

WBI DEVELOPMENT STUDIES

Diaspora Networks and the International Migration of Skills

How Countries Can Draw on Their Talent Abroad

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The Dynamics of Migration of the Highly Skilled: A Survey of the Literature

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This chapter focuses on South-to-North skilled labor migration, considering the policy problems from the viewpoint of the sending country. The field is not without controversy. Policy discussions often seem imbued with a Panglossian optimism that all voluntary labor migration will ultimately work out for the best for all. Natural sympathy for those who seek a better life for themselves and their families by migrating makes some researchers and policy makers reluctant to recognize the adverse consequences of migration. The dynamics of migration are implicitly assumed to be benign and equalizing rather than adverse and divergent. Self-reinforcing processes are taken to be virtuous rather than vicious circles.

The basic decision facing a potential migrant can be stated in terms of Hirschman's (1970) contrast between the logic of exit and the logic of commitment to making a better home. The literature often reflects the implicit assumption that all social institutions should operate, like the market, on the logic of exit, so that any public policy to increase commitment is seen only as an impediment to exit.

This chapter looks at a broader class of dynamic models and reviews a number of policy options from the perspective of those models. Understanding the underlying dynamics leads to two types of policy suggestions. The first is to critically review some policies that may make matters worse in view of the actual dynamics. The second is to try some new policies based on a better assessment of the dynamics. These include policies that reinforce the logic of commitment, in order to reduce the brain drain in the first place, and policies that help involve emigrants in developing their country of origin.

Opening Match: Harry Johnson Versus Don Patinkin

In an early anthology of papers, two prominent economists, Harry Johnson and Don Patinkin, debate the brain drain (Adams 1968).

Harry Johnson's "Internationalist" Model

Johnson begins with one of the basic policy questions in the field: better or worse for whom? Is the relevant group the people of the home country or region (excluding those who have left or might leave) or the people of the world as a whole? Is the policy commitment to a specific place or nation or to an identifiable set of people?

Johnson, a Canadian who taught at the University of Chicago and the London School of Economics, stakes out what he called the "cosmopolitan liberal position,"

noting that he expects "many educated international migrants would share this position" (Johnson 1968, p. 70). The basic assumption in this position is that the international flow of human capital is a beneficial process, because "it reflects the free choices of the individuals who choose to migrate."

According to this view, the policy reference group is the world as a whole. Most people have a culturally conditioned attachment to their home country, but, in a sense, that is an artificial path-dependent phenomenon. Had the individual been born and grown up in another country, a similar attachment would have developed to that country. With such "artificial barriers to migration" in operation, less migration from low- to high-income countries occurs than is economically optimal, according to Johnson. Hence when such migration does occur, he puts the burden of proof squarely on any argument against it being economically beneficial.

"Like any profit-motivated international movement of factors of production [voluntary migration] may be expected to raise total world output. . . . [except] when the migrant's private calculation of gain from migration excludes certain social costs that his migration entails," according to Johnson (1968, p. 75). Externalities that are not taken into account in private calculations may or may not outweigh the benefits of the migration. As the externalities associated with the brain drain may include positive ones in the receiving country as well as negative ones in the sending country, Johnson argues that the externalities will, to some extent, cancel each other out and will not, on the whole, outweigh the direct benefits to the migrants.

Even if in theory the benefits of migration outweigh the costs in the sense that winners could more than compensate losers, there is, in practice, no system for doing so. (The discussion of compensation assumes that citizens are "owned" by their home country and that the home country is therefore due compensation when they migrate.) Migrants send back remittances and sometimes return themselves, but there is no systematic mechanism for compensating the home country for their departure.

Johnson recognizes one case in which compensation could be justified. Home countries often finance the higher education of citizens under at least an implicit expectation that they will contribute to the country. Johnson suggests that providing university loans might be a better policy than providing grants. Some alternatives, such as a required service or a tax or bounty paid by the receiving country or employer, would be less in the liberal spirit and would be difficult to enforce internationally. Johnson argues that it is up to home countries to make it attractive for their educated citizens to stay (or to get the diaspora productively involved in their home country) rather than to expect host countries to pay subsidies or compensation for people who freely choose to emigrate.

There are two weaknesses in Johnson's powerful statement of the cosmopolitan liberal position. One is his implicit assumption that local value-increasing actions (for example, factor movements) will yield global improvements. Today externalities in the form of interdependencies are seen as ubiquitous. Game theory is the theory of interdependent decision making. In the coordination problems popularized by the prisoners' dilemma game, the individually preferred strategies lead to an outcome that is Pareto dominated by the cooperative option.

If economic development in a developing country or region is modeled as a multiperson prisoners' dilemma in which many people who are more socialized

into the home country or less mobile opt to “cooperate” (commit to make home better), less socialized and more mobile people would be encouraged to “defect” (exit to find a better home), which would benefit them individually (Schelling 1978, chapter 7; annex 1 to this chapter). But these gains would not accrue if everyone defected and tried to emigrate, because the doors of potential host countries would close, vastly raising the costs of migration and dissipating the benefits. A new, lower equilibrium would be reached, with the benefits of neither migration nor development. In these we’re-all-in-this-together situations, cosmopolitan liberalism does not seem justified in urging defection on the grounds that it benefits the defectors as long as most others do not defect.

The other major weakness in the cosmopolitan liberal argument is that in practice it is used to defend the right of out-migration more than the right of in-migration. It is used to attack countries trying to limit who leaves; it is less often used to attack countries trying to limit who comes in, which is taken as the “proper” exercise of national sovereignty.

How can cosmopolitan liberalism in developed countries push for two-way openness in goods and capital but not in people? According to Rodrik (2001, p. 3), “The short answer . . . is that developed countries cannot have it both ways. Either they put their money where their mouth is, and include labor flows in the agenda of liberalization, or they recognize the need for national autonomy and space, in which case they must extend to the developing countries the same privileges in the areas of trade and capital flows.”

But if cosmopolitan liberalism is not applied across the board, what is the second-best policy? Today we are much more attuned to the subtleties in second-best arguments. We cannot simply assume that liberal policies applied to everything but labor are automatically second best to 100 percent liberal policies.

Don Patinkin’s “Nationalist” Model

Don Patinkin of the Hebrew University, Jerusalem, took the point of view of a middle-income developing country concerned with possible brain drain, a concern that is “implicitly a rejection of the viewpoint that the ‘world’ should be considered as a single aggregate from the welfare viewpoint—and that the welfare of this unit is maximized by the free flow of resources between countries” (Patinkin 1968, p. 93). Patinkin pointedly notes that developed countries do not adopt this viewpoint about the “free flow of resources” when the resources are the “population masses of (say) Far Eastern Asia.” Developing countries do not take this viewpoint when the resources are their own skilled members of the population. Both developed and developing countries take into account the distribution effects among nations; neither group of countries adopts the free flow view across the board.

While adopting a nationalist viewpoint without apology, Patinkin nevertheless starts with the liberal assumption of free emigration and asks what developing countries can do to limit the brain drain. One approach would be to ask the more advanced countries to limit immigration of highly skilled people. Patinkin rejects this as being impractical, if not quixotic, as the firms and scientific institutions of the developed world would lobby for such immigration and governments would tend to support it. Rather than ask the developed countries not to compete for this talent, he suggests what developing countries can do to retain it: encourage trained

scientific personnel to identify with the development of the country, show that these people can indeed fulfill a vital role in that development, and provide at least the minimal conditions that allow them to fulfill their scientific aspirations.

Patinkin provides some concrete guidelines. When training abroad is necessary, two years is probably a minimum period to get acclimatized and four years is a maximum period, after which there is likely to be much attrition or readjustment problems upon return. Study should be at the graduate level, preferably at the doctoral level or above. If there is an adequate doctoral program at home, specialized training should be postdoctoral. Greater advantages would flow from sending more mature, already employed, and preferably married people abroad, that is, those who might already be committed to making home better. Upon return from abroad, students could train others in what they had learned abroad. These guidelines would give the learner who goes abroad a "higher degree of identification with his home society and home institution" (Patinkin 1968, p. 97). In Patinkin's opinion, losing more than 10–15 percent of nationals who study abroad is cause for alarm. But, he adds, if there were no brain drain at all, the country would be underutilizing the opportunities for training abroad.

As to fellowships offered by developed countries, Patinkin notes that it would be better to fund instructors and professors to come to the developing countries, so that more students could be reached. In a similar manner, U.S. firms might establish subsidiary research and development plants abroad to employ scientists in their home countries, probably at much lower cost than in the United States.

One form of exit-voice reasoning is the safety valve idea of migration. If jobs are not available in the home country, some static efficiency is achieved and some pressure is released through the safety valve of migration (exit). This may be dynamically inefficient, however, by relieving some of the pressure (voice) to make the domestic reforms necessary for business development that would create jobs at home. Brain drain exit opportunities show the government that the scientific community has other options and should not be taken for granted. The possibility and exercise of some exit alerts the government that it needs to improve conditions at home for the domestic scientific community.

Patinkin added an appendix to the published paper to reflect some of the discussion at the original conference at which the paper was presented. It reflects his annoyance at Johnson's argument that the free flow of resources increases world welfare and that opposition to that flow reflects an illiberal, nationalistic anachronism. Patinkin notes that welfare economics had not been able to produce a "world social welfare function." Moreover, the "free flow of resources" reflects the effective demand created by very nationalistic forces in the developed countries. He wonders how the U.S. government defense and space programs and the "nationalistic war in Vietnam" would be reflected in a "world social welfare function."

In his appendix, Patinkin argues for the sort of intellectual diversity that would result from having at least one good university with a developed educational and cultural life in every developing country. He notes that the dynamics of agglomeration are at work in the formation or de-formation of intellectual centers. There needs to be a critical mass of good people. Even within a developed country, "brain raids" by one university on another can lead to a process of decline that is hard to reverse. The same dynamics are even stronger between developed and developing countries. As soon as a scientist establishes some prominence in a developing country, hard to

resist offers come in from developed countries, making it difficult to maintain a top-flight university even in a mid-level developing country. The people who may be a few more small jewels in the crown at a Harvard or a Cambridge may make all the difference to the critical mass in their home country.

The Effect of Critical Mass on Migration

The critical mass argument used by Patinkin is ubiquitous in the brain drain and broader development literature, so it may be worthwhile to present a simple statement of the idea for later reference.¹ One type of critical mass dynamics is driven by expectations. Suppose that each scientist in a home country reference group will make plans to stay or leave depending on his or her expectation about how many others will stay or leave. These expectations are summarized in a reaction function. Given the information that X percent of the scientists in a group are staying, Y percent will consider that sufficient for them to stay. If given that 40 percent are staying, only 35 percent consider that sufficient for them to stay, then 40 percent would not be an equilibrium (where expectations match reality). The numbers would spiral downward to some low-level equilibrium. If given that 75 percent would stay, at least 80 percent consider that sufficient to stay, the dynamics would work the other way. The number of scientists staying would spiral upward to a high-level equilibrium. In between there would be a critical mass number that would separate the downward and upward dynamics. At each point, the dynamics are indicated by comparing the reaction function to the upward-sloping 45 degree line (figure 2.1).

