Migration: Who Gains, Who Loses

Arvind Panagariya

Analytically as well as politically, migration is a more complex phenomenon than international trade. The latter involves two-way flows of goods and services that allow the real aggregate income to grow in each country involved. Therefore, the arguments for protection against imports typically rest on the detrimental effects on the income distribution or the existence of prior distortions in other markets.

Migration involves one-way flows, which immediately requires us to distinguish between the "source" and "destination" countries. In addition, we must separately consider the welfare of the migrant himself and also decide whether his welfare forms a part of the source or destination country. In turn, since the migrant physically resides in the country of destination and cannot be excluded from consuming public goods, we are confronted with the issue of fiscal burden imposed by him on the native population.

The literature on brain drain that experienced explosive growth in the 1970s and has been elegantly surveyed by Bhagwati and Rodriguez (1975) continues to provide a useful framework for analyzing many of the current issues in the migration debate. Therefore, my discussion below draws heavily on that literature. I begin with the introduction of the basic issues with the help of the conventional one-good, two-factor model.

1 The Simple Welfare Economics of Migration in a One-Good Model

The one-sector, two-factor model offers us the simplest framework within which we can introduce the key issues migration raises. The model has the obvious limitation

that it does not admit international trade. As such, it is to be viewed as only the starting point for the introduction of the basic issues.

With this qualification, let us call the two factors capital (K) and labor (L). Divide the world into two countries: the capital abundant North and labor abundant South. In Figure 1, the horizontal axis O_SO_N represents the total supply of labor worldwide. We measure labor employed in South to the right from O_S and that employed in North to the left from O_N. Using the only good in the economy as the numeraire, MPL_S and MPL_N represent the marginal product curves of labor in the South and North, respectively.

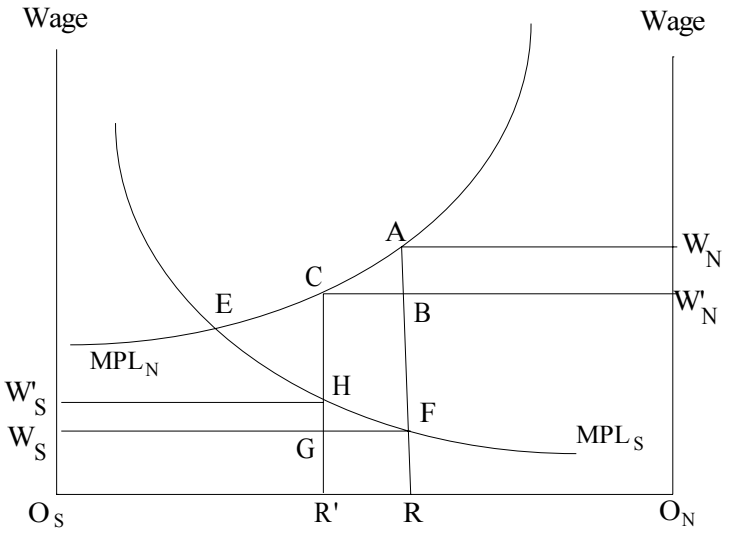

Figure 1: Migration in the one-good model

Suppose now that point R gives the initial allocation of labor between North and South. It is then immediate that the initial northern wage, w_N, exceeds the initial southern wage, w_S. The area under each country's marginal product curve up to the labor-allocation point gives its total income. The rectangle formed by the height of the wage

and the length of labor allocation determines the wage bill with the rest of the income going to capital

Next, allow just one worker to migrate. Given the higher wage in the North, this migration will be from the South to the North. Assume for simplicity that the migrant does not own any capital either before or after migration. Under such circumstances, since the volume of migration is infinitesimally small by assumption, neither the welfare of those left behind in the source country nor that of the native population in the destination country is altered. Only the migrant, who now receives the higher northern wage, benefits. Prior to emigration from the South, he added w_S to the GDP and received w_S; after immigration into the North, he contributes w_N to the income and receives w_N.

