



The Demography of China and India: Effects on Migration to High-Income Countries through 2030

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I. Executive Summary

China¹ and India are major players in international migration. Both countries have very large populations that will continue to grow in the coming years. The available pool of potential migrants from China and India will remain high although population size and density (known as demographic variability) will change from year to year in both countries and China will experience slower labor force growth overall. Both countries' supply of individuals in the 16-to-34 age group, which is most likely to migrate, will remain high, and in India this supply will increase substantially. Further, large migrant communities in destination countries are likely to sustain the flows of information and remittances that encourage further migration.

It is more difficult to tell to what extent this large pool of potential migrants will translate into actual immigration flows. One of the most important unknowns is the level of domestic growth China and India will experience. Continued high growth would create significant opportunities at home, potentially discouraging emigration or encouraging the diaspora's return. China's more promising ratio of working-age to non-working-age persons favors economic growth in the short term. The two countries' differing current age structures and demographic trajectories also make for somewhat different scenarios in the two settings. On balance, however, the pressure to migrate to developed countries from both China and India is expected to remain high.

Meanwhile, destination countries will continue to see shrinking working-age populations. Europe will be particularly affected since it has lower fertility rates than the United States. This demographic need may or may not translate into greater openness to immigration. If it does, demographic trends suggest that ample numbers of Chinese and Indian workers will be willing and able to migrate — although it is more difficult to tell how these migrants' skill composition will change over time.

A high level of uncertainty clouds all of these projections. The uncertain fortunes of national economies around the world, changes in demand for certain skills, and destination-country immigration policies could swamp the effects of demographic change on migration.

II. Introduction

India and China are two of the six largest contributor nations to lifetime migrant flows to developed countries, with about 8.5 percent of all flows (see Appendix 1).² India and China are also an important source of highly skilled migrants: In the United States, 74.6 percent of Indian immigrants and 44.4 percent of Chinese immigrants have a tertiary education.³ In this paper, we examine some of the demographic dynamics that will drive migratory movements involving China and India, focusing on recent demographic data and taking a

¹ As referred to in this paper, and specifically for the age pyramid and dependency ratio data, China excludes Hong Kong, Macao, and Taiwan.

² The Russian Federation and Mexico are reported to be the largest two sources of lifetime migrants; Bangladesh and the Ukraine also rank in the top six.

³ US Census Bureau, *2007 American Community Survey*.

look at projections through about 2030. We also comment on some of the opportunities and constraints that will affect migratory flows.

There is much uncertainty about future movements of people and the international migration policy changes that shape them. Forecasts are inevitably flawed since international migration, especially involving China and India, takes place in a world of cross-cutting incentives, shifting national economic trajectories, and constantly revised policy regimes. Volatile economic forces (as witnessed in recent months) underscore this uncertainty. Further, the scale of the impact depends on how it is measured.

Subject to these caveats, this paper argues that pressure for migration from the two “demographic billionaires” to Europe and North America is likely to remain substantial. Average gaps in living standards are likely to persist and spur international movements. Social networks and remittances will continue to sustain migrant flows. These factors suggest that if developed countries choose to loosen policy restrictions on immigration, migrants will be ready and willing to come.

III. Key Demographic Drivers

The outward migration pressure from China and India to Europe, North America, and other high-income countries is likely to remain high — and perhaps increase — in the coming decades. Despite the inevitable uncertainty, some features of the current and near-term demographic landscape suggest a scenario of more, rather than less, migration. Population growth in these two countries is set to continue — albeit at a slower rate — and large numbers of young people will enter the labor force age group of those ages 15 to 64. The sizable wage-income gap is likely to remain in coming decades, encouraging continued migratory flows. On the other hand, economic growth in China and India represents a countervailing tendency, with higher growth likely to reduce pressures for the highly skilled to emigrate. The robustness of the world economy and ever-uncertain policies in destination countries constitute a large part of the unfolding story. These factors are almost impossible to forecast.

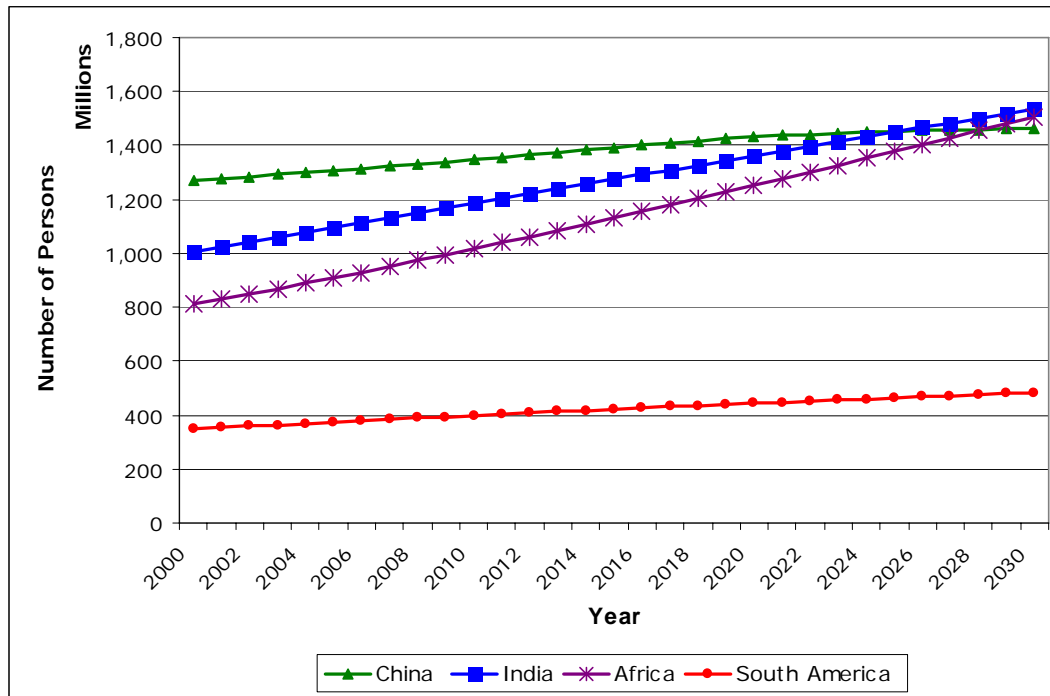
Overall Population and Population Growth

Figure 1 compares population trends and projections from 2000 to 2030 for China, India, South America, and Africa. China and India are of course, the two current “demographic billionaires,” with estimated 2008 populations of 1.325 billion and 1.149 billion, respectively.⁴ Together they comprise 36.9 percent of the world’s 6.7 billion people. The United Nations (UN) predicts India will overtake China in total population size in 2026 when the Indian population hits an estimated 1.46 billion. According to projections, the two countries will still be the only demographic billionaires in 2050, each with more than double the population of the United States — the next most populous country in 2050 (with approximately 402 million people).

⁴ Population Reference Bureau, *2008 World Population Data Sheet* (Washington, DC: Population Reference Bureau, 2008), <http://www.prb.org/Publications/Datasheets/2008/2008wpds.aspx>.

Two less-appreciated facts stand out. First, despite China and India’s size and growth, they are expected to shrink slightly as a fraction of world population (to a combined 36 percent in 2050, according to UN projections). Second, evolving age structure is expected to play a key role in determining labor force size and the extent of demographic dependency — with implications for the dynamics of international migration.⁵ This paper deals at length with the second consideration.

Figure 1. Population Projections for China, India, South America, and Africa, 2000 to 2030



Source: US Census Bureau, International Data Base.

South America and Africa serve as a useful comparison with China and India’s population trends (see Figure 1). South America’s entire population of nearly 400 million falls considerably short of either China or India, and the continent’s overall growth rates have declined so much that South America’s relative share of the world’s population is likely to shrink in the coming decades. Africa presents the contrast: at about 800 million in 2000, the continent is projected to achieve an aggregate population size similar to that of China and India by the end of the 2020-2030 decade.

What does all of this mean? It seems likely that population-related emigration pressure will grow more in India relative to China. Migration pressures in both countries are likely to increase for demographic reasons but also because of further global economic integration. From a purely demographic perspective, however, pressures to migrate abroad may increase more rapidly in Africa than in China and India. Whether this *pressure* for emigration is translated into actual migratory flows depends as much on the policies of potential destination societies as on the demographic developments in potential origin societies.

⁵ Projections are generally carried out under a series of variants, altering fertility, mortality, and migration. The last component, of particular interest here, is hard to project, and often variants assume the same amount of migration or offer a zero-migration scenario.