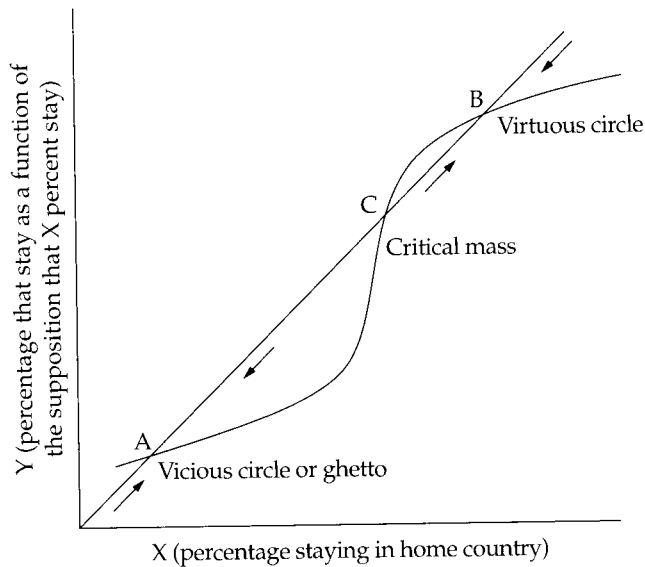
Above the critical mass C, the "more the merrier" dynamics of agglomeration set in to drive toward the high-level equilibrium at B. Below the critical mass, the dynamics of disagglomeration work to ghettoize the scientific community, until the low-level equilibrium is reached at A. Starting at B, if a few key people are cherry-picked or poached by the developed countries, the system may be pushed down below the critical mass at C, which would trigger the self-reinforcing downward spiral to A.

The downward dynamics below the critical mass are not a self-equilibrating process between the sending (home) and receiving (host) countries. The more people who leave the home country, the greater the push to leave and the greater the pull of the receiving countries. The situation snowballs to divergent outcomes rather than equilibrating to a benign one.

Expectational dynamics need not work in this manner to drive toward an upper or lower equilibrium with a critical mass in between. Instead, a "room for more"

¹ See Schelling (1978) for an extensive treatment. The reaction function model presented here is a reinterpretation of the faculty meeting model he presents in chapter 3 of his book. The dynamics of divergence can operate between two populations or within one population to divide it into upper and lower strata. For instance, a virtuous circle of city growth might have a positive "spread effect" in a suburban neighborhood but a negative "backwash effect" in a nearby rural area. This effect is sometimes called the Matthew principle, after the Biblical reference "for to every one who has will more be given, and he will have abundance; but from him who has not, even what he has will be taken away" (Matthew 25: 29). Myrdal (1957) did the most to popularize these dynamics in the economic development literature, particularly to account for persistent and increasing national and international inequality.

Figure 2.1 *Critical Mass Dynamics of Emigration*

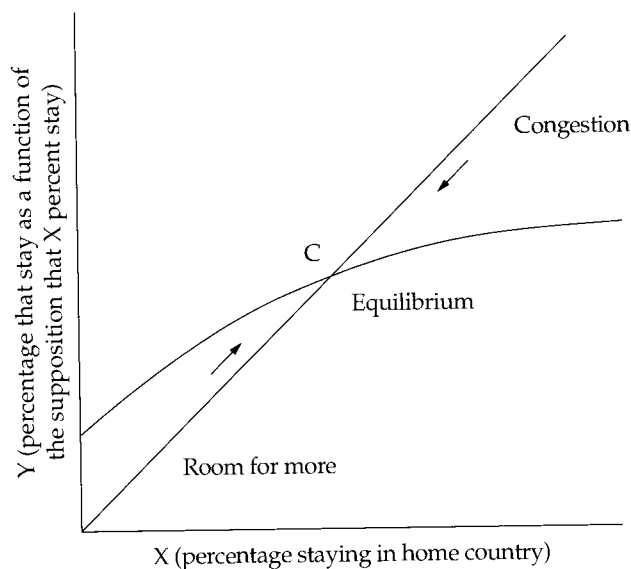


Source: Author.

dynamic could dominate at low levels and a dynamic of overcrowding and congestion could dominate at higher levels, so that a single stable equilibrium is reached in between at C (figure 2.2).

Many people would go to a restaurant that has room for more without getting crowded but would avoid a crowded one. That would lead to the single equilibrium dynamics shown in figure 2.2. In contrast, in the case of a nightclub, people

Figure 2.2 *Equalizing the Dynamics of Emigration*



Source: Author.

might prefer to be where the action is, which would lead to the critical mass dynamics shown in figure 2.1.

Many discussions in the migration literature are based on neoclassical models that picture migration induced by wage differentials as equalizing the differentials between countries or regions of origin and destination. But this is tantamount to assuming that the equalizing dynamics are in operation (for example, diminishing returns to labor within a static production function in each country), when the question of the dynamics may be precisely the point at issue. In terms of the restaurant and nightclub example, a group of people leaving the waiting line at restaurant A to go to less crowded restaurant B may help equalize conditions between the two establishments, but a group of people leaving one nightclub to go to another may induce even more migrations in the same direction. (The dynamics between the two groups are treated in a reaction square diagram in annex 2.)

Clarity in migration policy research starts with understanding these two dynamics. Are the migration flows part of a critical mass dynamic driving one region away from a high equilibrium toward a low equilibrium, and perhaps doing the reverse for another region? Or are the flows part of an equilibrating dynamic reducing the push and pull factors between two countries or regions?

North-To-North Migration

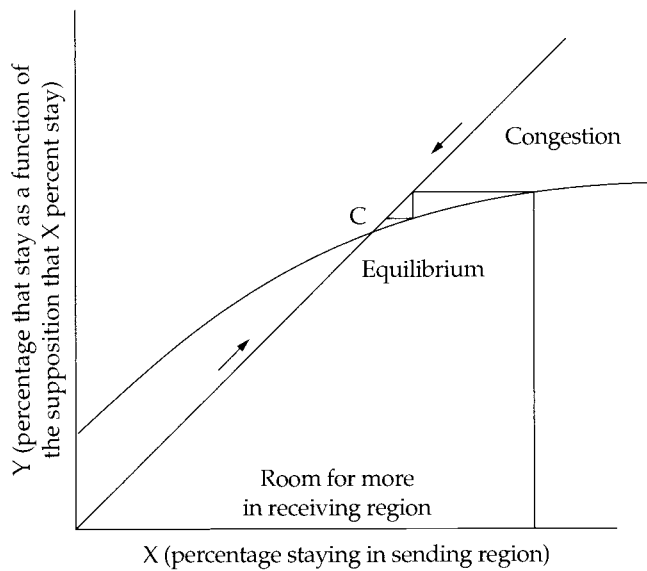
These equilibrating dynamics are often assumed in policy discussions. The historical North-to-North migrations from a crowded Europe to a sparsely populated North America might be represented by the equilibrating dynamics (Hatton and Williamson 1998; O'Rourke and Williamson 2000). The flow of the "tired and huddled masses" from the "teeming shores" of Europe to North America in the 19th century may have relieved the crowding in Europe, reducing the push factor. The "empty spaces" of North America became less empty, and may have reduced the pull factor, causing migration to equilibrate the pressures on both ends as shown in figure 2.3.

In North-to-North migration, the sending country or region is relatively developed, so the question of the migration being detrimental to the sending region tends not to arise. Migration equilibrates pressures (like water flowing between two containers) and does not start a disequilibrating downward spiral to a low-level equilibrium "trap." If all migration was of this type, it would be much less of a development issue.

South-To-North Migration

South-to-North migration is migration from a relatively undeveloped region or country (South) to a relatively developed one (North). The economic differential between the sending and receiving ends is the main determinant of South-to-North migration. It should not be assumed that push factors, such as a lack of local jobs, are predominant; it is the differential that counts.² The label South-to-North is

² A manager of a tire factory in Ecuador reports, "We don't have a labour market here any more . . . They finish their education and they go" (*Economist* 2002a, p. 42). He now requires neither prior experience nor a high school diploma and he has had to double the salary he offers new workers.

Figure 2.3 *Equilibrating Migration*

Source: Author.

applied to migrations in which there is a presumption that the development of the South is still a policy goal of the national government or international development agencies. There is no presumption that any detrimental effect on the sending region is an intended goal or an acceptable by-product of other policy goals.

South-to-North migration causes many of the migration-related problems in the world today in both the sending and receiving areas. The focus here is on the developmental impact in the sending areas. Powerful economic forces drive South-to-North migration. The communication and transportation revolutions that are part of globalization have accelerated the pace and expanded the flows. The interaction, and perhaps collision, of these globalizing forces with the policy goal of developing the sending area has generated much commentary and speculation about the long-run effects. Is the out-migration part of an equalizing dynamic that will improve conditions (by relieving "overpopulation," for example) in the sending region? Is the out-migration a temporary negative factor that might be more than compensated for by the flow of remittances and skills that, together with other developmental forces, will drive the area from a low to a high equilibrium and thus eventually reduce out-migration? Or does the out-migration largely feed and sustain a low-level equilibrium, notwithstanding the flow of remittances and returnees? Perhaps a happy face should be put on the whole question by seeing the production and export of unskilled and skilled labor as a comparative advantage of the sending area that might be promoted as an export industry? These are some of the basic policy questions and perspectives that run through the current policy literature on South-to-North migration.

"Temporary" Labor Migration as a Permanent Way of Life

Migrants from Turkey and the Balkans who came to Germany as guest workers (*Gastarbeiters*) after World War II were originally seen as potential drivers of development for the sending regions. Workers would learn industrial skills and new

technologies that could then drive development in their home countries. They would observe societies with more economic development and different laws, institutions, and habits.³ Remittances and the savings of returnees would provide the capital for a developmental liftoff in the less developed regions.

None of this was impossible. Yet the guest worker phenomenon has not, on the whole, driven development in the sending regions. It may be useful to explore some of the reasons for its failure to do so.

Historically, temporary work elsewhere was a way to acquire a capital stake. During the Gold Rush in the United States in the mid-19th century, people from across the country rushed to the West Coast to try to make quick money. Some made money directly from gold and silver, many others made money from selling provisions. But diminishing returns soon set in, as the rich veins of gold and silver were exploited. Many of the miners and provisioners returned home with their capital stake, to the benefit of the sending regions. One of the key elements was the time limit on the Gold Rush. Staying on in a Gold Rush town was not a permanent way of life.

Temporary work abroad can also be a means of technology transfer. When the Axis powers occupied the former Yugoslavia during World War II, a sizable number of technically trained workers and engineers—particularly from the most Germanized part of the country, Slovenia—were taken to Germany to work in advanced industries. When the forced migrants returned after the war, Slovenia drew on their knowledge to build a group of electrical and electronics companies, the Iskra (Spark) Group. Iskra laid the foundation for modern high-tech industry in Slovenia. Here again, the labor migration was temporary.

A similar story can be told for some internal rural to urban migration and return. During the Chinese civil war, some peasants moved to the industrial cities, such as Shanghai, to escape the chaos in the countryside. After the revolution, they returned home with enough industrial skills to begin some off-farm rural industrial workshops. These workshops laid the foundations for the success of the township and village enterprises founded many years later.

Thus it is not impossible for temporary labor migration to provide the capital stake and technological knowledge to drive development in the sending region. But is that an accurate description of the temporary labor migrations between the less developed and more developed parts of the world today? So far, it would seem the answer is no. As a number of observers have quipped, there is nothing more permanent than temporary migration. Some family members go abroad to work not as a temporary measure to acquire capital or knowledge, but as a career choice that will increase and diversify the income of the whole family.

