educated than those who stay behind, productivity and incomes in migrant-sending areas can fall. Some research suggests that the opposite may be true. In some cases migration creates a “brain gain” instead of a “brain drain.” One study found evidence that the migration of highly educated individuals from developing countries has had a positive impact on aggregate human capital formation in those countries. This is because the possibility of someday migrating abroad induces children to go to school. Another study found that internal migration by relatively skilled villagers in Mexico raised rather than depleted average schooling levels in villages. No study of the dizzying growth of India’s information technology (IT) industry would be complete without mentioning migration connections with the Silicon Valley and the incentives they create for Indian youth to go to school.⁴

International migration does not always select the most educated, however. In theory, more highly educated people should take their schooling to wherever its economic returns will be highest. For a Mexican villager with above-average education (i.e., seven or more years of completed schooling), this is not likely to be in the United States. It is more likely to be at an internal migrant destination. Studies find that education does not stimulate international migration from rural Mexico, but it significantly increases the likelihood of internal migration.

A Self-Perpetuating Process

By far the most important variable driving international migration is migration networks, or contacts with family members and perhaps also with neighbors who have previously migrated. “Pioneer” migrants send home not only remittances but also information about how to migrate, where to look for work, what labor recruiters or smugglers to trust, what wages to expect, and how to overcome migration costs and risks. Past migrants also may support new migrants at their destination. They may even be willing to help finance the migration costs and insure against the risks.

The value of networks depends on where they go; networks can negatively affect migration to destinations to which they do not lead. It also depends on gender. Recent findings suggest that the value of networks may be higher for women than for men, because female migrants appear to be more deterred by risky border crossings, uncertain prospects abroad, and concerns for personal safety.⁵ Research also suggests that the benefits created by networks are not limited to just those households that have already sent family members abroad: access to networks eventually spreads to benefit other households. For example, the more households in a village that have migrants, the more likely it is that *other* households in the village eventually will send migrants abroad.⁶

⁴ See Stark and Wang (2002); Beine, Docquier and Rapoport (2001); and Boucher, Stark and Taylor (2005).

⁵ For example, see Richter and Taylor (2006) and Curran and Rivero-Fuentes (2003).

⁶ A number of studies show this, including Woodruff and Zenteno (2001) and McKenzie and Rapoport (2005).

Networks with international labor recruiters play an important role in shaping international migration from some, but not all, LDCs.

Regional Trade Integration and International Migration

It is many LDCs' hope that new trade opportunities will stimulate income and employment at home. One would think that this might deter emigration, but history suggests that often this is not the case in the short run. The final report of the Commission for the Study of International Migration and Cooperative Economic Development concluded that "expanded trade between the sending countries and the United States is the single most important remedy" for unwanted migration (CSIMCED, 1990). That is, in the long run, trade and migration are substitutes. However, the Commission also warned that "the economic development process itself tends in the short to medium term to stimulate migration." It concluded that the same policies that accelerate economic growth, including privatization, land reform, and freer trade, temporarily increase migration pressures, because of the displacement and disruptions that accompany development. The fact that trade and migration may be complements in the short run may create a short-run versus long-run dilemma for countries concerned about migration (Martin, 1993).

Emigration may increase in the short run if trade reforms spur imports that compete with labor-intensive production. In the long run, if export activities expand and remittances create income and investment multipliers, emigration pressures may subside.⁷

There is empirical evidence that economic growth is accompanied by temporary increases in emigration. The 48 million people who emigrated from Europe between 1850 and 1925 represented about one-eighth of Europe's 1900 population, suggesting that "large scale emigration was quite common during Europe's period of industrialization" (Massey, 1991). When southern European nations such as Italy and Spain industrialized and were integrated into the European Community (EC, today the European Union, or EU), they too experienced significant emigration pressures. However, these countries had to wait 6 to 10 years before their citizens were permitted to search freely for jobs in other EC countries. In the meantime, economic gaps narrowed enough that, once Italians and Spaniards had the right to work elsewhere in the EC, few did.⁸

In Asia, South Korea has experienced one of the world's fastest migration transitions in the context of its export-led economic growth. In 1982, more than 200,000 Korean workers emigrated. Korea sent 25 percent more immigrants to the United States during the 1980s than it did during the 1970s, despite rapid economic growth at home.⁹ By 1994, the South Korean government was debating how to deal with its *immigration* problems, including 20,000 legal foreign "trainees" and 50,000 to 100,000 illegal alien workers.

