Chapter 12

Labor and migration

TAKE-HOME MESSAGES FOR CHAPTER 12

1. Developing countries' labor markets are typically highly dualistic, with a formal sector offering wages above the full-employment equilibrium, and surplus labor accumulating in the informal sector with low wages and harsh work conditions.
2. Rural–urban migration is an integral component of the structural transformation of an economy that accompanies GDPpc growth.
3. Influx of rural immigrants, pushed into urban labor markets by different factors such as bad weather shocks or attracted by higher income and accessibility of public goods ("lights of the city") can crowd out local residents in the formal sector and push them into informal employment.
4. The Harris–Todaro model explains domestic migration in the context of labor-market failure. High urban formal-sector wages induce migration of individuals until unemployment is sufficient to lower the expected wage to the level of the current wage in emitting rural areas. Migration can thus continue to occur even with very high levels of urban unemployment.
5. Migration decisions are generally part of a household strategy, where the migrant is expected to send remittances back to the emitting household. This requires an understanding of migrants' motivations for remitting, ranging from altruism to trade.
6. The "new economics of migration" looks at migration as a way for a household to overcome local market failures in credit and insurance, allowing it to make better use of its resources through the remittances received.
7. Migration has both benefits and costs for the emitting community, the emitting country, and the recipient countries. They need to be carefully understood and managed to optimize the social benefits from migration and remittances.

With generally rapid population growth and insufficient new jobs, developing countries are facing a huge employment problem. Because labor is the main asset that poor people have, creating opportunities for them to use this asset productively is the main instrument for poverty reduction. It is no surprise, then, that providing employment opportunities in remunerative activities, elevating the skill level the labor force, and

pacing migration between rural origins and urban destinations to avoid the expansion of urban slums are major development issues. In this chapter, we first look at the logic of employment in the formal and informal sectors. We then look at two bodies of theory that aim to explain why people migrate: one when the decision to migrate is taken at the individual level, the other when it is taken at the household level. We consider international migration and look at its impact on the communities and countries from which migrants come, as well as on the receiving countries.

LABOR AND EMPLOYMENT

The employment problem in developing and industrialized countries

The employment problem takes different forms in different countries. In developing countries, few people can afford to be openly unemployed. Because there is typically no formal social assistance provided to the unemployed, everyone able to work has to generate a living in some way, with different degrees of success. This is the role of the informal sector, where entry is easy, labor productivity is low, labor regulations such as paying the legal minimum wage and respecting work-safety codes are absent or not respected, taxes are not paid, social benefits are absent, and value-added is generally not counted in GDP (though it is often guesstimated). Informal-sector employment can range from self-employment shoe-shining, selling lottery tickets on the sidewalk, and garbage recycling to employment in sweatshops, where working conditions are harsh, pay is low, there are no social benefits, and workers' rights are not recognized. Because entry to the informal sector is easy, it provides a survival strategy for unskilled workers and new urban migrants. A large informal sector, sprawling urban slums, lack of public services for slum dwellers, and high congestion externalities are symptomatic of a developing country's urban environment. It is important in this context to induce more firms to enter into the formal sector, allowing them access to formal financial institutions and public support (Levy, 2008) and their workers better conditions.

The labor problem in industrialized countries is different. In continental Europe, employment conditions tend to be rigid, union power is high, and social benefits comfortable. The problem is a relatively high rate of unemployment as employers are careful about hiring new workers that are expensive and that they will have a hard time dismissing should they want to. In the US, by contrast, employment is more flexible, union power generally weak, and social benefits limited. Jobs are often available on a part-time basis, with few if any social benefits. As a consequence, the labor problem has historically been less one of employment than of remunerative wages and social protection for unskilled labor. Over the last 25 years, real wages for unskilled labor have been falling steadily, and disparities between skilled and unskilled workers have been rising, contributing to the rise in inequality. At the end of 2014, the unemployment rate was 5.6 percent in the US compared to 10.4 percent in France, 13.4 percent in Italy, 23.7 percent in Spain, and 25.8 percent in Greece (Trading Economics, online). The labor problem in continental Europe has been one of creating more jobs, while in the US it has been one of creating better jobs.

Indicators of unemployment

Given the fact that there is little open unemployment in developing countries due to lack of unemployment insurance and other formal social-safety nets, there is a bigger underemployment than unemployment problem. Characterizing employment requires indicators that include but go beyond open unemployment. As an illustration, the employment problem in Colombia in the 1970s has been characterized by the International Labor Office (ILO) as follows:

1. *Open unemployment*: defined as people "actively seeking work," measured at 5 percent.
2. *Hidden unemployment*: defined as "discouraged workers." They are typically not counted when characterizing unemployment, leading to an underestimation of the true level of lack of access to jobs.
3. *Under employment when people do not work full time* due to seasonal unemployment or to part-time work, measured at 15 percent.
4. *Underemployment when people are working in low-productivity jobs* relative to their skills and effort level, measured at 13 percent.

Using these employment indicators, total un- and underemployment in Colombia was as much as 33 percent, when open unemployment was only 5 percent.

Employment in the formal and informal sectors

The formal and informal sectors are interrelated. As Hernando de Soto (1989) argued, excessive regulation in the formal sector can push economic activity into the informal sector; and high wages paid in the formal sector, above the full-employment equilibrium, can push employment into the informal economy. These high wages can be due to feather-bedding in public-sector employment, minimum-wage legislation, labor unions effectively lobbying for higher wages for their members, and "efficiency wages," whereby employers pay wages above the full-employment equilibrium wage as a way of increasing worker productivity or efficiency (Akerlof and Yellen, 1986). We analyze these in the next section.

The impact on informality of formal-sector wages set above the market-clearing equilibrium can be seen in Figure 12.1. Workers who cannot find employment in the formal sector at the set high wage $\bar{W}_M$ crowd into the informal economy (shifting the supply curve of labor from S to S'), depressing wages W_I in the informal sector, which then becomes a refuge for the formally unemployed. The higher the formal-sector wage relative to the full-employment equilibrium wage, the lower the equilibrium wage in the informal sector.

Surveys conducted by the ILO (International Labor Office, 2002) have shown the enormous magnitude that the informal economy can reach. Informal employment is defined as not receiving social-security benefits through employment. Recent estimates are that informal employment makes up 48 percent of non-agricultural employment in North Africa, 51 percent in Latin America, 65 percent in Asia, and 72 percent in

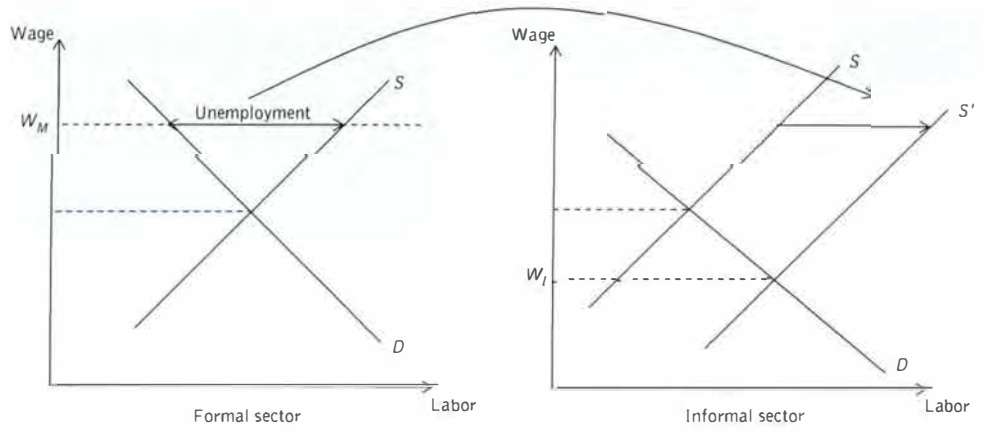

Figure 12.1 *Link between wages in the formal and informal sectors*

Sub-Saharan Africa. Some 70 percent of informal-sector workers are self-employed. ILO studies have also shown that the informal economy is highly heterogeneous (Tokman, 1989). Part of it is disguised unemployment, a large refuge sector for workers unable to find employment in the formal sector. This segment of the informal sector tends to be *counter-cyclical* to formal-sector employment: when formal-sector employment contracts due to a recession or to rising formal-sector wages, employment in the informal sector expands. But part of the informal economy is complementary to the formal sector, in particular subcontracting with formal-sector firms. This segment of the informal economy is *pro-cyclical* to formal-sector employment.

Empirical results for Colombia (Mondragón *et al.*, 2010) show that the counter-cyclical effect is supported empirically. An increase in non-wage costs and in the minimum wage in the formal sector had a large positive effect on informal employment and a negative effect on informal wages. Tracking the strategy used by households which lost formal-sector employment, Gaviria and Henao (2001) find that they compensated by participating in informal-sector employment.

An influx of rural migrants, pushed into urban labor markets by bad-weather shocks, can crowd out local residents in the formal-sector labor market and push them into informal employment. Using data for Indonesia, Kleemans and Magruder (2014) instrument rural–urban migration by excess rainfall (Figure 12.2). Bad weather is a good instrument as it has strong predictive power for migration, and yet no direct effect on urban labor markets (satisfying the exclusion restriction).

Results show that rural migrants pushed by adversity are detrimental to labor-market outcomes for local residents: for the latter, employment declines, especially in the formal sector, and income falls, especially in the informal sector. The impact is largest on low-skill resident workers (and also on women and young workers): their formal-sector employment declines, they switch to informal-sector employment, and there is a decline in informal-sector income. Kleemans and Magruder's study is important as it offers rigorous support for the link between formal- and informal-sector employment.