Some researchers have promoted the idea of migrants returning home during the economically active part of their lives, that is, before retirement, and then using their capital and knowledge for economic development. However, this proposed development strategy may conflict with the psychology of the migrant worker (Bovenkerk 1974, 1982). Coming home to work before retirement may be seen as a sign of failure, an indication that the worker was not good enough to keep his or

³ As John Stuart Mill noted, "It is hardly possible to overrate the value, in the present low state of human improvement, of placing human beings in contact with persons dissimilar to themselves, and with modes of thought and action unlike those with which they are familiar . . . Such communication has always been, and is peculiarly in the present age, one of the primary sources of progress" (1899, pp. 99–100).

her job abroad. It is hard to build a development strategy on people doing what they, their families, and their peers perceive as failure. Many of the speculations about the potential developmental role of remittances and returnees fail to take into account the perceptions of temporary labor migrants about their careers.

It is compatible with the self-perceptions of guest workers to successfully complete their “careers,” return home, and ease into semiretirement by starting a small life-style business, such as a shop, café, or small boarding house. But that is far from being an engine of development.

Any rethinking might start with the idea that temporary should mean limited to a fixed time period of at most several years. Migrants from Asia to the Gulf States are called temporary because each episode is limited in time and workers are not permitted to immigrate. But this temporary migration is a permanent way of life. There is no sum-of-episodes limit on the number of years one can work in the Gulf. Making this migration temporary would require setting a limit on the total number of years foreigners can work in the Gulf (like term limits for politicians). Such a limit would change workers’ expectations. Like a student who receives some education abroad and then returns home for a career at home, a worker would see the time-limited migration as the chance to receive an on-the-job education abroad and build up a capital stake in order to then return home to make a career.

The Deleterious Effects of Migration of the Best and the Brightest

Temporary labor migration is usually not temporary. Migrants usually have some entrepreneurial drive toward self-betterment (of which their migration is testimony), some skills, and some resources to finance their travel. Remittances may lead to more migration, because they show that migration works; finance other family members’ trips; and show what the neighbors have to do to “keep up with the Jones’s.”

This highlights another way in which labor migration can be detrimental to development. Many of the best and the brightest blue-collar workers and college-educated “brain workers” leave their home region. Their talents and capabilities are not brought to bear on overcoming the barriers to development at home.⁴ This migration facilitates the meritocratic rise of the best and brightest in a transnational world.

But this is also a variation on the old theme about how a meritocracy works to perpetuate a stratified society.⁵ For the sake of simplicity, consider a society divided into two strata, an upper stratum and a lower stratum.⁶ The “smart” way to organize such a stratified society is as a meritocracy, in which the best and the brightest from the lower stratum can be recruited without prejudice into the upper stratum.⁷ Moving into the upper stratum should be the very definition of success for someone born into the lower stratum. Such individual cases of ascent into the upper stratum should be celebrated as examples to which any ambitious young person born

⁴ Using a production function such as $Y = AK^aL^b$, there are two effects: the reduction in L and the retardation in the processes to increase the residual coefficient A (which represents the influences aside from capital K and labor L). The second effect is the more important one from the developmental viewpoint.

⁵ The classic satire about such a society is Young’s *The Rise of the Meritocracy* (1962).

⁶ The stratification can also be spatialized, with the lower stratum identified with a ghetto.

⁷ There may also be some social mobility the other way, as in the notion captured in quips about rags to riches and back to rags in three generations.

into the lower stratum might aspire, and with every success story, those in the upper stratum might pat themselves on the back for sponsoring a society that allows such social mobility that is based on merit and is blind to the accidents of birth. In this manner, the talents devoted to maintaining the stratification and privileges of the upper stratum are constantly renewed by meritocratic recruitment from below. The Mandarin-dominated structure of ancient China was both static and long-lived, in part, because it operated on such a meritocratic basis.

The problem is that such a dynamic may well be at work in the South-to-North migration of the unskilled as well as skilled migration in today's globalized world. The development divide may be perpetuated by the successes of the best and the brightest from the South making their careers in the North. This is a broad-brush argument; there are individual Moses-like exceptions, such as Gandhi or Martin Luther King, who return to help organize structural change, but the typical case is unfortunately rather different.

Migration as a Safety Valve

The flip side of increased exit is that there is decreased voice, or, in more general terms, decreased pressure, to break through the barriers to structural change. Hirschman's (1970) example of exit-voice dynamics started with the conventional wisdom that increased competition to the Nigerian railroads from trucking would bring pressure on the railroads to reform. In fact, it had the opposite effect, because the best and brightest of the client base (the discriminating customers, who needed to get their goods to a given place at a given time) exited the railroad system and switched their business to trucking. As the railroads could not be just shut down, the state continued to subsidize them. Thus there was even less pressure to break through the barriers required for difficult reforms in the railroad system.⁸

The pressure of problems that demand social change can be relieved without being resolved in many ways. One is to discover oil or gas deposits in one's backyard and then to soften the rough edge of pressing problems with the natural resource rents. Another is to misuse external aid or loans to buy time and postpone real changes: to pay the costs of not changing rather than paying the costs of change (Stern 2001).⁹

Migration often seems to work in a similar way as a safety valve to relieve the pressure of a pressing problem rather than to resolve it. When yesterday's elites use their power to lock in their position and thereby stifle innovation, which can always be threatening, the economy will stagnate and young people will not be able to find jobs that utilize their skills and match their ambitions. Migration provides the ambitious and skilled with individual exits. It helps export the unemployment problem for both skilled and unskilled workers. Overall, it relieves the pressure to change the structural barriers to improving the business climate. History is ripe with examples of stagnant societies in which the elites have found ways to constantly suppress or bleed off the pressure for change.

⁸ Hirschman (1970) notes other examples in which exit undercuts voice. Latin American powerholders have long encouraged the voluntary exile of political opponents, which takes the pressure off internal reforms. Another example is the tendency of Indian industrial companies to generate their own electricity where the public supply is unreliable. This takes the pressure off the public suppliers to reform the old system, so the situation is self-reinforcing.

⁹ Both examples are discussed in World Bank (2003, chapter 7).

In the context of the safety valve argument, remittances amplify the deleterious effect of migration by relieving the pressure of pressing problems. Many governments in developing countries have now discovered the "oil well" of remittances, which help them paper over problems and pay the costs of not changing.

All this does not deny the fact (which Hirschman also noted) that exit itself can be a form of voice. National pride cannot be sustained for long if young people seek to obtain degrees largely as exit visas. This is why the deleterious effects of migration (the exit of the best and brightest, the relief of pressures for change) operate with greatest force where the collective self-image is of a ghetto. Out-migration is a key part of the self-perpetuating ghettoization mechanism, that is, the self-reinforcing low equilibrium in the critical mass dynamics. A ghetto will never be successful as long as the internalized definition of success is individual exit.

Remittances: Streamlining Transmission and Increasing Developmental Impact

Remittances from North-to-South labor migration have received great attention in the migration literature (see, for example, Athukorala 1993; Massey and others 1998; Woodruff and Zenteno 2001). There is much concern about the developmental impact of aid transfers from the North to the South, and yet, on the whole, remittances are even larger than all aid transfers. Thus the potential developmental role of remittances should be an important topic for policy research and experimentation.

The volume of remittances is growing rapidly, so that the market for remittance transfers is attracting more for-profit and nonprofit competition. Costs now seem to be falling as a result of these market forces, thus the expenditure of scarce government attention and resources may not be necessary to reduce transmission costs.

Perhaps public policy attention should focus on increasing the developmental impact of remittances. There is an old stylized fact that most remittances are spent on consumption, health care, education, land, and the like, but that there is little expenditure or investment in direct productive uses. Many authors have argued that even if remittances are spent nonproductively, there is still a pro-development multiplier effect, particularly if the expenditures are used locally instead of on imports. There are two problems in this multiplier argument, at least if it is used to argue that further policy initiatives are unnecessary.

The first problem in the multiplier argument is that the multiplier is a double-edged sword. As is evident in a recession, reductions in expenditure have a downward multiplier effect. Thus any volatility in remittances will be amplified through the multiplier effect in the home economy. Businesses depending not just for their start, but for their continuation, on remittances will create a vested interest in the economy for continued migration and remittances as a way of life.

The second problem in the multiplier argument is a more subtle distinction between expenditures that are essentially sterile for development and expenditures that bring forth development that is soon independent of reliance on remittances.¹⁰ Jacobs (1969, 1984) has forcefully developed this distinction (box 2.1).

¹⁰ Many argue that the education of the young financed by remittances is a merit good (an end in itself). But that is quite different than arguing that remittances are used for education so that the next generation does not have to migrate. Indeed, there is considerable evidence to the contrary. Where migration has become a way of life, education is seen as the road to a better migratory outcome (perhaps with permanence) rather than local development without migration.

Box 2.1 *Jacobs on Regions That Workers Abandon*

Jacobs (1984) considers the problems of rural settlements or regions that workers abandon to migrate to jobs in cities. After World War II, workers from Turkey, the former Yugoslavia, and a number of other countries in southern Europe and North Africa were welcomed into northern Europe, particularly the Federal Republic of Germany. The remittances sent back were sizable, and in some countries were the single largest source of foreign exchange. Yet when unemployment rose abruptly in northern Europe, for example, in 1974 and 1980, hundreds of thousands of guest workers lost their jobs and returned to "the same unemployment and underemployment they had left" (Jacobs 1984, p. 74). The remittances, in the mean time, had not put their home regions on the road to development. According to Jacobs (1984, p. 75): "Remittances, while they last, do alleviate poverty in abandoned regions, just as any forms of transfer payments from rich to poor regions alleviate poverty while they last. The money buys imports for people and institutions which they would otherwise have to go without, but that is all it does."

Jacobs (1984, p. 75) tells the story of a small Mexican village, Napizaro, that for 40 years has been dependent on remittances largely from migrant workers in the Los Angeles area. "Today Napizaro is as prosperous a settlement as can be found in its entire region. The village's twelve hundred people live, for the most part, in comfortable brick houses with pretty patios and TV antennas. The community has street lights, a modern infirmary, a community center, and a new bull ring named The North Hollywood in honor of the industrial section of Los Angeles, some fifteen hundred miles away, from which this prosperity comes."

The road between Napizaro and North Hollywood is now well-trodden; it has become a way of life. When boys get to working age, they are trained by retired returnees about what to expect in the American factories, and other villagers working in Los Angeles help to find them jobs. Over the years, it seems that many men have considered starting their own companies at home because they had acquired most of the skills necessary, but they have abandoned the idea, as it seemed that their village was too isolated. As Jacobs (1984, p. 76) notes: "The skills and experience the men have acquired in Los Angeles are usable only in the context of a city economy with its symbiotic nests of suppliers and its markets, not in this economically barren region. One and the same lack—a vigorous city right in the region—forces the men to find work far away and also makes it impossible for them to start an industrial plant of their own, at home."