⁷ See recent work on CAFTA and migration by Taylor and Yúnez-Naude (2006).

⁸ Staubhaar (1988) and Martin, et al. (1990).

⁹ U.S. Immigration and Naturalization Service (INS, 1990), p. 50.

The most comprehensive data on international migration over time are from the 2003 Mexico National Rural Household Survey. This survey compiled retrospective migration histories for all family members (regardless of whether they were present at the time of the survey) from a nationally representative sample of rural households between 1980 and 2002. With this information it is possible to reconstruct migration trends from rural Mexico over a time period spanning years both before and after the implementation of the North American Free Trade Agreement (NAFTA) in 1994. These trends are illustrated in Figure 3. There is no obvious break in the migration trend after 1994, only a continuation of an upward trend that started years earlier. When we use a dynamic econometric model to test for a NAFTA effect, we find that this effect is small or insignificant. There is some evidence that NAFTA had a slight negative effect on male migration and a positive effect on migration to U.S. farm jobs, but no clear influence one way or another on total migration from rural Mexico to the United States.¹⁰

The Ambiguous Effects (and Gender Bias) of Immigration Policies

The effects of immigration reforms and border enforcement on immigration are almost always ambiguous. Only an empirical analysis can tell us whether IRCA increased or decreased the probability of migration, say, from Mexico to the United States, or whether heightened border enforcement has increased or decreased the number of unauthorized immigrants in the United States. In the case of IRCA, there is now strong evidence that the legalization effect (a positive for immigration) dominated the employer sanctions effect (a negative for immigration). The intent of increased border enforcement is to deter new unauthorized immigration. However, border enforcement also may deter return migration.

Our analysis of migration from rural Mexico finds that IRCA did not significantly affect overall migration and may have increased migration to U.S. farm jobs. It also finds that U.S. expenditures on border enforcement have not reduced the probability of Mexico-to-U.S. migration, and they may have increased it.

The Alternative to International Migration Generally Is Not to Stay at Home

One often hears of investing scarce resources (including remittances) in stay-at-home development of rural areas. Yet the alternative to international migration usually is not staying at home—it is migrating somewhere else. Figure 4 illustrates that, as per-capita incomes increase, the share of the work force in agriculture not only goes down—it plummets. In 2004, in Burundi, Burkina Faso, Niger, Malawi, and Rwanda, with a per-capita income (PPP adjusted) of US\$620 to \$1,230, 90% or more of the national work

¹⁰ See Boucher, Smith and Taylor (1996) and Richter and Taylor (1996). It is not known whether the same can be said for emigration from urban Mexico to the United States because the data to do such an analysis are not available.

force was in agriculture.¹¹ Between 79% and 94% of the population lived in rural areas. China, at \$4,980 per capita PPP, had 49% in farm jobs and 63% living in rural areas, and these percentages were falling fast. Rich countries typically have less than 5% of their work force in agriculture and 25% or less of their populations living in rural areas. Remarkably, per-capita income alone can explain 85% of the variation in the percentages of country work forces in agriculture.