The expansion of social-assistance programs, with access to non-contributory health and pension benefits, may induce more firms and workers to remain in the

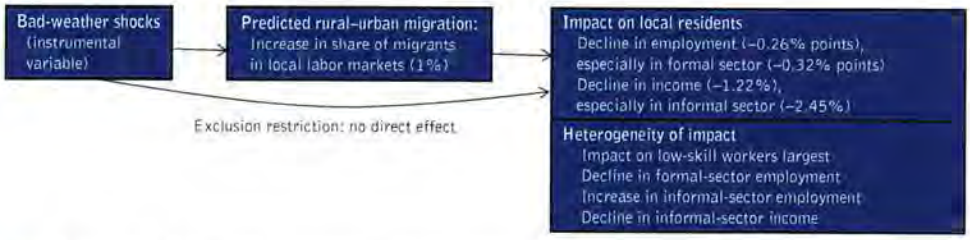

Figure 12.2 *Impact of rural–urban migration on labor market for local residents*

Source: Based on results in Kleemans and Magruder, 2014.

informal sector. Given the existence of these programs, workers may prefer a higher informal-sector wage with no contribution to these programs to a lower wage with social benefits, particularly if they have high discount rates and little confidence in the permanence of the programs (Maloney, 2004). In Latin America, the rise in informality coincided with the expansion of non-contributory public health insurance. Improved provision of social-assistance programs may thus have a perverse effect on informality, with associated losses in economies of scale and productivity gains for firms, and in fiscal revenues for governments (Levy, 2008). There can thus exist a complex trade-off between equity and efficiency gains when introducing social-assistance programs such as pension funds in Bolivia and South Africa, and free health services in Mexico, Colombia, and Bolivia. These programs are good for welfare but, by encouraging informality, impose an efficiency cost on the economy.

Recent studies have tried to estimate the efficiency cost of increased informality induced by expansion of coverage of non-contributory social-assistance programs. In Colombia, coverage of the subsidized public health-insurance program increased from 30 percent to 90 percent of the population. Camacho *et al.* (2014) estimate that this induced an increase in informal-sector employment of 8 percent, with workers accepting a 12 percent decline in wages as they could forego payment of social-security benefits. The government's public health budget increased by 11 percent as a consequence of this shift in employment to the informal sector. Because labor productivity is lower in informal- than in formal-sector employment, the authors estimate that it led to a 3.8 percent loss in GDP. Working in the informal sector was a strategic choice, and had a high aggregate efficiency cost.

RURAL–URBAN MIGRATION

Migration is a huge phenomenon, both domestically and internationally. Domestic migration is mainly rural–rural and rural–urban, and only urban–rural when unemployment or adversity strikes in the urban environment. Domestic migration can be seasonal, short-term, long-term, or permanent. It can be pushed by adversity, or driven by opportunity. And it can be at the initiative of the migrant, or part of a household strategy focused on the role of remittances for household welfare. We discuss here rural–urban migration, and consider international migration later.

Structural transformation and urbanization

Migration from rural to urban environments is a huge phenomenon, involving millions of people every year. More than half a billion people are estimated to have migrated from rural to urban areas in developing countries over the past 25 years (World Bank, 2007). Rural–urban migration contributed to the increase in urban population from 29 percent of world population in 1950, to 49 percent in 2005, and a predicted 60 percent in 2030. Urbanization increases with GDPpc (Table 12.1), rising from 29 percent in low-income countries to 80 percent in high-income countries. The rate of growth of the urban population is highest in low-income countries, rising at an average annual growth rate of 3.8 percent over the 1990–2013 period. In low- and middle-income countries, the rate is the highest in Sub-Saharan Africa (4.6 percent), followed by East Asia and the Pacific (3.6 percent), South Asia, the Middle East, and North Africa (2.8 percent), and Latin America and the Caribbean (2.1 percent). Rapid urbanization is clearly a problem that can be associated with convergence (rapid growth and structural transformation of poor countries), but also with failure to retain populations in rural areas, and urban poverty.

The world has become predominantly urban, with a prevalence of megacities, defined as having a population in excess of 10 million (Table 12.2). Of the 26 megacities in the world, 17 are located in developing countries. Many have explosive growth. If current growth rates continue unabated, Karachi will double in 14 years, Delhi in 15, and Dhaka and Guangzhou in 17.

Rural–urban migration is part of the normal process of structural transformation of an economy (Lewis, 1955; and see Chapter 8): as GDPpc rises, the labor force increasingly leaves agriculture and rural areas to move to urban environments and employment in industry and services. As can be seen in Figure 12.3, using cross-country data, the shares of agriculture in total employment (Figure 12.3a) and GDP (Figure 12.3b) fall, while the shares of industry and services rise (Kuznets, 1968; Chenery and Taylor, 1968). At high levels of GDPpc, the service sector is by far the largest employer in the economy and the largest contributor to GDP. It is also interesting to observe how these normal patterns have changed over time, comparing them in 1980–4 and in 2009–13. Industry is losing its capacity to generate employment with rising income, while services are gaining employment capacity, with the same pattern observed for

Table 12.1 *Population and urbanization*

Country category	*GDPpc/year US$*	*Total population (millions)*	*Urban population (percent)*	*Average annual growth urban population 1990–2013 (percent)*
Low-income	< $1,045	850	29	3.8
Lower middle-income	$1,045 to 4,125	2500	39	2.8
Upper middle-income	$4,125 to 12,745	2400	62	2.9
High-income	> $12,745	1300	80	0.9

Source: World Bank, *World Development Indicators.*

Table 12.2 *Megacities in developing countries, 2012*

Megacities	*Country*	*Population (million)*	*Annual growth (%)*	*Time to double Years*
Guangzhou	China	25.2	4.0	17
Seoul	South Korea	25.1	1.4	50
Shanghai	China	24.8	2.2	32
Delhi	India	23.3	4.6	15
Mumbai	India	23	2.9	24
Mexico City	Mexico	22.9	2	35
São Paulo	Brazil	20.9	1.4	50
Manila	Philippines	20.3	2.5	28
Jakarta	Indonesia	18.9	2.5	28
Karachi	Pakistan	17	4.9	14
Kolkata	India	16.6	2	35
Cairo	Egypt	15.3	2.6	27
Buenos Aires	Argentina	14.8	1	69
Dhaka	Bangladesh	14	4.1	17
Beijing	China	13.9	2.7	26
Rio de Janeiro	Brazil	12.5	1	69
Lagos	Nigeria	12.1	3.2	22

Source: Wikipedia, *Megacity*.

the share of GDP. This declining role of industry, which has been called premature deindustrialization (Rodrik, 2015), should be worrisome for countries that count on industrialization to help absorb rural–urban migrants in productive employment.

The decision to migrate from the rural to the urban sector responds to expected income differentials between rural and urban locations in excess of migration costs. Importantly, the comparison is not only about private income but also about the consumption of public goods and services. Typically much more accessible in the urban environment, they are referred to as the "lights of the city" and contribute to attracting migrants. Migration helps equilibrate the labor market, shifting labor toward higher-productivity urban employment. In this sense, migration is a "normal" and desirable phenomenon, contributing to both efficiency gains and poverty reduction (Ravallion *et al.*, 2007). However, things may not be that simple. Migration may be excessive if it adds to urban unemployment, contributes to the sprawl of urban slums, and creates congestion externalities in urban areas. As can be seen in Table 12.3, the share of the urban population that lives in slums is as high as 63 percent in Nigeria, 62 percent in Bangladesh, 53 percent in Iraq, and 47 percent in Pakistan. Migration may then displace poverty from the rural to the urban sector instead of contributing to rising levels of labor productivity and wellbeing. In this case, socially optimal migration may be less than privately optimal migration. A policy issue then emerges as to how to reconcile social and private optima by discouraging or constraining excess migration.

The reverse can also hold. Countries like India, Bangladesh, and Mexico have shares of their labor force in agriculture way in excess of normal patterns. Migration

