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Economic integration and migration: The Mexico-US case

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Economic Integration and Migration

The Mexico-US Case

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April 2003

Abstract

This paper explains the evolution and effects of Mexico-US migration, and highlights the NAFTA approach to economic integration, viz., free up trade and investment while stepping up efforts to prevent unauthorized migration. The European Union approach is different: provide aid first, and later free up trade and migration in the expectation that moves toward convergence will ensure minimal migration because trade has become a substitute for migration. The paper concludes that NAFTA will reduce unwanted Mexico-US migration in the medium to long term, and that different initial conditions in Europe mean that there will be relatively little east-west migration when nationals of new entrant EU members achieve freedom of movement.

Keywords: Mexico-US migration, international migration

JEL classification: F22, R23

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1 Introduction

Most regional and international regimes—systems in which national governments yield power to a supranational authority that grants member nations rights and imposes obligations on them—emerge from crisis. For example, after wars end, security regimes are often created: nations pledge mutual support via NATO and similar organizations to prevent or deal with future conflicts. Similarly, economic crises may be followed by trade regimes that require member states to lower barriers to goods from all member nations, as with the WTO. Finally, there can be financial regimes, such as the IMF establishing rules for fiscal and monetary policies before providing loans to governments.

Defence regimes are based on the expectation that mutual benefits will flow from peace, while economic regimes assume there will be increased output from comparative advantage and stable economic policies. The economic case for an international migration regime is weaker, and that established to deal with refugees struggled with a rising number of asylum applicants in the 1990s.¹ Most calls for an international migration regime imagine a system in which there would be fewer barriers to movement over national borders, and thus more migration. There are several speculative estimates of the gains from more international migration based on increased allocative efficiency—moving labour from lower to higher wage areas, with the wage gain reflecting the economic gain. Hamilton and Whaley, in a 1984 general equilibrium modelling exercise, estimated that world GDP could double if barriers to labour migration were removed.

In a more incremental approach to estimating the gains from more migration, the 1992 UNDP *Human Development Report* estimated that, if an additional two per cent of the 2.5 billion strong labour force of developing countries were permitted to move to industrial countries, which means an additional 50 million migrants, and they earned an average US\$ 5,000 a year or a total US\$ 250 billion, and remitted 20 per cent of their earnings or US\$ 50 billion a year to their countries of origin, the extra remittances to their countries of origin would be equivalent to official development assistance.

According to the latest UN Population Division data, in 2000 there were about 185 million international migrants—persons outside their country of birth or citizenship for 12 months or more, up from 120 million in 1990. Some 70 to 80 million of the world's migrants are in industrial countries,² so adding 50 million migrants—all in the developed countries—would almost double their number of migrants, and affect labour markets, employment patterns and wages in sending and receiving nations. The US has

¹ The 1951 Geneva Convention on refugees obliges signatory countries not to refoul or return to danger persons who are outside their countries because of a well-founded fear of persecution because of race, religion, nationality, membership in a particular social group, or political opinion. As the number of asylum seekers—foreigners who arrived in industrial countries and asked not to be returned because they faced persecution at home—rose in the 1990s, the industrial countries spent an estimated US\$ 10 billion a year to care for and process asylum seekers. Members of the EU have been struggling with the challenge of developing common standards and criteria for evaluating and handling applicants as well as for 'burden-sharing', sharing the cost of processing asylum applications and supporting applicants while they await a decision.

² The UN estimate is 150 to 200 million migrants in 2000. There is no country or regional breakdown, but in 1990, when the UN estimated 120 million migrants, 66 million or 55 per cent were in developing countries and 54 million or 45 per cent were in developed countries.

about 32 million foreign-born residents, including 15 million in the labour force, and their presence is estimated to add up to US\$ 10 billion to the US\$ 10 trillion GDP, or 1/10 of one per cent, largely via wage depression. The sign of the migrant economic effect is positive, but its magnitude is small.

The labour force participation rates of migrants are lower in Europe. If we assume that migrants in all the industrial countries, which have a GDP of US\$ 25 trillion, currently add 1/10 of one per cent to GDP, the migrant gain is US\$ 25 billion a year. If doubling the number of migrants doubled the gain, it would be US\$ 50 billion a year. Adding US\$ 50 billion to the GDP of industrial countries is about equivalent to their current ODA to developing countries. To put US\$ 50 billion in perspective, if industrial country GDP grows by 2 per cent a year, it rises by US\$ 500 billion, which means that doubling the number of migrants in the industrial countries has an economic impact equivalent of about one month's 'normal' growth.

These data suggest that the economic gains from current levels of immigration are relatively small, and that even a doubling of current levels would not dramatically add to growth. As with most economic activities, increasing migration highlights competition between competing goods—a faster rising GDP may be coupled with more unemployment and/or inequality, *ceteris paribus*, for workers who compete with the additional migrants. Without social safety nets for such workers which are rare compared in comparison to Trade Adjustment Assistance programmes for workers displaced by freer trade, these workers can be worse off, and social discontent could result. Furthermore, the process of admitting and integrating additional migrants can be costly.

We focus on the dynamics of change in two migration regimes: Mexico-US migration in the 1990s, especially after NAFTA went into effect 1 January 1994, and migration from eastern to western Europe in the 1990s, with a special emphasis on likely east-west migration after Poland and other eastern and southern European countries become full EU members with freedom of movement rights. We conclude that it is easy to exaggerate the benefits and costs of migration. Economic integration is desirable for its own sake, and we conclude that the additional migration that sometimes accompanies economic integration is a 'reasonable price to pay' for the increased economic efficiency flowing from trade and investment that responds to comparative advantage. However, it is less clear that moving ex-farmers and their children over borders after they are displaced by economic integration is better than re-integrating them into growing home country economies and labour markets.

Table 1
UN Estimates of global migrants, 1965-2000

	Migrants (millions)	World population (billions)	Migrant %
1965	75	3.3	2.3
1975	85	4.1	2.1
1985	105	4.8	2.2
1995	148	5.7	2.6
2000	185	6.1	3.0

Source: UN Population Division.

