Part I
Analytical Framework and Major Policy Issues

1

International Migration of Talent, Diaspora Networks, and Development: Overview of Main Issues

Yevgeny Kuznetsov and Charles Sabel

Actors in developing economies must have the capacity to acquire new knowledge—to learn new ways of doing things—if they are to compete in the world economy.[1] Learning, in turn, supposes and contributes to the ability to search out and usefully recombine scattered information about production methods, markets, and resources. Because development depends on learning and learning depends on searching, development almost invariably depends on linking the domestic economy to the larger, outside world, because even the strongest economies quickly rediscover (if they have ever forgotten) that they cannot generate all state-of-the-art ideas in isolation.

International mobility of talent and its most visible manifestation, brain drain (usually defined as the migration of human capital from less to more developed economies), is central for learning and development. This volume takes two key stylized facts about the international mobility of skills as given. First, it accepts that there are large stocks of highly skilled (university educated) expatriates from developing countries in developed countries. Among developing countries in 2000 (the latest year for which data are available), the Philippines had the highest emigration stocks of university-educated expatriates in high-income economies (1,126,260 people), followed by India (1,037,626), Mexico (922,964), and China (816,824) (Ozden and Schiff 2005, p.170).[2] Second, it assumes that the skilled expatriates could be a significant resource for the development of their home countries. As a well-known example, overseas Chinese contributed 70 percent of China's foreign direct investment during 1985–2000. By 1995, 59 percent of the accumulated foreign direct investment in China came from Hong Kong (China) and Macao, with a further 9 percent from Taiwan (China) (World Bank 2005, p. 67).

Expatriates do not need to be investors or make financial contributions to have an impact on their home countries. They can serve as "bridges" by providing access to markets, sources of investment, and expertise. Influential members of diasporas can shape public debate, articulate reform plans, and help implement reforms and new projects. Policy expertise and managerial and marketing knowledge are the most significant resources of diaspora networks. The overarching focus on the

---

[1] Part of this chapter was adapted from Kuznetsov and Sabel (forthcoming).

[2] Note that small countries suffer the most from emigration of highly skilled individuals. More than 85 percent of individuals with a tertiary-level education emigrate from such countries as Grenada, Guyana, and Trinidad and Tobago.

knowledge and policy contributions of expatriates and diaspora networks distinguishes this book from a rapidly growing literature on international migration.

The recent literature emphasizes remittances and their development impact (see World Bank 2005 for a summary of this view; for a perspective that is similar to this book's view and that stresses knowledge and institution building rather than financial flows, see Kapur and McHale 2005). In contrast, we are somewhat skeptical that remittances and other financial transfers by migrants can ever have a significant development impact, although they are certainly an important tool of poverty alleviation.

The Co-Evolution of Diasporas and Developing Economies

Historically, countries' contact with the outside world was often established through skilled migrants and the ethnic or religious communities they founded in the host country. Examples include the contribution of the Huguenots in France; the Jews in Monterrey, Mexico; the Chinese in Indonesia, Malaysia, and the Philippines; and the Indians in East Africa and later the United Kingdom. During much of the 20th century, multinational firms facilitated knowledge transfer by establishing facilities—usually for the manufacture or assembly of mature products—in developing countries, often with the assistance of local elites.

Viewed from this historical perspective, network diasporas are but the latest bridge institutions connecting developing economy insiders, with their risk-mitigating knowledge and connections, to outsiders in command of technical know-how and investment capital. At least for developing economies, the attraction of diaspora networks over immigrant communities and multinational firms is that networks promise to depoliticize the relationship between domestic actors and the foreign actors from whom they learn, transforming a volatile, often irrational, struggle for power into a mutually beneficial economic exchange. Economically powerful ethnic minorities have traditionally been suspected of having greater loyalty to their ethnic community than to the host country and of being tempted to exploit the latter to benefit the former. Powerfully autonomous and often footloose multinational firms are viewed as the agents, even the masters, of economic imperialism rather than as partners in development.

By contrast, the actors in diaspora networks are native sons and daughters. Even if they are wealthy or are connected to wealthy families or important multinationals, they seldom command the resources attributed to economically potent minorities (whose riches, though real enough, are often magnified by envy), and they are not manifestly at the command of the world's largest companies. They are, at least potentially, a connection to the indispensable world of foreign knowledge that can be domesticated and then used to discipline the behavior of ethnic communities and multinationals. That the members of network diasporas are likely to be suspected in their host countries of putting personal gain or ethnic ties above managerial professionalism makes them, from the point of view of the sending country, more pliant and more willing to cooperate on a truly equal footing. Diaspora networks seem to form spontaneously as a result of both the shortcomings and the successes of the meshing of individual and national strategies for economic advancement.

The reality of network diasporas is far more complex and unruly than this juxtaposition of suspicion and spontaneity suggests. Whether diasporas are seen as adjuncts to rather than adversaries of domestic elites depends on how the two groups have interacted historically. Whether, and in what way, diasporas connect domestic economies and the world economy depends on the interaction of changes in global production or supply chain patterns, changes in domestic growth opportunities, and changes in the economic activities and strategies of the diaspora members themselves. Thus diasporas are mirrors of national development, reflecting the migratory pushes of national crises and the pull of the global economy. Network diasporas are not a self-generating, context-free solution to the perennial problem of learning from abroad without being victimized by the foreign master; they coevolve with the political and economic contexts within which they operate.