Enormous differences in rural development policies seem to have little effect on whether people stay in agriculture or not. Economic mobility requires geographic mobility, and for most farmers and their children the question is not whether to migrate, but where. It is instructive to look at some of the world's rural development success stories. China, where agriculture production has risen sharply and international migration is generally not an option for the rural population, is one. Between 1990 and 2004, the percentage of China's worker force employed in farm jobs plunged from 72% to 49%. Chile, despite its famous agricultural export boom, saw the share of its agricultural work force fall from 19% to 14%. In Japan and France, despite expensive agricultural support programs, agriculture's share of the work force today is 5% and 4%, respectively. In the United States, where farm support programs are legendary and the question of emigration is academic (but immigration is huge), less than 2% of the work force is in agriculture (nearly all of the farm work force is foreign-born), and 23% of the population is rural (this includes many high income people for whom rural living is an amenity and the internet transforms rural homes into offices.) In the UK, 2% of the work force is in agriculture and 11% of the population lives in rural areas.

Many or Most of Migrations Impacts are Not in the Migrant-Sending Households

Migration transforms the economies of the households that send migrants abroad and receive remittances from them. Studies find that the loss of labor to migration can discourage household production activities that require large amounts of labor, particularly where hired workers are not readily available. However, remittances can enable household to overcome credit and other constraints and invest in new production technologies and activities. There is evidence that, when one controls for lost labor, the effects of remittances on production in migrant-sending households is positive. As a result of this, the activities of households that send migrants abroad change. This is illustrated in Figure 5. Households in a village in Michoacán, one of Mexico's major migrant-sending states, were surveyed in 1983 and again in 1993. During the interim, migration from this village to the United States increased sharply, as did remittances. However, the average share of remittances in household incomes in the village went down, from 45% in 1983 to 27% in 1993, because total income also increased. The principal income driver was livestock. The average share of livestock income in household total income rose from 23% to 42%. In this village, livestock was an ideal complement to international migration. Land for grazing was abundant in the hills

¹¹ PPP refers to Purchasing Power Parity. This is a better way to compare standards of living because it takes into account differences in the purchasing power of a given dollar of income across countries.

surrounding the village, remittances provided the financing households needed to invest in their herds, and livestock production uses little labor; in many cases, children tend to the animals, while their older siblings migrate to destinations in Mexico or abroad.

Despite the far-reaching impact that migration and remittances can have on households that send migrants, it appears that most of migration's effects are found outside these households. When a migrant-sending household's income increases as a result of remittances and the activities they stimulate, its spending also increases. New demand for goods and services, from bricklayers to butchers, is created inside and outside the village, and income in the households that offer these services increases. They, in turn, spend their new income, creating additional rounds of income increases. The result is the creation of income multipliers inside and outside the rural economy, akin to the fiscal multipliers made famous by the John Maynard Keynes' seminal work. Economy-wide models are required to estimate the size of remittance multipliers. Findings from such models indicate that each additional dollar remitted increases Mexico's GDP by between \$2.69 and \$3.17, depending on which households in Mexico receive the remittance.¹²

The Importance of Gender

International migration affects men and women differently. Since at least the 1960s, the number of female international migrants has been nearly as large as the number of male migrants. Today, the share of females in the world's total international migrant population is close to one half. However, some LDCs send more men than women abroad, while others send more women. Developed countries attract more men than women from some LDCs but more women than men from others.

Recent research finds that both the determinants and impacts of international migration are different for women than men. A new study from Mexico finds that migration experience and networks raise the likelihood of international migration more for women than for men. It also finds that U.S. border enforcement expenditures decrease the likelihood of female migration, but they have no significant effect on male migration. More educated women (but not men) are more likely to migrate from rural Mexico to the United States. Male (but not female) migration may have been slightly lower after NAFTA.

3. Conclusions

Our brief discussion of trends and paradoxes of international migration leads us to the following conclusions:

- Underdevelopment drives migration, but migration also affects underdevelopment

¹² The remittance multiplier is larger for households that spend a larger share of their new income on locally produced goods and services with a low import content. See Taylor, et al. (1996).