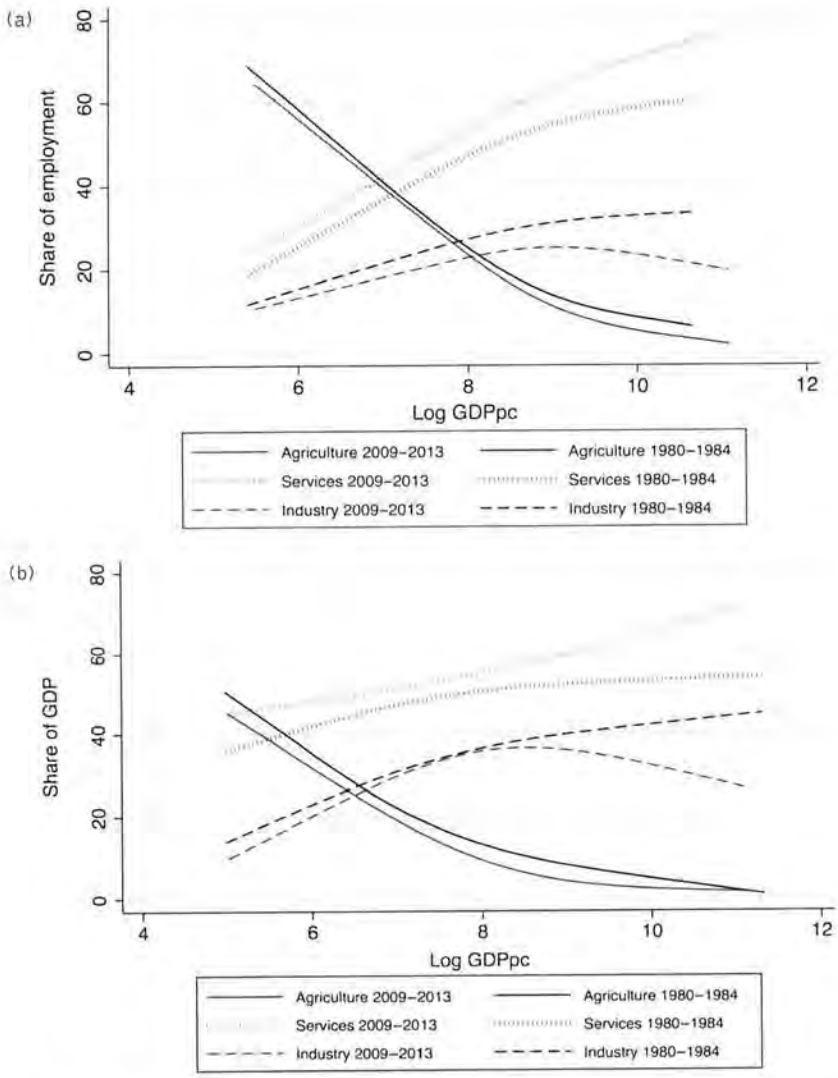

Figure 12.3 *Normal patterns of structural transformation of an economy as GDPpc rises, 1980–4 and 2009–13: Sectoral shares of employment (a) and GDP (b)*

Source: World Bank, *World Development Indicators.*

may be detained by lack of information, liquidity constraints, and excessive risk of migration failure given current poverty levels. We will see later that cash grants to potential migrants can help boost migration (Bryan *et al.*, 2014).

What induces people to migrate? There are two complementary theories. One is when migration is an individual decision, driven by self-interest. In this case, it is the expected gain for the migrant that makes him decide. The other is when migration is a household decision, where a household member migrates to improve conditions for the household as a whole. In this case, the key motivation in migration is the remittances that the migrant will send back home, driven by the household's collective interest.

Table 12.3 *Urban population living in slums, 2009*

	Urban population living in slums	
Countries	*Millions*	*% of urban population*
Nigeria	47.6	63
Bangladesh	27.5	62
Iraq	10.8	53
Pakistan	30.0	47
China	174.0	31
India	104.7	29
Brazil	44.9	27
Zimbabwe	1.1	24
South Africa	7.1	23
Indonesia	23.3	23
Egypt	6.1	17
Mexico	11.9	14
Colombia	4.9	14

Source: UN-Habitat, 2012.

Individual decision to migrate under urban labor-market failure: The Harris–Todaro model

The basic model

In this model, the unit of decision-making is the individual migrant (Harris and Todaro, 1970). A potential migrant has to decide whether to stay in the rural sector, where he gets a certain wage W_A or move to the urban sector, where he hopes to be employed in the modern sector and receive the high wage $\bar{W}_M$. He may be unlucky, and find himself unemployed. Todaro developed this model while working in East Africa, and he wanted to find an answer to a big puzzle he saw: why is there continuing, rapid rural–urban migration in spite of the fact that there is high urban unemployment? With a perfect labor market, economic theory predicts that, if there is unemployment, wages will fall until unemployment is eliminated. At this equilibrium, both wages will be equal, up to migration costs, and it will no longer be beneficial to migrate. In contrast, the Harris–Todaro model helps explain why migration continues even with high unemployment, but not forever. It does this by looking at how a distorted formal-sector urban wage held above the full-employment equilibrium (a labor-market failure) induces migrants to take a chance in the hope of getting the high wage, in spite of high unemployment.

The Harris–Todaro model is formulated as follows. Define the following variables:

W_A = current rural wage (rural income)
$\bar{W}_M$ = formal-sector urban wage
W_M^* = expected urban wage (urban income)

m = 1 if the individual decides to migrate, 0 otherwise

P = probability of finding a job in the urban sector = urban employment rate

$1 - P$ = urban unemployment rate.

The structural form of the model has three equations:

Expected urban wage

$$W_M^* = P\bar{W}_M$$

In other words, the expected urban wage W_M^* is the urban wage $\bar{W}_M$ times the probability P of finding a job in the urban sector.

Probability of finding a job in the urban sector

This probability is equal to the urban employment rate, assuming that jobs are randomly allocated across the urban labor force in each period.

$$P = \frac{\text{Urban employment}}{\text{Total urban labor force}} = \text{Urban employment rate.}$$

By difference, $1 - P$ is the urban unemployment rate.

Decision to migrate

The individual will decide to migrate if the expected urban wage is higher than the current rural wage, i.e.

$$m=1 \text{ if } W_M^* > W_A, m=0 \text{ if } W_M^* \leq W_A.$$

The reduced form (solution) of the model consists in deriving the rate of unemployment that will stop migration:

$$m=0 \text{ when } W_M^* = W_A, \text{ i.e., when } P\bar{W}_M = W_A \text{ or when } P = W_A/\bar{W}_M.$$

Hence the urban rate of employment that will stop migration is the ratio of the rural to the urban wage.

Two numerical examples will illustrate the power of this simple result.

If $W_A = 1$ and $\bar{W}_M = 2$: $P = 1/2$, and $1 - P$, the equilibrium urban unemployment rate, has to be as high as 50 percent to discourage rural people from migrating. Until then, it is incentive compatible for the potential rural migrant to decide to migrate.

If $W_A = 1$ and $\bar{W}_M = 4$: $P = 1/4$, migration will continue until there is a 75 percent urban unemployment rate.

The important message here is that migration is economically rational for rural migrants in spite of eventually extensive urban unemployment. Unemployment is provoked by a large urban labor-market failure, whereby the urban wage fails to adjust

to unemployment. With a large rural–urban wage gap in the situations observed by Todaro in East Africa, it is no wonder that we find large and expanding urban informal sectors and slums.

Policy implications of the model

A labor-market equilibrium with urban unemployment is clearly highly inefficient, and it imposes a high welfare cost on the unemployed. It is also a source of exclusion and frustrations. The unlucky urban unemployed migrants would have been better off staying in the rural sector; yet it was incentive compatible for them to move. What can be done to reduce this inefficient outcome?

Create new jobs in the formal sector? Not the right solution

This policy response to urban unemployment has been extensively used, in particular creating public-sector jobs with the intention of mopping up the unemployed. The implication for unemployment is, however, perverse because new migrants vote with their feet. If government increases urban employment by one job at $\bar{W}_M$, more than one person will migrate to the city attracted by the higher employment rate. If, for example, one job is created when the formal-sector wage is four times the rural wage, four additional migrants will come to the city, of which three will be unemployed. The arithmetic is as follows:

Denote urban employment by UE, and the total urban labor force by $TULF$. The labor market equilibrium before job creation is:

$$P = \frac{UE}{TULF} = \frac{W_A}{\bar{W}_M} = \frac{1}{4}.$$

Hence $TULF = 4UE$.

If the government creates one new job at the same urban wage $\bar{W}_M$, P remains unchanged at ¼ since the wage ratio has not changed. Hence, after job creation, the new $TULF$ is $TULF'$ equal to:

$$\frac{UE+1}{TULF'} = \frac{1}{4} \text{ or } TULF' = 4UE + 4.$$

The total urban labor force has increased by four migrants. Of these, one is employed and the other three are unemployed. Hence job creation at $\bar{W}_M$ is not the solution to urban unemployment. The policy backfires on good intentions, increasing both the number of migrants and the number of unemployed.

Reduce the gap between $\bar{W}_M$ and W_A? Two options

Creating jobs while maintaining the high fixed urban wage is not the answer. The model tells us to close the rural–urban wage gap to reduce incentives to migrate. How can this be done? There are two options.

Lower $\bar{W}_M$ These interventions are on the "pull" side of the wage gap. We need to understand, however, why the formal-sector wage is so high. There are two reasons.

The first is interventions by labor unions or by government for clientelistic purposes. The implication here is to resist excessive union power when there is still so much unemployment. The unions defend the wages of the employed, but create a backlash for the unemployed in the informal sector. We saw this for Colombia with the Mondragón *et al.* (2010) results. Another implication is to expose feather-bedding in the public sector by unscrupulous politicians who use it to build political support and enhance their chances of re-election. The social cost of these practices is high, taking the form of huge urban slums. To get a feel for life in these urban slums, take a moment to look at Kibera, the largest urban slum in Nairobi, with some 500,000 to a million inhabitants on a small piece of land (Wikipedia, *Kibera*). You can also visit the urban slum at the center of Mumbai, India by watching the video The Mumbai Makeover (Journeyman Pictures, *The Mumbai Makeover*). An interesting aspect of this visit is to see how the slum is both a crowded living environment and a place of bustling informal-sector enterprises.