Commentary on the Remittances Literature

INCREASING INCOME IS NOT INCREASED DEVELOPMENT. Overall, the remittance literature seems too sanguine about the expenditure of remittances. Much of the expenditure is sterile for development purposes, for example, nonlocal expenditures on conspicuous consumption.¹¹ Abella (2002), the head of the International Labour Organisation's Migration Program, voiced some of the skepticism at a recent World Bank conference:

There is general agreement among observers that by itself labour migration is unlikely to significantly improve the development potential of a sending country. While individual migrants and their families tend to gain from

¹¹ Some researchers have even noted that conspicuous consumption by some migrant families may spur other families to send out migrants: "Migration may represent an effort to 'keep up with the neighbors'—if migrant families have better homes and TVs, then non-migrant families may be motivated to send a migrant abroad to earn money to overcome their relative deprivation" (Martin and Straubhaar 2001, p. 3; see also Stark 1991).

migration (in terms of greater economic security), the same cannot be claimed for the countries, as a whole. There is little evidence to indicate that labour migration and flows of remittances have generated sustained growth . . .

Take a look at the variation in recent development performance of major labour-sending countries—Mexico, Turkey, the Philippines, Pakistan, Yemen, Egypt, Morocco, Lesotho, Burkina Faso, Jamaica, etc. Which countries have managed to sustain high rates of economic growth?

In a community now largely dependent on income from migrant remittances, development would mean building local enterprises that would not live off remittances directly or indirectly (via the multiplier), so that local jobs could be sustained without continuing migration and remittances. While the initial investment funds, or even initial sales of the products, might come from remittances (a pump-priming effect), the idea is that the products should be largely exported from the community to satisfy demand unrelated to the community's remittances. Remittances could jump-start the local engines of development, but should not supply the ongoing fuel.

CHANGING THE PSYCHOLOGY OF LABOR MIGRATION. Today there is increasing policy interest in the development impact of labor migration on the home region, yet much of the policy discussion takes as a given that the labor migration is essentially a way of life for the local communities. Instead of seeing the temporary export of labor as a means to acquire a capital stake or as a learning experience, the export of labor, no matter that it is nominally called "temporary," is the way of life of the communities (box 2.2).

The project of local development is probably lost if this labor migration continues as a way of life. There are two related arguments here. One argument is that the static-efficiency option of increased earnings through semipermanent labor migration is dynamically inefficient in the sense of foreclosing on the option of local development. Martin and Straubhaar (2001, p. 18) note this when commenting on studies such as Abadan-Unat (1976) about the Turkish experience with guest workers:

These studies concluded that Turkish areas of origin were not primed for an economic take-off before emigration began, and that remittances and returning migrants reinforced trends that prevented a take-off rather than fueling the take-off for reasons that included . . . :

- nonproductive use of remittances, e.g., to speculate on real estate or to imitate a successful service such as a delivery service, taxi, or a shop
- the retirement of many migrants, so that skills acquired abroad are not used to promote development
- some distortion of local incentives, as when children do not stay in school because the wage for unskilled work abroad is several times the wage for skilled work at home.

In sum, the conclusion of the leading study of the 1970s was that labor emigration is "cumulative and self-perpetuating" (Abadan-Unat 1976, p. 384)—migrants leave an area because it is less developed, and remittances and returns reinforce the dependence of the areas on an external labor market.

In depressed and underdeveloped regions, if the pressures of local unemployment and poverty are routinely relieved by labor migration, then the various barriers

Box 2.2 *Ahmeti's Village*

A detailed case study (European Stability Initiative 2002) of Zajas, an ethnic Albanian village in Macedonia, provides an example of a community where living off remittances has become a way of life. The local Albanian economy runs almost entirely on remittances.

There are 184 shops crammed into the Albanian end of Aleksandar Makedonski Street, selling carpets, furniture, jewellery and wedding gowns. The shops make most of their annual turnover during the summer months, when thousands of Albanian migrants return to get married or build houses in their villages. In this period, the Albanian quarter bustles with activity, and Cadillacs and other impressive cars with Chicago and Alaska license plates are parked along the sidewalks. Many of Kicevo's 300 private taxi drivers make a living shuttling the diaspora to and from Skopje airport. The heart of the Albanian economy is made up of traders, restaurateurs, construction workers, money changers, tradesmen and a few lawyers and private doctors (European Stability Initiative 2002, p. 4).

The social expenditures of the Albanian diaspora tend to be unrelated to local development, for example, a hall for social functions such as weddings, and even a new soccer stadium. The researchers illustrated the social structure and expectations by looking at the entering 1989 class in a high school in the neighboring ethnically mixed town of Kicevo and then seeing what they were doing a decade later. Of the ethnic Albanians, all except one were working abroad and the latter's father was working in Germany. Of the ethnic Macedonians, all continued to live in the immediate region. This illustrates the self-reinforcing, critical mass dynamics of the labor migration for the ethnic Albanians and the lack of migration for the ethnic Macedonians. According to the European Stability Initiative (2002, p. 21): "Emigration tends to be a cumulative process. Its incidence is a positive function of the number of earlier emigrants who provide money, information and support for newcomers. If Kicevo's ethnic Macedonians have relatives abroad, they usually emigrated for Australia in the 1950s and no longer maintain close links with family who remained. There is no equivalent of the dense networks which Albanians have constructed between Kicevo and the outside world over the past two decades."

There was one interesting exception to the rule of nonproductive expenditure of the remittances from the Albanian diaspora (concerning Albania itself, see Martin, Martin, and Pastore 2002; Nicholson 2002). An ethnic Albanian with a clothing company in France set up a cut-and-sew subcontracting company in Kicevo with about 100 workers (ironically, all but two of them are ethnic Macedonians who had worked for a Yugoslav textile company). Cloth is trucked in from France and the finished product is sent back, with the company in France acting as the contractor. While this is not an example of a migrant returning permanently to run a business at home, it is a case reminiscent of the small garment factories (*maquiladoras*) in Guanajuato, Mexico, where the company is a labor-intensive part of a value chain based in the North.

to development will probably not be surmounted and the regions' lack of development will be perpetuated.

The second argument is that the psychology of labor migration as a way of life does not bode well for local development. As noted previously, returning home to make one's living there before retirement is seen as a failure to sustain one's "career" as a labor migrant.

Brain Drain Effects of Migration

In the immediate post-World War II period, the brain drain was seen as a problem (see, for example, the Johnson-Patinkin debate and the other papers in Adams

1968), a bad cold that might hinder the activities of developing countries. Today, with the quickening of international processes that is referred to as globalization, the brain drain has become more like a pneumonia, crippling the activities of some countries, such as those in Sub-Saharan Africa, and particularly South Africa. Some policy ideas suggested in the past, such as legal restrictions on exit or a departure tax paid by receiving countries to sending countries,¹² are now seen as archaic and unimplementable. Other ideas, such as the creation of a transnational community of scientists and engineers helping both receiving and sending countries, may be more feasible because of globalization. Thus while globalization may exacerbate some old problems, it may also entrain some new solutions.

TREATING SKILLED LABOR AS AN EXPORT. When a young doctor goes abroad to work, does he or she do so to acquire first-hand knowledge of medical practices in industrial countries in order to improve practices at home and perhaps obtain enough capital to open up a practice upon his or her return? Or is the purpose to find long-term employment in the North? The evidence suggests that the bulk of cases fit the second profile.

One policy response is to make the best of it by treating the training of skilled people as essentially an export industry for which payment is made in the form of remittances. The training of medical personnel in the Caribbean, the Philippines, and a number of other countries would seem to fit this model. If this training takes place at privately financed institutions, public policy would have little purchase. If the training is at public expense, it would seem, at least at first glance, that this is a waste of public expenditure. There is a multiple loss: the human capital, the public monies that funded the training, and the later fiscal loss. As the *Economist* notes (2002b, p. 25):

To the loss of productive potential, add the fiscal loss from migration. Taxpayers in developing countries have paid to educate many of those who leave (and who may well end up working in jobs below the level their qualifications would justify at home). And emigration leaves behind fewer workers to pay the cost of looking after the old . . . A recent study of the fiscal effects of the Indian brain drain, by Mihir Desai of Harvard University and two colleagues (Desai, Kapur, and McHale 2001), points out that the 1 million Indians in the United States accounted for a mere 0.1 percent of India's population but earned the equivalent of a staggering 10 percent of India's national income.

Any remittances received in return for this exported human capital go privately to the families of the skilled migrants, which would hardly justify public expenditure.

One way of preventing the loss of investment in public education is to treat it as a loan (secured in some fashion) unless the graduate satisfies certain minimal

¹² Until 1824, the United Kingdom had restrictions on the out-migration of skilled artisans. The restrictions were imposed not out of fear of brain drain in the United Kingdom, but out of fear of brain gain to competing countries in Europe. The effect was less to prevent out-migration as to discourage return migration: "Restriction on emigration of artisans failed to prevent their departure, but did inhibit their return" (Kindleberger 1978, p. 47). A similar perverse side effect has been noted for tightened restrictions on unskilled in-migration. As Cornelius (2002, p. 6) notes: "The current strategy of border enforcement is keeping more unauthorised migrants *in* the United States than it is keeping *out*."

requirements of public service after graduation. This policy seems fair, but it may be difficult to implement. Travel abroad would have a broadening effect, and further study abroad might greatly enhance the value of the graduate's education. "Hard" requirements to enforce the education loans, such as exit bonds or liens against family assets,¹³ might reduce the graduate's intrinsic commitment to and identification with the country, and thus lead to perverse consequences. If one's obligation to one's home country was thus represented simply as the need to pay off a bank loan, then once paid in full, the graduate would have little compunction in seeking opportunities elsewhere. Public service obligations might have some of this crowding out effect, but they would probably be much smaller than a monetized obligation.

A counterargument against seeing public grant funding of education for export as a clear loss is that if students see higher education as a means to out-migrate, many more students may be attracted into these professions. The country will have a net increase in supply, even after the migrants leave. Due to the ease of immigrating to the United States as a doctor, Jamaica loses four out of every five doctors trained, but it still retains one out of five.

Where a professional degree is seen as an exit visa, the demand for such degrees will increase. After the financial collapse in the Russian Federation in 1998, enrollment in science and technology rose. The initial delight of educators was somewhat tempered when interviews showed that since the getting rich exit door had closed, many students saw a science and technology education as the next best road out of Russia. The net result of this natural experiment may well be that Russia will end up with more trained scientists and engineers than would otherwise have been the case.

While this mechanism may operate on its own, the idea of promoting it as policy seems bizarre. Even leaving aside the substantial waste of national education resources, how could any country that takes pride in its scientific, engineering, or medical professions urge students to become educated in those professions as a means to exit the country? If that were officially promoted as the goal of science education, a country's national academy of science would soon be seen as a ghettoized national academy of second- and third-rate science, made up of nationals who were not good enough to get jobs in the advanced industrial countries.¹⁴ But at least this policy idea has the virtue that if accepted by the developing countries, the developed countries could continue their poaching of the best and brightest of the trained scientists and professionals with a clear conscience.¹⁵

ORGANIZING THE DIASPORA. The interplay (or dialectic) of exit and voice (or commitment) is subtle. Sometimes exit can function as a kind of voice to spur reforms; sometimes it exacerbates a downward spiral. For those who leave, exit could mean the abandonment of voice, or it could lead to new, and perhaps even

¹³ In establishing the University of Naples in 1224, Frederick II tried to entice students by arranging for creditors to supply loans. The students could not leave the city unless the loans were paid back or markers were left with the creditor.