Potential Migrants: the Young Population

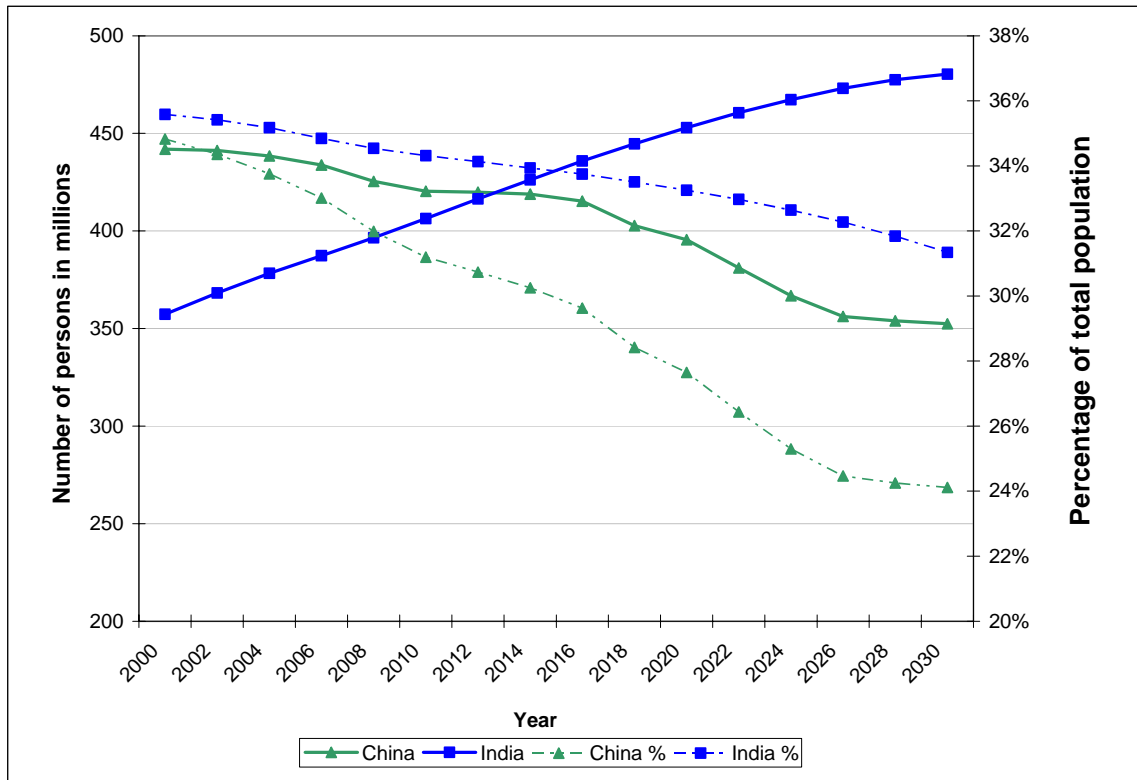
China and India are well along in the demographic transition (the shift from a regime of high birth and death rates to a regime of low birth and death rates). Countries with high birth and death rates typically experience low population growth. The same applies to countries with low birth and death rates. As the transition between the two regimes progresses, however, countries usually experience high population growth. In particular, the speed of the transition affects the country's age structure, with important implications for the labor market and for likely international migration.

Migrants are disproportionately young adults. This holds true whether we talk about urban-to-rural migrants in Africa or international economic migrants to high-income countries. For this reason it is important to consider the change in the size of the 16-to-34 population when assessing the numbers of potential migrants in the origin country.

Figure 2 shows population projections for the 16-to-34 age group in China and India through 2030. It shows a decreasing population of young adults in China, which constituted 34 percent of the population in 2000 but decreases to 24 percent by the year 2030. This decrease is instigated by the fewer people "aging in" to the labor force over time in China. For instance, US Census Bureau projections place the number of persons ages 5 to 19 in China in 2015 to be almost 20 percent lower than in 2005. At the same time, a robust Chinese economy will demand young workers. These individuals may find themselves in a relatively attractive job market, with considerable demand for their talents at home. In other words, large numbers of young men and women have entered the high-migration ages in recent years, and another group is about to pass through these ages in the next several years. Over time, however, the demographic flow will decrease, giving China a smaller pool of available migrants than it has now.

By contrast, India will see substantial numbers reach working age for the coming decade or two. The projection shows an increase in the size of the 16-to-34 age group, which constitutes a substantial portion of the population though it will decline from 35 to 31 percent of the population from 2000 to 2030. Therefore a larger pool of workers will be looking for jobs in India, and those workers could become international migrants depending on the state of both the Indian and world economies.

Figure 2. Projection of the 16-to-34 Age Group in China and India, 2000 to 2030



Source: US Census Bureau, International Data Base.

Age Structure in the Sending Countries

We now discuss in more detail the demographic picture that has led to the trends shown in Figure 2, including important details on rural to urban migration and on the two countries' dependency ratios; both will have a significant impact on economic growth and hence the incentive to migrate. China presents the more dramatic case and the one for which more detailed data are available.

Fertility Trends. China's present birth rate is well below replacement at 1.6 children per woman.⁶ Strikingly, this rate is about on par with the current European level of 1.5. More consequential, though, is the relatively short period over which China has attained this childbearing level (see Figure 3). The total fertility rate (TFR) in 1960 was near 6 children per woman. In just a few decades, China made a transition that took other countries much longer as fertility dropped to 2.18 by 1990.⁷ The well-known one-child policy, inaugurated in the 1980s, accelerated the transition, but the decline was already underway partly due to

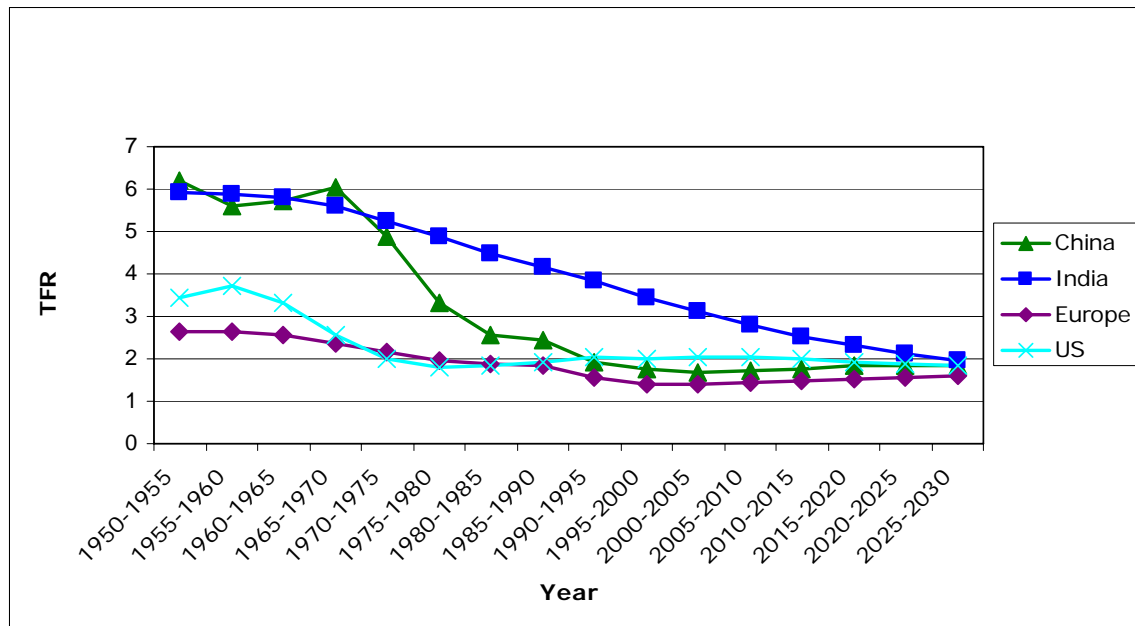
⁶ Population Reference Bureau, *2008 World Population Data Sheet*.

⁷ J. Yu and J. Yuan, "The Fertility Status of Chinese Women in Recent Years," 1992 National Fertility and Family Planning Survey, China (selected research papers in English compiled by China State Family Planning Commission and US Centers for Disease Control and Prevention, October 1997, abstract in POPLINE, Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs).

1970s-era policies designed to delay marriage and postpone childbearing.⁸ This drop in fertility has important consequences for age structure: China now has a significant bulge in the working-age and young-adult segments of the population.⁹

Although India’s story has similarities, it has not progressed as far along the demographic transition as China. In the 1950s and 1960s, China and India both exhibited total fertility rates between about 5 and 6 children per women. But fertility declined much more sharply in China (see Figure 3). The present fertility rate for India stands at 2.8,¹⁰ more than both China and Europe.

Figure 3. Fertility Trends in China, India, Europe, and the United States, 1950 to 2030



Source: United Nations, *World Population Prospects 2006*.