The second reason for the existence of high formal-sector wages is because employers want to increase worker productivity or efficiency. This is the efficiency-wage theory referred to above, and developed by Akerlof and Yellen (1986). There are several versions of this theory. One is a nutritional theory, according to which higher wages allow workers to eat well enough to be able to work more productively. In this case, a high formal-sector wage is efficient for the employer, not a distortion, as above. The wage is set at W^* to maximize worker effort per dollar of wage paid along the S-shaped effort-response function in Figure 12.4a. Another influential version of the efficiency-wage theory is Shapiro and Stiglitz's (1984). The idea is that by paying wages higher than the equilibrium wage and creating unemployment, and threatening workers with dismissal for shirking on the job, unemployment creates a disciplinary device for workers to work hard. Other theories are that well paid workers are less likely to quit their jobs, thus decreasing turnover, and that higher wages attract more qualified workers and boost the morale of workers, increasing productivity. In all cases, the higher wages are paid to induce higher worker productivity, and hence are rational for the employer.

This efficiency wage may well be above the full-employment market-equilibrium wage W (Figure 12.4b), creating unemployment. This makes reducing the wage gap difficult to handle because it is incentive compatible for employers to pay above equilibrium wages. However, there are other options for employers to ensure hard work, including motivating workers by sharing the profits of the firm with them, i.e. making them residual claimants. As can be seen in Figure 12.4c, greater motivation shifts the effort-response function and helps reduce the incentive wage paid from W^* to $W^{*\prime}$. Another option is to use a monitoring-enforcement approach to induce effort by direct supervision instead a wage incentive. These options have been extensively explored in the labor literature, in particular by Bowles and Gintis (1988).

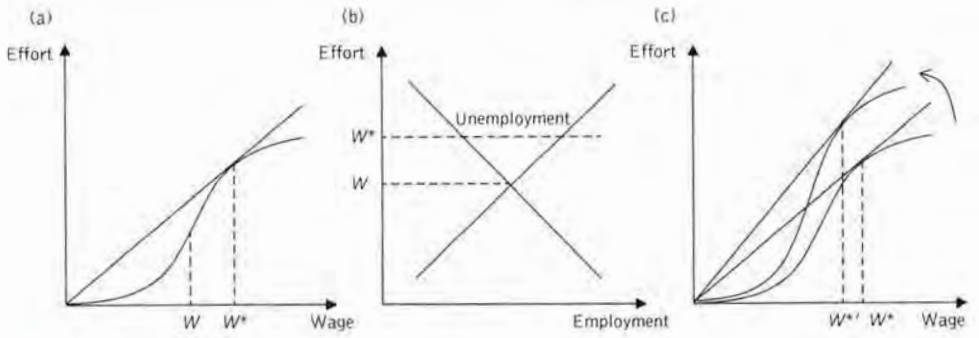

Figure 12.4 *Wage determination and labor-market failure under the efficiency wage theory*

Raise W_A These interventions are on the "push" side of the wage gap. They will induce more rural people to stay where they are. This calls for policies to improve living conditions in rural areas and make agriculture a more profitable and labor-intensive business. Interventions include rural development programs, land reform, better technology and institutions to improve productivity in agriculture, shifting to high-value crops, and decentralization of employment toward rural areas in order to create a thriving rural non-farm economy. The policy implication is, in a sense, somewhat counter intuitive: the solution to urban unemployment is not in the city, but in remote rural areas. We will explore these policies in Chapter 18.

Note, however, that in the context of other market failures, the impact of rising agricultural income on migration may be ambiguous. In the case of international migration, which is also applicable to rural–urban migration, Bazzi (2014) has shown that reducing the income gap through economic development in the emitting countries might have ambiguous effect on migration. Higher income at home narrows wage gaps with rich countries but also relaxes liquidity constraints that may have prevented migration among the poor. He tests for liquidity constraints in Indonesia using household-level land-holding heterogeneity, rainfall shocks, and a large exogenous increase in domestic rice prices with considerable spatial variation. He finds that the liquidity constraints are indeed binding and that positive agricultural income shocks are associated with significant increases in the share of village residents working abroad.

Regulate urban migration

A coercive solution also exists. Migration to the city may be restricted by requiring migrants to hold an urban residence permit, as in China under the Hukou system, introduced in 1952 and still partially in place today. Urban residents without a permit are not given access to local public services, including, for a long time, access to education for the children that may have migrated with them. This is of course very difficult to enforce. In 2003, it was estimated that there existed a floating population of 740 million migrants working without residence permits in urban areas. Lack of

access to schooling for their children if they accompanied their parents imposed a huge welfare cost on the next generation.

Extensions of the model and empirical results

An attraction of the Harris–Todaro model is that its basic formulation is very simple, but it can incorporate a lot of modifications to capture particular situations. The model can be applied to domestic as well as to international migration, and we consider both here, as well as some of the extensions that have been introduced in the vast literature on the subject.

Migration costs and longer time horizon

Migration is expensive and should be thought of as a medium- to long-term decision. The decision to migrate can then be modeled by comparing the present value (PV) of the difference in income at the point of origin (y_{origin}) and income at the point of destination ($y_{destination}$) net of migration cost (Rosenzweig, 1988a):

$$\text{Migrate if } \text{PV}(y_{destination} - y_{origin}) - \text{Cost of migration} > 0.$$

This model predicts that migration will increase with younger age (longer time horizon over which to benefit from migration) and lower migration cost (shorter distance to destination), in addition to greater income difference as in the Harris–Todaro model.

Model predictions are confirmed by descriptive statistics. The index of migration intensity between two regions, A (rural) and B (urban), is defined by the UNDP (Bell and Muhidin, 2009) as the ratio:

$$\frac{\text{Number of migrants from A to B over the period}}{\text{Number of inhabitants of A at the beginning of the period}}$$

The index of migration intensity can be measured by age. The age profile of five-year migration intensity for eight Latin American countries is shown in Figure 12.5. It confirms the prediction that there is a sharp peak between the ages of 20 and 30, with the highest intensity of migration at peak observed in Chile (15.6 percent), followed by Ecuador (10.3 percent) and Costa Rica (8.2 percent). In China, with restrictions on labor migration, the intensity of migration at peak is 6.2 percent, compared to 20.7 percent in Malaysia and 11.7 percent in Thailand. India also has a remarkably low intensity of migration, peaking at only 4.1 percent.

Role of social networks in finding a job

In the basic Harris–Todaro model, the probability of finding a job is the urban rate of employment, P = Urban employment/Total urban labor force. It means that employment is determined by a random drawing of who will be employed in each period. This is evidently not realistic. More plausible specifications of the workings of the

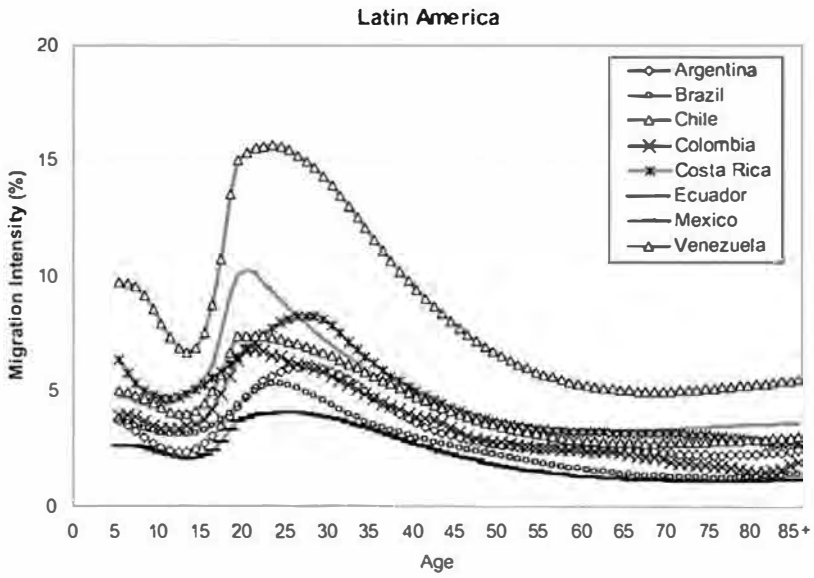

Figure 12.5 *Profile of five-year migration intensity by age, Latin American countries*

Source: Bell and Muhidin, 2009.

urban labor market for migrants can be explored. It is likely that migrants have a lower chance of being selected for employment than current residents who are already employed. In this case the equilibrium rate of unemployment to deter migration would be lower than in the Harris–Todaro model. But it may also be the opposite. Strong social networks of migrants from the same community may increase P for new migrants, raising the equilibrium-unemployment rate to stop migration. Empirical studies of the migration of Mexican workers have shown that migrant networks in the US play a large role as they help new migrants find employment through information and job referrals (Winters *et al.*, 2001). However, establishing the causal impact of networks on migration outcomes is challenging. Migrants with a large network may also share characteristics that are favorable to successful migration. These characteristics then create a spurious correlation between networks and migration that obscure the causal role of the network. To overcome this difficulty, Munshi (2003) used an instrumental variable approach (see Chapter 4) where migration is influenced by local weather shocks to show that a Mexican migrant in the US labor market is more likely to be employed and to hold a higher-paying non-agricultural job when his migrant network is larger.

The role of credit constraints and risk aversion

The cost of migration can be high: travel is expensive (for the 8–10 million Bangladeshi migrants working in the Gulf countries, for example), migrants have to rely on intermediaries who charge expensive fees to arrange visas and work permits, or pay fees to guides (*coyotes* on the Mexico–US border) that help them cross borders illegally. If migrants are poor and cannot borrow against future incomes, they will be constrained

in their migration. Additionally, if migrants cannot take the risk of urban unemployment, either because they are poor and come to the city with no financial resources, or because they do not have access to credit, they will be constrained. A typical result from migration studies is that the poorest, who should have the greatest incentive to migrate, migrate less than less poor individuals. That migration is costly and risky, deterring many, has been applied to India to explain the surprisingly low rate of migration in spite of huge rural–urban wage disparities.