¹⁴ In countries such as India, which have significant emigration of scientists, scientists who remain home for whatever reason may be viewed as second-rate. Programs to top up the salaries or extend other enticements to professionals who return are resented by professionals who never emigrated or who returned without "bribes."

¹⁵ In biological terms, the poaching would have advanced from a form of parasitism to a form of symbiosis.

more effective, kinds of voice. Emigrants have exercised the logic of exit, but that does not mean that they have forsaken any commitment to making home better. The entrenched authorities in the home country might be accustomed to ignoring domestic voices for reform, particularly if those voices have no real alternative. But calls for reforms coming from the diaspora might find a different reception. The diaspora could bring new knowledge and capital to the home country, but its members have alternatives. Indeed, the emigrants have a new home in addition to their old home. Their exit may have increased the effectiveness of their voice at home.

While emigrants may have left for economic reasons, there is no reason to think that mobilization of the diaspora is solely an economic proposition. Intrinsic motivation taps into the roots of identity, and an emigrant's home country is likely to be part of that emigrant's identity (Deci and Ryan 1985; Lane 1991). The social rewards of working with other successful emigrants to help the home country may also play an important role, but the economic rationale cannot be ignored. At best, the intrinsic and the more extrinsic motivations should be aligned, like arrows pointing in roughly the same direction.¹⁶ Intrinsic motivation can take the lead, but its energy will eventually flag if sound economics does not soon follow behind.¹⁷

One meta-principle of development assistance is to look at what spontaneous, unassisted, or self-organized social processes have helped development and to then figure out how to catalyze those processes in other countries or regions. Development practitioners look at where water flows naturally and where it is flowing in the right direction, then deepen the channel so that a stream might swell to a river.¹⁸

The reinvolvement of the diaspora in the home country through investment and integration in networks is an historical process that many countries and agencies are now trying to catalyze. The policy idea of organizing the diaspora complements efforts within home countries to increase the retention of scientists, engineers, and professionals. The point is not to treat emigrants as being irreparably lost to the home country, but to view them as potentially playing a positive, transnational role.¹⁹ Bhagwati (2003) argues that such a diaspora model is much more likely to succeed today than a retention strategy.

One major historical model of diaspora-assisted development is the role of the 50 million overseas Chinese in China (Weidenbaum and Hughes 1996). The overseas Chinese have been remarkably successful in business and can bring considerable experience, network connections, and capital back to benefit investment in

¹⁶ McGregor's (1960) theory Y is based on the principle of integration and self-control, in the sense that work and tasks are designed so that the intrinsic motivation of staff is aligned with the objectives of the organization.

¹⁷ See Hirschman (1977) for more on the interplay of the passions (intrinsic motivations) and the interests (extrinsic motivations).

¹⁸ Where the water is flowing in the wrong direction, instead of trying to build a dam, it is better to try to rechannel the water into acceptable nearby channels. A related "pave the paths" metaphor is used by Williams (1981). Rather than pave paths on a campus of new buildings at the time the buildings are constructed, let grass grow between them, see where footpaths develop, and then pave the paths. The question development assistance organizations face is how to pave the paths worn in the diaspora's self-organized reinvolvement in its old country.

¹⁹ "Transnational" connotes more globalization-enhanced betweenness, circularity, back-and-forthness, and toing-and-froing than old-fashioned terms like "international" (Portes 1999).

China. Their common language, culture, and family networks gave them connections (*guanxi*) that non-Chinese investors did not have.²⁰

Indian governments at the state and national level and various expatriate groups have now become active in involving the extensive Indian scientific and business diaspora in India (Kapur 2001; Saxenian 2000). The year 2000 (Y2K) problem in the late 1990s provided the sudden need for much reprogramming in "archaic" computer languages, which created opportunities for companies in Bangalore. The experience and trust built up from that episode, aided by the temporary migration of many Indian software engineers and programmers to the West, spilled over into substantive business deals during the dot.com boom. In addition to this trade in services, the Indian high-tech diaspora in Silicon Valley and other technology centers in the United States has become organized, forming a transnational community that brings experience, connections, capital, and deals to India.²¹

Governments and expatriate groups have tried to form mutually beneficial transnational communities in countries with sizable diasporas, including Argentina, Armenia, Israel, Pakistan, and South Africa. In addition, many Internet-based networks specialize in science and engineering. These networks build on the experience of the United Nations Development Programme's Transfer of Knowledge through Expatriate Nationals Program. The South African Network of Skills Abroad has identified some 40 networks, such as the Arab Scientists and Technologists Abroad, the Network of Colombian Researchers Abroad, the Iranian Scientific Information Network, the Global Korean Network, the Philippines Brain Gain Network, the Polish Scientists Abroad group, the Association of Thai Professionals in North America and Canada, and the Tunisian Scientific Consortium (Brown 2000; Solimano 2002).

A menu of policy options is associated with catalyzing the organization of skilled and professional diasporas, starting with supporting the use of the Internet by expatriates to build organized groups and by agencies in the home countries to build relationships with the centers of expatriate activity. The transnational relationship might start with discussion and information exchange. The challenge is to develop transactions and business deals that lead to the investment of diaspora expertise and capital in the development of the home country. Emigrant groups and ministries in the home country can collaborate on investment fairs in developed countries and tours of investors in the home country. Business incubators may play a role in both countries: home-country exporters may need a base in a developed country, and fledgling businesses in the home country could be sponsored or mentored by successful emigrants.

REDUCING BRAIN DRAIN THROUGH EDUCATIONAL POLICIES. If a company upgrades a worker's skills (which are always to some extent transferable), another

²⁰ Some have argued that the bulk of the Chinese diaspora investment into China was by the Hong Kong (China) Chinese, who, in the face of Hong Kong's reabsorption into China had special incentives to gain favor from the Chinese authorities (Naughton 1999).

²¹ One part of the transnational diaspora community idea is to downplay the role of return migration to obtain these outcomes. Various programs to facilitate permanent return migration for highly skilled professionals have become notorious for their meager outcomes, and that seems unlikely to change in the countries that need help the most.

company can offer a higher wage to try to poach the trained worker.²² To prevent poaching, firms could privatize worker training by having workers pay for their own training. This is analogous to a country privatizing its higher education system so that no public resources are expended on those who exit. In both cases, this policy would restrict training to those who already have the required resources if loans were not provided. If loans are provided, however, the firm or country faces the problem of collecting from those who exit.

Another corporate strategy is to provide for worker education, but to build a corporate culture that increases worker identification with the company and reduces exit. "Identification becomes an important means for removing or reducing those inefficiencies that are labeled by the terms *moral hazard* and *opportunism*," writes Simon (1991, p. 41). This is one of the keystones of human resource policies in Japanese firms and firms using Japanese-style policies (Kagano and Kobayashi 1994). As each firm develops its own routines and procedures in a path-dependent manner, an increasing proportion of worker training may be firm specific, so that retention becomes self-reinforcing over time.

How might migration lead to the dynamics of North-South divergence rather than convergence? Can migration be viewed as the exit or defect option in a multi-person prisoners' dilemma game? Such models are abstract and barren of pointers to alternative policies. But the adverse dynamics of migration are based on the logic of exit (find a better home), and Hirschman's (1970) development of the interplay between the logic of exit and the logic of commitment (commit to making home better) seems to suggest alternative policies.

The contrast between the logic of exit and the logic of commitment is well developed in the case of work organizations, for example, in the contrast between models of Japanese-style and Anglo-American-style firms (table 2.1). Applying the logic of commitment to a country as a whole, particularly to the tertiary education system, can help combat brain drain in source countries.

Can the ideas of Japanese-style human resource management be applied to reforming higher public education in a developing country to reduce the incidence of brain drain? Dore (1976, 1997), an economic sociologist who specializes in the Japanese economy, has proposed education reforms based on these principles. Although he was concerned with education reform for its own sake, his suggestions have the indirect effect of helping reduce the brain drain in developing countries. They therefore overlap with Patinkin's suggestions.

Dore's diploma disease critique focuses on the effects of the obsession with credentials and with the escalation of the credentials required for jobs. In developing countries, where there are more graduates than jobs, the level of credentials is used as a filter for job applicants. Students thus strive to obtain even more credentials, and employers escalate their requirements. The original purpose of education—the learning needed to perform a job—has been crowded out by the need to obtain the credentials needed to obtain a job. The content of education systems is often based

²² Williams (2000) notes the analogy between the brain drain problem and training by firms that may result in the loss of trained people. Fear of losing employees would lead to an underinvestment in non-firm-specific, firm-sponsored training. Vocational education subsidies in the United Kingdom try to overcome this underinvestment problem.

Table 2.1 Organization of Work Based on Logic of Exit and Logic of Commitment

| <i>Item</i> | <i>Logic of exit</i> | <i>Logic of commitment</i> |
|--------------------------------------|---|---|
| Efficiency | Resources are allocated to highest value use. Allocative efficiency is enhanced by mobility. | Greatest value is reaped from resources allocated to given use. X-efficiency (effort) is enhanced by immobility (Leibenstein 1984). |
| Results of education | Universal certification is provided to maximize mobility, and thus the efficiency of allocation. | Knowledge is local, embedded, partly tacit, and shown in practice, not in certificates. |
| Identity | Mobility is enhanced by identifying with a profession or other universal category. | Individuals identify with and are motivated to improve their social group, village, company, or institution. |
| Labor mobility | Mobility is high, so changes take place primarily by replacing old workers with new workers embodying new knowledge. | Mobility is low, so changes take place primarily by workers acquiring new knowledge. |
| Process improvement | Work is reduced to standard repetitive tasks, so that workers are replaceable. Skills change exogenously. Expertise is exogenous or located in management, so that workers are replaceable. Staff do not identify with a firm or institution. | The plan-do-study-act cycle of continuous improvement is applied. Learning takes place as the scientific method is applied. Expertise develops as embedded local and tacit knowledge of staff involved in continuous improvement grows. The system encourages staff identification with the firm. |
| Payment system | Employees are paid the going rate for certified skills. Workers receive equal pay for equal work. Payment is associated with the work performed and the results achieved. | Employees are paid according to seniority and skills demonstrated in firm-specific jobs. Payment is associated with individuals (usually under the going rate at the beginning and over it at the end, as incentive to stay). |
| Motivation | Employees are expected to be motivated by individual material self-interest. | Employees are expected to identify with the organization and have shared group interests. |
| Stability and trust in relationships | Low-trust relationships imply explicit contracts and competitive, arm's length, exit-oriented relationships. The lack of investment in building trust or loyalty leads to low-trust relationships. Individuals pay for learning. | High-trust relationships imply incomplete relational contracts. Voice-oriented relationships requiring investment in building trust and loyalty lead to high-trust relationships. The company pays for learning. |
| Entry into firm | Entry is at all levels. | Entry is at lower levels. Promotion is from within. |
| Style of interpersonal relationships | Standardized, professional behavior is used as a means of coordinating people. Low interpersonal knowledge is associated with high turnover. | Familiarity and intimacy in long-term relationships is used as a means of coordinating people. High interpersonal knowledge is associated with low turnover. |
| Application to migration | Nationals exit to find a better home. | Nationals commit to making home better. |

Source: Based on Ellerman (2005b).

on standards from the former colonial center or on today's globalized standards and has little relevance to local jobs. Moreover, even that content is sacrificed in the rat race of the diploma disease.