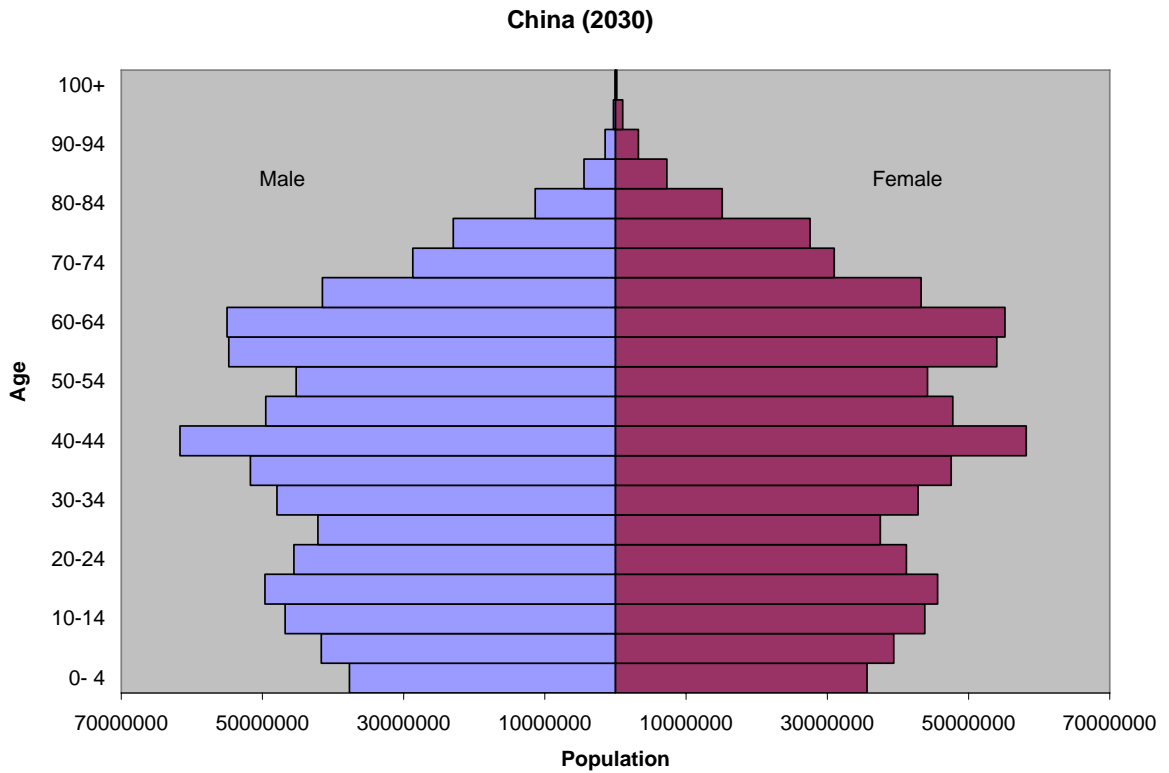
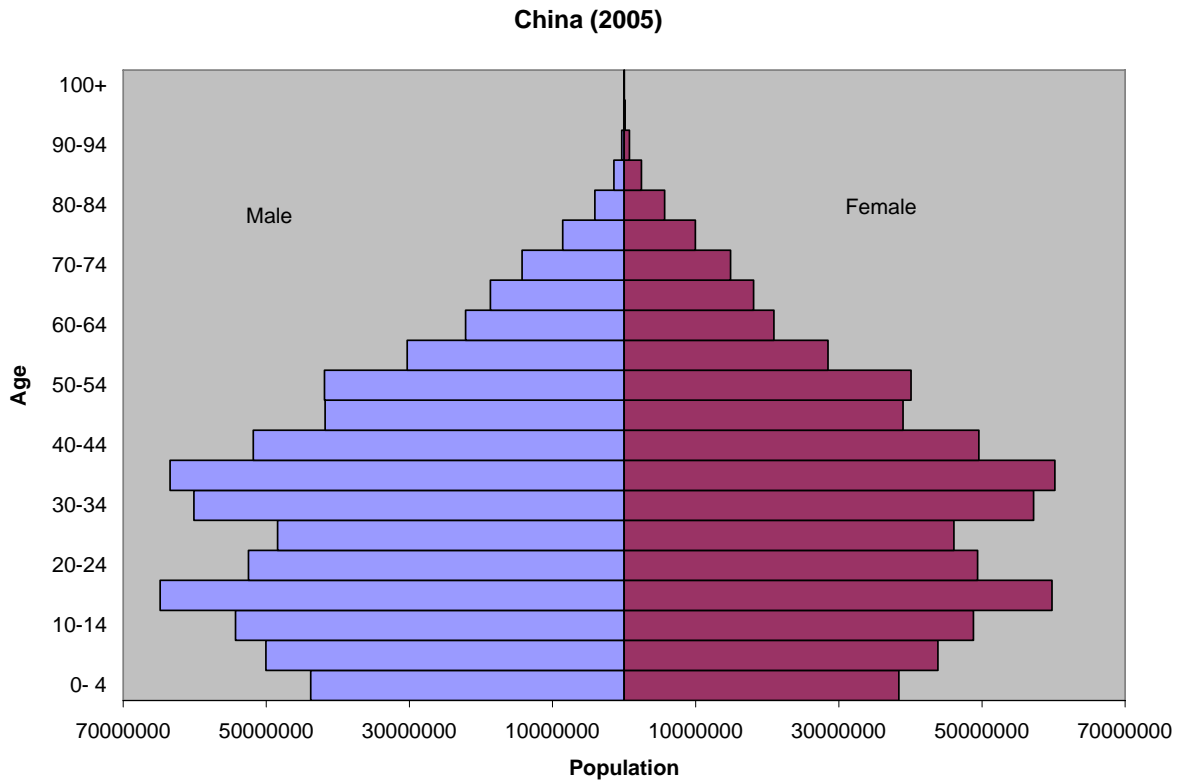
These demographic dynamics have translated into different age structures for India and China today, with relatively large numbers in the youngest age groups and steadily declining numbers represented in the older age groups (see Figures 4 and 5). As India’s birth and death rates decline, a youth and labor force bulge — less pronounced than China’s — will begin to appear.

⁸ Alice Goldstein, Michael White, and Sidney Goldstein, “Migration and Fertility in State Policy in Hubei Province, China,” *Demography* 34, no. 4 (1996): 481-491.

⁹ This youth bulge (which will in time become an adult bulge) is likely to be particularly pronounced in Africa and South Asia as well. David A. Lam, “The Demography of Youth in Developing Countries and its Economic Implications” (World Bank Policy Research Working Paper 4022, October 2006).

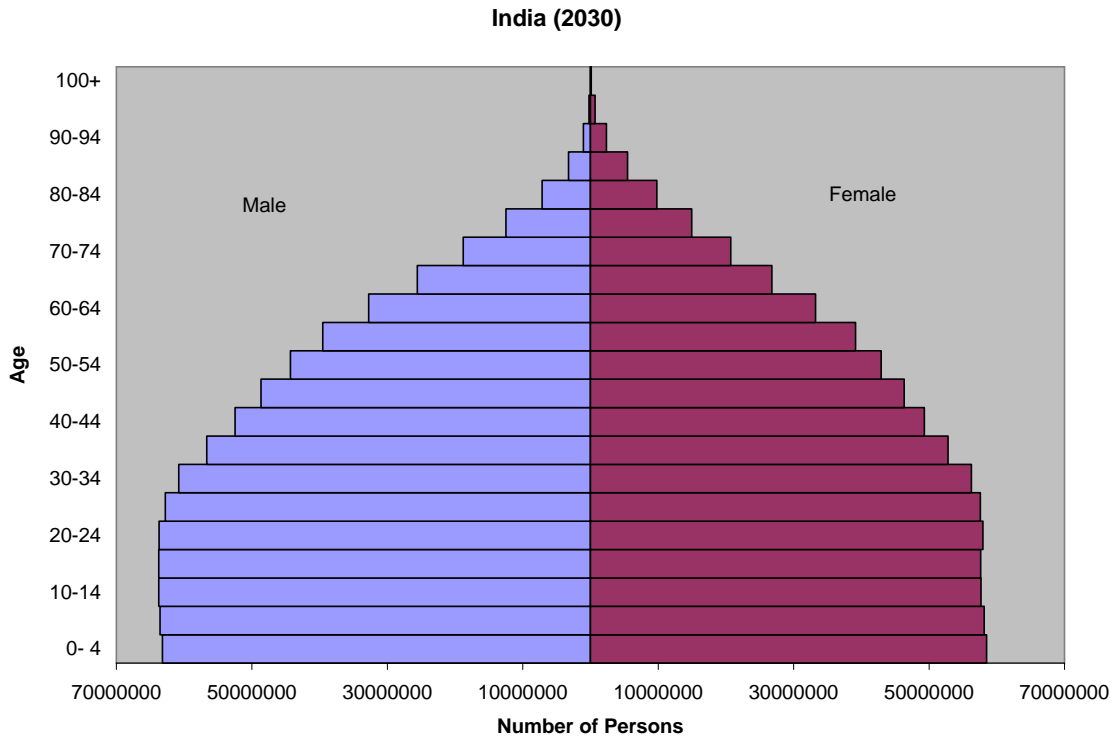
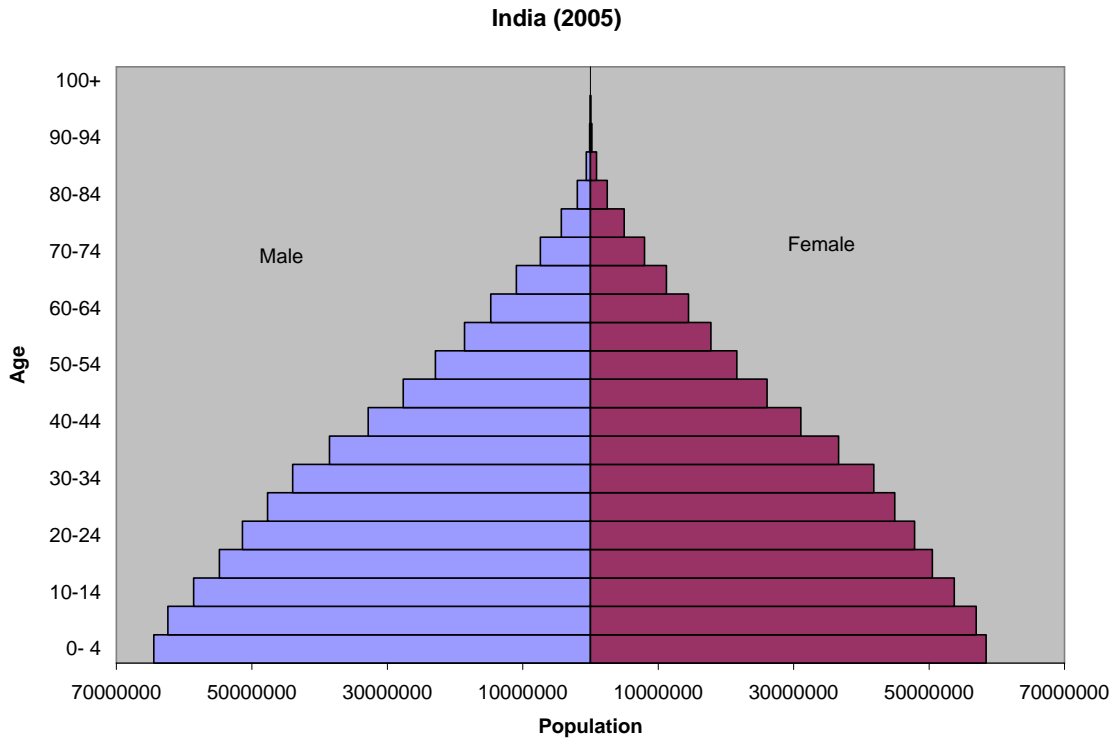
¹⁰ Population Reference Bureau, *2008 World Population Data Sheet*.