2 Thinking about migration

Migration is as old as humans wandering in search of food, but international migration is a relatively recent phenomenon: it was only in the early twentieth century that the system of nation-states, passports, and visas developed to regulate the flow of people across borders. Migration is the exception, not the rule, for two major reasons. The first and most powerful is inertia: most people lack the desire and drive to leave home and move away from family and friends. The second is the restriction of movement across national borders. Governments have significant capacity to regulate migration through passports, visas, and border controls.

The growth in the number of nation-states increases opportunities for international migration. There were 190 recognized nation-states in 2000, up from 43 in 1900, and each has a system of passports to distinguish citizens from foreigners, border controls to inspect persons who want to enter, and policies that affect the settlement and integration of noncitizens. Most countries do not anticipate the arrival of foreigners who wish to settle and become naturalized citizens, and some discourage emigration.

There are just five major immigration countries: the United States, Canada, Australia, Israel, and New Zealand. Collectively these countries accept 1.2 million immigrants a year. About 800,000 immigrants each year are officially admitted to the United States; 200,000 to Canada; 75,000 to Australia; 50,000 to Israel; and 35,000 to New Zealand. But these figures account for a small percentage of the estimated annual global immigration, which means that most people who take up residence in another country each year are not accepted as ‘planned immigrants’. Instead, many foreigners move to join family members abroad or seek asylum, are guest workers who are expected to depart after several years of work, or are unauthorized or illegal foreigners who enter and settle in defiance of immigration laws.

International migration is usually a major individual or family decision that is carefully considered. There are two broad categories of migrants: those who decided to migrate to another country for primarily economic reasons, and those who moved primarily for noneconomic reasons (see Table 2). The factors that encourage a migrant to actually move are grouped into three categories: demand-pull, supply-push, and network factors. Economic migrants may, for example, be encouraged to migrate by demand-pull guest worker recruitment, while noneconomic migrants might be motivated to cross borders to join family members settled abroad. A man living in rural Mexico, for example, may be offered a job in the United States by a recruiter, or hear about US job openings on the radio—a demand-pull factor. This potential migrant may not have a job at home, or he may face crop failures, which make him willing to move, a supply-push factor. After obtaining information about US work and wages from a returned migrant, a network factor, he decides to migrate from Mexico to the United States.

The three factors encouraging an individual to migrate do not have equal weights, and the weight of each factor can change over time. Generally, demand-pull and supply-push factors are strongest at the beginnings of a migration flow, and network factors become more important as the migration stream matures. Thus, the first guest workers are recruited, often in rural areas where jobs are scarce. But after migrants return with information about job opportunities abroad, network factors may become more important in sustaining migration, so that even employed workers in Mexico may migrate to the United States for higher wages.

Table 2
Determinants of migration: Factors encouraging an individual to migrate

Type of migrant	Demand-pull	Supply-push	Network/other
Economic	Labour recruitment, e.g. guest workers	Un- or under-employment; low wages; e.g., farmers whose crops fail	Job and wage information flows; e.g., sons following fathers
Noneconomic	Family unification; e.g., family members join spouse	Flee war and persecution; e.g., displaced persons and refugees/asylum seekers	Communications; transportation; Assistance organizations; Desire for new experience/adventure

These examples are illustrative. Individuals contemplating migration may be encouraged to move by one, two, or all three factors. The importance of pull, push, and network factors can change over time.

One of the most important noneconomic motivations for crossing national borders is family unification—a father working abroad wants to have his wife and children join him, for example. In such cases, the anchor immigrant is a demand-pull factor for family chain migration. The migrant’s immediate family may be followed by brothers and sisters, and then their families.

Some migrants are impelled to cross national borders by war and political persecution at home. Some of these migrants qualify as refugees according to the 1951 Geneva Convention which defines a refugee as a person residing outside his or her country of citizenship who is unwilling or unable to return because of ‘a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion’. Countries that signed the Geneva Convention pledged not to ‘refoul’ or return persons to places where they could be persecuted.

Migration is a result of differences: in demographic growth, in incomes, and in security and human rights. These differences are increasing, so international migration is likely to increase in the twenty-first century. A comparison of the demographic evolution of Europe and Africa is instructive. In 1800, Europe had about 20 per cent of world’s one billion people and Africa had 8 per cent. In 2000, the populations of these two continents were almost equal—Europe had 728 million residents and Africa 800 million, giving each 12-13 per cent of the world’s population. If current trends continue, Europe will shrink to 660 million by 2050, or about 7 per cent of the world’s nine billion residents, while Africa will expand to 1.8 billion, 20 per cent of the world’s residents. Demographic trends north and south of the Mediterranean raise a migration question: Will Africans migrate northward, to a Europe that may have ‘excess’ infrastructure and housing for a smaller population? History suggests the answer will be yes—some 60 million Europeans emigrated from a more densely settled Europe to the Americas and Oceania between 1800 and 1915. The issue for Europe and Africa will be how to manage what appears to be an inevitable south-north migration.

Economic trends provide a second example of differences that are likely to increase potential migration. The world’s GDP was US\$ 30 trillion in 2000, and is expected to double by 2030. Economic growth is expected to be fastest in developing countries, but higher incomes in the industrial democracies mean that many young people in

developing countries will be able to earn in one hour abroad the equivalent of a day's wages at home. According to the World Bank, global per capita income averages US\$ 5,000, but per capita incomes in the 25 high-income countries averaged US\$ 26,000 per person in 1999, and US\$ 1,200 in the poorer 175 countries. This means that an average person moving from a poorer to a high-income country can increase her income 22 times; this large income gap explains why migrants often take huge risks to enter high-income countries.

There is a second dimension to economic differences between high-income and poorer countries that suggests increased international labour migration in the twenty-first century. The world's labour force in 1999 was 2.9 billion, and 1.3 billion or 45 per cent of the world's workers were employed in agriculture. In developing countries, incomes in agriculture are generally lower than in urban areas.³ There is a 'great migration' off the land underway in many developing countries that are integral components of the world migration system, including China, Mexico, and Turkey, and this great migration will likely continue in the twenty-first century, with three implications:

- First, ex-farmers everywhere are most likely to accept so-called 3-D jobs (dirty, dangerous, difficult) in urban areas inside their countries or abroad, as seen in Chinese coastal cities, where internal migrants fill 3-D jobs, and abroad, where Chinese migrants are employed in industries that range from services to sweatshops;
- Second, ex-farmers who must find new jobs and sources of income, often make physical as well as cultural transitions when they leave rural areas, making them more willing to go overseas if there is recruitment or a migration infrastructure that can help them to cross borders;
- Third, cities in developing countries have become nodes in the international migration infrastructure—cities are the places to which migrants go to get visas and documents for legal migration, or to make arrangements for illegal migration.