Dore's proposals call for coordinated transformation in the tertiary education system and in the organizations providing jobs. Under his proposal, individuals begin work at an earlier age. Learning (at tertiary educational institutions as well as on the job) becomes a life-long process guided by the requirements and opportunities of the work.²³ The work organization pays for continuing tertiary education. Filtering is based on the demonstrated ability to continue to learn and to perform a job, not on the acquisition of universal certificates. Under this system,

the civil service, for instance, would no longer recruit graduates. There would, instead, be a single major entry port for all grades at the age of 16 (or whatever was fixed as the school leaving age) and everyone would start as a clerk; some, on the results of internal tests, or on the basis of work performance, would be promoted fairly quickly to the executive grades and given such further training as was necessary, and some of those would similarly be selected—and educated/trained—for administrative posts. The same pattern could apply to other professions. Future engineers could train first as craftsmen; some of the craftsmen could be trained as technicians, and the ablest of those sent off for full training as engineers. Doctors could begin as medical assistants; teachers as pupil-teachers; university teachers as research assistants or secretaries or schoolteachers; architects and accountants and quantity surveyors could begin as clerks and be selected for professional training (Dore 1976, p. 143).

Cooperative education programs (which alternate semesters studying and working in a company) are a step in this direction. When study abroad is appropriate, it would be financed by the company and would probably take place at an older age, when the individual not only had a job waiting upon return, but had a family and other roots in the home country. A national system of education and work designed along Dore's lines would maximize the retention of the best and brightest, just as Japanese-style human resource management policies have done within firms.

Perhaps in order to keep more brains at home, the tertiary education system has to be improved so that its centers of excellence have higher international ranking and better recognition. The value of the credentials these institutions provide must be improved, perhaps with help from independent international certification, to relieve some of the pressure for the best students to get degrees abroad. Independent certification of graduates would also increase job prospects for graduates. This argument can be cast in the terms of information economics. Certification would help overcome the informational asymmetry faced by the work organizations (domestic or international) that might provide jobs for graduates.

What is wrong with this argument? How could anyone be against focusing, say, African tertiary education systems on centers of excellence with better international certification of their graduates? Dore's diploma disease argument opposes just such

²³ This is similar to the Japanese-style firm, where entry occurs at an early age and continuing education is promoted by the firm. With changing technologies, workers "require formal training at regular intervals in a quasi-school environment that complements the informal training they receive on the job in order to systematize their experiences on the job" (Aoki 1988, p. 52).

an effort. The certification argument is an example of an argument based entirely on the logic of exit, without recognizing that there is an alternative way to address the problem. Organizations based on the logic of commitment address the information asymmetry problem by taking people on board at an earlier age and slowly learning about their attributes and capabilities through direct interaction.

For example, the Japanese-style firm “can identify slow learning, low productivity, low motivation, and uncooperative workers by actual observation and differentiate them in pay and status over the long run, while attempting to lock in fast-learning, highly productive, highly motivated, cooperative workers by discouraging them from quitting in midcareer” (Aoki 1988, p. 50). Hence this system emphasizes the X-efficiency of retaining and developing the best and brightest as opposed to a system designed to equip people with universal credentials so that they have the greatest mobility to seek the highest-paid opportunities available in an allocatively efficient global labor market.

Thus the certification approach is not the only way to address the information asymmetry problem. Moreover it will tend to aggravate rather than alleviate the brain drain. Many of the homilies about the globalization of educational standards make this clear. “The proportion of foreign students studying for professional degrees or doctorates in the university systems of the major industrialized countries, in particular the United States, is large, and more than two-thirds simply stay on. The situation is similar in Europe, albeit on a smaller scale. At the same time, centres of excellence in higher education in labour-exporting developing countries are increasingly adopting curricula that conform to international patterns and standards. Given the facility of language, such people are employable almost anywhere” (Nayyar 2002, p. 164).

There is also a more subtle problem in the certification argument. One consequence of focusing on international certification with universal standards is that the type of knowledge that is internationally certifiable—that will have currency in Paris, London, or New York, for example—is emphasized. This redirects the focus away from the types of local knowledge important for a developing region. For instance, instead of training physicians in local tropical diseases, knowledge of little use in the North, doctors would receive universal training that would be as applicable in Alberta as in Angola. Policy makers should not be surprised when doctors with such training emigrate to Alberta rather than stay in Angola.

Summary of Conceptual Issues

The field of migration and development is unsettled and unresolved for good reason. The dilemmas are basic and fundamental. Seemingly good arguments can be made on both sides of major issues; intelligent people (like Johnson and Patinkin) can disagree. Some issues in the sphere of migration studies reflect larger issues that rend the field of development studies. Some of those basic issues are summarized here.

The Dynamics of Convergence or Divergence

One basic issue is the question of the underlying dynamic mechanisms. The contrast is between negative feedback, self-limiting mechanisms (equalizing dynamics) and positive feedback, self-reinforcing mechanisms (critical mass dynamics). Almost all

neoclassical economics is based on the assumption of diminishing returns. As factors move from low-return uses to higher-return uses, the high return falls and the low return rises, eliminating the discrepancy. But the opposite case of positive feedback (increasing returns) is now receiving increasing attention in the literature of economics (Myrdal 1957 was an early example) and the sciences. Increasing returns lead to multiple equilibriums, perhaps of a high and low variety (the twin peaks dynamics of divergence).

The North-to-North migration from Europe to North America during the 18th and 19th centuries was, for the most part, an equalizing dynamics mechanism.²⁴ Part of the controversy today is about whether South-to-North migration is part of an equalizing dynamics of convergence or a critical mass dynamics of divergence. Time and again, one finds unguarded and unstated assumptions in the literature that a factor movement from a low to a high return will equalize rather than increase the discrepancy in returns, as if the flight of human and financial capital out of a country could be expected to improve its development prospects.

This argument can also be stated in terms of Hirschmanian inducement or pressure mechanisms and exit and voice dynamics. Suppose there are two groups, A and B. If problems and bottlenecks appear in group B, then the migration of some members from B to A could have either a positive or negative effect on B. The exit or defection of some members of B might alert the other members or their leaders that changes needed to be made to resolve problems and overcome bottlenecks, leading to equalizing dynamics between A and B. But it might work the other way. The members exiting from B might be the most articulate or capable members, whose exit makes it even less likely that vested interests will be overcome to resolve the problems. This would lead to the dynamics of divergence.

When the entrenched elites in a developing country see highly educated young people emigrating, does that steel their resolve to make the changes necessary to staunch the brain drain? Or does it reduce the pressure on them to give up the privileges that are barriers to development and that lead to the brain drain in the first place? This is not a question that can be settled a priori. But there should be no a priori assumption that exit (switch rather than fight) rather than nonexit (fight rather than switch) is the best way to induce reforms; no assumption should be made that exit will equalize rather than increase the difference.

A number of social mechanisms are designed to mitigate, if not defeat, the dynamics of divergence of the Matthew principle. Antitrust policy tries to break the size begets size dynamics in the merger market, so that companies maintain some parity and rivalry. Separation of powers, term limits,²⁵ and other constitutional limitations are designed to mitigate the power begets power dynamics in the political sphere. In an economy in which wealth begets wealth independently of effort and innovation, the breakdown of primogeniture and the enactment of progressive income taxes and inheritance taxes help mitigate those dynamics. In professional sports, the practice of having the worst teams get first choice in the draft of new players is aimed at defeating the dynamics of divergence and maintaining some competitive parity.

²⁴ An argument could be made that migration out of some regions, such as southern Italy and Sicily, contributed and continues to contribute to the poverty of those regions.

²⁵ For similar reasons, term limits were suggested earlier for temporary labor migration schemes to defeat the self-reinforcing, rut-deepening tendencies of such schemes.

Box 2.3 *The Logic of Exit and the Logic of Commitment in Other Contexts*

Situations in which decision makers must choose between the logic of exit and the logic of commitment appear in many contexts, for example:

- A hiker seeking to climb the highest peak in a mountain range in which visibility is poor can adopt either the logic of commitment by continuing to climb the peak he or she is on (fight rather than switch), or the logic of exit by switching to another peak, which might be higher (switch rather than fight).
- The process of selection in evolution (including its mathematical versions in genetic algorithms), starts with the commitment to the existing set of genetic possibilities and then exploits or refines them to determine the fittest. In addition, there is the process of variation (for example, mutation and crossover or sexual reproduction), which works to exit the given hill on the fitness landscape and explore other possibilities. This is the evolutionary version of the previous example: commit to climbing farther up a given hill or search for another, possibly higher, hill.
- A detective must decide when investigating a crime whether to spend time following up on a given clue or searching for more clues.
- A manager must decide whether to make a commitment to a given team and focus on developing its capabilities or to take those characteristics as given and focus on shuffling team members to get a better combination.

Every potential migrant faces a similar situation: to make a commitment to staying home and trying to improve it or to take its characteristics as given and search elsewhere for a new and better home. Economic models tend to model only the exit option, ignoring the possible logic of commitment, with its inherent uncertainties about the possibilities of transformation.

Universal public schooling aims to disrupt the dynamics of educational divergence across generations. Proposals for school vouchers are often criticized as attempts to reintroduce the logic of exit and individual visions of success as getting one's child into a better school instead of the collective action logic of working to make the child's school better. Proponents of voucher plans assume that the underlying dynamics are equalizing and convergent. If the primary sources of pressure for betterment were the articulate and concerned parents who would also be the first to exit under a voucher plan, then the underlying dynamics are those of divergence and ghettoization.²⁶

The Logic of Exit Versus the Logic of Commitment

If the characteristics of resources and structures (or uses) are taken as fixed, then efficiency is seen through the logic of exit. Resources should exit or be replaced if there are feasible higher-valued allocations for them. If, however, the location of the resources in a use is taken as essentially fixed but the characteristics of the resources and structures are taken as variable, then efficiency is seen through the logic of commitment. How can a given set of resources and surrounding structures be transformed to reach a higher-value outcome (box 2.3)? That is the domain of X-efficiency. In some formulations, the

²⁶ New Zealand adopted a voucher-like program, Tomorrow's Schools, in the early 1990s. The better schools soon filled with hand-picked students and turned away the hard to teach poor or minority students, who had no alternative but to return to their now more depleted old schools. The dynamics of divergence left the schools even more stratified along socioeconomic and ethnic lines than they had been (Wylie 1998).

contrast between allocative and X-efficiency might be rendered as static efficiency (fixed characteristics of resources and uses but variable allocation of resources to uses) versus dynamic efficiency. The two logics are elaborations of Hirschman's (1970) treatment of exit versus voice. He analyzes the choice of taking characteristics as fixed or variable as "trait-taking" or "trait-making" (Hirschman 1967).

The stylized models of the American versus the Japanese firm—such as Aoki's (1988) distinction between the A-firm and the J-firm—are based on these two logics (Ellerman 2005b). The manager in the A-firm sees the organizational problem in terms of the market logic of exit and replacement: how to find the best resources on the market, buying and selling or hiring and firing as necessary, to obtain the highest-value allocation of resources. Management in the J-firm sees the organizational problem in terms of a community model (Dore 1987) of commitment to an essentially given set of people: how to develop and transform their skills and capabilities and those of the surrounding organizational structures to obtain the highest-value outcome.