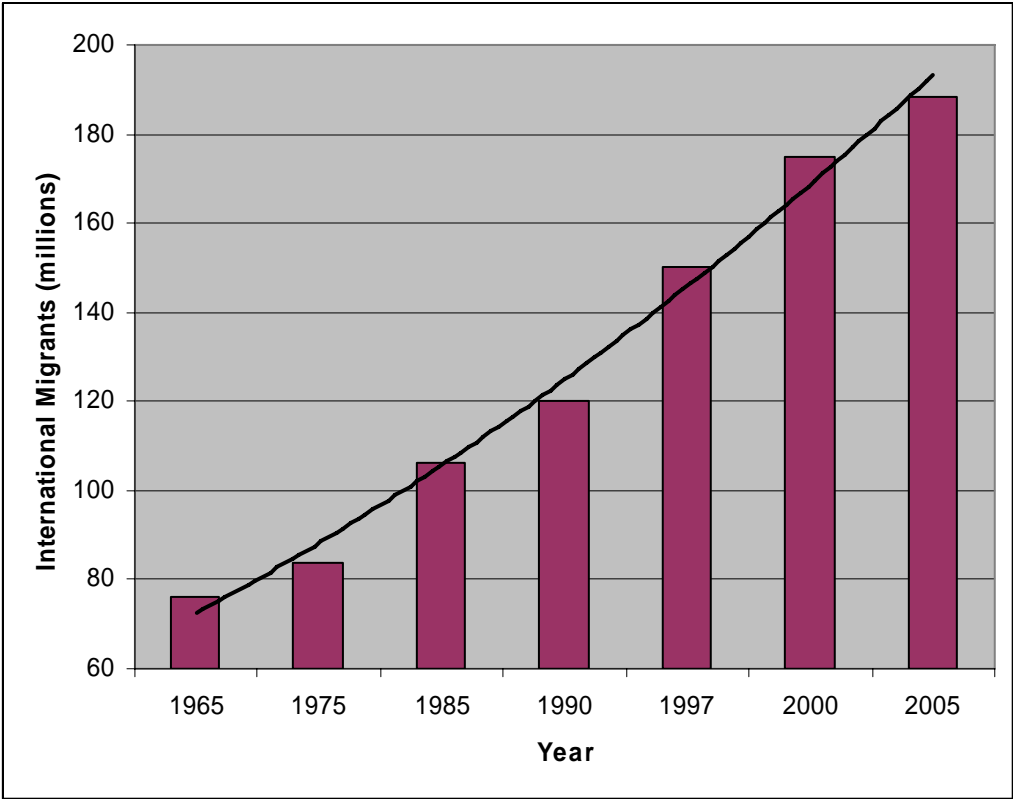
- Income gaps between rich and poor countries create the incentives for international migration but they are a necessary—not a sufficient—condition. Most people do not migrate, even when incomes are far higher abroad than at home.
- Income growth in migrant-sending areas often is associated with more international migration, not less. In all countries that experience rapid income growth, the share of people in farm jobs and in rural areas goes down.
- International migration is driven by networks. Once international migration from a particular region reaches a certain point, it tends to take on a life of its own.
- Half of the world’s international migrants are women, whose motives for migrating, constraints, concerns, and impacts on sending areas often are different from those of males.

These findings point to a rich set of potential policy implications. First, it is probably not a good idea to make “keeping people on the farm” a policy priority. This might seem controversial and provocative, but it is really common sense. History teaches us convincingly that trying to keep people at home is not only very costly, it is futile. Increased mobility is a concomitant part of economic success: as per capita incomes grow, people leave the agricultural sector (they also move out of rural areas). Even in countries with the biggest rural development success stories, the share of the work force in agriculture is decreasing. The countries that have been most successful at keeping population in rural areas have been precisely those that have been least successful at raising their people’s living standards and developing their agricultural base.

This does not mean that governments should be passive or not try to promote development in migrant-sending areas, for at least two reasons. First, when low incomes are compounded by poor access to markets for inputs, outputs, credit, and insurance, there may be too much migration. Second, many of the world’s migrants come from rural areas, and it is now well known that in countries where agriculture is not growing, the rest of the economy usually does badly, too. However, occupational migration away from farm jobs and geographic migration from rural areas, if anything, are likely to be higher when incomes are growing.