Demographic and economic differences, augmented by the flight from the land in developing nations, promise more migration in the twenty-first century. The third major difference that promises more international migration involves security and human rights. As global conflicts such as the fight between capitalism and communism ended in the 1990s, local conflicts erupted in many areas, leading to separatist movements, new nations, and migration, as in the ex-USSR and ex-Yugoslavia. As the process of nation-state creation continues, there were 43 generally recognized nation-states in 1900, 121 in 1980, and 193 in 1998. In most cases, creating new nation-states leads to a reshuffling of population, as in South Asia and Europe after World War II. However, in some cases, the creation of nation-states can produce migrants without physical movement, as with Russians in the Baltics who were considered to be foreigners in Latvia or Estonia. The creation of migrants as borders move over people may become more common as independence movements spread in, for example, Indonesia.

³ This income gap encourages rural-urban migration, helping to explain why there are shanty towns around many cities in developing countries and why the urban population of the low and middle income countries rose from 32 to 41 per cent of these countries' population between 1980 and 1999.

3 Evolution of Mexico-US migration

The largest volume migration relationship in the world has moved about nine million of the 109 million persons born in Mexico to the US, half since 1990; an additional 1-2 million Mexicans work seasonally in the US. There are about 15 million foreign-born workers in the US labour force of 142 million, including 5-6 million Mexican-born workers, most in formal sector jobs.

Mexico has a labour force of about 40 million, but many of those considered employed in Mexico are self-employed farmers, unpaid family workers, or in the informal sector—the usual indicator of formal sector employment in Mexico is enrolment in the pension system IMSS. In 2001, there were 12.4 million Mexican workers enrolled in IMSS, and their number was forecast to rise to 13.1 million in 2003, or about 350,000 a year (Estudios Económicos y Socio-Políticos de México). Thus, about 30 per cent of the 18 million Mexican-born workers with formal sector jobs are in the US.

Migration has been the major relationship between Mexico and the US for most of the twentieth century, and Mexican migrants were negatively selected, that is, those who left Mexico had less education and skills than the average Mexican (Martin 1993). The movement of Mexican migrants to the US has often led to tensions that, on some occasions, slowed economic integration. For example, successive Mexican governments complained about the poor treatment of Mexican citizens in the US, and the nationalism engendered by attacks on the US is one reason why Mexico has refused to open its nationalized oil industry to foreign (US) investment. A standard treatment of Mexico-US relations until the 1990s is entitled 'Distant Neighbours', reflecting the lack of a common vision, and a common Mexican saying has been, 'Poor Mexico, so far from God, so close to the US'.

History helps to explain why Mexico-US migration may have slowed economic integration. There has been Mexico-US migration throughout twentieth century, but only during two periods, 1917-21 and 1942-64, were there formal bilateral agreements to regulate the employment of most of the Mexican migrants in the US. At the beginning of World Wars I and II, US farmers were able to persuade the US government to make 'exceptions' to immigration rules to admit Mexican guest workers, and both guest worker programmes ended after pressure from US labour and civil rights groups, who argued that the Mexican migrants depressed wages and increased unemployment for similar US workers.

Both guest worker or Bracero programmes were followed by illegal Mexico-US migration, as especially rural Mexicans dependent on rain-fed farming learned to go north for higher wages and more opportunities. At first it was very easy to cross the border—the US Border Patrol was not established until 1924, after the first Bracero programme ended. The Depression led to 'repatriations' of Mexicans to free up jobs for Americans, and practically stopped Mexico-US migration, and there was little Mexican migration north during the 1930s, the era in which midwestern Dust Bowl farmers moved to California hoping to start anew. They found instead large and labour-intensive factories in the fields that were accustomed to paying relatively low wages to seasonal workers who were available when needed, and John Steinbeck's 1940 novel, *The Grapes of Wrath*, gave an emotional impetus to the common economic prescription of the time, viz., break up large farms that needed armies of seasonal workers and were viable only if they paid workers seasonally.

There was a great deal of sympathy for structural changes in farming to reduce the employment of seasonal workers, but low farm wages had been capitalized into higher land prices, and landowners unwilling to see land prices fall used the outbreak of World War II to win a new Bracero programme (Craig 1971; Martin 1996: Ch 2). During WWII, Braceros, prisoners of war, interned Japanese, and state and local prisoners were farm workers, and their presence in the fields sent an unmistakable signal to US farm workers: economic mobility would require occupational and often geographic mobility; getting ahead in the US labour market would require getting out of the farm work force.

After WWII ended, the Bracero programme expanded. Farmers assumed that seasonal workers would continue to be available at US minimum wages, and they expanded the production of labour-intensive crops as the baby boom increased demand for fruits and vegetables, water became available to expand irrigated farming, and the interstate highway system lowered transportation costs between the west coast, which produced 40-50 per cent of fruits and vegetables, and the east coast, home to most consumers. The growth of labour-intensive agriculture in areas dependent on Braceros reflected both an expanded western agriculture and the displacement of eastern farmers. California became the number one farm state in 1950, and displaced New Jersey as the garden state supplying fruits and vegetables to eastern population centres.

The Bracero programme ended in 1964, amid predictions that labour-intensive agriculture would shrink in areas that had been dependent on Bracero workers, and that processing tomatoes and other commodities that had been picked by Braceros would have to be imported from Mexico. These predictions—by farmers and agricultural researchers—proved to be false. Farm wages rose sharply. Cesar Chavez and the United Farm Workers (UFW) won a 40 per cent wage increase for grape pickers in 1966, increasing their wages from US\$ 1.25 to US\$ 1.75 an hour in the UFW's first contract. In response to this rise in wages, there was a wave of labour-saving mechanization, and there were predictions that the US seasonal farm labour market would soon be like construction labour markets, offering high hourly wages when seasonal work was available, and maximum unemployment insurance benefits when there was no work (Martin and Olmstead 1985).