What the exit logic views as inflexibility or rigidity (for example, taking the allocation of people to an organization as a given), the commitment logic views as commitment and loyalty. Some organizational mechanisms, such as barriers to exit (Kagono and Kobayashi 1994), are seen as irrational by one logic and rational by the other. For instance, the organizational norm of expecting the captain to go down with the ship or the failed manager to fall on his sword is designed to close off the logic of exit and to promote the logic of commitment and transformation. As Chinese township and village enterprises faced a hard budget constraint (that is, they were like a ship that could sink), the relative immobility of labor (the lack of lifeboats on the ship) was viewed by the logic of exit as allocative inefficiency. The commitment logic viewed it as promoting the commitment, voice, and effort (that is, X-efficiency) of the workers and managers to make sure that the enterprise stayed afloat.

These two logics cut across the analysis of migration and development. If a worker in a developing country takes the characteristics of the place as fixed, he or she will view advancement through the logic of exit. Commitment and voice are pointless if transformation is seen as impossible, at least within the relevant future. These workers are looking for the best exit in search of a higher-value use of their human resources. This is the market-based logic exemplified in Johnson's cosmopolitan liberalism.

Others, such as Patinkin, take the people as essentially given. Starting with that commitment, they face the task of finding out how the skills and capabilities of the people and the surrounding structures can best be transformed and developed. This logic of commitment and transformation is behind policies at Japanese-style firms, Dore's educational reforms, and the thinking of development-oriented policy makers in developing countries.

Individual Versus Collective Visions of Success

In the prisoners' dilemma game, the individual strategy for success is not the best collective strategy for success. An individual vision of success comports well with the logic of exit (defection), while a collective, group, or community vision of success evokes the logic of commitment.²⁷

²⁷ See the related ego-focused and group-focused visions of change in Hirschman (1958, chapter 1), as well Hirschman's (1982) analysis of individual versus collective action.

Consider a situation in which there are two companies, countries, or groups, A and B, and that group A is much better than group B. An individual in group B with an individual vision of success might well use the logic of exit to find a way to migrate from B to A. An individual in group B with a collective vision of success might well use the logic of commitment to find a way to transform B so that it becomes better than, or at least comparable to, group A.

The dynamics of migration by the best and brightest from B to A might well be the dynamics of divergence. Group A might be able to sustain and increase its advantage over B by poaching the most capable people from B. One subtle way for group A to promote that outcome would be to promote the universal adoption of the objective meritocratic standard, in which success on the basis of one's merits means joining the currently best group, not working to make one's own group best. As Young's *The Rise of the Meritocracy* (1962) forcefully shows, such a meritocratic structure would tend to perpetuate the supremacy of group A.

Increased Income Versus Increased Development: The Three D's Deal

Debates about migration and development may reveal basic differences about the goals of development assistance. Some view the goal of development assistance as putting resources in the hands of the poor—a certain kind of poverty reduction. They view increased income and increased living standards as development. Others view increased income for the poor as a worthy goal, but not in itself as development. Indeed, depending on how it is achieved, poverty reduction (in the form of long-term charitable relief, for example) may even be inimical to development. These observers view development in a country or region as based on developing and diversifying the skills and capabilities of the people in the country so that they can increase their incomes by adding value (as opposed to merely extracting natural resources) in an autonomous and sustainable way.

A question helps frame the issue. Suppose a poor and undeveloped country discovers a large deposit of oil and gas, so that the average income is substantially increased and living standards are improved. Is that by itself development?²⁸

Now reframe the question so that the large deposit of oil and gas is replaced by long-term South-to-North migration, with the ensuing flow of remittances to the sending country. These remittances reduce poverty, increase incomes, and improve living standards. Are they not, then, a form of successful development? In today's world of globalized transportation and communication, must nationals work in their home countries? No one says that a suburban bedroom community is underdeveloped because it contains no internal sources of income. Why should the judgment be different when the bedroom community is hundreds or thousands of miles away?

A deal—some would say a devil's deal—has been struck between the North and the South. In the developed North, many dirty, difficult, and dangerous jobs (the three D's) are not being filled by native workers. For unskilled migrants, these jobs may pay four times what they could earn at home. Hence a deal is struck. The North will be the primary site of development in the sense of jobs, including the

²⁸ The aggregate growth models of development economics provide remarkably little insight into such questions. Some of the best and most accessible thinking on this topic is in the works of Jacobs (1969, 1984).

low-end jobs that native workers will not fill. The South will be a kind of long-distance bedroom community furnishing workers for these jobs. This arrangement will satisfy many of the conventional criteria for development in the South: increasing income, reducing poverty, and improving living standards.

There seems to be a fault line running under the field of migration and development concerning this three D's deal between the North and the South. The deal is usually not stated in such bald terms; euphemisms, blinkered vision, and Pollyanna scenarios abound. Some supporters of the three D's deal emphasize the benefits to governments in the South, which can export their unemployment problems and import the hard currency they need to relieve their balance of payments problems. Some keep their eyes riveted on the improved living standards of the temporary migrants and their families and ignore the lock-in to a pattern of economically sterile bedroom communities in the South. Some ignore decades of disappointed hopes for development led by guest worker remittances in order to embellish the lingering hope that these patterns could lead to real development in the South. Others cut that Gordian knot and in effect redefine development in terms of poverty reduction and improvements in living standards. The debate, implicit or explicit, over the three D's deal is fundamental to policy questions in migration and development.

Complicating the Discourse on Migration and Globalization

Globalization is often praised as being unambiguously positive on the grounds of the market-driven logic of exit, the equalizing dynamics of convergence, and the individual visions of success. The conceptual framework used here complicates the discourse by showing that the usual approach to globalization is one-sided (for more analysis, see Ellerman 2003, 2005a). The logic of commitment and transformation that embodies a group-focused or collective action vision of success has an equal claim as a strategy for social improvement. Moreover, to the extent that the underlying mechanism for South-to-North interaction is the dynamics of divergence, the logic of exit to obtain individual success will perpetuate and aggravate the North-South divide.

Annex 1. Multiperson Prisoners' Dilemma Games

The standard two-person prisoners' dilemma game illustrates a symmetrical situation in which each player has a choice of cooperating or defecting. In this game, regardless of what the other player does, each player's best strategy is to defect, but the outcome of both defecting is worse for players than the outcome of both cooperating (table A1.1.1).

Table A1.1.1 *Payoffs in a Two-Person Prisoners' Dilemma Game (amount of payoff)*

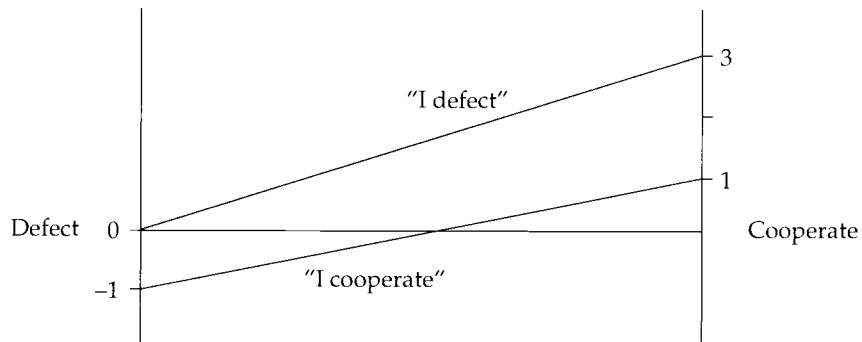
| | | <i>Player 1</i> | | | |
|-----------------|------------------|------------------|----|---------------|---|
| | | <i>Cooperate</i> | | <i>Defect</i> | |
| <i>Player 2</i> | <i>Cooperate</i> | 1 | 1 | -1 | 3 |
| | <i>Defect</i> | 3 | -1 | 0 | 0 |

Source: Author.

The two-person game can be graphed in a way that can then be generalized to a multiperson game (figure A1.1.1). The two sloping lines "I defect" and "I cooperate" show the results for each player depending on what the other player does. The other player is either at the left end (defect) or at the right end (cooperate) of the horizontal line. The fact that no matter what the other player does, it is better for a player to defect is indicated by the fact that the "I defect" curve is always above the "I cooperate" curve. If both players defect, each gets a payoff of 0; if the players cooperate, each gets a payoff of 1.

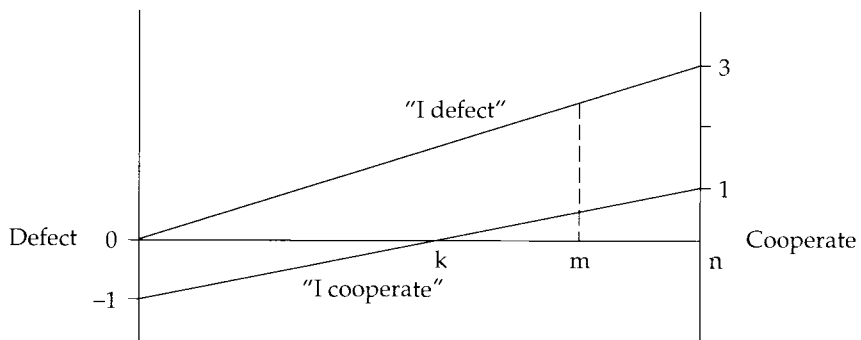
In figure A1.1.2 which represents a multiperson game with $n + 1$ players, the length of the horizontal line is n . A point such as m along the line represents the players who cooperate, so that $n - m$ represents the number of defectors. The two sloping lines give the payoffs to any player given the assumed number of other players who defect or cooperate. (The payoff curves need not be straight lines. They are shown as such here for simplicity.) Thus the vertical line at m intersects the "I cooperate" and "I defect" lines at the points giving the payoffs to the marginal player (which could be any player). As the "I defect" curve dominates the "I cooperate" curve no matter what the other m players do, it is still in the interest of each player to defect. The payoff to each is then 0, whereas universal cooperation gives each a payoff of 1.

Figure A1.1.1 Payoffs in a Two-Person Prisoners' Dilemma Game

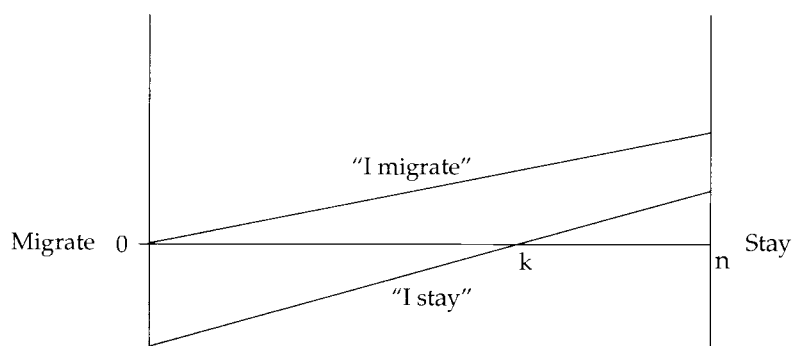


Source: Author.

Figure A1.1.2 Payoffs in a Multiperson Prisoners' Dilemma Game



Source: Author.

Figure A1.1.3 *Migration as a Multiperson Prisoners' Dilemma Game*

Source: Author.

The universal defection point is arbitrarily taken as the origin. The point k is the minimum "coalition of the cooperating" needed for the payoff to exceed the universal defection payoff no matter what the other players do.