Bryan *et al.* (2014) ran an RCT in Bangladesh to show the role of cash constraints in the migration of the poor. They created incentives for rural inhabitants to migrate in the pre-harvest lean season (also called the hungry season) by giving an $8.50 cash grant to households, which covers the round trip travel cost. They found that the incentive induced 22 percent of the households to send a seasonal migrant. Their interpretation is that low migration was due to the risk of migration failure. Once households have sent a migrant and learn how well he can fare at the destination, in the following years they continue to do so at a higher rate than control households without a subsidy. 

The role of skills in migration

Studies have shown that the return to education is generally higher in the urban than in the rural environment. As a consequence, it is rural residents with higher skills that are more likely to migrate (Rosenzweig, 1988a). Technological change in agriculture (for example, the Green Revolution, or the introduction of high-value crops using sophisticated production techniques) will increase the skill premium in the rural sector, and reduce the migration of skilled labor.

For international migration, the role of skills in migration may be different. The return to education obtained in Mexico is higher in Mexico than in the US due to different languages and institutions. As a consequence, economic logic tells us that it is the lower-skill workers who should migrate most to the US, implying negative selection. However, as Chiquiar and Hanson (2005) show, this is not the case. It is those men with intermediate levels of skills who migrate the most, and those women with the highest skill levels, implying positive selection. A possible explanation is the differential role of networks, credit constraints, and the ability to take risks.

McKenzie and Rapoport (2010) examined the role of migration networks in self-selection by skill levels in Mexico–US migration. They confirm that there is a lower return to education in the US than in Mexico (due in part to language differences), leading to negative selection by skills. High migration costs have an opposite, positive self-selection effect. However, the presence of strong migration networks reverses the role of cost and induces negative self-selection. Through the benefits of cost-reducing networks, it is lower-skill individuals who are most able to migrate.

The role of relative deprivation as a motivation to migrate

A powerful incentive to migrate is considering that your personal situation is inferior to a standard you aspire to. This is the theory of relative deprivation (Stark and Taylor,

1989). It implies that it is those whose educational and entrepreneurial potential is most unrewarded in the community who have the greatest urge to migrate. If this is the case, not only is low absolute income a determinant of migration, but also local inequality associated with relative deprivation. Policies to reduce migration must then focus on reducing both poverty and inequality (Quinn, 2006).

All these different reasons to migrate are of course not exclusive. This explains why correlations may not be consistent with theory, like seeing the most educated women migrate. One would have to properly control for the other determinants of migration to identify a causal relationship illustrating any one of these channels. So while these theories are intuitive, few have been empirically tested.

The household decision to send a migrant under local market failures: the new migration economics

In the Harris–Todaro model, it is the individual who decides whether or not to migrate based on the calculus of personal-income advantage. This is likely to be the most important determinant of migration. However, most individuals are members of households, and the decision to migrate may also be part of the household's overall income and security strategy. In this case, the decision to send a migrant is motivated by the household's objective of receiving remittances. This becomes a two-agent contract (the household and the migrant). We must look at their respective points of view to understand migration and the subsequent flow of remittances.

Household benefits: income from remittances

There are two interpretations of the rationale for a household to send a migrant. The first rationale is a direct extension of the Harris–Todaro argument, transposed from the individual to the household. From the perspective of the household, the contribution of a specific member to household income may be seen as higher if he is located in the urban sector or abroad rather than in the community. The incentive to send a migrant can be huge: for Mexican migrants to the US, the PPP-adjusted wage gap between destination and origin in jobs requiring identical skills in 2007 was 7 to 1. The household pays the cost and risk of migration for the designated member, and expects to receive remittances in exchange for this investment. The difference with the Harris–Todaro model is that the benefits of migrating are seen as not accruing exclusively to the migrant but at least in part to the household as a flow of remittances.

The second rationale, first introduced by Stark (1993) under the heading of the "new migration economics," consists in looking at the decision made by a household to sending a migrant who will send remittances to help overcome the market imperfections to which the household is subjected locally. Due to these market failures, the household is making sub-optimum use of the assets it controls. While under perfect local market conditions there may be no reason to send a migrant away, under market failures the migrant can help compensate for the market failure through the remittances sent back home. The market failures that can be relaxed through remittances

are mainly for credit and insurance. The gains to the household are the remittances sent by the migrant (if successful, and if he or she agrees to remit) that will help relax the liquidity and risk constraints on productive household asset use. The cost to the household of sending a migrant is the loss of labor at home in using the assets controlled by the household. In this perspective, seasonal migration during the hungry season may have a zero opportunity cost, as in Bryan *et al.*'s (2014) study in Bangladesh. According to the theory, more local market failures induce more migration, and remittances are used to compensate for the market failures in generating more local autonomous income. Use of remittances is then specifically as follows.

1. *Credit constrained household.* A rural household will use remittances to spend on the farm as if it had access to local credit—buy inputs such as fertilizers and seeds, hire labor, pay for the services of work animals or a tractor, rent more land, etc.
2. *Risk constrained household.* When insurance is not available, a household has to engage in risk management and is less able to cope with shocks, both at a cost. Risk management requires choosing activities that yield lower expected income in exchange for lower risk. If the household knows that remittances will be transferred when there is a shock, serving as insurance, it can take more risk in generating autonomous incomes and achieve higher expected incomes. If hit by a shock (a harvest failure, an accident, sickness, unemployment, collapse in the price of coffee), and in need of risk-coping initiatives such as selling a productive asset or taking a child out of school, remittances sent by the migrant as insurance can prevent having to make these costly, and often irreversible, decisions. The empirical test here consists in verifying that the timing of the transfers follows the occurrence of shocks.

These rationales for migration are not mutually exclusive. It is likely that in most situations the flow of remittances more than compensates for the loss of local income associated with the departure of a household member, but that these remittances also compensate for market failures.

What motivates a migrant to remit?

Sending a migrant is a big gamble for the household as there is a time-consistency problem (between the time of paying the cost of migration and receiving remittances) with no corresponding commitment device (to force the migrant to remit to the household at least part of the income earned in the place where he migrated, if successful). This raises an interesting question: why do migrants remit instead of defaulting on family obligations? There are several reasons for this (Lucas and Stark, 1985). We discuss for each the corresponding empirical regularity associated with this particular motivation.

1. *Repayment.* For some migrants, remitting is part of a trade—they have received something from parents and must return remittances in exchange. From this perspective, remittances sent by a migrant can be seen as repaying parents for the

costs of rearing, feeding, and educating him or her. It can also be seen as repaying parents for the cost of migration. Controlling for other factors, the level of remittances should, in this interpretation, increase with the level of investment made by parents in the migrant. This includes the level of education achieved by the migrant and the migration distance travelled.

2. *Inheritance.* Several studies have shown that remittances may be motivated by securing a share of future inheritance from parents, especially when there is competition among siblings. A migrant sends remittances to compensate for the fact that he is away from the community, not able to help care for parents, and yet keep his share of the inheritance (Hoddinott, 1994). Migrants can even compete with each other in attracting the attention of parents and expecting to get a higher share of inheritance. In this case, remittances should increase with assets owned by parents and with the number of competing heirs. It may also increase with the migrant's intention to return, giving parents' land particular value to him. This is the case for boys more than for girls as the latter are more likely to return to the village of their husband rather than their village of origin (de la Brière *et al.*, 2002). The inheritance value of parents' land is all the more important to male migrants under two conditions. One is if local land markets are thin and land cannot be acquired through the migrant's earnings abroad. The other is that the migrant has acquired specific experience in cultivating the family land before migrating, and this land has, for this reason, more value to him than unknown land.
3. *Social security motive.* Migrants send remittances to support parents when they are old, particularly if there are no public social-assistance programs to provide free access to health services and to non-contributory pensions. The empirical test would consist in verifying that: (1) transfers respond to the stage of the life cycle parents are in and the conditions they are under, in particular increasing when parents stop working or are in need of special assistance in response to health and other shocks; (2) transfers decrease if the government introduces a formal rural social-security scheme (Cox and Jimenez, 1992). Mexico, Brazil, Bolivia, and South Africa have recently introduced non-contributory pensions and health coverage. The question is whether this will decrease private transfers from children to older parents. Research shows that it appears to be the case, which can be seen as a positive spillover effect of the program as it helps the working generation save more, and invest in productive activities and in the education of their own children. In studies of transfers in Peru, Cox *et al.* (1998) find that transfers would have been 20 percent higher without public social-security benefits. The social-security motive is revealed by the importance of parents' age and income position in determining remittances.
4. *Insurance motive.* With a lack of insurance markets, households will send a migrant who can remit when adversity strikes at home. This can be when harvests fail, an earthquake or a tornado damages parents' assets, an economic crisis raises the level of unemployment, or ill health or accidents require high medical expenses. In this case, we should see remittances flowing in an anti-cyclical fashion relative to fluctuations in household income. This is extensively supported by research results. Stark and Lucas (1988) have shown that remittances sent by migrants from Botswana

respond to the severity of the drought that has afflicted their parents. Cox and Jimenez (1998) found that the total transfer received by households in Colombia is a function of their income risk. And using panel data on Indian rural households, Rosenzweig (1988b) related remittances to the size of parents' income shocks, although remittances only compensate for a small fraction of the income loss.