Facilitating Serendipity: Institutionalizing Nascent Diaspora Networks

In 1997, Ramón L. García, a Chilean applied geneticist and biotechnology entrepreneur with a doctorate from Iowa State University, contacted Foundation Chile. Foundation Chile is a private-public innovation organization that, among other missions, helps provide the technical infrastructure that allows Chilean agribusinesses to develop domestically viable variants of crops typical of California's Central Valley. García is the chief executive officer of InterLink Biotechnologies, a Princeton, New Jersey, company he co-founded in 1991. Interlink developed a way to identify novel chemical entities derived from microorganisms for use in new pharmaceuticals and enzyme additives for human food, animal feed, and biocontrol agents. It markets its technical expertise to other firms interested in transferring and licensing new biotechnologies.

After jointly reviewing their portfolios of initiatives, Interlink and Foundation Chile founded a new, co-owned company, Biogenetic S.A., to undertake the long-term research and development projects needed to transfer to Chile technologies key to the continuing competitiveness of its rapidly growing agribusiness sector. Without García's extensive knowledge of Chile, advanced U.S. education, exposure to U.S. managerial practices, and experience as an entrepreneur, the new company would have been inconceivable. Biogenetic has successfully developed a technology platform that uses biotechnology to improve grapes and stone fruits, two export crops that are important to the Chilean economy. The company genetically modified grapes to make them resistant to diseases and was instrumental in developing a program for developing pine trees resistant to an important insect pest. It is developing the technology to introduce important quality traits in stone fruits.

The fact that skilled expatriates can create enormous benefits for their countries of origin has been recognized in recent years through the conspicuous contributions that the large, highly skilled, and manifestly prosperous and well-organized Chinese and Indian diasporas have made to their home countries. But García's collaboration with Foundation Chile suggests that diasporas do not need to be large to have an impact: 10 Garcías could transform entire sectors of the economy in relatively small countries such as Armenia or Chile. Moreover, García's collaboration with Foundation Chile suggests that even the sparsely populated, informal diaspora networks linking small home countries with their talent abroad are not without some institutional resources and may prove capable of developing more.

García's collaboration with Foundation Chile was serendipitous. While the story tantalizes and inspires those who search for keys to economic development, it scarcely hints at how to proceed from the happy accidents of the Ramón Garcías in the emerging business diasporas of Chile and other countries to the robust and systematic diaspora involvement exemplified by China and India. Indeed, on closer inspection there seems to be a schism between the demonstrated success of mature diaspora networks in triggering knowledge-intensive activities in their home countries and the disappointing results in promoting diasporas' engagement in the development of their home countries.

This chapter seeks to bridge this divide. It presents a compact framework for understanding the large and related transformations in labor and product markets and in industrial organizations that are reflected in and furthered by the growing role of diasporas of both relatively low-skill workers as well as highly educated professionals. It then analyzes what has worked and what has not in facilitating diaspora networks and extracts some tentative and preliminary policy recommendations, addressed primarily to leaders of business communities and public organizations anxious to learn from and scale up the García case.

To illustrate this co-evolution of network diasporas with their environments and to identify potential obstacles, this chapter describes the development of the mature diasporas of Armenia, China, and India, described in more detail later in the book. All three are large, well organized, and centuries old. The first two have been enormously successful. The success of the Chinese diaspora grew out of—although it is no longer limited to—the traditional investment behavior of emigrant families that made their fortunes overseas. The success of the Indian diaspora is much more closely tied to recent changes in supply chain organization and the emergence of transnational innovation networks than to the investments of fixed capital of India diaspora members in India. Although a decade ago the success of the Armenian diaspora seemed nearly certain, it has failed to contribute substantially to domestic development (at least relative to its potential). The political divisions between the diaspora and the post-Soviet political class in Armenia, combined with the philanthropic generosity of overseas Armenians, thwarted development and buffered domestic actors from the costs of their actions. This experience suggests that the political context requires as much attention as the economic setting.

Following this review, the chapter looks at South Africa's efforts to institutionalize relations with its diaspora. Examination of South Africa's successes and failures suggests how policy makers can address the crucial problems involved in turning an emerging diaspora into a mature institution of economic development by bootstrapping (making a series of incremental steps, each suggested by the lessons learned in the preceding ones).

Diaspora Networks as Search Networks

The global circulation of high-skill and low-skill labor from poor economies to rich ones and back is opening new possibilities for economic development. The changes are most noticeable in the behavior of the most skilled workers. The brain drain pattern of migration long drew many of the most promising students from poor countries to lucrative and challenging careers in developed countries. Today this pattern shows signs of turning into a back and forth movement, or diaspora network, in which talented students still go abroad to continue their studies and work in the developed economies, but then use their own global networks, and especially those of their diasporas, to help build new establishments in their home countries.

There are also signs that emigrants with fewer skills, forced by poverty to go abroad but long confined to dead-end jobs in developed economies, are also finding new career possibilities. Increasingly, the entry-level jobs they take in factory production or the health care sector in host countries demand and teach problem-solving skills that blur the line between management and labor. Whether these new skills can be redeployed back home is an open question. But the changing nature of migrants' work suggests the possibility that these "birds of passage," traditionally in transit between a native land that cannot support them and a rich country that remains alien, may one day form distinctive, medium-skill diaspora networks that complement the diasporas of managers and entrepreneurs.