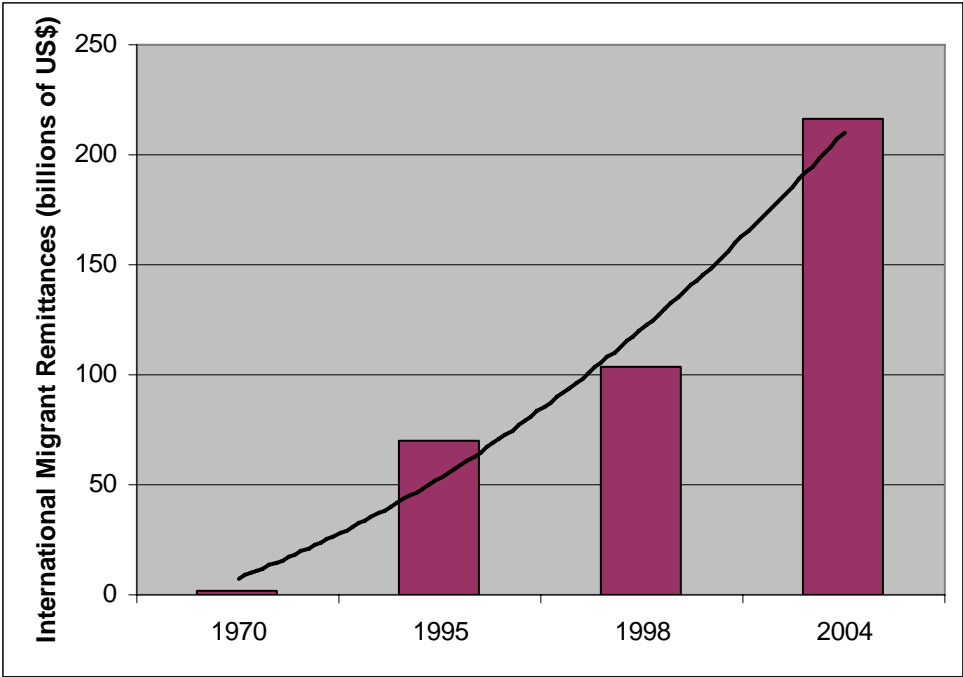
The challenge for policymakers is how to make migration a development tool and part of a dynamic process of income growth instead of a response to limited opportunities in migrant-sending areas. The ability of countries to create an environment that is conducive to broad-based economic growth *generally* can shape the economic landscape in migrant-sending areas, the contributions of migration to development, and the nonmigration options available to those who stay behind.

Figure 1. Upward Trend in Total International Migration, 1965-2005



Source: International Organization for Migration (2005)

Figure 2. Growth in Total International Migrant Remittances, 1970-2004



Source: International Monetary Fund (2005).

Figure 3. Labor Migrants as Percentage of Mexican Village Populations, by Migrant Destination, 1980-2002