Figure 4. Current and Projected Age Pyramids for China, 2005 and 2030



Source: US Census Bureau, International Data Base.

Figure 5. Current and Projected Age Pyramids for India, 2005 and 2030



Source: US Census Bureau, International Data Base.

Age Structure and Dependency Ratios: the Economic Implications

China's 2005 pyramid reflects its recent history of demographic dynamics and also portends the demographic and socioeconomic changes that Chinese society will face. Currently, China is fortunate to have a relatively large working-age population. The dependent-youth (under age 15) and old-age (age 65 and over) groups comprise 41 percent of China's 2005 population.¹¹ This is the demographic contributor to China's spectacular economic growth over the last several years. India's 2005 population pyramid is more pyramidal in shape, reflecting the legacy of several decades of relatively high growth rates and a more gradual decline in its birth rates.

The demographic transition has a catch: it is a one-way trip. (No population has yet traversed the fertility and mortality curves in the opposite direction, moving from low to high birth and death rates). Some features of demographic structure appear for a relatively short period of time — a few years or decades — and cannot be recaptured. The demographic bulge will persist in the labor force age group for awhile, but then the bulge will enter the elder years, reversing the beneficial effects of age structure. For China, the contrast between the 2005 pyramid and the 2030 pyramid tells the story of fewer people entering the working-age years.

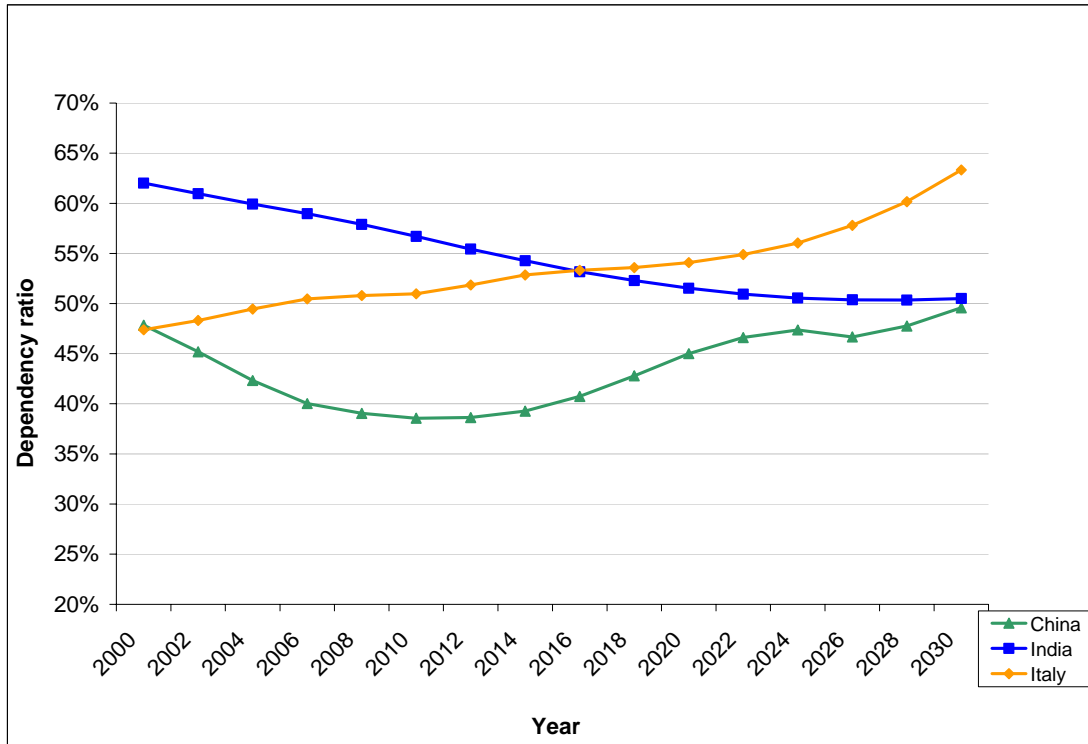
Figure 6 shows projected changes over time in the dependency ratios (the non-working-age population dependent on the working-age population) for China, India and, by way of comparison, Italy, one of Europe's aging countries where the fertility rate stands at 1.3. In the short run, China will experience very low dependency ratios that will aid economic growth, but this benefit will erode over time.

Figures 7 and 8 break this down into the old-age and youth dependency ratios, respectively. The old-age dependency ratio measures the number of old who depend on working-age adults while the youth dependency ratio measures the number of children who depend on working-age adults.

Between 2005 and 2030, China's dependency ratio is expected to increase by about 10 percentage points due to aging and continued low fertility.

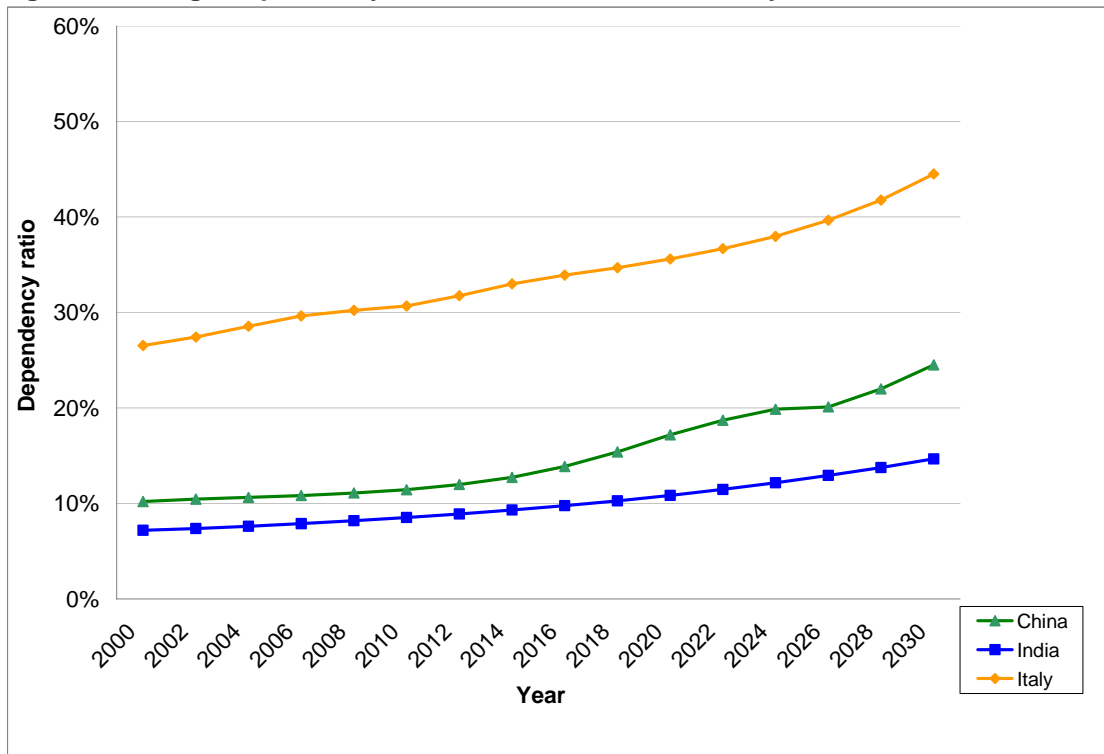
¹¹ Author's calculations from US Census Bureau age-specific data represented in the population pyramids.