Behind these developments is the long-term, accelerating decentralization of decision-making responsibility from end-producers in the public and private sectors to their suppliers and the decentralization within public and private establishments from managers to frontline work teams. To take a frequently cited example, recognizing that they cannot possibly remain abreast of all the key technologies involved in making a car, automakers have largely divested themselves of their component-producing capacity. They co-design virtually every subassembly of the vehicle with independent suppliers. Facing analogous limits to their own managerial capacities, public administrations in developed countries routinely outsource the provision of new services to not-for-profit organizations and certain routine functions, such as servicing complaints, to for-profit call centers. This decentralization of production often allows firms to relocate activity in developing countries, creating many of the investment opportunities within reorganizing supply chains that members of the high-skill diaspora networks seize.

The managerial limits that propel the decentralization of production to suppliers also compel a shift from hierarchy to teamwork in end-producers and suppliers alike. As product life cycles shorten from years to months (in consumer electronics, cell phones, and computers, for instance) and quality expectations rise, it is impossible to shift from one production setup to another—and solve the inevitable start-up problems each changeover brings—without the active cooperation of the workers who will be doing the assembly. Organized as production and problem-solving teams, frontline workers are routinely asked to criticize and suggest improvements in the setup of their workplaces, the flow of production, and the provision of support services. They are asked to share in the quintessentially managerial task of co-designing the organization within which they are working. New training programs in problem solving and teamwork help equip them for this task. This entry-level exposure to problem solving and the new forms of training with which it is associated create a bridge between the traditional world of the immigrant worker and the knowledge economy. In doing so, this exposure may open the way to the formation of a medium-skill diaspora.

The decentralization of production to suppliers, as well as the shift from hierarchy to teamwork by end-producers and suppliers, can be viewed as part of a profound change in the principles of organizational design. In traditional organizations—the kind found in mass-production factories and large public bureaucracies—complex operations are accomplished by decomposing them into tasks sufficiently limited to be manageable by actors with "bounded rationality." Hierarchy is the result. But as a rapidly changing world has made the decomposition of tasks too time-consuming and costly to be practicable, organizations have stumbled on an alternative solution. Instead of responding to bounded rationality by simplifying the problems actors face, organizations create the infrastructure that allows actors charged with a task to find other actors—outside the organization as well as within—who are already solving (part of) the problem. Put another way, organizations shift from hierarchies in which subordinates execute their superiors' plans to search networks in which collaborators, through the very process of identifying one another, come to define the tasks they will jointly accomplish. In a world of search networks, changes in labor markets (who works with whom) can easily lead to changes in product markets (what businesses make), and even in industrial organization (how firms are structured internally and connected to one another).

From this point of view, modern diasporas networks, as the García and Foundation Chile anecdote suggests, are just an especially conspicuous (because they are publicly visible) variant of the search networks under rapid construction in firms worldwide. The shift from brain drain to brain circulation marks the shift from a world in which the function of long-range labor markets was to fill jobs with relatively fixed requirements to a world in which filling a job changes not only the definition of what needs to be done but also the setting in which future needs are defined.

The emergence of diasporas as a type of search network—a network that lets members find and collaborate with those who already know what they need to learn—poses new challenges for the articulation of coordinated training and economic development strategies within individual sending and receiving countries and for increased coordination between senders and receivers as distinct but increasingly intricately connected groups. Individual sending countries will presumably want to encourage the formation of diaspora networks by helping high-skill emigrants stay in touch with one another and the home country and by creating individual and corporate incentives for their re-engagement with the domestic economy. A key aspect of increasing the attractiveness of the domestic economy to potential investors will be introducing problem-solving skills in the public school curriculum and in continuing education programs to create a domestic workforce with the skills required by the new wave of decentralizing firms. Broad provision of these skills will also increase the chances that young job seekers who do not find work at home will be able to take advantage of new career possibilities afforded by entry-level jobs abroad.

Receiving countries have reasons of their own to encourage diaspora networks. Obstructing mobility in an epoch of decentralization imposes stay-or-go choices on energetic, ambitious, immigrant elite, potentially spurring the return en masse of high-skill expatriates. Promoting the circulation of high-skill labor from home country to adopted home and back reduces this risk and is therefore almost certainly in the long-term economic interests of the receiving countries. With their aging populations and low birth rates, traditional receiving countries will also likely find it useful to recruit immigrants for low-level jobs in the public service sector and manufacturing. But the blurring of managerial and executory tasks means that foreign entry-level workers—even those familiar with the new problem solving—will need complementary training in "soft" social skills relevant to the host country if they are to use their abilities to good effect.

Ideally, sending and receiving countries will develop these new, complementary programs in concert. The content of the problem-solving training in developing countries should profit from the extensive experience that global firms and host country training systems have already accumulated. Host countries' acculturation programs in soft skills will benefit from ongoing consultation with sending countries about the best ways to address cultural frictions that arise. By the same token, both sending and receiving countries can gain from meshing their efforts to support diaspora networks, and there is likely to be strong pressure from the high-skill members of such networks for them to do so. Both have interests in jointly regulating the working conditions and environmental responsibilities of decentralizing supply chains to prevent protectionist reactions to off-shore ventures by rich countries and local protests against multinational imperialism in poorer ones. Political realities will, of course, often obstruct the realization of potential gains, but an appreciation of the possibilities will help improve outcomes even when ideal solutions are beyond reach.