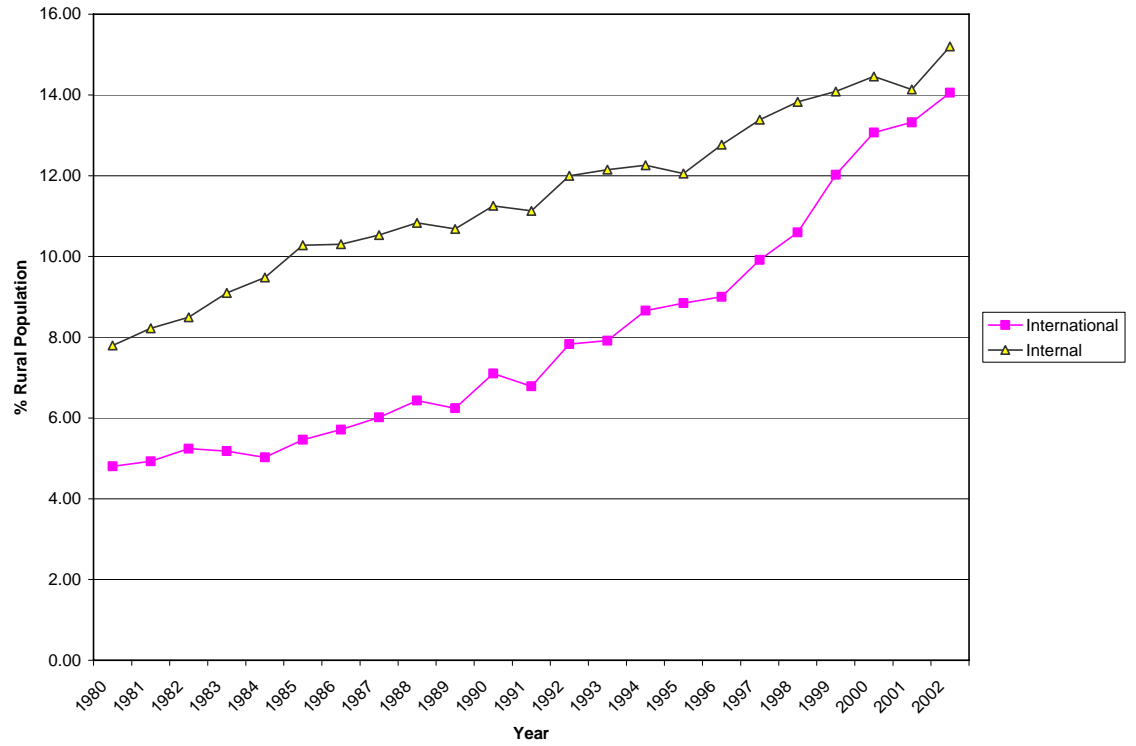
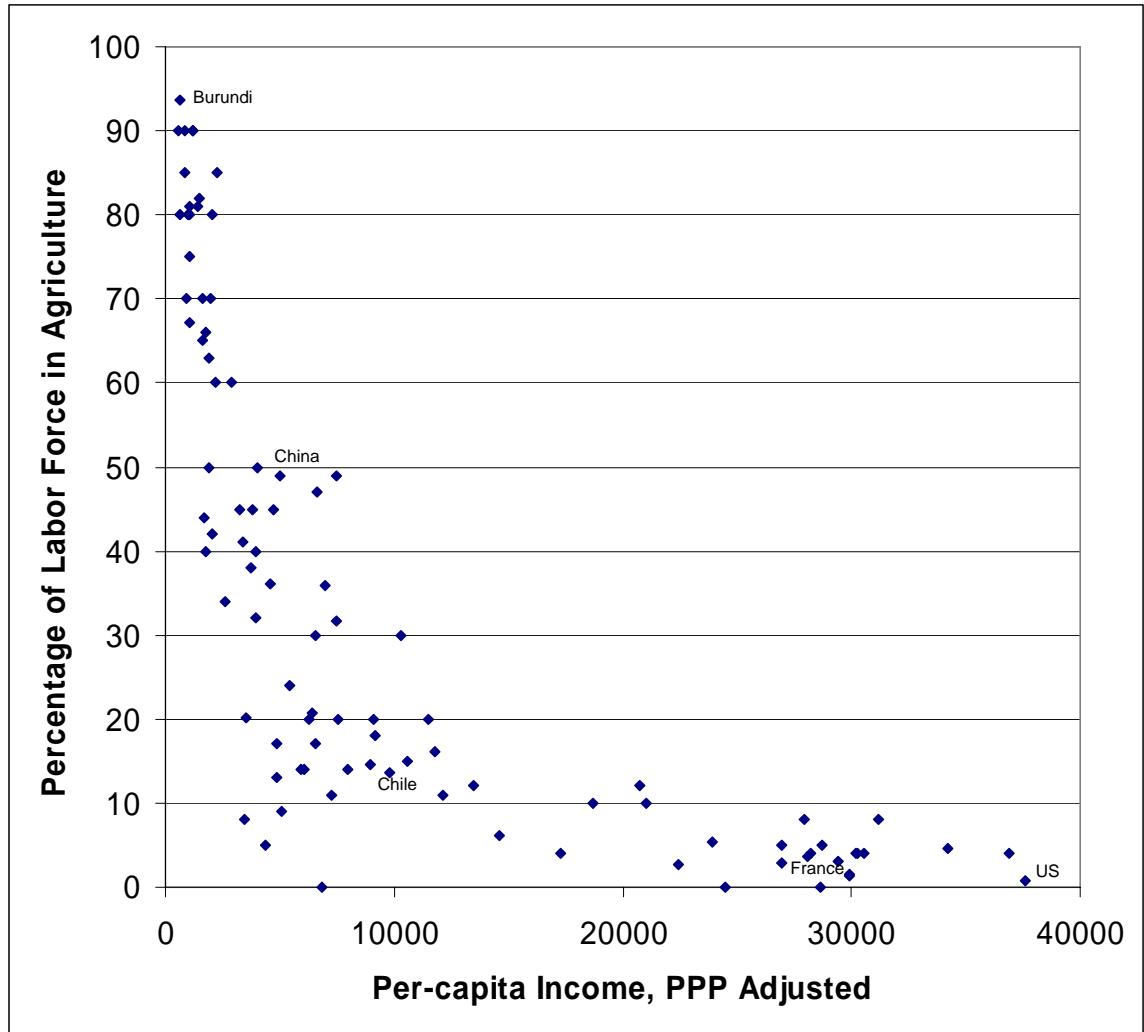