If migration is finite, however, the welfare of those left behind in the source country and of the native population in the destination country is affected. This is shown by the movement of RR' workers from the South to the North in Figure 1. Continuing to assume that migrants do not own any capital either before or after migration, this change leads to a loss of triangle FGH to those left behind in the South and the gain of triangle ABC to the native population in the North. Migrants themselves gain the rectangular area BCFG. The world income as a whole rises by ACHF.

Migration also leads to an income distribution effect. In the South, reduced endowment of labor raises the wage. In the North, the labor endowment increases and the effect on the wage is the opposite. If the ownership of factors were specialized so that capital was owned entirely by "capitalists" and the "workers" derived their entire income from labor, the changes would effectively improve the income distribution in the South, worsen it in the North and improve it worldwide.

Note that so far I have avoided any reference to the effect of migration on "national" welfare. This is because the answer here critically depends on whether the welfare of the migrant is included in the welfare of the source or the destination country. If migration is temporary, it makes sense to continue to include the welfare of the migrant in the welfare of the source country. In this case, since the welfare of the migrants rises by more than the decline in the welfare of those left behind, national welfare of the source country rises. Since the native population in the destination country also benefits, migration improves national welfare in both countries.

If migration is permanent, however, the answer is less clear-cut. The reason is that we cannot automatically make the welfare of the migrants a part of the welfare of the destination country in this case. Even permanent migrants rarely cut their ties with the source country and a case can still be made for at least a partial inclusion of their welfare in the source country welfare. This case is further strengthened if the migrants remit a part of their income to the relatives in the source country.

Figure 1 also helps us understand some of the political economy implications of migration. It is evident that if migration is driven exclusively by the wage difference and is entirely free, it will equalize the wages internationally. From the political economy standpoint, the precise wage at which the marginal product curves of the North and the South intersect is crucial. The closer this intersection is to the initial wage in the North, the more likely that the wages in New Delhi (South) will be determined in New York (North). On the contrary, the closer is the intersection to the initial wage in the South, the more likely that the wages in New York will be determined in New Delhi. Migration is

likely to be feared less by the North and desired more by the South in the former than the latter case.

Being based on the one-good model, the analysis up to this point is simple. Complications arise as we make the model richer to allow international trade. Complications also arise when we distinguish between unskilled and skilled migration. Before we consider these features, however, let me take up an issue raised recently in the literature with respect to the welfare of the migrant.

2 Global Care Chains and the Welfare of the Migrant

The analysis in the previous section suggests that the proposition that the migrant himself gains ought to be rather uncontroversial. Even when we introduce more goods into the model and allow for international trade or formally distinguish between skilled and unskilled labor, the migrant is likely to move only in response to a higher wage in the destination country and would therefore benefit.

One possible objection, however, is that migration in response to the higher wage may require the movement of a non-working spouse who may find her welfare declining on account of the loss of the richer social life in the source country. But since the decision of the household to migrate is voluntary, it is reasonable to argue that the household taken as a whole must see its welfare rise with the costs of social hardship to the spouse more than offset by the financial benefit reaped.

Sociologist Arlie Russell Hochschild (2000) forcefully makes a closely related argument in the context of the global care chains. She argues that the global care chains that bring the Third World mothers to care for the First World children hurt the former and their children. She writes, "(M)ost of the migrant workers…interviewed talked of

going back but it was their wages that went home while they themselves stayed on in the USA or Italy." She further states that being in care chain is "a brave odyssey…with deep costs" and that the poor migrant mother's "child may be getting less motherly care than the First World child." Hochschild concludes in favor of policies that will discourage the global care chains and hence the associated migration.

The argument made by Hochschild is readily countered. For instance, in my review (Panagariya 2000) of the book in which the article by Hochschild appeared, I noted, "Arguably, this is wrong diagnosis and, hence, wrong prescription. It is entirely possible that while the migrant mother brings her loving care to the First World children, not available from their super-busy mom, her own children back home are reared under the loving care of her extended family that is so common in traditional cultures. Moreover, even when this is not true, one must ask whether the educational and other opportunities opened up by the migrant mother's earnings do not outweigh the cost of the children being reared by someone else."[1] I may further add that in so far as the Third World mothers voluntarily decide to take advantage of better economic opportunities in the First World, they are effectively voting with their feet in favor of migration. Since they are free to return but choose not to do so despite the social and psychological costs of separation from their own children, the presumption has to be in favor of migration improving their lot over the alternative.