Juxtaposing High- and Low-Skill Immigration Streams

Global labor migration today can be divided into high-skill and low-skill streams. The superficial differences between the two conceal important common sources, features, and even consequences.

The high-skill stream is made up of diaspora networks. In the past decade, expatriates have come to play a critical and highly visible role in accelerating technology exchange and foreign direct investment in China, India, Israel, and the United States. Some expatriates became pioneer investors before the widespread decentralization of supply chains, and internal decentralization of authority assured major capital markets that these economies had rosy futures. Some of these pioneers had, and continue to have, nonfinancial motives for early-stage participation. Others had, and have, means of mitigating risk unavailable to other investors by virtue of their knowledge of their countries' language, culture, institutions, and counterparts.

The contribution of U.S.–based Indian managers to a spectacular surge in information technology and related services in India is an exemplary win-win situation, in which the migration of highly skilled professionals benefits both the sending and receiving countries. Other countries may be nearing the threshold of repeating the Chinese or Indian experience, in that they have both successful expatriate communities and high-risk economies that scare off mainstream investors, but provide the opportunities from which diaspora networks grow. Still other economies, such as the new members of the European Union and countries in Latin America, are struggling to move to more knowledge-intensive development despite significant foreign direct investment in recent decades. Their hope is that diaspora networks can overcome obstacles to deeper integration by serving as an entry point into new markets. Diaspora networks mesh so well with the architecture of the modern knowledge society that they are coming to be seen as one of its natural building blocks.

In contrast, workers in the low-skill migration stream have no advanced degrees and may not be able to show prospective employers any school-leaving certificate, or indeed any official documentation at all. They are not entrepreneurs, or at least not founders of high-tech firms. They often live in poor, high-crime neighborhoods, and their children are frequently not at home in their parents' culture or in their country of residence. Where diaspora networks seem to have emerged from nowhere to become part of a new, cosmopolitan elite, low-skill immigrants are frequently depicted as unchanging, indeed determined not to change, out of loyalty to the premodern cultures from which they come.

Official and public reaction to the two migratory streams underscores these differences: high-skill talent is welcomed in virtually every country, while most low-skill immigrants are illegal. High-skill professionals provide tangible benefits to the receiving country in terms of new business creation and human capital; unskilled immigrants are perceived as draining the budget for social expenditures and threatening solidarity.

Despite the apparent differences between the two streams, there are common features that do not figure in public discussion. First, the acquisition and development of skills is crucial to both streams. This is obvious in the case of the recent Indian with a doctorate who emigrates to the United States, but it is also true of the secondary school graduate from Mali who emigrates to take a cleaning job in a nursing home in France. Given the paucity of its current development possibilities, Mali is likely to have a comparative advantage in the production of such human capital, and as the health system crisis revealed by the European heat wave in the summer of 2003 showed, the need for the kinds of skills such workers offer is high in advanced countries. Put another way, many so-called low-skill migrants are low skilled only in comparison to certified professionals. They are far from unskilled compared with the bulk of the population in their country of origin, and they have skills that are in demand in the host country. Managerial skills are a case in point. After working for several years in Japan, Luis Miyashiro, a Peruvian national, came to Lima and founded Norkys, a chain of chicken restaurants. The chain, the first of its kind in an Andean country, combined Western standards of cleanliness and efficiency with the familiar corner food-stand concept common in Latin America. The idea, expertise, and initial capital needed to establish and manage the chain came from Japan.

Second, both migratory streams are being redirected and transformed by profound and pervasive economic restructuring that creates important opportunities and entry points. For skilled workers, the global restructuring of supply chains is turning brain drain into brain circulation, creating or strengthening diaspora networks in the process. In the case of the unskilled and illegal, the restructuring of public administrations that provide key social services, together with the restructuring of shop-floor work, is beginning to create career opportunities where earlier generations in similar positions faced dead ends. This is not to romanticize entry-level work in the new economy, but there is at least anecdotal evidence that even hamburger-flipping jobs now often lead somewhere and that public sector restructuring—just now coming to public notice—will accelerate this tendency.

Third, in both migration streams, social networks emerge as naturally occurring or spontaneous solutions to complex coordination problems—like manna, they fall from the sky—allowing emigrants to match themselves to jobs or entrepreneurial possibilities. In connecting emigrants to the world, these social networks create new possibilities for policy makers to learn from and with key social actors how to redirect institutions and incentives to meet emerging needs.

Much labor market theory in the late 20th century focused on industrial jobs. It was common, perhaps standard, to treat migration between countries as concerning low-skill workers and to treat skill acquisition as occurring through learning on the job within a large, hierarchically organized corporation. Given the organization of production in such firms, most learning was plant or firm specific. It followed from the decomposition of large projects, such as the design and production of a car, into small, linked tasks, and the fact that the machines needed for any step were highly specialized and tightly matched in specifications to the machines that produced their inputs and the machines that used their outputs. Machines designed to be used only with other machines in such a sequence are referred to as asset specific: they have no value for any other use. By the same logic, the skills needed to operate each machine consisted of the largely tacit knowledge of the peculiarities of each machine in relation to upstream and downstream operations. (The knowledge was almost sure to be largely tacit, because the machines were effectively unique. Formalization, at least in the then current view, was the statement of the general features of some process or situation.) Workers with little or no formal education learned these skills by progressing from machine to machine, acquiring the highly specialized knowledge they needed from more experienced colleagues, not from books. These job sequences are called job ladders.