Mexico-US migration was low during the late 1960s and early 1970s, and US farm workers had their 'golden age', with many in California employed under union contract and earning wages double the minimum wage. However, some of the ex-Braceros had become US immigrants—during the 1960s, a US employer could issue a letter asserting that a foreigner was 'essential' to fill even a seasonal job, and a foreigner could use this offer of employment to become an immigrant. Some ex-Braceros became immigrants in this manner, and the immigrant visa, printed on a green card, made them green-card commuters—Mexicans who worked in the US seasonally, and then returned with their savings to Mexico.

As these green-card commuters aged, many sent their sons north, using false or altered green cards, or simply entering the US illegally. A smuggling infrastructure soon evolved to move rural Mexicans to rural America, and this infrastructure was strengthened markedly by an attempt by the UFW, the dominant US farm worker union, to win 40 per cent wage increases in 1979, when wage-price guidelines called for maximum 7 per cent wage increases. Labour contractors hiring unauthorized workers broke many of the strikes, and competition between union hiring halls and labour contractors to supply seasonal workers to farmers were generally won by the

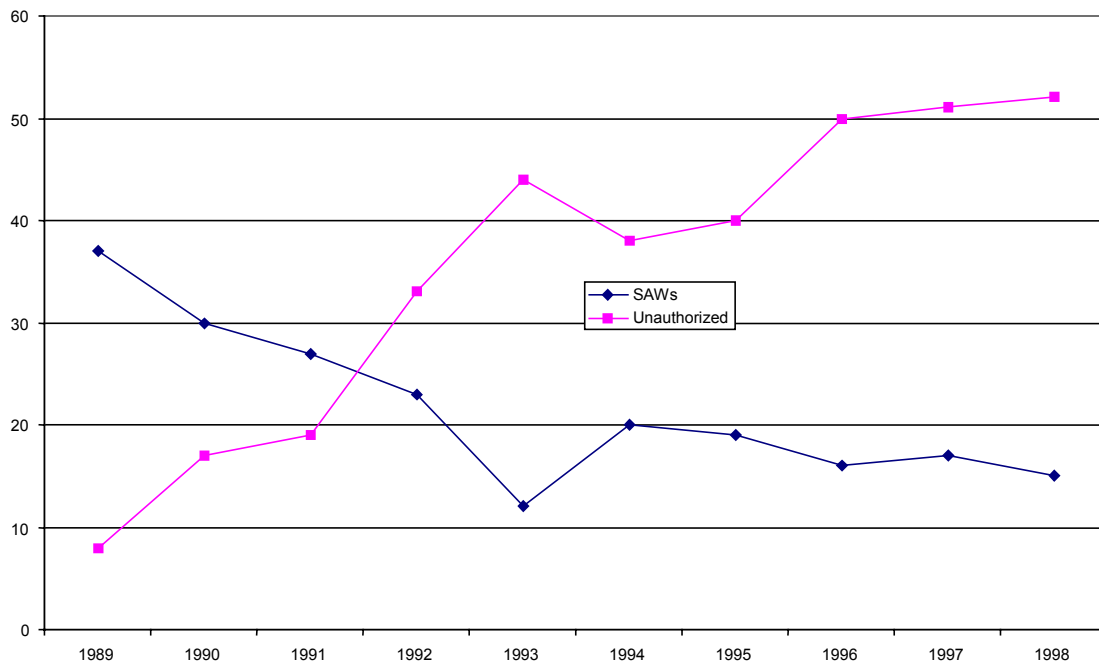
contractors. The number of workers under UFW contract dropped from 60,000-70,000 in the early 1970s to 6,000-7,000 by the mid-1980s (Mines and Martin 1984).

Mexico-US migration rose in the early 1980s with peso devaluations that made work in the US more attractive. One crude indicator of illegal Mexico-US migration—apprehensions of Mexicans just inside the 2000-mile Mexico-US border—reached their all time peak of 1.8 million in 1986, meaning that the US was apprehending an average an average 3 Mexicans a minute, 24 hours a day, 7 days a week. In 1986, two events occurred that, contrary to expectations, led to first more Mexico-US migration, and eventually closer economic integration:

- the US enacted the Immigration Reform and Control Act (IRCA) of 1986 to prevent illegal immigration by imposing sanctions on US employers who knowingly hired unauthorized foreigners.
- Mexico changed its economic policy from import substitution to export-led growth.

Both policy changes increased Mexico-US migration. IRCA included two legalization or amnesty programmes—the theory was that Mexicans and other unauthorized foreigners who had developed an equity stake in the US should be integrated, not deported. However, the legalization programme for unauthorized farm workers—the Special Agricultural Worker (SAW) programme—was rife with fraud, and wound up allowing over one million Mexican men to become US immigrants. There were only

Figure 1
Shares of legalized and unauthorized US crop workers, 1989-98



Source: National Agricultural Workers Survey (available at: www.dol.gov/dol/asp).

about six million Mexican men in rural Mexico in the mid-1980s, and the SAW programme gave one-sixth of them immigrant visas. However, their families were deliberately excluded from the SAW programme, under the theory that SAWs would commute to seasonal farm jobs as green card commuters. (Martin 1994). The SAWs did not behave as expected. Many quickly left the farm labour force, moved to California cities where their families joined them, and were replaced by unauthorized workers in the fields.

US-trained economists achieved political power in Mexico and, under President Carlos Salinas, Mexico proposed the North America Free Trade Agreement in 1990, after the Canada-US Free Trade Agreement went into effect in 1989. In an ironic twist, the major opposition to NAFTA turned out to be in the US, where Ross Perot won 20 per cent of the vote in his 1992 campaign for president in part predicting that NAFTA would lead to a 'giant sucking sound' of US jobs moving to Mexico. Despite strong opposition from Perot, US unions, and environmental groups, NAFTA entered into force on 1 January 1994.

4 NAFTA and the migration hump

NAFTA lowered barriers to trade and investment in Canada, Mexico, and the US, and was expected to spur job and wage growth in the three member countries. Most of the benefits of this freer trade were expected to accrue to Mexico, and most of the adjustments to freer trade were also expected in Mexico. The most frequently cited study of NAFTA's likely effects concluded that Mexican employment, which was projected to be 30 million in 1995, would be 609,000 or two per cent higher because of NAFTA. Mexican wages were projected to be 9 per cent higher with NAFTA, largely because foreign investment (and Mexican money staying in Mexico) was expected to raise the value of the peso relative to the dollar, reducing Mexican living costs (Hufbauer and Schott 1992: 47-64).