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[1] In his recent celebrated book, *In Defense of Globalization*, Bhagwati (2004) also write critically of the thesis advanced by Hochschild.

3 The Source Country

I focus on two issues in this section: temporary migration as a development strategy and some asymmetries in the welfare economics of emigration.

3.1 Temporary Emigration as a Development Strategy?

The analysis associated with Figure 1 suggests that if North-South wage differences are large as is indeed the case currently, potential gains from temporary migration to the source countries are large. Using a simple simulation model more than two decades ago, Hamilton and Whalley (1984) concluded that the gains from freeing up migration of labor worldwide were larger than the existing world income at the time. Because North-South wage differences have remained large, these large gains from migration are still available.

In Panagariya (1999), I had proposed that if developed countries insist on a multilateral agreement on investment as a part of the next WTO negotiating round—a bid that seemingly succeeded at the WTO Ministerial Meeting at Doha in 2001 but eventually failed at the Cancun Ministerial Meeting in 2003—developing countries should symmetrically demand an agreement on the temporary movement of workers. My broad argument was that when a factor market is liberalized internationally, the bulk of the benefit goes to the owner of the migrating factor, which receives the higher return prevailing in the destination country. In the case of investment, developed countries are the source countries and developing countries destination countries. Therefore, the benefit of the higher return on investment in the latter would accrue largely to the former. The situation is reversed with respect to labor: here the developing countries are the source countries and will therefore benefit from the higher wage in the developed,

destination countries. The calculations by Hamilton and Whalley (1984) suggest that these gains would be large.

With the removal of the multilateral investment agreement from the negotiating agenda of the Doha Round, my original basis for demanding an agreement for temporary movement of workers no longer exists. Moreover, the United States Congress has now taken the view that the temporary movement of natural persons is an immigration issue and gone on to forbid the United States Trade Representative (USTR) from negotiating on it. Nevertheless, many including Rodrik (2002) and Stiglitz and Charlton (2005) have subsequently embraced the proposal and have been calling for what is now a politically unviable agreement for opening the rich country labor markets to temporary migration from the poor countries as a part of the Doha negotiations.

Alongside, Pritchett (2003a, 2003b) and Kapur and Mchale (2006) have offered variants of "development" strategies based on temporary migration. The premise underlying these proposals is that somehow the conventional development strategies centered on trade openness have failed and we must try something different. And that something may well be temporary migration of workers from the poor to the rich countries.

In my judgment, this is a largely flawed view for two reasons. First, as documented systematically in Panagariya (2004), virtually every successful growth experience during the last half decade has taken place in the presence of rapidly expanding trade and either low or declining trade barriers. As such the premise that the conventional strategy has failed is itself on very shaky grounds. Second, and more importantly, whereas the world markets to trade are open so that a strategy based on

outward-oriented trade policies is readily available, opening the rich country markets to either temporary or permanent migration on a scale significant enough to make a dent in poverty in the vast majority of the poor countries is a pie in the sky.

Thus, leaving aside the exceptional cases such as Mexico, which have a vast common border with a rich country and can count on a large number of their citizens to cross the border illegally if not legally, most developing countries cannot hope to gain significant access to rich country labor markets. Most they can hope is modest expansion of opportunities for skilled emigration as the populations in the United States, Europe and Japan age. Therefore, any development strategy that relies on the emigration of a significant population—skilled or unskilled—to the rich countries has far poorer chances of success than the one that relies on the conventional approach. In the case of Sub Saharan Africa, which is the region in the greatest need of help, it is simply not likely that the rich countries will accept significant number of their unskilled workers in the foreseeable future.[2] And in so far as skilled workers are concerned, given their extreme shortage in the region in the first place, it is even doubtful whether their emigration is a plus for the source countries in the first place (more on this below).