5. *Altruism vs. trade.* Altruism is selfless concern for the welfare of others, in this case sending remittances back home without regard to personal benefits (Altonji *et al.*, 1998). In utility theory, it means that, if I am an altruist, your utility enters into my utility function: making you happier will increase my own happiness. The motivation is strictly the welfare of others, and altruism is expected to prevail among members of a household, especially toward parents, siblings, and close kin.

   Altruism would suggest that transfers increase either when parents become poorer and/or migrants become richer. It is, however, almost impossible to assert whether observed transfers are altruistic or part of a trade. This is because migrants providing insurance for their parents could be motivated by pure altruism or by trade either for earlier payments or later compensation by parents. Migrants could be paying back their education in the form of insurance. Migrants could expect to reinforce their claim to inheritance by providing insurance, either because it allows parents to maintain their assets, or because it strengthens their competitive position *vis-à-vis* their siblings.

Conclusion

Several empirical studies have found patterns that suggest heterogeneity in dominant motives. For example, a study of remittance patterns in the Dominican Republic shows that female migrants are more likely to remit to insure parents when affected by a negative shock and to help educate younger siblings, while male migrants are, by contrast, more likely to help parents invest and secure a flow of autonomous income (de la Brière *et al.*, 2002).

Focusing the decision to migrate on the household instead of on the individual is a realistic extension of the Harris–Todaro model. Households are indeed an important locus of decision-making and of assistance in migrating. The huge flow of remittances from migrants to their communities of origin is to a significant extent likely to be directed at the remaining members of the household.

IMPACTS OF MIGRATION

In both the Harris–Todaro and the household approaches to migration, we did not distinguish between national migration (largely rural–urban, but also rural–rural, often as intermediate stages toward an ultimate urban destination) and international migration. The migrant's decision-making process may largely be the same. On the other hand, the implications of migration for both the emitting community and the receiving location may be quite different across the two types of migration. We need to distinguish between the two in analyzing the impacts of migration.

Importance of international migration

In spite of severe restrictions to international labor movements (as opposed to the movements of goods and capital that are increasingly free with trade liberalization and globalization), migration is a hugely important phenomenon. Three percent (191 million people) of world population is composed of migrants, with 82 percent coming from developing countries. In the US, 14 percent of the population is composed of migrants.

Remittance flows at a world scale amount to US$350 billion annually (in 2012), with three quarters of these transfers going to developing countries (World Bank, 2014). These flows are exceeded only by foreign direct investment (US$665 billion) and private capital flows (US$315 billion), and are about three times larger than net official foreign-aid flows (US$133 billion) (Figure 12.6). 22 countries derive more than 10 percent of their GDP from remittances. Highest GDP percentages are 25 percent for Nepal, 20 percent for Haiti, 16 percent for El Salvador, Lebanon, and Honduras, 10 percent for the Philippines and Nicaragua, and 7 percent for the Dominican Republic (Table 12.4). This is a large underestimation of the true remittances flow as formal remittances are considered to be only about half of the total flow of remittances.

Impacts of migration on the emitting community and country

Migration has both positive and negative effects on the emitting community and country. Some of the best-known positive effects include the following.

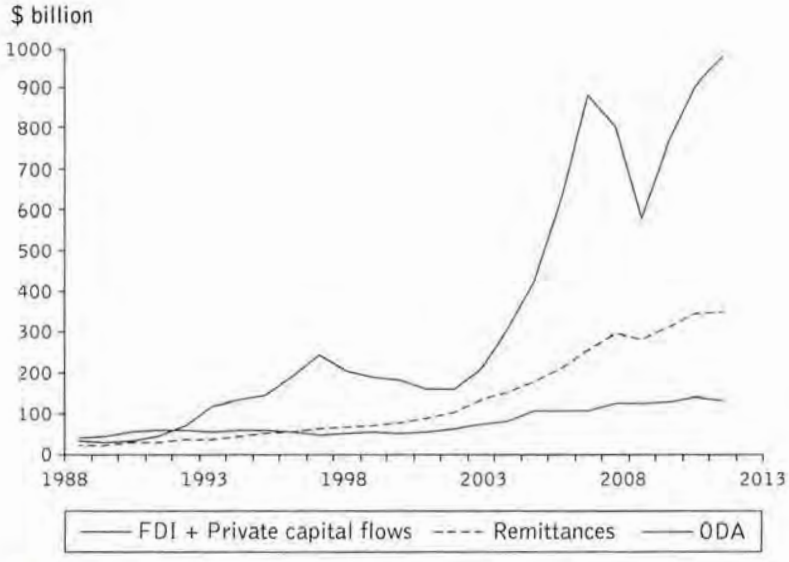

Figure 12.6 *Relative importance of remittances in international capital flows to developing countries, 1988–2012*

Source: World Bank, *Global Development Finance.*

Table 12.4 *Flows of remittances into developing countries: top recipients in dollar value and percent of GDP, 2012*

Remittances			
In billion US$		*In % of GDP*	
India	69	Nepal	25
China	39	Haiti	20
Philippines	25	El Salvador	16
Mexico	23	Lebanon	16
Egypt	19	Honduras	16
Bangladesh	14	Philippines	10
Pakistan	14	Nicaragua	10
Morocco	7	Dominican Rep	7
Brazil	3	Nigeria	4

Source: World Bank, *World Development Indicators.*

Migration enhances the return to education

Most rural communities offer only a low return to education because local opportunities to use what has been learned at school are quite limited. As T.W. Schultz famously observed, the return to education increases with opportunities to use it productively (Schultz, 1975). Following this idea, Foster and Rosenzweig (1996) show that the returns to primary education increased in areas of India where the new technologies of the Green Revolution became (exogenously) available, thus creating a natural experiment. Higher returns to education in turn induced more private investment in schooling as well as more public investment in the availability of schools.

Rural education often has higher returns outside the community. In Mexico, the return to education obtained through *Progresa* in poor rural communities (measured as the present value of lifetime earnings) is very low inside the community (in agricultural wage work, non-agricultural wage work, and self-employment), but substantial outside the community through migration (Figure 12.7). By increasing the return to rural education, migration creates a strong incentive for rural children to seek education.

Other examples include returns to education received in Kerala (India) and in the Philippines (for women) through international migration. Kerala is the Indian state with the highest level of education, and, in the Philippines, it is notable that the average level of education is higher for women than for men as they are the ones who can migrate and derive a high return from education.

Income and consumption effects

Studies of the impact of international migration on development in the emitting countries suffer from a double self-selection bias. As a consequence, simple comparisons of the welfare of households with and without migrants give biased results: households self-select migration, and households also self-select either sending a subset of members as migrants with the rest remaining, or migrating as a whole. Countries like

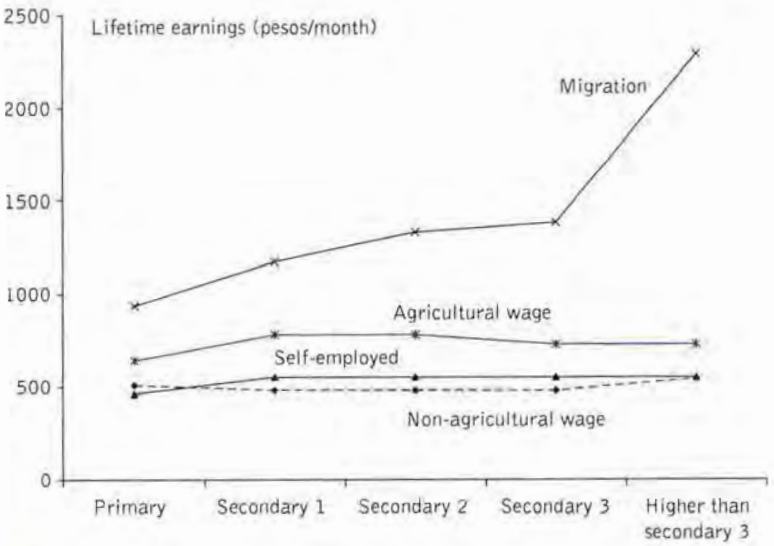

Figure 12.7 *Return to education obtained under* Progresa *in rural communities*

Source: de Janvry *et al.*, 2005.

New Zealand (and also the US) have introduced migration quotas and a lottery system to randomly select winners from among the pool of applicants. This provides a natural experiment, where households with winners serve as migration treatments and households with non-winner applicants as controls. Gibson *et al.* (2011) analyze this for migrants from Tonga. They find the surprising result that the impact of migration of a family member on the income and consumption of household members left behind is largely negative. This implies that the loss of labor and local income earning for these households was larger than the benefits derived from remittances. This may be a special case, but the point is well made that non-controlled comparisons of households with and without migrants can give fallacious results.

Role of local financial institutions in facilitating local investment by non-migrants

It is difficult to expect migrants or their families to have the entrepreneurial talents to invest the remittances they receive in productive activities. As a consequence, remittances are most often spent on consumption goods, construction, and the buying of land, limiting the growth value of remittances. But this does not have to be the case. If local financial institutions (such as village banks and local savings and loans associations, as we will see in Chapter 13) use the remittances deposited by migrants to make loans to local entrepreneurs based on reputation (i.e. following the principles of proximity lending), they will be invested in productive activities that create local value-added and employment opportunities. If capital constraints limit local development, remittances that flow right to the heart of poor communities offer a unique opportunity to break this constraint. In some of the poorest areas of the Dominican Republic, from which large

numbers of migrants were pushed by poverty to New York (perhaps half of the people born in the Dominican Sierra), we see remarkable examples of local development financed by the large flow of remittances through local savings-and-loan associations.