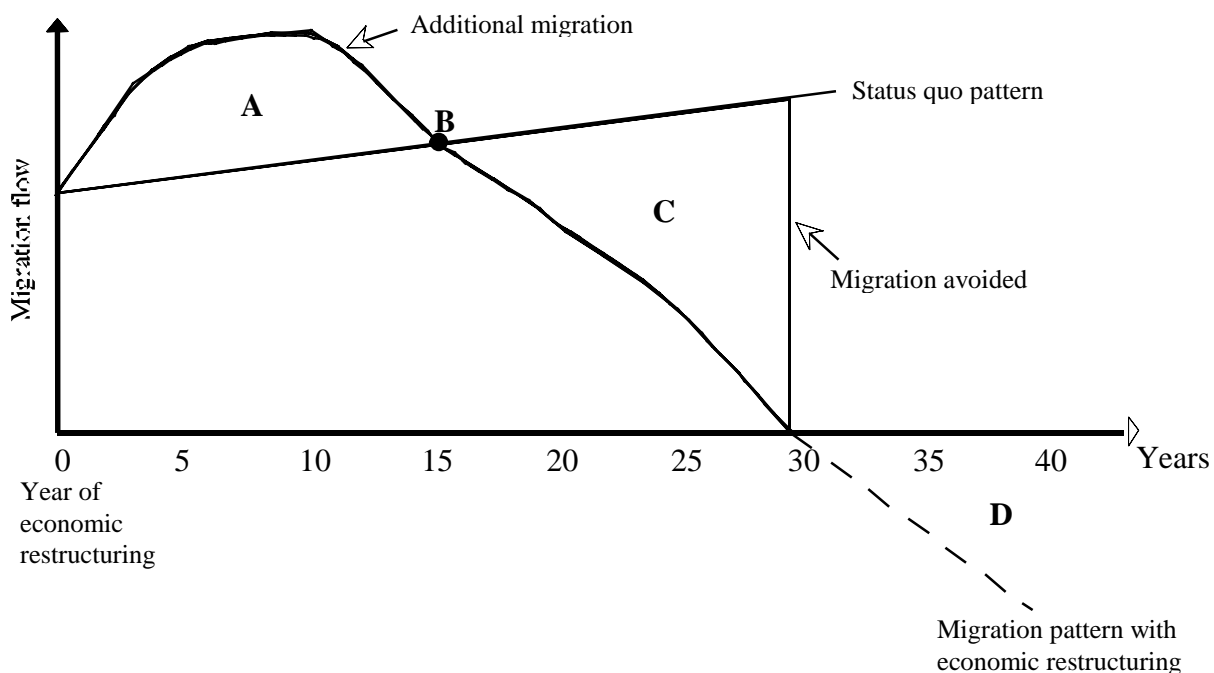
Virtually all studies agreed that most of the additional jobs due to NAFTA would be in Mexico. Some anticipated displacement in Mexico, and predicted additional migration, in part to urge the US and Mexican governments to create a North American Development Bank to create jobs in rural Mexico. For example, Hinojosa and Robinson (1991) estimated that NAFTA would displace about 1.4 million rural Mexicans, largely due to changes in Mexican farm policies and freer trade in agricultural products, and projected that 800,000 of those displaced would stay in Mexico, and 600,000 would migrate (illegally) to the United States over 5-6 years. Hinojosa-McCleery (1992) developed a Computable General Equilibrium (CGE) and sketched three migration scenarios. In 1982, they estimated there were 2.5 million unauthorized Mexicans in the US, the cost of migrating illegally was US\$ 1,200 (smuggling costs and lost earnings), and the US earnings premium was US\$ 3,000 a year (US\$ 4,000 a year in the US, and US\$ 1,000 a year in Mexico). Their migration scenarios: no more unauthorized Mexico; US migration; four million Mexican illegals, and five million Mexican illegals. They thought the middle scenario could be achieved with a guest worker programme (what they called managed interdependence).

Martin (1993) examined NAFTA's likely impacts on Mexican and US agriculture because most Mexican-born US residents came from rural areas in Mexico, and most

had their first US job on farms. After examining how demand-pull factors in the US would evolve after NAFTA, as well as supply-push factors in Mexico and networks that enabled Mexicans to find US jobs, he concluded that the flow of Mexicans to the US, running at 200,000 settlers and one to two million sojourners a year in the early 1990s, would likely increase by 10 to 30 per cent for 5 to 15 years, producing a migration hump. However, Mexico-US migration should then decline for demographic and economic reasons. If a US demand-pull for migrants persisted even after Mexico-US migration slows, migrants could come from Central America, China, or elsewhere—there has been a sharp upsurge in Central American migrants in rural America. The Clinton Administration used the migration hump to argue that Congress should approve NAFTA because the additional migration—the hump—was a reasonable price to pay in the short run for less Mexico-US migration in the long run.

The migration hump is pictured in Figure 1, where the solid line represents the status quo migration flow and the broken line depicts a migration hump, with the volume of migration on the Y-axis and time on the X-axis. Economic integration leads to an increase in migration over the status quo trajectory, and this additional migration is represented by **A**. However, economic integration also speeds up economic and job growth, so that migration falls and the volume of migration returns to the status quo level at **B**. As migration continues to fall, area **C** represents the migration avoided by economic integration.

Figure 2
The migration hump



5 Trade theory and the migration hump

The critical policy parameters are A, B, and C—how much does migration increase as a result of economic integration (A), how soon does this hump disappear (B), and how

much migration is 'avoided or saved' (C)? Generally, three factors must be present for a migration hump: a continued demand-pull in the destination country with economic integration, an increased supply-push in the origin country as a result of economic integration, and migration networks that can move workers across borders. Comparative statics—before and after equilibrium points—usually ignore the process of adjustment to freer trade, and assume that trade is a substitute for migration in the short and long term. The migration hump, by contrast, is a short-run relationship between migration and economic integration.