Figure 6. Total (Old-age plus Youth) Dependency Ratio for China, India, and Italy, 2000 to 2030



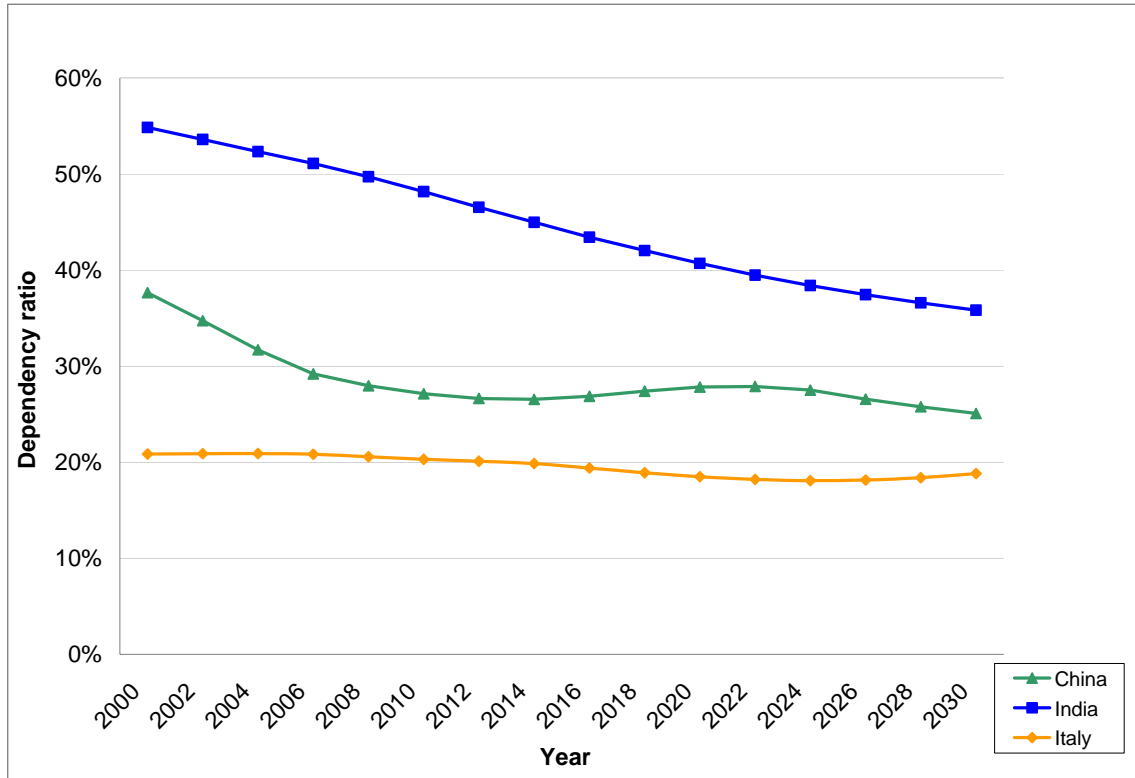
Source: US Census Bureau, International Data Base.

Figure 7. Old-age Dependency Ratio for China, India, and Italy, 2000 to 2030



Source: US Census Bureau, International Data Base.

Figure 8. Youth Dependency Ratio for China, India, and Italy, 2000 to 2030



Source: US Census Bureau, International Data Base.

However, India’s dependency ratio is expected to *decline* by about 10 percentage points between 2005 and 2030, as birth rates moderate and large numbers of youths and adults remain of working age. In the short run, therefore, India will not experience the same very low dependency ratios as China. Relatively high fertility has led to an overall dependency ratio of 57.9 percent in India and youth-dependency ratio of 50 percent in 2008. Over time, the youth-dependency ratio will decrease sharply for India, indicating the entry of those in the younger age groups into the working-age group. Yet the overall dependency ratio remains higher than that of China through 2030 (contrast Figure 6 with Figures 7 and 8).

Since low dependency ratios aid economic growth, especially in cities,¹² a high youth-dependency ratio could place a brake on India’s economic growth. On the other hand, India is less likely than China to have to manage the burden of a high 65-and-older population as shown by the low old-age dependency ratio in the country over time. Indeed, China will experience a sharply increasing old-age dependency — from 11 to 25 percent — between 2008 and 2030 (see Figure 7).

By way of comparison, for Italy, the overall dependency ratio increases from 51 to 63 percent, and the old-age dependency ratio increases from 30 to 44 percent from 2008 to 2030 (see Figures 6 and 7). Both values are higher for Italy than for India and China. In

¹² Author’s calculations based on US Census Bureau, International Data Base.

other words, India's less pronounced age structure will make for a more diffuse demographic dividend in economic growth.

Regional Detail: Rural-to-Urban Migration

National pictures often obscure regional detail, especially in the study of migration. The Chinese countryside has been emptying (or at least not growing as fast) since the onset of market reforms in the 1980s. Conversely, cities have been growing rapidly. In sharp contrast to other developing countries, China's very low birth rates mean that internal migration accounts for a very substantial fraction of all urban growth in China.

The relative shift between China's urban and rural areas is striking. A relative deficit of young adults in the countryside emerges as a substantial infusion in urban areas. China's 2000 census shows that migrants made up 33.7 percent of residents of Beijing-Tianjin-Shanghai (the three largest urban regions) and 26.2 percent of the population in other cities, while the proportion of migrants was only 13.8 percent in towns and 3.7 percent in rural areas.¹³ Migrants have been moving up all rungs of the urban ladder, although most of the attention is given to the large metropolises.

This urbanward migration, in an era of unprecedented Chinese economic growth, suggests how we might think about the prospects of China-origin migration in a more refined way. Not only will potential migrants have origins in China, they will have origins in particular *places* in China. Robust Chinese cities will provide (as now) attractive alternative destinations for migrants from the countryside and small towns. At the same time, cities can provide jumping-off points for international migrants. As Liang and Morooka have shown, not only are Chinese emigrants younger and more educated than those they leave behind, they are more likely to have originated from Chinese cities.¹⁴

The urbanward migration story is, again, less clear for India than for China. Definitions differ and so does the availability of data, but it is likely that just as in the case of the demographic transition and the youth bulge, the urban transition has been proceeding more modestly in India, where about 29 percent of the population lived in urban areas in 2006.¹⁵ Unlike in China, India's overall demographic dynamics (and the somewhat higher recent past and current fertility rates) are likely to be more important than rural-to-urban migration.

Summary: Growth and Migration in China and India

Taken together, urbanization and the nascent youth bulge suggest that India's economic opportunities will improve in the years to come. The same is true for China, which is further along in the transition but will probably see its demographic dividend come to an end sooner.

¹³ Michael White and Leiwen Jiang, "Migration and Spatial Dispersion in China" (paper presented to the Population Association of America, New Orleans, April 17-19, 2008).

¹⁴ Zai Liang and Hideki Morooka, "Recent Trends of Emigration from China: 1982-2000," *International Migration* 42, no. 3 (2004): 145-164.

¹⁵ World Bank, *World Development Indicators* (Washington, DC: World Bank, 2007).

While China and India are usually viewed as net exporters of labor, they may begin importing workers if these demographic trends play out and their overall economies stay strong. After all, China is already dramatically “importing” labor to its cities from its countryside. Whether continued economic growth and demographic shift are enough to slow migration out of the country, however, is an open question.

IV. Some Key Sociodemographic Determinants

The core demographic features of the China-India migration picture outlined above have focused on basic demographic dynamics — fertility and age distribution. Alongside these drivers, other important factors will help shape the pattern of migration from (and to) China and India.

Social Networks

Social networks are crucial to migration, facilitating information flows and helping to mitigate the cost of relocation. The very existence of a migration flow between origin and destination can help perpetuate that flow, as origin and host country are kept in contact. Since China and India are migrant-origin regions of substantial scale, and since established Indian and Chinese migrant communities exist in a number of destination countries, including Canada, the United States, the United Kingdom, and Australia, the network flow — of information and migrants — is likely to be sustained.

Remittances

Movements of people to a receiving country generate another important flow in the opposite direction: remittances.¹⁶ According to the World Bank, India received US\$25.4 billion in official remittances in 2006 while China received US\$23.3 billion.¹⁷

Remittances have consequences for further migration. In the simplest of models, which date back to the 1970s, migration (internal or international) is spurred by wage and resource gaps between origin and destination.¹⁸ While such gaps are important, more recent thinking suggests that additional factors are at work. The most impoverished potential migrants may not have the information or the minimal resources needed to make a move. Hence migration may in some cases accelerate further migration by catalyzing socioeconomic development through remittances.¹⁹ The research on this threshold, part of a migration-development

¹⁶ Measuring the amount of this flow is notoriously difficult, but it appears to be substantial for many sending countries.

¹⁷ Official remittances do not represent the true size of remittances, which also include unrecorded flows through formal and informal channels. For China, remittances may have been misclassified as foreign direct investment. For India, remittances may have been classified as nonresident deposits, especially those in local currency terms. Dilip Ratha and Zhimei Xu, “India,” in *Migration and Remittances Factbook 2008* (Washington, DC: World Bank, 2008); Ratha and Xu, “China,” in *Migration and Remittances Factbook 2008* (Washington, DC: World Bank, 2008).