Experience gained in migration is used in communities of origin and transferred to non-migrants

Migrants come back home with experiences gained abroad that can be applied in the community and transmitted to others. Experience can be in entrepreneurship, leadership, use of advanced technology, and new institutions. This is how experience gained in Silicon Valley by Indian migrants spread back to Bengalore and Hyderabad, helping fuel a local software boom (Chacko, 2007). This reverse brain drain—turned into a brain gain—has made a major contribution to the acceleration of growth in India. Military service in Vietnam has been identified as a source of local innovations based on what conscripts have learned from their urban experiences.

Impact on wages in the local labor market

As President Porfirio Díaz once said, "Poor Mexico, so far from God and so close to the United States." Proximity has the extraordinary consequence that 16 percent of Mexico's labor force lives in the US. Mishra (2007) estimated that, by reducing the labor supply in the communities of origin, the wage of workers on Mexican labor markets increased by 7 percent. Through this labor-market effect, the benefits of migration are spilling over to non-migrants.

There are also negative effects of migration on emitting communities. One is the loss of direct benefits from investments in education, the well known brain drain. An example is the emigration of doctors and nurses from English-speaking African countries to England, the US, Canada, and Australia: in Ghana and Zimbabwe, 75 percent of all doctors emigrate within a few years of completing medical school. As we saw, this may not be true in the longer run if migration leads to remittances and also to investments by returning migrants, the reverse brain drain. Other negative changes that have been associated with migration are an increase in local inequality (with a class of new rich benefiting from remittances), land abandonment (if migrants are afraid of renting their lands while away as they may not be returned by tenants), rising land values as migrants invest their earnings in land (making access to land more expensive for local residents), the loss of traditional values as migrants bring back new patterns of behavior and sometimes gang warfare and criminality (for example, the Mara Salvatrucha gang that originated in Los Angeles and spread to Central America), broken families as migrants settle in other places and abandon their original families (resulting in many female-headed households), and the spread of HIV/AIDS through returning migrants.

Spending vs. investing remittances

Remittances tend to be spent on consumption (including the construction of housing) or safely invested in land. A lament from a development standpoint is that remittances

Remittances have the unique feature of going directly to poor communities as this is where many of the migrants came from (though, as we have seen, not usually the poorest and most unskilled people in the community). They clearly make major direct contributions to poverty reduction among the recipient households. But they can also be a potentially important source of autonomous income if channeled toward productive investments and social projects. The *Tres-por-Uno* (three-for-one) program in Mexico matches every dollar invested in social projects by migrants' clubs in the US with a three-dollar contribution from the municipal, state, and federal governments. This public–private partnership is also used to support joint business ventures between migrants and residents in the communities of origin. The program has, however, been exposed for being regressive across communities, benefiting more the relatively richer communities, and for being used for political advantage, favoring municipalities supportive of the presidential party (Aparicio and Meseguer, 2008). Another astute initiative is helping to channel remittances toward the capitalization of local microfinance institutions. This was done in Mexico under President Salinas' Solidarity Program.

Given the extraordinary magnitude of remittance flows, it is no surprise that governments and development agencies are starting to experiment with ways of channeling remittances toward social infrastructure and local investments that can help create jobs and reduce poverty.

Impact of international migration on receiving countries

International migration is one of the most sensitive political issues, for both receiving and emitting countries. International migration was far less restrictive in the 1800s and up to World War One (during the first liberal period, also called the age of empire (Chapter 3)) than it is today. Then, migration flowed from more to less developed countries with vast open territories, inducing, through the transfer of institutions, a subsequent "reversal of fortune" (Acemoglu *et al.*, 2001). Today, the desired flows are mainly from less to more developed countries, and migration is severely restricted.

Free international labor movements, as advocated for instance by Pritchett (2007), would equalize opportunities and be efficient at a world scale, but would also result in massive relocation of populations and increased downward pressures on unskilled wages in MDC labor markets. This pressure on unskilled wages in industrialized countries is already felt as a consequence of trade (Chapter 7) and of outsourcing jobs to cheaper labor abroad. At the same time, unauthorized migration is increasingly difficult to contain, with more than 12 million undocumented persons in the US, who live, in many ways, at the margin of society and do not receive the full benefit of their work. Attempts to control migration with stronger borders have not proved effective. Restricted legal migration and increased undocumented migration also tends to shift the composition of migrants toward lower educational levels, increasing downward pressure on unskilled wages in the receiving country and making social integration more difficult.

There undoubtedly are important positive effects of migration for industrialized countries. Immigrants bring labor, ideas, and entrepreneurship. Migrants create jobs for others. They bring youth to an aging population, which helps maintain the solvency of social-security systems based on the pay-as-you-go principle (namely, where current

contributions fund current transfers, as opposed to a system where contributions toward retirement are capitalized in income-earning investments). Contrary to frequent perceptions, undocumented migrants make positive contributions to the local welfare system as the taxes they pay tend to exceed the cost of their use of public services. Migrants help decrease labor shortages, especially high-skill workers given priority admission through H1-B temporary visas in the US. And they keep wages low in the service sector, which benefits the consumers of these services, which are broadly distributed across the population.

Negative effects include anti-immigrant responses in the resident population, based on the belief that immigrants add to crime, unemployment, and welfare fraud. And it can create a backlash against domestic low-skill workers when unskilled wages decline. A rapid increase in the number of undocumented immigrants in the context of a stagnant economy with high unemployment makes integration more difficult for all migrants and fuels discrimination.

Beaman (2012) analyzes the role of the size of social networks on labor-market outcomes for refugees newly arrived in the US. She uses exogeneity of location of refugees across cities as it is determined by resettlement agencies and not by refugee choice, avoiding placement bias. She shows that the labor-market outcome for newly arrived refugees in a community is negatively affected by the number of refugees already resettled in the community in the short run (current year and previous year). In the longer run, however, newly arrived refugees benefit from a larger network of long-tenured network members (refugees resettled three and four years ago).

Reforming immigration policy is politically explosive, and has for this reason not been adequately addressed. The current Graham–Schumer framework for US immigration reform is based on three main components: stricter border enforcement, a guest-worker program to manage the future flow of workers into the labor market, especially agriculture, and a path to citizenship for the 12 million undocumented immigrants currently living in the US. However, chances of rapid progress on immigration reform remain low.

A solution to illegal entries to industrialized countries—think of overloaded boats of the desperately poor reaching Lampedusa in Italy and the coast of Southern Spain, or illegal crossings into the US with the risks of exposure to the Arizona desert—will not involve stricter border controls and enforced legislation against hiring undocumented aliens (on the pull side) so much as reducing the pressures to migrate toward industrialized countries (on the push side). This requires improved living standards for the poor in developing countries. This includes not only higher per capita incomes, but also better provision of basic needs and improved quality of life, the other dimensions of development. Raising living standards in developing countries to reduce migratory pressures in industrialized countries is a powerful motivation for foreign aid, as explored in Chapter 19. If potential migrants are liquidity constrained, improved living standards may increase migration (Bazzi, 2014). Migration driven by opportunity will continue, and can create win–win opportunities if properly legislated and managed. However, migration pushed by adversity would decline, reducing illegal entries to industrialized countries.

CONCLUSION

Migration is part and parcel of a normal pattern of sectoral and geographical resource reallocation in the process of development. As such, it can be a source of efficiency gains. Domestically, it is the essence of structural transformation and internationally it is part of the globalization of a labor market. It can be an important force for development, with the potential for extensive benefits for both developing and industrialized countries. Remittances, in particular, create an extraordinary opportunity to finance development projects in some of the poorest emitting regions, if these regions have development potential and can channel the transfers toward productive investments. Yet migration is a difficult process to manage, both nationally and internationally, with a tendency for excessively rapid displacement of populations that are too often inadequately prepared to be absorbed productively in the receiving areas, and toward areas that are often not prepared to absorb them productively and culturally.

CONCEPTS SEEN IN THIS CHAPTER

Open unemployment, hidden unemployment, underemployment
Informal sector
Labor-market failure
Efficiency wage hypothesis
Harris–Todaro hypothesis in migration
Altruism vs. trade in remitting
Migration network
New migration economics
Role of credit and insurance-market failures on migration
Brain drain and brain gain
Remittances
Migrant motivation to remit
Immigration reform
Social networks and refugee resettlement

REVIEW QUESTIONS: LABOR AND MIGRATION

1. Define the concepts of open unemployment and underemployment. Define the relationship between formal- and informal-sector wages.
2. Explain why the efficiency wage hypothesis leads to unemployment, and hence market failure, even though it is incentive compatible for employers.
3. What is the Harris–Todaro hypothesis in migration? How does it explain continued migration in spite of urban unemployment? How does this relate to labor-market failure? Will creating

more jobs in the modern sector (e.g. in government employment) help reduce migration? What are the policy implications of the model to reduce rural–urban migration?

4. How does the new economics of migration analyze the decision to migrate? According to this approach, what are the main reasons for a household to send a migrant? Clearly identify the role of market failures in credit and insurance. How do policy implications to reduce migration under this theory differ from those of the Harris–Todaro model?
5. Why do migrants remit? Analyze the different motives that may apply.
6. What are the potential gains and losses from migration at the community level? What are the potential gains and losses from international migration for the emitting country?