Standard trade theory allows trade and migration to be complements when basic assumptions, including identical production technologies; factor homogeneity; constant returns to scale; instantaneous adjustment; and perfect competition, full employment, and complete markets, are relaxed. For example, if a country in the North (N) is capital rich, and a country in the South (S) is capital poor, the two countries share the same technologies or production functions, and the same two factors of production, capital and labour, are used in each country to produce two goods, free trade means that each country will export the good that is more intensive in the factor that is relatively more abundant—Country N will import labour-intensive goods from Country S, and Country S will import capital-intensive goods from Country N.

Stolper and Samuelson considered the effect on factor prices (wages and the return on capital) of an import tariff that increases the domestic price of the import-competing good relative to that of the export good. Under the Heckscher-Ohlin assumptions, plus the assumption that the underlying trade pattern is not altered by the tariff, an import tariff increases the real reward of the relatively-scarce factor and lowers the real reward of the other factor, or a tariff levied against labour-intensive imports in Country N will increase Country-N wages. Migration in response to international wage differentials means that protectionism in Country N should increase migration from the South, or the protection of capital-intensive industries in the South should spur emigration. Trade liberalization, on the other hand, shifts the production of labour-intensive goods to Country S and capital-intensive goods to Country N, which in turn puts upward pressure on Country-S wages, discouraging emigration.

However, if there are technology differences, trade and migration can be substitutes. Corn in Mexico has been highly protected; a guaranteed price of corn that was twice the world price was the social safety net in rural areas but, despite 2-4 million corn farmers, 75,000 corn farmers in Iowa in the mid-1990s produced twice as much corn, at half the price, as Mexican farmers. The US produced about 10 times more corn than Mexico and, using herbicides and other capital inputs, can export corn to Mexico and undercut Mexican farmers, who use labour-intensive production methods. The Mexican corn example illustrates the fact that, if the basis for trade is differences in technology, trade and migration may be complements, as e.g. trade in computers and software is accompanied by the migration of computer specialists.

Factor productivity differences between countries are one reason to trade, but *reasons* for productivity differences can help to explain migration behaviour. Suppose Mexican workers are more productive in the US than they are in Mexico because of better public and private infrastructure. In such cases, migration can complement trade, as occurred when much of the Mexican shoe industry moved from Leon, Mexico to Los Angeles, CA in the 1980s—shoes produced with Mexican workers in Los Angeles were exported to Mexico. Migration, by converting less productive Mexican workers into more

productive US workers, in this case discouraged the production a labour-intensive good in Mexico, and encouraged migration to the US.

A third assumption of the standard trade model is that (identical) production functions in the two countries exhibit constant returns to scale. However, if costs of production fall as output expands, especially in US industries that employ Mexican migrant workers, economic integration may expand US production, thereby increasing the demand-pull for migrants. This means that, when the basis of trade is economies of scale, migration and trade can be complements.

The fourth assumption of the standard trade model is that adjustments to changing prices and wages are instantaneous, and the process of adjustment does not affect the comparative-static equilibrium. With economic integration, workers are often displaced, but it may take time for them to find new jobs. For example, freeing up trade in corn may displace Mexican farmers, but there may be few jobs created by economic integration in the areas in which they are displaced. Furthermore, the new jobs created via economic integration may hire different types of workers than were displaced, as when older men are displaced from corn farming, but border-area *maquiladora* factories that expand with integration hire mostly young women. If the displaced Mexican men have better network connections and opportunities in the US labour market than in other Mexican labour markets, there may be more migration with more trade.

The fifth assumption of trade theory is that markets are perfect; there is full information, no risk, and no transactions costs. The new economics of labour migration is based on relaxing this assumption, showing that, for example, a family with a migrant abroad may experiment with a risky new crop, knowing that there will be remittances if the crop fails. Similarly, remittances that enable some families to buy TVs may encourage others to send a migrant abroad so that they can keep up with the neighbours.

6 Mexico-US migration in the 1990s

The fact that relaxing the assumptions of the standard trade model can allow trade and migration to be complements, especially in the short term, is well appreciated, but there has been less effort to determine how much additional migration there is or is likely to be with economic integration. Mexico-US migration rose in the 1990s with closer economic integration, and this section outlines Mexico-US migration patterns and reasons for the upsurge in the 1990s.

NAFTA went into effect 1 January 1994. There was an immediate political crisis in Mexico, as Zapatista rebels launched an armed campaign in the state of Chiapas. In March 2002, the leading presidential candidate was assassinated. In an effort to bolster the new candidate, the Mexican money supply was increased sharply in the run-up to July 1994 elections, enabling President Ernesto Zedillo to eke out a win over a very strong challenges from candidates on the left and right.⁴

⁴ The Institutional Revolutionary Party (PRI) was in power from 1930 to 2000, and Zedillo received 49 per cent of the vote in 1994, the National Action Party (PAN) 26 per cent, and the Democratic Revolution Party (PRD) 17 per cent.

Many economists urged outgoing President Salinas to devalue the peso, which was kept artificially high by the foreign portfolio investment pouring into Mexico, but Salinas resisted, wanting to be the first outgoing president to not devalue the currency. However, in December 1994, just as Zedillo was being sworn in, Mexican and foreign investors began converting pesos into dollars at the fixed 3.45 to US\$ 1 rate, Mexico ran out of reserves to support the peso, and the peso fell to 6 to US\$ 1 (in July 2002, it was trading at 10 to US\$ 1). The result was Mexico's worst economic crisis in decades. In fall 1994, there were 10 million workers in formal sector jobs (enrolled in IMSS); by the end of 1995, there were 9 million. Apprehensions of Mexicans just inside the US border surged: to 1.1 million in FY94; 1.4 million in FY95; 1.6 million in FY96; 1.5 million in FY97; and 1.7 million in FY98. The Mexican economy began to recover in 1996, and by 2001, the number of workers enrolled in IMSS surpassed 12 million, as both foreign investment and trade increased sharply.

Much of the growth in Mexico during the 1990s occurred in *maquiladoras*, foreign-owned plants in border areas that import components duty free, assemble them into goods, and then export the goods; the value added in Mexico—wages and utilities—is typically 10 to 20 per cent of the value of the finished good. The maquiladora or Border Industrialization Programme was launched by the US and Mexico in 1965 to provide jobs for ex-Braceros and their families that had moved to the border, and now had no source of income.⁵ In line with its closed economy strategy of protecting local industries, Mexico required that maquiladora goods be exported, and as the finished goods entered the US, duty was charged only on the value added by Mexican assembly operations.