It was a sign of the importance of tacit knowledge in these job ladders and the economy as a whole that returns to formal education were low. For many workers in the United States, for instance, there was little penalty, in terms of lifetime earnings, for quitting high school or skipping college, because in many cases the skills needed for high-paying jobs could be acquired by an industrial apprenticeship in a factory or firm.

In this world view, migration and skill acquisition were viewed as distinct phenomena. Migrants were presumed, correctly, to be seeking higher incomes and vastly increased possibilities for savings, not new skills, when they went abroad. Their goal was to remit as much as possible to their families at home while working in the receiving country and to return as soon as possible, with as much wealth as possible, to their home countries. They were not interested in investing in skill acquisition, because they were not planning to stay abroad long enough to reap the returns to their investment. Unattractive, low-skill jobs were acceptable, because they paid wages that were extraordinarily high by home country standards. Given these goals, these migrants were birds of passage, living in a no man's land between their home and temporary countries, often circulating back and forth between the two as economic and family circumstances dictated. The guest workers brought to Western European factories in the 1960s and 1970s fit this pattern perfectly, but they had many forbearers from the late 19th century on.

A central problem for these birds of passage was, and remains, the identification of plentiful, geographically concentrated supplies of low-skill jobs over long distances. The jobs had to be plentiful and close together, because being low skilled, and thus undifferentiated, there could be no guarantee than any particular job would prove stable. The potential instability of any one job was compensated for by the availability of others sufficiently close to each other that changing jobs did not require changing homes. Finding such jobs required scanning many possible destinations to determine whether jobs were available there for unskilled immigrants. An efficient way to scan was to rely on a network of relatives, friends, and acquaintances from one's home village who were looking for similar jobs themselves. Members or nodes in this network know little about each other—they have rarely worked or done business together—but they know all that migrants need to know, for the purposes of joint search, about labor market conditions. Links of this kind—rich in information about a particular, thin slice of the world, poor in information about the character and abilities of the network members—are called weak ties. The migration flows that result from a network of weak ties directing migrants from a given origin to follow the news of plentiful, low-skill jobs to a common destination is a migration chain.

A key consequence of the shift to networked, organization-based search networks rather than hierarchy is to "de-specify" machines and skills to make both more general-purpose. Assume that a firm knows in advance that it cannot be sure what products it will be making two years hence or how any of those products will be designed. In this case, it sacrifices some of the efficiency that comes with using a machine that can do only one thing and buys general-purpose machines that can easily be reprogrammed to do many different operations. There is less and less wholly unskilled work, and even the relatively unskilled work is no longer plant specific (think of the general teamworking skills needed by workers in just-in-time factories). A crude but revealing measure of this shift is the rapidly increasing returns to formal education and the corresponding increase in the gap between the lifetime wages of unskilled and skilled workers.

Potential migrants notice this shift. Those with good educational prospects at home go abroad to take advantage of still better opportunities, finding jobs that enable them to learn more than they could at home. Those with fewer opportunities at home start to think about improving their prospects by going abroad, fearing that their long-term employability depends on doing so. Instead of looking for destinations with plentiful unskilled jobs, migrants begin to look for destinations that offer many possibilities for skill acquisition at work or school. As job ladders are transformed into more open, interfirm, and formally skilled labor markets and weak ties among migrants begin to communicate information about learning possibilities, migration chains become open mobility networks, that is, means for discovering where to go to learn how to prosper in the reorganizing economy. High-skill diasporas are a conspicuous example of such networks.

The proliferation of professional associations of diaspora members is evidence of this transition from thin to thick search networks. Associations such as the Association of Doctors of Armenian Origin in the United States or the Association of Engineers from Latin America are thick networks that help members identify opportunities for professional advancement. Mentoring is a central feature of these associations. Perhaps the most successful organization of this kind, Indus Entrepreneurs, was started in 1992 as a conduit for experienced Indians to mentor others and provide a broad forum for networking and learning for its members. Indus Entrepreneurs is an institutionalized search network that helps its members move up their migration chains.

This change now extends beyond migrants with tertiary degrees. Hometown associations of migrants of Mexican origin (of which there are more than 70 in the United States) were started in the 1950s with the primary objective of defending the rights of often illegal labor migrants from Mexico, the vast majority of them unskilled. Hometown associations used to be paragons of institutionalized but thin search networks that identified job opportunities and provided mutual help, including practical ways to live and work as an illegal immigrant. Migrants from Zacatecas, a poor state in central-north Mexico, for instance, have a hometown association in almost every major U.S. city.

With time, and as many migrants became legal and progressed in their migration chains from hamburger flippers to supervisors of hamburger flippers, two things have started to happen. First, an acute shortage of native-speaking supervisors and shop-floor managers has emerged. Migrants from Mexico do not speak fluent English. For this reason alone, they prefer to work for Mexican managers. So significant is the shortage of Spanish-speaking immigrants in certain managerial positions that identifying and training such managers is now a central task of the Association of Latin American Professionals. Migrants' organizations such as Mexico's hometown associations, have contributed to this transformation by introducing mentoring also. For example, they direct their members to appropriate training programs and other job advancement opportunities.