REFERENCES

Acemoglu, Daron, Simon Johnson, and James Robinson. 2001. "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution." *Quarterly Journal of Economics* 117(4): 1231–94.

Akerlof, George, and Janet Yellen (eds.). 1986. *Efficiency Wage Models of the Labor Market.* Orlando, Florida: Academic Press.

Altonji, H., F. Hayashi, and L. Kotlikoff. 1998. "Parental Altruism and Inter Vivos Transfers: Theory and Evidence." *Journal of Political Economy* 105(6): 1121–66.

Aparicio, Francisco, and Covadonga Meseguer. 2008. "Collective Remittances and the State: The 3x1 Program in Mexican Municipalities." *World Development* 40(1): 206–22.

Bazzi, Samuel. 2014."Wealth Heterogeneity and the Income Elasticity of Migration." Working paper, Department of Economics, Boston University.

Beaman, Lori. 2012. "Social Networks and the Dynamics of Labour Market Outcomes: Evidence from Refugees Resettled in the U.S." *Review of Economic Studies* 79(1): 128–61.

Bell, Martin, and Salut Muhidin. 2009. "Cross-national Comparisons of Internal Migration." UNDP: Human Development Research Paper 2009/30.

Bowles, Samuel, and Herbert Gintis. 1988. "Contested Exchange: Political Economy and Modern Economic Theory." *American Economic Review* 78(2): 145–50.

Bryan, Gharad, Shyamal Chowdhury, and Mushfiq Mobarak. 2014. "Underinvestment in a Profitable Technology: The Case of Seasonal Migration in Bangladesh." *Econometrica* 82(5): 1671–748.

Camacho, Adriana, Emily Conover, and Alejandro Hoyos. 2014. "Effects of Colombia's Social Protection System on Workers' Choice between Formal and Informal Employment." *World Bank Economic Review* 28(3): 446–66.

Chacko, Elizabeth. 2007. "From Brain Drain to Brain Gain: Reverse Migration to Bangalore and Hyderabad, India's Globalizing High Tech Cities." *GeoJournal* 68: 131–40.

Chenery, Hollis, and Lance Taylor. 1968. "Development Patterns: Among Countries and Over Time." *Review of Economics and Statistics* 50(3): 391–416.

Chiquiar, Daniel, and Gordon Hanson. 2005. "International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States."*Journal of Political Economy* 113(2): 239–81.

Cox, Donald, and Emmanuel Jimenez. 1992. "Social Security and Private Transfers in a Developing Country: The Case of Peru."*World Bank Economic Review* 6(1): 155–69.

Cox, Donald, and Emmanuel Jimenez. 1998. "Risk Sharing and Private Transfers: What about Urban Households?" *Economic Developmentand Cultural Change* 46(3): 621–37.

Cox, Donald, Zekeriya Eser, and Emmanuel Jimenez. 1998. "Motives for Private Transfers over the Life Cycle: An Analytical Framework and Evidence from Peru." *Journal of Development Economics* 55(1): 57–81.

de Janvry, Alain, Frederico Finan, and Elisabeth Sadoulet. 2005. "Using a Structural Model of Educational Choice to Improve Program Efficiency." Working paper, Department of Agricultural and Resource Economics, University of California at Berkeley.

de la Brière, Bénédicte, Elisabeth Sadoulet, Alain de Janvry, and Sylvie Lambert. 2002. "The Roles of Destination, Gender, and Household Composition in Explaining Remittances: An Analysis for the Dominican Sierra." *Journal of Development Economics* 68(2): 309–28.

De Soto, Hernando. 1989. *The Other Path: The Economic Answer to Terrorism.* New York: Harper Collins.

Foster, Andrew, and Mark Rosenzweig. 1996. "Technical Change and Human Capital Returns and Investments: Evidence from the Green Revolution." *American Economic Review* 86(4): 931–53.

Gaviria, Alejandro, and Martha Luz Henao. 2001. "Comportamiento del desempleo en los últimos años y estrategias de los hogares para enfrentarlo." *Coyuntura Social de Fedesarrollo* 24: 23–38.

Gibson, John, David McKenzie, and Steven Stillman. 2011. "The Impacts of International Migration on Remaining Household Members: Omnibus Results from a Migration Lottery Program." *Review of Economics and Statistics* 93(4): 1297–1318.

Harris, John, and Michael Todaro. 1970. "Migration, Unemployment and Development: A Two-Sector Analysis." *American Economic Review* 60(1): 126–42.

Hoddinott, John. 1994. "A Model of Migration and Remittances Applied to Western Kenya." *Oxford Economic Papers* 46(3): 459–76.

International Labor Office. 2002. *Men and Women in the Informal Economy.* Geneva: International Labor Office.

Journeyman Pictures. *The Mumbai Makeover.* https://www.youtube.com/watch?v=9iC71S3o-4U&feature=related (accessed 2015).

Kleemans, Marieke, and Jeremy Magruder. 2014. "Labor Market Changes in Response to Immigration: Evidence from Internal Migration Driven by Weather Shocks." Working paper, Department of Agricultural and Resource Economics, University of California at Berkeley.

Kuznets, Simon. 1968. *Toward a Theory of Economic Growth.* New York: W.W. Norton and Co.

Levy, Santiago. 2008. *Good Intentions, Bad Outcomes.* Washington, DC: Brookings Institution Press.

Lewis, Arthur. 1955. *The Theory of Economic Growth.* Homewood, IL: Irwin.

Lucas, Robert, and Oded Stark. 1985. "Motivations to Remit: Evidence from Botswana." *Journal of Political Economy* 93(5): 901–18.

Maloney, William. 2004. "Informality Revisited." *World Development* 32(7): 1159–78.

McKenzie, David, and Hillel Rapoport. 2010. "Self-Selection Patterns in Mexico–U.S. Migration: The Role of Migration Networks." *Review of Economic and Statistics* 92(4): 811–21.

Mishra, Prachi. 2007. "Emigration and Wages in Source Countries: Evidence from Mexico." *Journal of Development Economics* 82(1): 180–99.

Mondragón, Camilo, Ximena Peña, and Daniel Wills. 2010. "Labor Market Rigidities and Informality in Colombia," *Economía* 11(1): 65–101.

Munshi, Kaivan. 2003. "Networks in the Modern Economy: Mexican Migrants in the U.S. Labor Market." *Quarterly Journal of Economics* 118(2): 549–99.

Pritchett, Lant. 2007. "Let Their People Come." New Economist http://neweconomist.blogs.com/new_economist/2007/06/lant_pritchard.html (accessed 2015).

Quinn, Michael. 2006. "Relative Deprivation, Wage Differentials, and Mexican Migration." *Review of Development Economics* 10(1): 135–53.

Ravallion, Martin, Shaohua Chen, and Prem Sangraula. 2007. "New Evidence on the Urbanization of Global Poverty." *Population and Development Review* 33(4): 667–701.

Rodrik, Dani. 2015. "Premature Deindustrialization." Working Paper No. 107, Institute of Advanced Studies: Princeton University.

Rosenzweig, Mark.1988a. "Labor Markets in Low-income Countries." In H. Chenery and T.N. Srinivasan (eds.), *Handbook of Development Economics* 1(1): 713–62.

Rosenzweig, Mark. 1988b. "Risk, Implicit Contracts and the Family in Rural Areas of Low-income Countries." *Economic Journal* 98 (393): 1148–70.

Schultz, Theodore W. 1975. "The Value of the Ability to Deal with Disequilibria." *Journal of Economic Literature* 13 (September): 827–46.

Shapiro, Carl, and Joseph Stiglitz. 1984. "Equilibrium Unemployment as a Worker Discipline Device." *American Economic Review* 74(3): 433–44.

Stark, Oded. 1993. *The Migration of Labor*. Cambridge, MA: Blackwell Publishers.

Stark, Oded, and Robert Lucas. 1988. "Migration, Remittances, and the Family." *Economic Development and Cultural Change* 36(3): 465–81.

Stark, Oded, and J. Edward Taylor. 1989. "Relative Deprivation and Migration: Theory, Evidence, and Policy Implications." *Demography* 26(1):1–14.

Tokman, Victor. 1989."Policies for a Heterogeneous Informal Sector in Latin America." *World Development* 17(7): 1067–76.

Trading Economics. www.trading economics.com (accessed 2014).

UN-Habitat. 2012. http://unhabitat.org/un-habitat-annual-report-2012/

Wikipedia. *Kibera*. http://en.wikipedia.org/wiki/Kibera (accessed 2015).

Wikipedia. *Megacity*. https://en.wikipedia.org/wiki/Megacity (accessed 2012).

Winters, Paul, Alain de Janvry, and Elisabeth Sadoulet. 2001. "Family and Community Networks in Mexico–U.S. Migration." *Journal of Human Resources* 36(1): 159–84.

World Bank. 2014. *Global Development Finance*. Washington, DC.

World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington, DC.

World Bank, *Global Development Finance*. http://data.worldbank.org/indicator/BX.TRF.PWKR.CD.DT/countries (accessed 2013).

World Bank. *World Development Indicators*. http://data.worldbank.org/indicator (accessed 2015).

Yang, Dean. 2008. "International Migration, Remittances, and Household Investment: Evidence from Philippine Migrants' Exchange Rate Shocks." *Economic Journal* 118(528): 591–630.