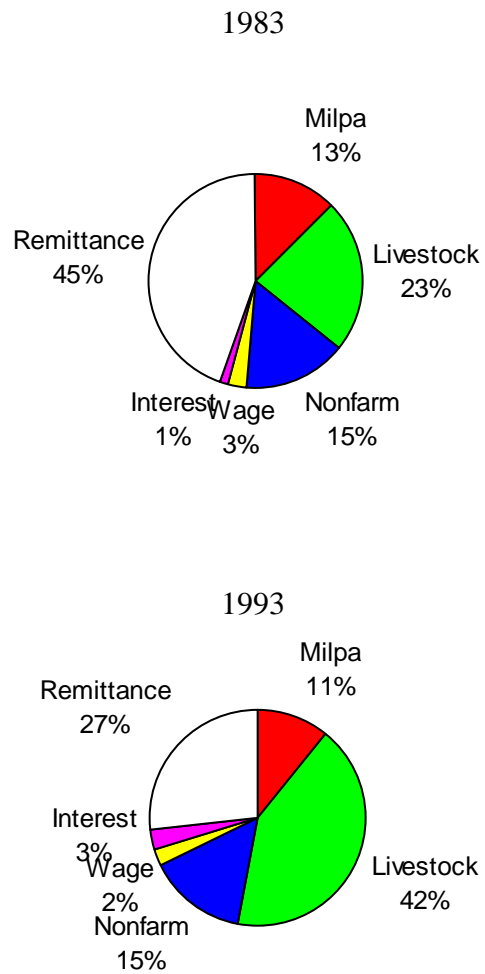