Second, as migrants progress along their migration chain and acquire the self-confidence that comes with personal and professional success, they start thinking about giving to and helping not just their families, but their home communities. Hometown associations from Zacatecas, in collaboration with the state government of Zacatecas, designed and cofinanced a highly successful 3 × 1 program of investment in community infrastructure (secondary roads, schools, hospitals) in their home communities (see chapter 5). The program is called 3 × 1, because for every peso the hometown associations put in, state and federal governments each contribute another peso. Although the vast majority of members of hometown associations are not wealthy, the binding constraint for this program of collective remittances has always been contributions from the Mexico government, not the donations of the migrants.

Financial transfers are not the most important aspect of collective remittance; governance and monitoring are. Community infrastructure projects need to be identified, financed, and managed through a network of diverse stakeholders—municipal government, users of the infrastructure, migrants, and others—that previously had little trust in one another. As migrants are contributing their own money, they are highly motivated to make the project succeed, avoiding the decay that often characterizes public works projects. To make these projects work, migrants need to monitor them, both from abroad and through frequent visits to their hometowns.

Studying diaspora networks helps uncover the partial solutions that are working. It helps formalize the networks, rendering them more effective as incubators for new programs and as governance structures for new projects. It also reveals potential win-win dynamics benefiting both sending and receiving countries.

Mature Diasporas: China and India Compared with Armenia

The diasporas of China and India have had a highly beneficial impact on their home countries. In contrast, the wealthy Armenian diaspora has failed to help move the country up global value chains.

China

The story of the post–World War II Chinese diaspora is one of geographic mobility and economic diversification: the construction of a "bamboo network" linking Hong Kong (China), Indonesia, Malaysia, the Philippines, Singapore, Taiwan

(China), and Thailand to one another and to China through meshed webs of family firms operating first in traditional trading and manufacturing, then in high-tech and finance. For many refugees, the years following the Communist victory in 1949 were a time of testing relieved—some would say redeemed—by rags to riches stories. In the conventional telling, frugal, canny traders, often with nothing but the clothes on their back, worked their way up from factory floor to great wealth. Once they laid the foundations of their enterprises in one host country, they diversified and expanded geographically. Just as the House of Rothschild's *pater familias* sent his sons from Frankfurt to Paris, London, and Naples, the overseas Chinese internationalized their businesses, delegating family members to set up firms in other promising locations within what was becoming, from their vantage point, Greater China. The new firms drew on the founder's capital and the founder's rich social connections. But as the opportunities suggested by these connections were only accidentally connected to the founder's original business interests, internationalization typically went hand-in-hand with diversification across areas of business activity. In time, the family firms grew into dynasties, operating a myriad of small and medium firms in many sectors and countries, all under the direct but secretive control of the founding family.

In a vast geographic zone with underdeveloped financial markets and fragile legal institutions, the family and ethnic loyalties of the overseas Chinese—backed up by the credible threat to blacklist anyone who violated the community norms of fair dealing—reduced the cost to this group of organizing complex business transactions. The greater the reach of the bamboo network, the greater, in principle, the competitive advantage. Soon the overseas Chinese held key positions in real estate development, component manufacturing, and construction, sectors that put a premium on the ability to combine trading and productive skills. At the same time, Taiwan (China) was developing a distinctive style of business organization that fused elements of the traditional, small Chinese firm and the Silicon Valley start-up.

With the start of Deng Xiaping's open door policy, in 1978, China turned away from isolation and autarky and welcomed the successful overseas Chinese as investors. The influx from Hong Kong (China) and Taiwan (China) was particularly great because of proximity and historical ties. Multinational firms flocked to the mainland, partly to decentralize existing operations to a low-cost location, partly to participate in the widely anticipated growth of a huge market, and partly because partnering with key members of the Chinese diaspora was often regarded as indispensable to navigating an opaque political environment.

Today traditional lines of business are increasingly being abandoned in favor of the most modern sectors of the economy. Having helped transform China, the Chinese diaspora is now being transformed by the developments it encouraged.

India

The contribution of the Chinese network diaspora to Chinese development started, and was long sustained, by investments in manufacturing. In contrast, the contribution of the Indian diaspora to domestic development began by linking domestic and foreign firms in the service sector. The Chinese experience shows that certain traditional forms of risk-mitigating investment behavior are by no means limited to traditional industries. The Indian experience shows that new models of business organization emerging during the continuing reorganization of supply chains can give rise to new patterns of development, in which economic learning begins through service provision rather than industrial activity, and in which the key investments are in education and training rather than in equipment and plant.

The Indian software industry grew 40 percent a year in the 1990s. Revenues reached $10.2 billion in 2002, $7.7 billion of them from exports (see chapter 4). During the same period, employment grew from 56,000 to 360,000, absorbing most of the 75,000 new information technology graduates India produces every year. The number of software firms more than quadrupled, from 700 to more than 2,800, and the largest firms, such as Wipro and Infosys, are undertaking increasingly complex and valuable projects. India has demonstrated that success in outsourcing low-level business services can be a building block for higher value-added services.

The emergence of the Indian software industry was in some ways a fortunate accident that almost surely cannot be reproduced by other countries. But it was an accident waiting to happen, dependent on structural conditions that can indeed be influenced by policy. The Indian government's emphasis on higher education, especially scientific education, created a surplus of well-trained scientists, engineers, and technicians just when the Internet and telecommunications booms and the year 2000 problem produced a massive need for these professionals in the West. Still more providentially, excess U.S. demand for programmers developed just when a critical number of Indian expatriates who had emigrated to the United States in the 1970s and 1980s had become chief executive officers and senior executives at American technology companies. These executives played a critical role in giving their companies the confidence to outsource work to India. They were also patient sponsors as Indian firms gradually learned how to meet U.S. quality and delivery requirements.