¹⁸ J. Harris and M. Todaro, “Migration, Unemployment & Development: A Two-Sector Analysis,” *American Economic Review* 60, no. 1 (1970):126-42.

¹⁹ Stephen Castles and Mark Miller, *The Age of Migration*, 3rd ed. (New York: Guilford Press, 2003).

paradox, is quite limited in scope and focuses primarily on internal migration or Mexican-US migration.

Human Capital

Simply stated, most international migration of the kinds discussed in this paper concerns the shift of human capital across regions. Origin countries' investment in human capital — education and other skills — will affect who goes where. Skills coupled with economic opportunity in the origin country could encourage some potential migrants to stay put. But some educated individuals will instead choose to put their skills to use in high-income countries as labor migrants. It is difficult to obtain demographically useful information on education trends and how these trends are likely to affect international migration.

Note that the migration of educated workers also raises the specter of “brain drain,” meaning the emigration of a large number of a country's highly skilled and educated to countries offering superior economic and social opportunities.²⁰ In general, countries belonging to the Organization for Economic Cooperation Development (OECD) have experienced positive “brain gain” as a result of the mobility of skilled workers. Docquier and Marfouk have estimated that net brain gain of skilled workers through international migration amounted to 1.6 percent of the OECD workforce in 2000 with Australia, the United States, Canada, and Luxembourg among the countries that benefited most from the inflow.²¹

Comprehensive studies have not analyzed brain drain specifically from India and China, but Ozden's analysis indicates that skilled workers constitute a high percentage of the total emigrants from both of these countries.²² Ozden shows that Chinese and Indian immigrants to the United States possess tertiary education at a rate several times higher than the proportion in the home countries, even when adjusting for age. It is likely that this degree of selectivity operates for other OECD destinations as well.²³

Although India and China have high numbers of educated emigrants (the stock of skilled emigrants is 1,037,000 for India and 816,000 for China),²⁴ it is difficult to assess the extent of brain drain because little data exist on emigrant characteristics and return emigrants in the origin country.

²⁰ Population Reference Bureau, “Glossary of Terms,” <http://www.prb.org/Educators/Resources/Glossary.aspx>.

²¹ Frederic Docquier and Abdelsam Marfouk, “International Migration by Education Attainment, 1990-2000”, in *International Migration, Remittances, and the Brain Drain*, eds. Çağlar Özden and Maurice Schiff (Washington, DC and New York: World Bank and Palgrave Macmillan, 2006), 151-201.

²² Çağlar Özden, “Educated Migrants: Is there Brain Waste?” in *International Migration, Remittances, and the Brain Drain*, eds. Çağlar Özden and Maurice Schiff (Washington, DC and New York: World Bank and Palgrave Macmillan, 2006), 227-244.

²³ Interpretation of the educational level of immigrants is complicated because data do not clarify whether education was received after reaching the destination country with investments from the destination country; if so, this process might not necessarily reflect brain drain.

²⁴ Docquier and Marfouk, “International Migration by Education Attainment.”

Despite the lack of data and comprehensive empirical study, the consensus view is arguably that past international migration has benefited living standards in poor sending countries,²⁵ and will continue to do so in the future.²⁶

V. How Much Movement Is There and Has There Been? The Diaspora

An estimated 37 million “overseas” Chinese lived in other countries as of about 1990.²⁷ This includes first-generation Chinese migrants and their descendents. Similarly, Fullilove reports an Indian government estimate of 25 million overseas Indians, including both persons of Indian origin as well as Indian citizens who have moved internationally.²⁸ These diasporic populations, though large, still comprise only a modest fraction of the world’s population. Since these numbers generally include descendents who never lived in the country of origin, one should make comparisons cautiously. We do not know what fraction of the world entire diasporic population these 62 million people represent. We can only repeat for comparison that the current stock of about 15 million international emigrants — the migrants themselves, excluding any historical or contemporary descendents — from China and India constitute about 8.5 percent of the entire international migrant stock.²⁹

Data for migration flows do exist although the usual caveats again apply. (Nations are often neither careful nor consistent in defining and counting individuals who cross international borders — and many of the individuals are, of course, keen to evade detection). If we consider “lifetime migration,” i.e. birth in one country and enumeration in a second country’s census, we find that China and India contribute 5.8 million and 9 million lifetime migrants, respectively. Appendix 1 presents such lifetime migration flow data for selected countries, based on a UN world migration matrix. It shows the number of persons born in one country (row) now residing in a second country (column).³⁰ Though substantial, the numbers for both India and China are still smaller than the 9.3 million Mexican migrants estimated to be residing in the United States.³¹ Appendix 2 shows the proportion of Indian and Chinese among the total foreign-born population in selected OECD countries.

²⁵ Jeffrey G. Williamson, “Global Migration,” *Finance and Development* 43, no. 3 (2006).

²⁶ Lant Pritchett, *Let Their People Come: Breaking the Gridlock on Global Labor Mobility* (Washington, DC: Center for Global Development, 2006), <http://www.cgdev.org/content/publications/detail/10174>.

²⁷ Dudley Poston Jr., Michael Xinxiang Mao, and Mei-Yu Yu, “The Global Distribution of the Overseas Chinese Around 1990,” *Population and Development Review* 20, no. 3 (1994): 631-645.

²⁸ Michael Fullilove, *World Wide Webs: Diasporas and the International System* (Sydney: Lowy Institute for International Policy, 2008), 19.

²⁹ See Development Research Centre on Migration, Globalisation and Poverty, “Global Migrant Origin Database,” updated March 2007,

http://www.migrationdrc.org/research/typesofmigration/global_migrant_origin_database.html.

³⁰ Appendix 1 reports the stock of migrants by birthplace for each given host country.

³¹ According to data from the 2007 American Community Survey of the US Census Bureau, about 11.7 million immigrants from Mexico live in the United States,

Increasing Future Flows?

All told, the scale of the flow between selected origins and destinations is extremely uncertain. Even the United Nations admits that “international migration is the component of population change most difficult to measure and estimate reliably”.³² Thus, analysts need to proceed with the proverbial grain — nay, shaker — of salt when attempting to peer into the future and predict population movement. Still, as we have outlined, the research community does know something about the ways demographic and social factors are likely to push migration and in which direction.

Evidence suggests that international migration is likely to increase. For instance, one recent review concluded that migration will increase faster than world population growth.³³ As this paper outlines, *pressures* for international migration, particularly from China and India, the two most populous countries in the world, are likely to remain or even increase. Most signs point to increased flows in terms of both absolute numbers and the share of world population. Yet conventional population forecasts often incorporate a steady-state assumption, having the number of migrants or the rate of international migration level off after just a few years. Recent UN projections, for example, have assumed a net annual movement from developing to developed regions of 2.46 million people for 2000 to 2010, declining to 2.15 million by 2040 to 2050.³⁴

VI. Receiving Countries: Demographic Needs and Policy

An important part of the migration picture not yet examined in detail is immigration policy in destination countries. While China and India will see large numbers of young people entering the labor force in coming years, Europe, North America, Japan, Australia, and selected other host societies face the converse demographic issue: how to sustain their labor forces in the face of declining population growth rates.

While this overall slowdown is well known (and welcomed in many quarters, especially among environmentalists), what is less appreciated is the diversity of experiences these developed countries exhibit. Considerable shifts in major European countries’ age structures mean that the proportion of the population that works will decline in coming years.³⁵ Germany, Denmark, France, and Italy will face increases in the ratio of nonworkers to workers of between 15 and 18 percent in the 2005-2025 period, according to recent

³² United Nations, *World Population Prospects: The 2006 Revision: Highlights* (New York: United Nations, 2007), http://www.un.org/esa/population/publications/wpp2006/WPP2006_Highlights_rev.pdf.

³³ Philip Martin, “Another Miracle? Managing Labour Migration in Asia” (paper presented to the United Nations Expert Group Meeting on International Migration and Development in Asia and the Pacific, Bangkok, September 20-21, 2008), http://www.un.org/esa/population/meetings/EGM_Ittmig_Asia/P01_Martin.pdf

³⁴ United Nations, *World Population Prospects: the 2004 Revision* (New York: United Nations, 2005), 19.

³⁵ James W. Vaupel and Elke Loichinger, “Redistributing Work in Aging Europe,” *Science* 312 no. 5782 (2006): 1911-13.

calculations.³⁶ However, the United States has a different demographic trajectory. As Vaupel and Loichinger point out:³⁷

The United States faces a less daunting demographic future because women (and men) in the United States are having about two children on average (compared with 1⅓ to 1½ in much of Europe) because of sizable immigration flows of young workers, and because life expectancy has been relatively low [vs. high-income European nations] and increasing relatively slowly.

Europe and North America will continue to age. Their labor forces will be replenished only modestly from fertility, particularly in the case of Europe. Such observations raise the question of how much international migration can serve to counterbalance aging populations in high-income countries.