Figure 4. Percentage of Country Work Forces in Agriculture and Per-capita Income (PPP Adjusted)



Sources of Data to Construct Figure: The World Bank (<http://devdata.worldbank.org/dataonline/>) and CIA Factbook 2005 (<http://www.cia.gov/cia/publications/factbook/fields/2048.html>).

Figure 5. Average Household Income Composition in a Michoacán Village, 1983 and 1993.



References

- Beine, M., F. Docquier and H. Rapoport. 2001. "Brain Drain and Economic Growth: Theory and Evidence." *Journal of Development Economics* 64(1): 275-289.
- Boucher, S., A. Smith and J.E. Taylor. 2006. "Impacts of Policy Reforms on the Supply of Mexican Labor to U.S. Farms: New Evidence from Mexico." *Review of Agricultural Economics* (in press).
- Boucher, S., O. Stark and J. E. Taylor. 2005. A Gain with a Drain? Evidence from Rural Mexico on the New Economics of the Brain Drain. Invited paper, 14th World Congress of the International Economic Association, Marrakech, Morocco, August 29 – September 2, 2005.
- Curran, S. R. and E. Rivero-Fuentes. 2003. "Engendering Migrant Networks: The Case of Mexican Migration." *Demography* 40(2): 289-307.
- International Monetary Fund. 2005. Balance of Payments Statistics Yearbook, 2005, Part 2. Washington, DC: International Monetary Fund.
- International Organization for Migration. 2005. *World Migration 2005: Costs and Benefits of International Migration*. Geneva: International Organization for Migration.
- Martin, P.L. 1993. *Trade and Migration; NAFTA and Agriculture*. Washington, D.C.: Institute for International Economics.
- Martin, Philip, Elmar Hönekopp and Hans Ulmann. 1990. "Europe 1992: Effects on Labor Migration," *International Migration Review*, Vol. 24, No. 91, Fall. 591-603.
- Massey, D.S. 1991. "Economic Development and International Migration in Comparative Perspective." In Sergio Diaz-Briquets and Sidney Weintraub, eds., *Determinants of Emigration from Mexico, Central America and the Caribbean 1*. Boulder: Westview Press.
- Massey, D.S., J. Arango, G. Hugo, A. Kouaouci, A. Pellegrino, and J.E. Taylor. 1998. *Worlds in Motion: Understanding International Migration at the End of the Millennium*. Oxford: Oxford University Press. (Paperback edition published in 2005).
- McKenzie, D. and H. Rapoport. 2005. "Network Effects and the Dynamics of Migration and Inequality: Theory and Evidence from Mexico." Bureau for Research in Economic Analysis of Development (BREAD) Working Paper No. 063, April (<http://www.cid.harvard.edu/bread/papers/working/063.pdf>).
- Özden, Ç. and M. Schiff, Eds. 2005. *International Migration, Remittances, and the Brain Drain*. New York: Palgrave Macmillan.
- Richter, S. and J. E. Taylor. 2006. "Gender Composition of Migration Networks and the Allocation of Household Labor." Paper presented at the 2006 Annual Meetings of the American Agricultural Economics Association, Long Beach, CA, July 24.
- Stark, O. 1991. *The Migration of Labour*, Cambridge: Basil Blackwell.

Stark, O. and Y. Wang. 2002. "Inducing Human Capital Formation: Migration as a Substitute for Subsidies." *Journal of Public Economics* 86: 29-46.

Taylor, J.E. and P.L. Martin. 2001. "Human Capital: Migration and Rural Population Change." In B. Gardener and G. Rausser, eds., *Handbook of Agricultural Economics, Volume I*. Amsterdam: Elsevier, pp. 457-511.

Taylor, J.E., J. Mora, R. Adams, and A. López-Feldman. 2005. "Remittances, Inequality and Poverty: Evidence from Rural Mexico." Selected Paper, American Agricultural Economics Association Annual Meeting, Providence, Rhode Island, July 24-27.

Taylor, J.E. and A. Yúnez-Naude. 2006. "El CAFTA y la migración de trabajadores en América Central." Washington DC: Inter-American Development Bank.

Taylor, J.E., D.S. Massey, J. Arango, G. Hugo, A. Kouaouci, and A. Pellegrino. 1996. "International Migration and National Development." Population Index 62(2):181-212 (Summer).

United States Immigration and Naturalization Service INS. 1990. *INS Statistical Yearbook, 1990*. Washington, D.C.: Immigration and Naturalization Service.

Woodruff, C. and R.M. Zenteno. 2001. "Remittances and micro-enterprises in Mexico." University of California, San Diego (Mimeo).