Even with these propitious coincidences, however, Western firms could not have outsourced work extensively to India had the Indian government—unaware that software firms could become major employers and producers of tradable goods—not exempted the industry's largely white-collar workforce from much of the labor regulation that hampers India's traditional manufacturing. Even India's much criticized isolationist policy toward the computer industry proved fortuitous: by the early 1990s, when regulations were relaxed, isolation had weaned an entire generation of programmers from mainframes and forced them to master emerging client server and personal computer standards.

No other country or industry should expect to duplicate India's software luck. But India's experience demonstrates that outsourced business services can make a primary contribution to economic development in the 21st century and that diaspora networks can play a crucial role in establishing long-range collaboration in the supply chain. Growth based on business services eases the burden on developing countries in at least two important ways. First, unlike manufacturing, business services do not require much advanced infrastructure or large capital investments. The minimal requirements are educational: English-speaking workers with various technical proficiencies. Most developing countries have, or can be expected to develop, such human resources. Second, as a new industry in developing countries, business services face neither entrenched domestic competitors (with, perhaps, privileged access to government officials who set the rules of competition) nor trade unions (allied, perhaps, with ministries of labor). Traditional forms of regulation, however legitimate in the historical context in which they arose, are therefore unlikely to burden the development of business services in a novel and largely uncharted situation.

The emergence of the high-skill diaspora also reduces the burden on the developing country. The success of the diaspora equips its members with high-level, internationally current managerial skills of a kind that would, at best, be available to tiny elites at home. The apprenticeship that leads to the acquisition of such skills is long, even in the fast-paced sectors of the world economy: the average chief executive officer of a major U.S. corporation took office at age 48 (see chapter 4). Moreover, purely managerial training is complemented by a broader political education, which makes the successful members of the diaspora well suited to bridging the differences between home and host cultures. First-generation immigrants typically try to remain inconspicuous in their host countries. They know that their ethnicity can be a disadvantage, at best merely excluding them from the informal associations through which natives mentor their successors, at worst exposing them to outright discrimination. Reticence born of such concerns is noticeable in the Indian-American community. Individuals with the ambition and prospects of becoming the chief executive officer of a publicly traded company must face and overcome such obstacles. Their success makes them symbols and spokespersons of their community in the host country, and host country recognition gives new weight to their opinions at home.

Despite their different starting positions, the relationship of the Chinese and Indian diasporas to home country development seems to be converging. Recent surveys of their disposition to invest in the home country, discuss possible reforms and business opportunities with national officials, and consider returning permanently themselves do not suggest that the Chinese diaspora is more disposed to investment while the Indian diaspora focuses on relations among firms. Whether or not initial differences are being effaced by continuing development, the two diasporas continue to be alike in that both are manna solutions, win-win outcomes that fell from the sky.

Armenia

When home country elites see development as at least as great a threat as an opportunity, they may hesitate to cooperate with, let alone systematically enlarge, the role of a capable diaspora in the domestic economy. The case of Armenia illustrates the politics of the diaspora and how, perhaps, to mitigate such politics.

At the beginning of the 1990s, after the fall of the former Soviet Union, Armenia seemed well positioned for the transition to a developed, market economy. It was the most educated and most industrial of the Soviet republics. It was considered the Silicon Valley of the Soviet Union, with a major concentration of high-tech industries and developed infrastructure and a workforce known for its tenacity and ability. In addition, Armenia, which had about 3.5 million inhabitants in 1990, expected to be supported by its diaspora, which included more than 1.0 million Armenians living in the United States and at least 1.0 million living in Europe, the Middle East, and Latin America. This diaspora is successful both economically and professionally and is also well organized politically and socially. Another 1.5 million Russian Armenians, traditionally quite influential in the Kremlin, could be counted on as well. The territorial conflict in Karabakh mobilized Armenians worldwide, strengthening ethnic identity and advancing national consolidation. While Armenia also had serious economic disadvantages—its landlocked location, the impact of the 1988 earthquake, and the loss of markets in the Soviet Union—on balance the country had great potential for development.

In the event, despite—indeed, partly because of—its diaspora, Armenia was unable to realize its potential for rapid growth. The chief obstacle to development was a domestic elite composed, like the elite of many contemporary stalled states, of communist bureaucrats, security service officers, and managers of large state-owned enterprises. This elite did, and does, push aggressively for economic liberalization and privatization, but in a way that allows its own members, especially enterprise managers, to capture the major benefits of reforms. While such elites in Armenia and elsewhere welcome economic and political support from the diaspora, they do not want to see diaspora activists and investors perturb their own privileged position at home. They treat the diaspora primarily as a potential political and economic competitor.

The upshot is that the Armenian government has been interested largely in receiving humanitarian aid and long-term unrestricted loans, sources of funding it can control much more easily than direct investments. In addition, because state officials benefit so much from imports, which remain the most lucrative business, many oppose an influx of investments that could replace them with domestic production. Thus the hostility of insiders has thwarted most of the diaspora's attempts to invest.