The number of maquiladoras and their employment increased sharply after several peso devaluations in the 1980s. There were 12 maquiladoras employing 3,000 workers in 1965, 600 employing 120,000 workers in 1980, 2,000 employing 472,000 workers in 1990, and 4,000 employing a peak 1.3 million workers in fall 2000—maquiladora exports of US\$ 53 billion surpassed oil as Mexico's leading source of foreign exchange in 1998. At the height of the maquiladora boom, when maquiladora workers were being paid US\$ 1.50 to US\$ 2 an hour (including benefits), the state of Baja California posted signs on the border advising migrants attempting illegal entry saying: 'Migrant Friend: Don't put yourself at risk. Baja Californians will give you a hand'.

Maquiladoras have been a major job-creating success, but they never created jobs for ex-Braceros. The Braceros were young men, while most of maquiladora workers were young women—over 60 per cent in 2000. Maquiladoras preferred to hire young women from the interior who were getting their first job to men who had worked in the US, or wanted to work in the US, believing that the young women were more likely to be satisfied with repetitive assembly line work. Despite the preference for young women, maquiladora workers have very high turnover. A maquiladora must often hire two workers to keep one job slot filled, an annual turnover rate of over 100 per cent, which many analysts attribute to uniform wages and benefits, that is, to monopsony employer behaviour. Maquiladora wages in dollar terms in 2002 remain below 1994 levels.

⁵ Many Braceros moved to the border area to increase their chance of being selected. The US employer had to pay transportation from the workers' place of recruitment to the US job, and employers thus preferred border-area workers.

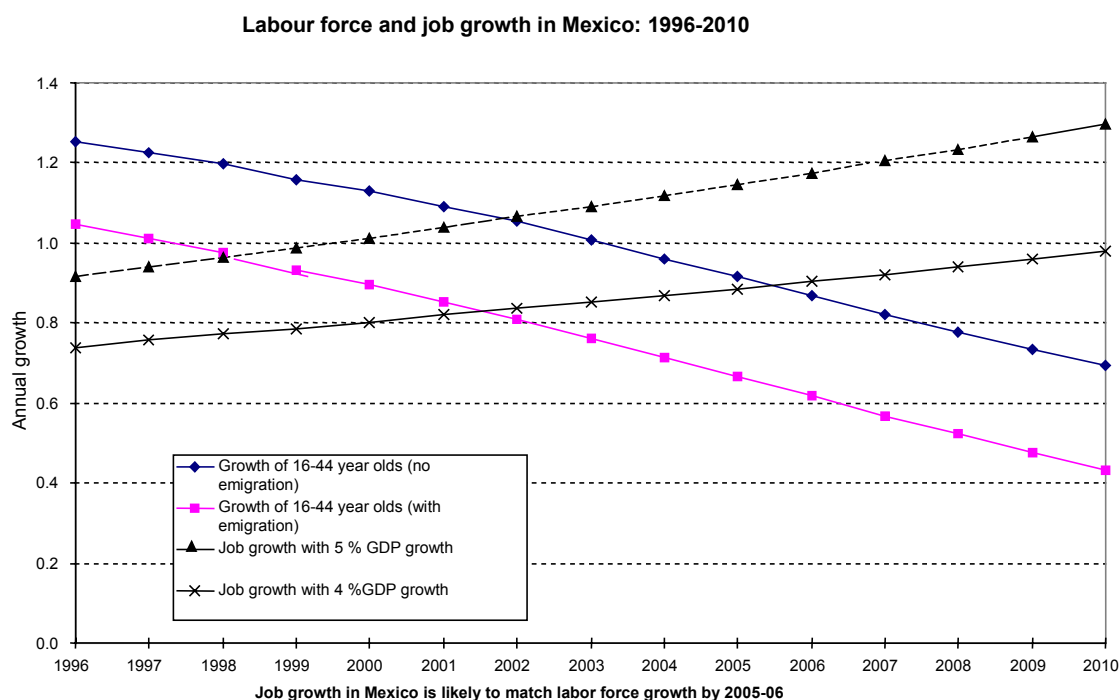
During the late 1990s, the Mexican economy and Mexicans migrated northward with maquiladora expansion. It is very hard to sort out cause and effect between economic integration and Mexico-US migration. Clearly, the economic integration symbolized by maquiladoras drew many Mexicans to the border area, but there is little smoking gun evidence of a trampoline effect or stepping stone migration, in which internal migrants to border areas become international migrants. The clearest smoking gun involves the 100,000+ indigenous Mexicans, Mixtecs and Oaxacans from southern Mexico, who were recruited to work in Mexico's export-oriented vegetable industry in the northern part of the country. Their jobs end in the spring, just as the demand for farm workers in the US increased, and some of them continued on to the US. One survey of Mixtec workers in the US in the late 1990s found that two-thirds had worked in northern Mexican export-oriented agriculture before arriving in the US (Zabin *et al.* 1993).

7 Mexico-US migration in the twenty-first century

The migration hump has both an up and a down side. Many pessimists look at the 1990s upside of the Mexico-US migration hump and see only continued Mexico-US migration. But Mexico-US migration may fall faster than expected for demographic and economic reasons. As a result, the US border control build up may be completed just as Mexico-US migration begins to fall for other reasons, and enforcement may get the credit that demography and economics deserve.

Mexico's population of 100 million is growing by 2 per cent a year. In the late 1990s, legal Mexican immigration was 150,000 to 200,000 a year, and unauthorized Mexico-US migration was even higher. Mexican population growth rate peaked at 3.3 per cent

Figure 3
Demographic and job growth in Mexico, 1996-2010



in 1970, but in 1974, the Mexican government launched a family planning programme that helped birth rates to fall sharply: fertility dropped from an average 7 children per woman in 1965 to 2.5 by 2000. Declining fertility reduces migration directly and indirectly, because households with fewer children tend to keep them in school longer, reducing the need for jobs for young people entering the labour market, and educated Mexicans are less likely to emigrate.