3.2 The Welfare Economics Once Again: Some Asymmetries

It is useful to clarify further the analytics of the impact of emigration on the source country. We saw in Section 1 that absent remittances finite migration within the one-good, two-factor model worsens the welfare of the population left behind. This result need not extend to a model with more goods. Thus, consider the two-good, two-

[2] In a world in which almost fifty years of exhortations have failed to induce most of the rich countries to raise development assistance to 0.7 percent of their respective GDPs, any expectation that they will open their labor markets to assist developing countries is unrealistic.

factor (capital and labor), small-country model. We know that the factor prices in this model are tied to commodity prices as long as both goods produced. Therefore, assuming both goods continue to be produced before and after migration and remembering that the goods prices are given from the world market, even finite emigration leaves the factor prices unchanged. With the rate of return on capital and the wage rate entirely unchanged, those left behind are neither worse off nor better off in the post-migration equilibrium. In this case, even small remittances by migrants will suffice to strictly improve the welfare of those left behind.

If the source country is large, however, migration will change the terms of trade, which will in turn change the factor prices and hence welfare of those left behind. The direction of the change in welfare will depend on the direction of the change in the terms of trade. I will have the occasion to elaborate on the implications of the terms of trade changes for welfare in the context of the host country problem in the next section. Here let me focus on some asymmetries with respect to skilled versus unskilled migration and large versus small countries in the context of the source country problem.

Because unskilled labor is plentiful in most developing countries, few of them view its outflow with disfavor. Any losses along the lines of Figure 1 are more than compensated by remittances. This is true, for example, of Mexico, which actively seeks access to the U.S. market for its unskilled workers. It is also true of the emigration of workers from countries such as India and Pakistan to the oil rich Middle Eastern countries.

This conclusion turns weaker, however, when it comes to skilled migration, especially from smaller countries such as the Sub-Saharan or the Caribbean countries.

When skilled workers leave, the country loses not only the triangular area such as FGH in Figure 1 but also the cost incurred on their education and training. Additional loss can arise if there are significant externalities from these workers to the rest of the population or if their wages happen to be below the value of their social marginal product.

These factors can be potentially particularly relevant to some of the smaller countries in which emigration of skilled workers is an extremely high proportion of their total availability. For example, consider Table 1, taken from Mishra (2006). It shows the percent of labor force that has migrated from various Caribbean countries to the United States between 1965 and 2000 at various levels of education. The last column shows that the proportion of the population with tertiary education migrating from the Caribbean to the United States has ranged from 18 percent for Dominican Republic to 80 percent for Guyana.[3]

If one assumes that skilled workers such as doctors and engineers generate external economies for the rest of the population, their emigration would lead to losses that can be much larger than the triangular loss of FGH in Figure 1. In effect, emigration reduces the available externality and therefore productivity of labor. In terms of Figure 1, the marginal product of labor curve shifts downward, making the loss bigger than the triangle FGH.

Assuming plausible externality parameters, Mishra (2006) computes the loss in production from emigration for the Caribbean countries. Combining this cost with the cost of education, she finds that the total cost imposed by emigration on these countries

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[3] Similarly high emigration rates to the OECD are observed for some African countries: 47% for Ghana (see *Economist* 2005).

more than outweighs the remittances. Thus, despite remittances, these countries are left worse off by emigration.

An important cost imposed by skilled emigration on those left behind in the source country, which has been entirely ignored in the literature and is perhaps more significant than the externality, is the loss of the transfer of income from emigrating skilled workers to the rest of the population. This transfer takes at least two forms. First, skilled workers are likely to contribute disproportionately to the tax revenues that finance the spending on public goods. Second, for a variety of reasons, most notably government regulation, wages of skilled workers in the developing countries are held well below the market wages. For example, many developing countries regulate doctors' fees, setting them well below the market rate. Alternatively, one can imagine that the market demand curve for the services of skilled workers such as doctors itself understates the social marginal benefit of those services. Because the poor lack purchasing power, their ability to pay falls well short of the social value of providing treatment to them. Either way, the wage paid to the skilled workers does not reflect their true social marginal product. It is then easy to show that emigration leads to a larger loss than the triangular loss of FGH in Figure 1.