Preston and Wang have examined the relative impact of international migration on the demographic dynamics of several countries, including major receiving countries in Europe and North America, as well as in China and India.³⁸ Their technical analysis contrasts a country's net reproduction rate (NRR) without international migration with an alternative rate (NRR*) that adjusts for the impact of international migration. This approach allows one to gauge the impact that international migration has on the projected "intrinsic growth" (age structure removed) of the population. For China and India, migration is not particularly consequential because it represents such a small fraction of overall population change. Mexico would be growing more rapidly were it not sending large numbers of migrants to the United States. France, by contrast, is growing at just about replacement (replacement NRR=1), but only because of migration (see Table 1).

Table 1. Net Reproduction Rates for Selected Countries and Regions with and without Allowance for Net Migration, 2000 to 2005

Region/country	NRR, without allowance for net migration	NRR*, with allowance for net migration	Change in NRR when including migration
Canada	0.73	1.02	0.29
United States	0.98	1.21	0.23
France	0.91	1.02	0.11
Germany	0.65	0.77	0.12
Italy	0.62	0.71	0.09
Mexico	1.14	0.93	-0.21
China	0.75	0.75	0.00
India	1.30	1.29	-0.01

Note: Replacement-level rate equals 1.

Source: Samuel H. Preston and Haidong Wang, "Intrinsic Growth Rates and Net Reproduction Rates in the Presence of Migration," *Population and Development Review* 33, no. 4 (2007): 357-666.

³⁶ Ibid.

³⁷ Ibid.

³⁸ Samuel H. Preston and Haidong Wang, "Intrinsic Growth Rates and Net Reproduction Rates in the Presence of Migration," *Population and Development Review* 33, no. 4 (2007): 357-666.

Some Policy Questions

The world will be a different place *demographically* in two decades. As this paper has outlined, China and India will have moved further along in their demographic transitions. The projected 2030 age pyramid for China points to a country that will have to grapple with emerging population aging although China will still have a large share of workers in the labor force ages. As we discussed above, some of this pattern will apply to a lesser extent to India.

The pressure for migration from the two demographic billionnaires to Europe and North America is likely to remain substantial. Average gaps in living standards are likely to persist and spur migratory movements. Social networks and remittances will continue to sustain migrant flows. These factors suggest that if developed countries choose to loosen policy restrictions on immigration, migrants will be ready and willing to come.

Two caveats should be mentioned, however. First, the analysis in this paper does not directly address the education levels of potential immigrants. Present international migration flows out of China and India are disproportionately drawn from the ranks of the more educated. Previous research shows that immigrants from countries with high expenditures on tertiary education perform better in the US job market.³⁹ Therefore, further improvement in educational attainment, perhaps accelerated by further national investments in schooling, will make migration attractive for more Chinese- and Indian-educated workers. This implies more international migration, especially since high-skilled individuals are more warmly welcomed than low-skilled migrants. Nearly half of those born in China or India and residing in OECD countries have postsecondary education.⁴⁰ (Note that low-skilled migrants may also be economically beneficial since they are also complements in production). Although destination countries cannot necessarily fine-tune migration flows, “quality-selective” immigrant policies, such as the points systems in Canada and Australia, facilitate migration of educated and skilled workers. For instance, the Immigration Act of 1990 in the United States placed more emphasis on highly skilled workers by allocating a designated number of H-1B visas each year for foreigners in specialty occupations, such as scientific research, information technology, and engineering.⁴¹ The H-1B visa, which a US employer must initiate, allows foreigners to work in the United States for up to six years, at which point they can file for permanent residency. From 1992 to 2000, the number of H-1B visas increased from 110,200 to 355,600, thus indicating an increase in the number of skilled migrant workers.⁴² Interestingly, half of these workers were from India, which explains the high proportion (around 70 percent) of tertiary level-educated Indian migrants in the United

³⁹ Özden, “Educated Migrants: Is there Brain Waste?”

⁴⁰ Author’s tabulations from data extracted on November 07, 2008 from Organization for Economic Cooperation and Development Statistics Portal www.oecd.org/statsportal.

⁴¹ The annual cap on H-1B visas available to private employers was initially set at and is currently 65,000 per year though it was raised to 115,000 per year for 1999 and 2000 and 107,500 for 2001; the cap peaked at 195,000 for 2001, 2002, and 2003. Nonprofits and certain educational institutions are exempt from the cap. See US Department of Labor, “TITLE IV--AMERICAN COMPETITIVENESS AND WORKFORCE IMPROVEMENT ACT,” http://www.doleta.gov/h-1b/pdf/acwia_a98.pdf; US Citizenship and Immigration Services, “Initial Guidance for Processing H-1B Petitions as Affected by the ‘American Competitiveness in the Twenty-First Century Act’ (Public Law 106-313) and Related Legislation (Public Law 106-311) and (Public Law 106-396),” June 19, 2001, <http://www.uscis.gov/files/pressrelease/ac21guide.pdf>.

⁴² Docquier and Marfouk, “International Migration by Education Attainment.”

States.⁴³ While Europe and North America will continue to regulate immigration, the mix of family reunification, refugee, illegal, and targeted skilled immigration probably will make fine-tuning extraordinarily difficult.

Second, economic growth, linked in part to underlying demographic dynamics, may tamp down the pressure to migrate: As China and India catch up in terms of per capita income and economic development, their citizens will have less motivation to leave. Improvements in the skill level of the national populations of China and India, through the improvements in education mentioned just above, would tend to augment the forces of economic development. Economic development may also generate reverse flows of migrants.

Finally, it is a mistake to think of migration in one direction only. China and India's economic transition is already providing incentives for their overseas migrants (who possess language skills, social capital, local organizational acumen, and the like) to return. Furthermore, Europeans and North Americans will join the flow *into* China and India as opportunities arise; anecdotal evidence suggests that this, too, is already happening. Whether China and India are anticipating these flows is hard to evaluate.

VII. Conclusion

Demographic trends will help shape the pattern of international migration around the world. Shifting age distributions, educational and skill levels, and prior migration (with its attendant flow of remittances, information, and other resources) will affect who moves where in the 21st century.

However, broad economic forces may well outweigh these demographic features. The last few months of world economic turmoil provide witness to the uncertainty. Changes in the fortunes of specific national economies, the geographic shift in demand for certain skills, and the overall health of the global economy are likely to trump the comparatively tortoise-like pace of demographic transition.

The missing piece of the puzzle is the policy pattern in destination countries. They may want and need labor, but new citizens have been less quickly welcomed. The extent to which their own demographic needs spark a shift in immigration policies remains to be seen.

⁴³ Author's tabulations from data extracted on November 07, 2008, from OECD Statistics Portal, www.oecd.org/statsportal.

Data Desiderata

Any researcher could go on at length about gaps in our stock of knowledge. Human geographic mobility within and between nations is imperfectly measured. Aggregate-level counts of persons exist in destination countries (see for example UN and Migration Policy Institute websites and various national statistical agencies). We also have more scattered numbers for sending societies. Ideally, an annual migration origin-destination matrix would allow one to measure the ebb and flow of migration across countries, and model the choice alternative destinations to get some purchase on policy as origin and destination countries shift their behavior. In parallel to this, a paucity of reliable data on monetary flows hinders research.

Perhaps equally important is information about migrants' characteristics. Information about their educational and occupational skills would be useful for the study of labor migration. Data about migrants that are collected at the destination — but not at the source — provide at best an incomplete story. We need to know how migrants compare both to the people they left behind and to those they have joined. Researchers would also like to know about alternative flows to destinations inside and outside of the country.