Compounding the problem, major diaspora organizations have never systematically tried to protect their members from the elite's abuse. The diaspora tends to limit its public criticism out of concern for the government's reputation. It has not attempted to rigorously evaluate the results of the massive assistance it has provided in the past decade. For this diaspora, like others in similar situations, the act of giving seems more important than the actual effect. While the regime in Yerevan has been heavily dependent on the diaspora's support, the diaspora did not use this reliance to secure a more active role in Armenia's development process. Just the opposite: the diaspora gave unconditional financial and political support to a regime that has been blocking the diaspora's attempts to expand productive investments. The diaspora's support relieves pressure on the domestic elite, thereby undermining demand for further reforms, especially for improvements in the business environment. The ruling elite gets additional resources for survival that provide a breathing space for delaying necessary reforms despite extreme poverty and emigration of the most skilled.

The principal lesson of the Armenian experience is that absent extensive knowledge of the depth and direction of domestic reform, massive assistance by the diaspora is not sustainable unless complemented by an active business support and investment program. By itself, assistance fuels emigration and the concentration of economic power and delays resolution of the most important challenges of development. This type of support is manna gone sour, even turned poisonous.

The Experience of an Emerging Diaspora: The Case of South Africa

Skilled South Africans began emigrating in large numbers before the end of apartheid and the turn to democracy in 1994. The data do not permit an accurate estimate of the skills lost, as the South African Department of Home Affairs and Statistics South Africa take into account only emigrants who report themselves as such. The actual number of emigrants could be as much as three times official figures. Nonetheless, it is widely agreed that skilled workers continue to leave South Africa. Fully two-thirds of workers with the potential to emigrate have considered doing so, and the highly skilled—of all races—are most likely to be drawn abroad (see chapter 8).

As South Africa has struggled to integrate itself into the world economy while struggling with the AIDS/HIV pandemic, crime, and sharp fluctuations in the rand-dollar exchange rate, enhancing relations with the diaspora has become a salient concern. To that end, South Africa has initiated two diaspora networks, one encouraging direct collaboration and other transactions among members, the other encouraging the formation of mentoring relations between members already active in international markets and others aiming to become active. Together these networks suggest the range of activities that public–private partnerships of different sorts can use to explore the possibilities for directing diasporas in the direction of manna solutions.

The transaction-oriented South African Network of Skills Abroad (SANSA) was established in 1998 by the University of Cape Town's Science and Technology Policy Research Center and a leading French agency for scientific cooperation, the Institute of Research for Development. SANSA aims to promote collaboration between highly skilled expatriate scientists and technologists and their counterparts in South Africa. The target group is alumni of all major South African universities and technical institutes. The portal to the network describes SANSA's objectives and explains how to network with other members through electronic bulletin boards, discussion groups, and job postings. As of March 2002, SANSA had 2,259 members in more than 60 different countries, 58 percent of whom were South African citizens. In October 2000, the National Research Foundation, part of South Africa's National Department of Arts, Culture, Science, and Technology, took over responsibility for SANSA. After some initial fumbling, the National Research Foundation is managing, with some difficulty, to stabilize the network.

SANSA's strength—its ability to facilitate transactions by enabling partners to find one another directly—is connected with a serious limitation: the inability to track the outcome of exchanges and communications between network members. Because of the way the network is structured, there are no data on the successes and failures of the network, and those who operate it cannot learn from the successes and failures of the transactions they help generate.

The second mentoring network, the South African Diaspora Network, was developed by the University of Cape Town's Center for Innovation and Entrepreneurship through assistance from the World Bank Development Marketplace. Founded in 2001, this network focuses on developing knowledge and entrepreneurial connections between local South African firms and well-connected individuals in the United Kingdom. Drawing on expatriate organizations such as university alumni associations and the South African Business Club, an organization with members in the United Kingdom and the United States, the South African Diaspora Network aims to facilitate continuing collaboration between respected and influential business people from South Africa in key overseas markets and young, high-potential start-up ventures based in South Africa. Local clients were recruited through extensive media coverage in South Africa. More than 60 South African companies applied to be part of the project, some of which were selected to participate. About 40 overseas members, most of them well-connected South Africans living in Greater London, were recruited through presentations held at the South African Business Club in London and a meeting of the London chapter of the University of Cape Town's Graduate School of Business Alumni Association.

So far the mentoring model of the network has resulted in some promising connections between growing firms and capable expatriates. But it is clear that the model will take time to yield results and that the network will have to develop the equivalent of a strategic plan to increase the number and improve the quality of the connections it encourages. A network that facilitates direct contacts between members cannot be self-organizing. Determining which tools and additional infrastructure can make mentoring and transactional networks more effective is a major problem confronting policy makers aiming to make emerging diaspora networks mature as quickly as possible.

References

Kapur, Devesh, and John McHale. 2005. *Give Us Your Best and Brightest. The Global Hunt for Talent and Its Impact on the Developing World.* Washington, DC: Center for Global Development.

Kuznetsov, Yevgeny, and Charles Sabel. Forthcoming. "Work Globally, Develop Locally: Diaspora Networks as Springboards of Knowledge-Based Development." *Innovation: Management, Policy, and Practice* 8 (1–2).

Ozden, Caglar, and Maurice Schiff, eds. 2005. *International Migration, Remittances, and the Brain Drain.* New York: Palgrave Macmillan.

World Bank. 2005. *Global Economic Prospects 2006. Economic Implications of Migration and Remittances.* Washington, DC.