Thus, in Figure 2, suppose SMB represents the social marginal benefit of the doctors' services as a function of the volume of such services measured along the horizontal axis. Suppose further that the initial supply of doctors is given by point L and the doctors' fee is set at w_S, which is below the social marginal benefit of the service. If LL' doctors now emigrate, the loss to those left behind is not just the triangle EJH but additionally includes the rectangle EFGJ.

While losses such as these from the emigration of skilled workers can be significant for smaller developing countries, they are unlikely to swamp the benefits from skilled emigration accruing to the larger developing countries. The obvious example here is that of India: even the large absolute emigration of skilled workers from it represents only 4.3 percent of its total skilled labor force (Economist 2005). On the other hand, because of its large absolute size in the United States, the Indian diaspora has generated significant benefits for India.

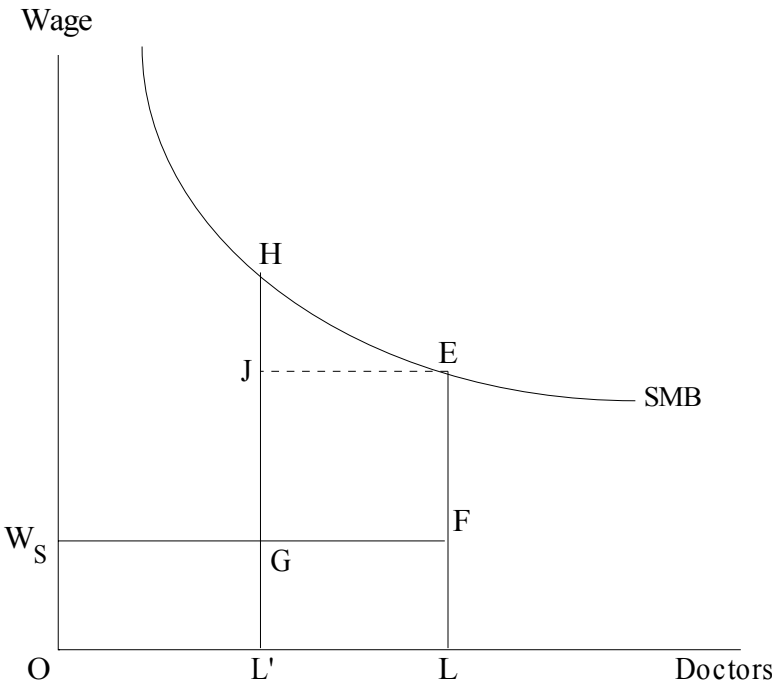

Figure 2: Losses from Skilled Emigration

Benefits from the emigration of skilled workers have accrued in at least five dimensions. First, the Indian diaspora in the United States have contributed significantly to the rapid advancement of the information technology (IT) industry. In turn, this advancement has benefited the Indian IT sector. Second, many Indian immigrants are employed in the top positions in the leading U.S. companies and have played an

important role in bringing the latter to India as potential buyers of Indian goods or investors. Third, the Indian diaspora have also turned into a significant political force within the United States and have been instrumental in promoting better political ties between the two countries. Fourth, the success of the Indian diaspora also generates an "inspiration" effect on those left behind. In particular, it encourages the young in India to seek higher education and excel. In the long run, this effect promises to improve the quality of the Indian labor force. Finally, the Indian diaspora have also contributed significantly financially through remittances. Currently, remittances contribute more than $20 billion annually to the national income of India (Reserve Bank of India, 2005, Table 146). Not all of these remittances come from skilled workers but the share of the latter is very substantial.

4 The Host Country

Whereas the smaller developing countries feel threatened by the emigration of the skilled, the larger developed countries fear the immigration of the unskilled. Recent literature has pointed to two sources of concern. First, immigration undercuts the native unskilled wages and thus has a detrimental effect on income distribution. Second, unskilled immigrants often enter illegally and do not pay taxes. Yet they consume public services such as education and health for which the native population pays through taxes. These immigrants, thus, effectively lower the overall welfare of the native population. Let me consider each of these concerns in turn.

4.1 Immigration and Unskilled Wages

Harvard economist George Borjas is the leading voice among economists expressing both concerns. In Borjas (2003), he works with a one-good model in which workers with different skill (education) levels, whether native or immigrants, are imperfect substitutes for one another. He further assumes that native and immigrant workers with the same skill levels are perfect substitutes for one another. Within this broad framework, he estimates that the effect of immigration into the United States between 1980 and 2000 was to lower the average wages by 3 percent and unskilled wages by 8 percent.

This finding is based on the assumption that immigration has no effect on the stock of capital. But since increased labor force through immigration raises the return to capital, it must also lead to an increase in the stock of capital either through faster accumulation or larger inflows of foreign capital. Borjas finds that once this effect is included, immigration has no effect on the average wage while it lowers unskilled wage by less than 5%.

Subsequently, Ottaviano and Peri (2006) have argued that even these estimates by Borjas are on the larger side. These authors argue that even within the same skilled category, natives and immigrants are imperfect substitutes and end up in very different jobs. For instance, unskilled Mexican workers are found predominantly in gardening, housework and construction while unskilled natives are concentrated in logging. Allowing for such imperfect substitutability, they find that immigration between 1980 and 2000 raised the average wage of native workers by 2 percent and its effect on unskilled wage was either nil or moderately negative.

These findings complement those of Card (2005) who takes an altogether different approach to measuring the effects immigration on the wages. He hypothesizes that if immigrants have an adverse effect on unskilled wages, it must show up in lower unskilled wages in the cities where immigrants are disproportionately more. He finds no such effect.

An important objection to these studies is that they all assume a one-good economy. This assumption has the unrealistic implication that the economy does not engage in international trade. Once we allow for two or more goods, however, the negative relationship between immigration and wages need not hold even qualitatively. Indeed, this fact may be behind relatively weak evidence linking immigration to reduced wages.

To see why, consider the two-good, two-factor, capital-labor model. Suppose there are two countries, a capital-abundant North and labor-abundant South, and tastes are identical and homothetic across all individuals. Assume further that the North has a superior technology for the production of the labor-intensive good in the Hicks-neutral sense. In this setting, free trade in goods equalizes the goods prices but not factor prices. In particular, the return to labor is higher in the North. Relaxing the restriction on labor mobility slightly leads some workers to move from the South to the North. At the original goods prices, increased labor endowment leads to expansion of the labor-intensive sector and contraction of the capital-intensive sector in the North. Because the South loses labor, the opposite change takes place there. In general, we cannot tell, however, whether these changes lead to a reduction or increase in the relative supply of the labor-intensive good. Therefore, the relative price of the labor-intensive good may rise or fall. If it rises, the wage will rise in both the source and destination countries and

if it falls, the wage will fall in both countries. In either case, the effect of migration on the wages as predicted by the one-good model will necessarily be false in one of the two countries. If the price of the labor-intensive good rises, the wage would paradoxically *rise* in the country of immigration and if it falls, the wage will paradoxically *fall* in the country of emigration.

An alternative way to understand this ambiguity is to consider the effect of immigration on trade. When more labor comes into the country via immigration, at the original goods prices, the labor intensive good expands. Assuming the country is an importer of the labor-intensive good, this expansion reduces the need for imports. This means less labor is imported indirectly through trade. Thus, increased supply of labor from abroad through immigration is counteracted by reduced supply of labor through trade. This is one possible reason why labor economists have had great difficulty in finding large effects of immigration in the data.

This point remains valid when we allow for non-traded goods and immigrant workers are concentrated in these goods. In the source country, emigration leads to the contraction of the labor-intensive good and expansion of the capital-intensive good as before. In the destination country, suppose the immigrant worker is employed in housework. If a member of the household who previously did this work is now freed up to enter the labor force, at the initial prices, the effect of this entry is to expand the traded labor-intensive good and contract the traded capital-intensive good. The eventual effect on the factor prices still depends on the changes in the traded goods prices induced by these output (and possibly expenditure) changes.

In an alternative scenario, the member of the household may choose to take greater leisure time instead of adding to the labor supply—this will be the likely case if the immigrant is employed in a task such as gardening that was previously done by the member of the household. In this case, we are likely to get the perverse outcome in the destination country whereby the decreased supply of the labor-intensive good in the source country would raise the price of the latter and push the wages up everywhere.

More realistically, we may distinguish between skilled and unskilled labor. Replacing capital by skilled labor in the two-factor model accomplishes this task most simply. In the housework example, we can then imagine the immigration of unskilled labor making it possible to expand the supply of skilled labor by releasing, for example, a mother from childcare duties. In this case, the effect of immigration is even more likely to raise the unskilled wage.

4.2 Access to Public Services and the Welfare of the native Population

Concerns have also been expressed that immigrants access welfare benefits at substantially higher rates than natives (Camarota 2001) and that they also use education and health services disproportionately more than their tax contributions so that there is a net transfer from the native population to them. According to Smith and Edmonston (1997), the net fiscal deficit for providing services to immigrants in 1996 was $1174 and $229 per native family in California and New Jersey, respectively. Hanson et al. (2001) discuss various aspects of this issue in detail in their long survey article.

A key factor that has received virtually no attention in this context, however, is that while immigrants may impose this fiscal burden on the native population, they also generate benefits for it. For instance, when immigrants performing gardening services

for the native households, they generate consumers' surplus for the latter. Likewise, when they perform housework that allows the members of the native families to participate more fully in the labor force, they help the latter earn income. These gains can be particularly large if the wage at which natives would perform the services provided by the immigrants is prohibitively high so that the households would end up doing their own gardening or housework. A proper evaluation of the impact of immigrants on the native population must take into account this benefit side and not just the cost side on which the literature to-date has focused.

5 Concluding Remarks

Perhaps the most robust proportion on the welfare effects of migration is also the most obvious one: the migrant generally benefits. Once we get past the migrant and focus on the welfare of those left behind in the source country or the native population in the destination country, generalizations are hard to make. For example, for some of the small countries that have lost 50 percent or more of their skilled labor force have probably been hurt by emigration on balance. On the other hand, the conventional losses from skilled emigration in the case of the large countries such as India have most likely been more than offset by benefits in the form of faster development of the information technology industry, increased incentives to seek technical education and a variety of "diaspora effects".

As regards the destination country, the dominant theme in the empirical literature has been that immigration has depressed the wages, worsened the income distribution and imposed fiscal costs on the native population. I have argued that a closer examination raises serious doubts about the validity of each of these themes. The theoretical basis for

the proposition that immigration depresses wages or worsens the income distribution is rather fragile. Unsurprisingly, upon close examination, the empirical evidence available from various studies turns out to reach conflicting conclusions as well.

Finally, I have taken a skeptical view of the proposals for temporary migration as the centerpiece of a development strategy for the poor countries. For one thing, the evidence does simply not support the premise that the conventional model has failed to deliver positive results. In fact, virtually every successful case has followed the conventional strategy of relying on outward-oriented policies. Moreover, leaving aside some exceptional cases such as Mexico, an emigration-based strategy is simply not available. Thus, most Sub Saharan African countries currently face a shortage of skilled workers so that their emigration will actually make matters worse. They could benefit from the emigration of unskilled workers but few rich countries are open to accepting them.

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Table 1: Percent labor force that has migrated to the United States (1965-2000)

(By level of schooling)

	Primary	Secondary	Tertiary
Antigua and Barbuda	3	57	56
Bahamas, The	2	10	58
Barbados	4	20	46
Belize	4	54	62
Dominica	6	56	49
Dominican Republic	5	28	18
Grenada	7	61	75
Guyana	7	35	80
Haiti	2	27	79
Jamaica	5	29	78
St. Kitts and Nevis	8	31	65
St. Lucia	2	13	53
St. Vincent and the Grenadines	4	23	71
Trinidad and Tobago	3	17	68
Average	4	33	61

Source: Mishra (2006)