The "dilemma" is in the game as long as the "I defect" curve is always above the "I cooperate" curve.

In figure A1.1.3 the migration decision is interpreted as a multiperson prisoners' dilemma game. This model is about a simple stay or leave decision. There are no remittances or return migrations. The payoff curves give a simple economic return to individuals (or families).

This model assumes diminishing returns to migration. As more people migrate, the payoff to each is reduced. This could be interpreted as a tightening of controls at the receiving end, which raises the cost of migration. The payoff to each player when all migrate is taken as the zero point. The point k represents the minimum number of stayers needed so that each stayer receives at least the universal migration payoff. At every combination of stayers and migrants, it is always in the individual interests of the marginal player to migrate, but the result of all migrating is dominated by the outcome in which all stay.

These prisoners' dilemma models of collective action situations typically do not represent the whole situation, as collective action does take place (Hirschman 1982). The game might represent the situation absent a law to require cooperation (such as paying taxes), absent some social sanction against defection, or absent some social preference for cooperative action. The migration example might represent the individual economic payoffs absent any social disapprobation against leaving. Accounting for such factors complicates the analysis, because different individuals have different susceptibilities to social sanctions.

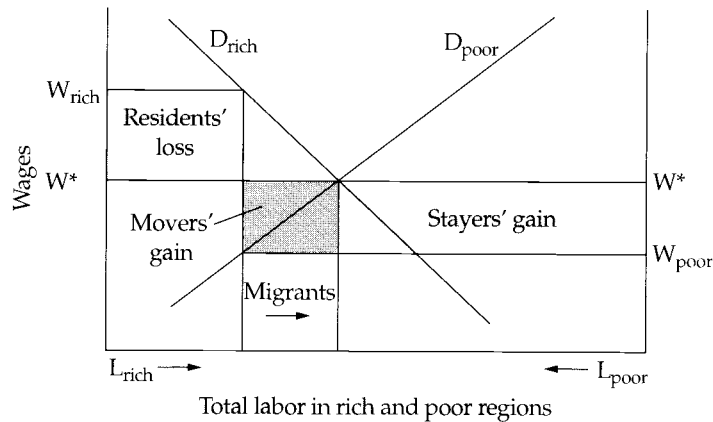
The migration version of the multiperson prisoners' dilemma game illustrates an important point: the cosmopolitan liberal position that each individual should choose the option that improves his or her own position is not good policy advice in a prisoners' dilemma situation.

Annex 2. The Dynamics of Convergence and Divergence

Picturing the Dynamics of Convergence

The equalizing dynamics between two regions (rich and poor) that are driven by wage differentials can be illustrated by drawing two labor demand curves (figure

Figure A2.2.1 Effect of Migration on Poverty Reduction



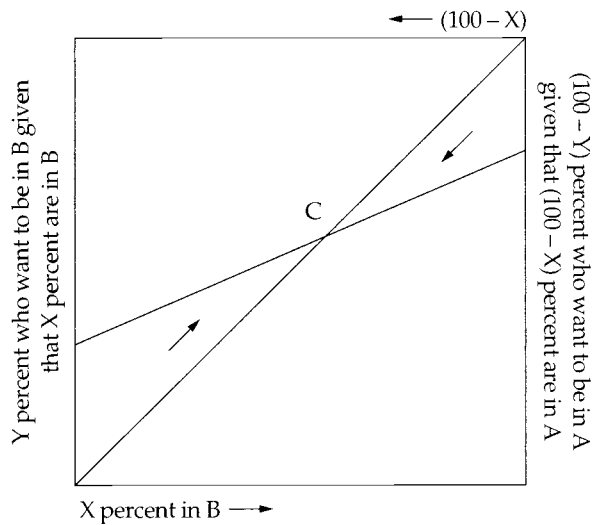
Source: Williamson (2003).

A2.2.1). The vertical axis on the right is the wage scale in the poor country; the quantity of labor supplied in the poor country, L_{poor} , is represented on the horizontal axis as increasing from right to left. Thus the demand curve for labor, D_{poor} , in the poor country is represented as backward sloping, right to left. The total combined labor of the two countries is the length of the horizontal axis. At the initial, premigration equilibrium, the wage is W_{rich} in the rich country and W_{poor} in the poor country. When the gate between the two labor reservoirs is opened, the equalizing flow of labor from the poor country to the rich country is the migration that equalizes the wage rate in both countries at W^* . By comparing the equilibrium wages before and after the migration, we can compute the residents' loss for the original workers in the rich country, the movers' gain for the migrants, and the stayers' gain for the workers who remain in the poor country.

This illustration of the dynamics of convergence is a comparative statics diagram that represents two equilibriums and not the dynamics in between. The key assumption is that there are no economies of agglomeration or disagglomeration in either country, an assumption embodied in the partial equilibrium representation of the demand for labor curves being the same despite a significant medium-term shift in population from one country to the other. The alternative assumption is considered in the next section.

A different dynamics of convergence is given by the reaction curve model. Consider a world with just groups A and B. Each of a fixed number of individuals is in one group or the other. The reaction function shows what percentage (Y) of people are willing to be in group B given that X percent are in group B. But in a two-group world, the reaction function can also be read as saying given $(100 - X)$ percent in A, $(100 - Y)$ percent are willing to be in group A. Then the reaction function dynamics between the two groups can be represented by a square diagram reminiscent of the Edgeworth box (figure A2.2.2). The reaction curve for group A has its origin at the northeastern corner of the square.

Whether looked at from the viewpoint of group A or group B, there is a unique and stable equilibrium where the reaction curve crosses the 45 degree line. Given an exogenous shock that moves it away from the equilibrium, the dynamics will restore it.

Figure A2.2 *Reaction Square with Dynamics of Convergence*

Source: Author.

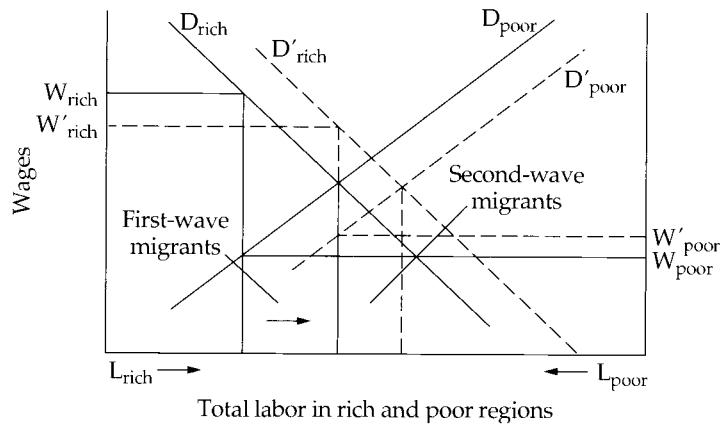
Picturing the Dynamics of Divergence

The comparative statics model shown in figure A2.2.2 assumes no economies of agglomeration or disagglomeration as labor moves from one country to the other. These economies and diseconomies go beyond the general equilibrium multiplier effects, which are usually ignored in the partial equilibrium comparative statics approach. Cities (or Alfred Marshall's industrial districts) may exhibit such economies. As labor comes in to satisfy demand, other medium-term dynamics are set in motion. As firms expand, they may diversify into new product lines, which would shift the demand for labor. Some operations may spin off from expanding large firms, and the vigor of the spin-offs may shift the demand for labor upward.²⁹ Some "resident" workers, as well as some migrants, may decide to go into business for themselves, which also shifts demand for labor.

On the sending side, there may also be medium-term dynamic effects. Some firms may collapse in the face of rising costs or the loss of key personnel to the North, which, in turn, may have a knock-on effect on the viability of related firms (suppliers or customers). In fact, some migrants may themselves have been proprietors of microenterprises. These effects would shift labor demand downward in the sending country, part of the dynamics of disagglomeration or ghettoization. Remittances would have an opposing multiplier effect, increasing labor demand (at least where the money is spent). But that demand would collapse if workers returned to take remittance-funded jobs unless the remittances were used to create jobs that did not depend on remittances. Remittances might also have the negative effect of inspiring and funding the migration of additional family members. In the absence of positive developmental changes, one would expect remittances to only mitigate and not reverse the downward shift.

²⁹ Nature thrives by having old growth constantly seeding new growth rather than just expanding old growth.

Figure A2.2.3 Effect of South-to-North Migration on the South-North Divide

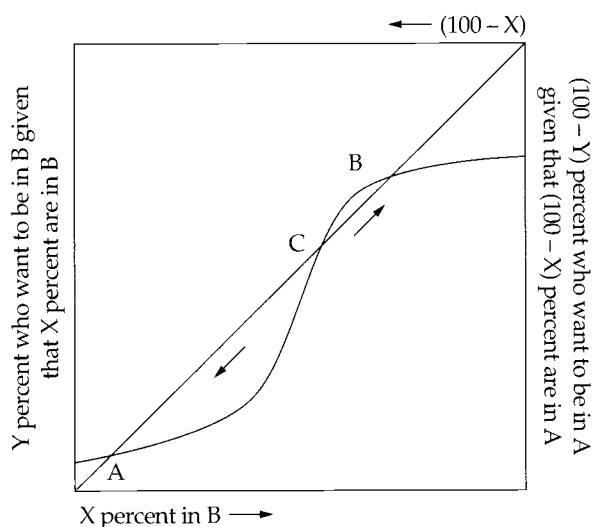


Source: Author.

Figure A2.2.3 shows three equilibriums. When the labor gates are opened, the separate equilibriums given by W_{rich} and W_{poor} create the first wave of migrants from the poor to the rich country. But the dynamic agglomerative effects of the migration shift the labor demand curve D_{rich} outward to D'_{rich} in the rich country, and the ghettoizing effect in the poor country shifts the labor demand curve D_{poor} downward to D'_{poor} . This still leaves a wage differential between W'_{rich} and W'_{poor} . Additional waves of migrants will come until the differential is eliminated. The size of the shifts is drawn so that after the first wave of migration, the wage in the poor country, W'_{poor} , is still higher than the original wage W_{poor} . The ghettoizing effect in the South is shown by the lower level of labor demand at each wage level, that is, the overall drop in economic activity, even though the remaining workers may earn higher wages.³⁰ Long before this dynamics of divergence worked its way out, however, the rich country would probably close its gates. The net effect of the intervening migration episodes would be agglomeration in the rich country and ghettoization in the poor country, increasing the South-to-North divide and contributing to “divergence, big time” (Pritchett 1997).

The reaction function model also illustrates the dynamics of divergence (figure A2.2.4). There are two stable equilibriums: A, in which almost everyone is in group A, and B, in which the groups are more evenly split but most people are in B. If the system is at B, then a large enough exogenous shock, such as massive poaching by group A, would increase the percentage in group A (and decrease it in group B) to beyond the critical mass point C, so that mass migration would be started, which would push the system to the new equilibrium at A. Almost everyone would be in group A, and group B would be ghettoized to a small remnant of diehards.

³⁰ For a dramatic example, suppose that a group of doctors in a hospital is attracted away to hospitals in the North in a package deal. Although the hospital would nearly collapse, the immobile wealthy would be willing to pay more to obtain the services of the remaining doctors.

Figure A2.2.4 Reaction Square with Dynamics of Divergence

Source: Author.

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