Mexico has a major job creation challenge, but the number of persons turning 15, the age of labour force entry in Mexico, is projected to drop by 50 per cent between 1996 and 2010, from about one million a year to 500,000 a year. According to the IMF, there is a 2-1 relationship between economic and job growth in Mexico, that is, 2 per cent economic growth is associated with 1 per cent job growth. The IMF includes all types of employment, and thus uses an employment base of 30 million, so that each 1 per cent job growth increases employment by 300,000, including 100,000 formal sector jobs. If Mexico can achieve its economic growth target of 6 per cent a year, then the declining additional workers and rising additional jobs X-curve will cross sometime in the next few years. The next challenge would be to upgrade jobs and wages.

8 EU enlargement and migration

The EU is expanding eastward, planning to accept as members up to 13 eastern and southern European countries—ten in the so-called first round(s)—Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia—and then perhaps three more—Bulgaria, Romania, and Turkey. Since wages are lower in the ‘accession countries’, migration to the current 15 EU countries from these new entrants is expected to increase.

Just as with economic integration in North America, accession to the EU effectuates economic, political, and institutional changes that are most pronounced in the poorer countries. When estimating how much additional migration could result from EU enlargement, changing institutions can make predictions of migration effects invalid, the so-called Lucas-critique of projections of large-scale change. Lucas noted that, if there are changes in institutions, then it is hard to extrapolate from past large-scale changes, so that using the experience of integrating southern European nations may be misleading if applied to from Eastern European nations.⁶

There have been many attempts to project the additional migration due to EU expansion. Some are based on how individuals making rational decisions about wage and unemployment differences would respond to migration opportunities, with projections based on aggregate models, while others rely on opinion polls that ask people about their migration plans. The surprise is that, regardless of methodology, the models reach similar conclusions—3 to 4 per cent of the residents of the 10 first-round

⁶ Some researchers try to overcome this fundamental methodological problem by the inclusion of so-called country-specific effects in their models, using a country-specific intercept that remains constant over time. However, it is hard to define such an intercept for Eastern European nations when assessing the effects of freedom of movement, since they have had no historical experience of free migration for decades, and because East Europeans have not had freedom of movement rights in the EU.

East European nations may migrate west within a decade of freedom of movement.⁷ In most models that include Bulgaria and Romania, half of the migrants are projected to come from Bulgaria and Romania, which makes it less likely that they will be among first-round entrants, and thus not likely to achieve freedom of movement quickly.⁸ It should be emphasised that the 3 to 4 per cent migration is a gross estimate—most studies expect half of the migrants who move west to return to their countries of origin within a decade, so that net migration would be 1.5 to 2 per cent. The bottom line is that a 3 to 4 per cent gross migration from Eastern Europe would increase the population of the EU 15, about 376 million, by about 1 per cent gross, or four million, and 0.5 per cent net, about two million.

Given these projections, and past unfounded worries about south-north migration from Italy, Greece, Spain and Portugal with EU enlargement, why did Germany and Austria take the lead in arguing that freedom of movement from Eastern Europe should be restricted to avoid ‘too much’ immigration? One criticism is that eastern European nations are not similar to southern European nations. For example, eastern European nations are poorer: southern European nations such as Greece, Portugal and Spain had per capita incomes that were about 2/3 of the EU average, while the ten Eastern European nations have per capita incomes that are 1/3 of EU levels. This means that, even if economic growth in Eastern Europe is faster than in the EU-15, as projected in most studies, it may still take 40 to 50 years for per capita incomes to converge. Austria and Germany insisted that the EU not grant freedom of movement rights to nationals of newly entered Eastern European nations for at least two years (2005-06, if they enter in 2005). After this two-year wait, the current 15-EU members could, under the freedom of movement compromise, individually prevent migration for another three years (2007-09), and then a further two years, for a maximum seven-year wait (2010-11). Eastern European candidates for EU membership eventually accepted this 2-3-2 freedom of movement plan.

9 Conclusions

International migration has great potential for disrupting orderly relations between nations, despite the fact that the number of migrants is relatively small. In a world of six billion, the number of international migrants rose sharply in the 1990s, and led to efforts to reduce immigration in Europe by, *inter alia*, preventing the entry of asylum applicants, and to reduce welfare costs associated with immigrants in the US by restricting their eligibility. All the industrial democracies increased expenditures on immigration control, and many joined regional forums to discuss migration issues.

With trade as a substitute for migration, economic integration should reduce economically motivated migration. However, in the short run, migration and trade can increase together, producing a migration hump when migration levels are viewed over

⁷ One of the most quoted studies of potential migration from Eastern European countries estimated that 335,000 workers from all of Eastern Europe would migrate west the first year of freedom of movement. After this migration hump, the number of migrants would shrink to 160,000 a year by 2010, with 80 per cent of the migrants moving to Austria and Germany (Boeri and Brucker 2000: 15).

⁸ The ten are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia.

time. The US attempted to reduce Mexico-US migration with trade, and NAFTA went into effect in January 1994 in part to enable Mexico to export tomatoes, rather than tomato pickers. However, during the 1990s, Mexico-US migration increased sharply. Mexican economic growth was very uneven, economic integration added jobs for new labour force entrants, not those displaced by trade, and the US economy boomed, providing a demand-pull for Mexicans with US contacts.

High levels of Mexico-US migration between 1995 and 2005 should not obscure the fact that migration may soon diminish for demographic and economic reasons. A combination of the sharp drop in Mexican fertility in the 1980s and 1990s, economic and job growth, and the near completion of the exodus out of agriculture should reduce Mexico-US migration after 2005, just when the US build-up along the border is nearing completion. If this occurs, analysts must be careful to credit the demographic and economic factors that reduce migration pressure, not the border controls whose completion happened to coincide with diminished migration flows.

The migration hump has three major policy implications. First, economic integration should be advocated as the best long-run policy to promote 'stay-at-home' development, but not sold as a short-term cure for unwanted migration. Second, there is a need for a better understanding of adjustment processes under economic integration, so that increases in migration can be anticipated and dealt with in a manner that does not slow increased trade and investment. Third, emigration countries that benefit economic integration could be expected to help manage the migration hump in light of the resistance to free trade in many ageing industrial democracies worried about unwanted immigration..

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