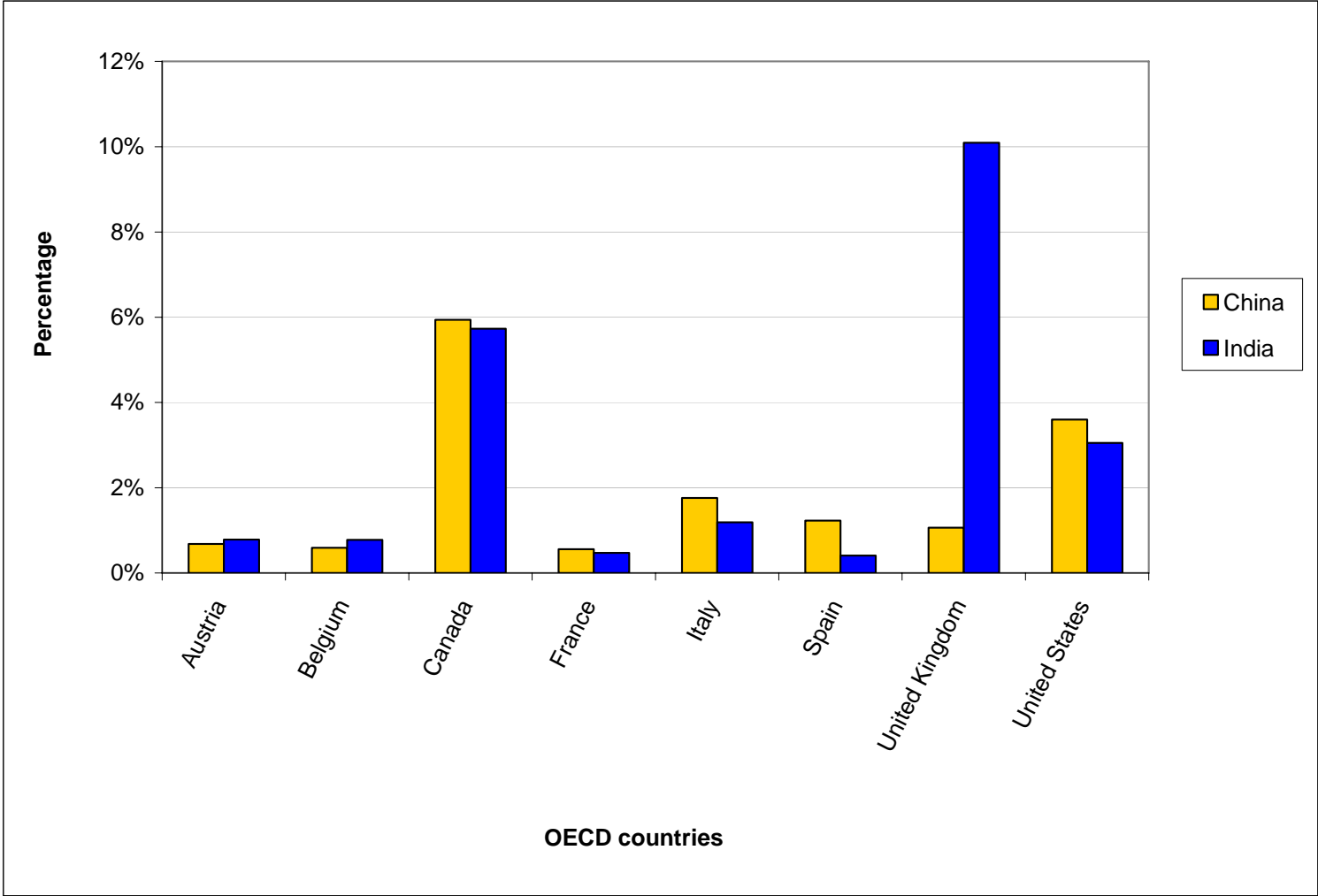
Appendix 1. Selected Gross Lifetime Flows of International Migrants, 2000

Origin Countries	Australia	China	Japan	India	Canada	USA	Mexico	France	Germany	UK	Ireland	Italy	Total
Australia	0	2543	6148	797	20156	75390	274	4510	25355	108131	6109	2390	437,183
China	142780	0	253096	29566	346116	1007331	1785	34792	104331	52228	5684	70805	5,820,295
Japan	25471	7999	0	859	27247	498535	2916	15255	22088	37771	719	8267	884,189
India	95452	16401	5771	0	323171	1037360	391	31727	181854	469569	3425	35756	9,059,424
Canada	27289	2960	7067	1972	0	945084	5644	20231	27177	72766	4083	3188	1,303,791
United States	53694	16276	38804	3267	278574	0	342137	42214	148287	159164	21546	55887	2,247,110
Mexico	1154	4146	1222	5765	44211	9336719	0	6803	50404	5509	317	5357	10,140,846
France	17272	1675	3768	1371	80968	204420	5629	0	187296	97359	6824	31061	1,794,473
Germany	108220	2109	3407	2577	191148	1241903	5529	230162	0	268005	8786	43925	4,078,251
United Kingdom	1036245	4017	10411	5840	624313	823916	2663	90382	211305	0	248528	27347	4,201,866
Italy	218718	1054	1128	1118	319236	536731	3731	437706	587850	109177	3721	0	3,293,565
	4,073,213	512,682	1,294,341	6,270,665	5,717,007	34,634,797	487,546	6,277,188	9,143,243	4,865,539	400,014	1,635,075	

Note: Total gross flow (all origin countries to all destination countries) is reported to be 175,708,021.

Source: Author tabulations from national statistical agencies of the 2000 census rounds or population registers if 2000 census data were not available.

Appendix 2. Migrant Stock of Indian and Chinese Foreign-Born Population as Percentage of Total Foreign Born in Selected OECD Countries



Source: OECD Statistics Portal. <http://stats.oecd.org/WBOS/index.aspx>

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IX. Works Cited

Adams, Richard. 2003. International Migration, Remittances, and the Brain Drain. Policy Research Working Paper 3069, World Bank.

Castles, Stephen and Mark Miller. 2003. *The Age of Migration*. 3rd ed. New York: Guilford Press.

Development Research Centre on Migration, Globalisation and Poverty. 2007. Global Migrant Origin Database.
http://www.migrationdrc.org/research/typesofmigration/global_migrant_origin_database.html.

Docquier, Frederic and Abdelsam Marfouk, 2006. International Migration by Education Attainment, 1990-2000. In *International Migration, Remittances, and the Brain Drain*, eds. , Çağlar Özden and Maurice Schiff, 151-201. Washington, DC and New York: World Bank and Palgrave Macmillan.

Fullilove, Michael. 2008. *World Wide Webs: Diasporas and the International System*. Sydney: Lowy Institute for International Policy.

Goldstein, Alice, Michael White, and Sidney Goldstein. 1996. Migration and Fertility in State Policy in Hubei Province, China. *Demography* 34 (4): 481-491.

Harris, J. and M. Todaro. 1970. Migration, Unemployment & Development: A Two-Sector Analysis. *American Economic Review* 60(1):126-42.

Lam, David A. 2006. The Demography of Youth in Developing Countries and its Economic Implications. World Bank Policy Research Working Paper 4022, October.

Liang, Zai and Hideki Morooka. 2004. Recent Trends of Emigration from China: 1982-2000. *International Migration* 42 (3):145-164.

Martin, Philip. 2008. Another Miracle? Managing Labour Migration in Asia. Paper presented to the United Nations Expert Group Meeting on International Migration and Development in Asia and the Pacific, Bangkok, September 20-21.

http://www.un.org/esa/population/meetings/EGM_Iitmig_Asia/P01_Martin.pdf

Organization for Economic Cooperation and Development. Statistics Portal.

<http://stats.oecd.org/WBOS/index.aspx>

Özden, Çağlar, 2006. Educated Migrants: Is there Brain Waste? In *International Migration, Remittances, and the Brain Drain*, eds. , Çağlar Özden and Maurice Schiff, 227-245. Washington, DC and New York: World Bank and Palgrave Macmillan.

Poston Jr., Dudley, Michael Xinxiang Mao, and Mei-Yu Yu. 1994. The Global Distribution of the Overseas Chinese Around 1990. *Population and Development Review* 20 (3): 631-645.

Preston, Samuel H. and Haidong Wang. 2007. Intrinsic Growth Rates and Net Reproduction Rates in the Presence of Migration. *Population and Development Review* 33 (4): 357-666.

Population Reference Bureau. 2008. *2008 World Population Data Sheet*. Washington: Population Reference Bureau.

<http://www.prb.org/Publications/Datasheets/2008/2008wpds.aspx>

———, Glossary of Terms. <http://www.prb.org/Educators/Resources/Glossary.aspx>.

Pritchett, Lant. 2006. *Let Their People Come: Breaking the Gridlock on Global Labor Mobility*. Washington, DC: Center for Global Development.

<http://www.cgdev.org/content/publications/detail/10174>.

Ratha, Dilip and Zhimei Xu. 2008. China. In *Migration and Remittances Factbook 2008*. Washington, DC: World Bank.

<http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1199807908806/China.pdf>

———. 2008. India. In *Migration and Remittances Factbook 2008*. Washington, DC: World Bank. <http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1199807908806/India.pdf>.

United Nations. 2005. *World Population Prospects: the 2004 Revision*. New York: United Nations.

United Nations. 2007. *World Population Prospects: The 2006 Revision: Highlights*. New York: United Nations.
http://www.un.org/esa/population/publications/wpp2006/WPP2006_Highlights_rev.pdf

US Census Bureau. 2008. International Data Base. <http://www.census.gov/ipc/www/idb/>

US Citizenship and Immigration Services. 2001. Initial Guidance for Processing H-1B Petitions as Affected by the "American Competitiveness in the Twenty-First Century Act" (Public Law 106-313) and Related Legislation (Public Law 106-311) and (Public Law 106-396). June 19. <http://www.uscis.gov/files/pressrelease/ac21guide.pdf>.

US Department of Labor. TITLE IV--AMERICAN COMPETITIVENESS AND WORKFORCE IMPROVEMENT ACT. http://www.doleta.gov/h-1b/pdf/acwia_a98.pdf.

Vaupel, James W. and Elke Loichinger. 2006. Redistributing Work in Aging Europe. *Science* 312 (5782): 1911-13.

White, Michael J. and Leiwen Jiang. 2008. Migration and Spatial Dispersion in China. Paper presented to the Population Association of America, New Orleans, April 17-19.

Williamson, Jeffrey G. 2006. Global Migration. *Finance and Development* 43 (3).

World Bank. 2007. *World Development Indicators*. Washington, DC: World Bank.

Yu, J. and J. Yuan. 1997. The Fertility Status of Chinese Women in Recent Years. 1992 National Fertility and Family Planning Survey, China. Selected research papers in English compiled by China State Family Planning Commission and US Centers for Disease Control and Prevention. Abstract in POPLINE, Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs.