

IMPACTS OF MIGRATION

Labor Market Implications of Scale, Innovation, and Entrepreneurship

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This paper addresses what is known about the impacts of immigrants on the U.S. economy, with special focus on Mexican immigrants. To stimulate critical thinking about whether Mexican migration warrants special policy consideration, it is necessary to first identify what is unique or distinctive about U.S.-bound Mexican migration. This a fair question because historically U.S. immigration policy has considered national origins in setting admission guidelines. Sometimes administrative policies for immigrants from different countries have been used to reinforce controversial international policies, as in the case of immigrants and asylum seekers from Central America during the 1980s, when refugees from El Salvador and Guatemala were systematically turned away, while refugees from Nicaragua were welcomed (see Teitelbaum and Weiner, 1995). The different treatment of unauthorized migrants from Haiti and Cuba during the 1990s offer another stark example of the intersection of foreign policy and immigration policy.

Our discussion of U.S. immigration begins by recognizing that migrant characteristics differ according to source regions and countries, and that these characteristics directly influence migrants' integration prospects and labor market

impacts in the host society. Most studies about migration make the simplifying assumption that the U.S. is a single, or perhaps divided (high wage and low wage) labor market. Frequently ignored are the reception factors, especially community-level circumstances, that facilitate the integration of new arrivals and organize links between immigrant enterprises and the mainstream economy. Most Mexican immigrants come not to an alien anglo environment, but rather to Mexican American communities within the United States where Spanish is spoken and where the customs and consumer tastes of the neighbors are well understood. This is relevant for understanding the labor market impacts of Mexican along with several additional factors that distinguish Mexican migrants from those who come to the U.S. from other source countries.

Size of the flow. Among the 18 million foreign born people living in the U.S. in 1990, more than 4 million, or 24% came from Mexico (see Table 1). Mexico contributes a larger share to the foreign born population of the U.S. than any other country, and roughly as much as the entire continents of Asia and Europe.

Duration of the flow. In the decade 1911-1920, 219,000 Mexicans legally immigrated to the U.S (Bean and Tienda, 1987). In the 1920s, this flow more than doubled. The 1930s and 1940s were slow times for all kinds of international migration except for war refugees. Migration from Mexico picked up again in the 1950s (299,000), and the flow has steadily increased to more than a million legal Mexican immigrants in the 1980s. The Mexican share of legal migration is lower than the Mexican proportion of foreign-born in the U.S. because the foreign born population also includes undocumented (i.e., illegal) immigrants.

Residential Concentration and "Sister" Communities. For historical reasons, the Mexican origin population is residentially concentrated in the five Southwestern states and Illinois. Within these locations, Mexican immigrants tend to reside in the largest metropolitan areas. Moreover, there are sizable established Mexican American communities in cities such as Los Angeles, Chicago, San Antonio and Houston. In 1990 there are just under 9 million U.S. natives of Mexican descent (see Table 1).

Motives for Migration. The Mexican immigrant flow includes negligible numbers of refugees or political asylum seekers. Virtually all Mexican immigrants seek better economic opportunities in the United States. However, social and familial ties to established Mexican American communities in the U.S. also draw immigrants across the U.S.-Mexico border.

Undocumented Immigration: Mexicans represent the bulk of undocumented migrant flows. Data on undocumented migrants is necessarily sketchy. However, studies of legalization authorized by the Immigration Reform and Control Act (IRCA) of 1986 indicate that 70% of those who were legalized under the amnesty program were of Mexican origin (see Tienda, et al., 1991; Singer, 1994).

Table 1
The Distribution of Foreign- and Native-born Persons,
by Ethnicity from the 1990 Census

	A) U.S.--born Population							US Total
	California	Florida	Illinois	New York	Texas	Other S.W. AZ+CO+NM	Other US	
Mexican	3,474,080	97,400	280,540	35,540	3,103,620	1,001,400	986,400	8,978,980
Puerto Rican	124,580	230,520	113,120	837,940	42,620	16,240	897,280	2,262,300
Cuban	25,700	147,920	5,900	23,100	7,480	3,080	63,720	276,900
Other Hisp	491,620	136,060	38,980	256,000	195,080	439,900	572,080	2,129,720
Non-Hisp Whites	15,728,680	9,401,480	9,019,020	12,845,480	10,932,720	5,982,780	124,548,880	188,459,040
Non-Hisp Blscks	1,754,560	1,488,600	1,246,180	1,501,800	1,825,560	211,180	16,696,940	24,724,820
Non-Hisp Asian	871,940	39,120	73,580	138,380	72,740	45,280	1,071,460	2,312,500
Non-Hisp Other	329,080	50,660	27,740	68,660	81,840	389,920	1,520,180	2,468,080
Total Persons	22,800,240	11,591,760	10,805,060	15,706,900	16,261,660	8,089,780	146,356,940	231,612,340

Table 1 (Continued)

	B) Foreign-born Population							Other S.W.: AZ+NM+CO	Other US	US Total
	California	Florida	Illinois	New York	Texas					
Mexican	2,535,300	61,120	234,980	42,140	924,480	234,760	310,640	4,343,420		
Puerto Rican	3,480	3,260	1,200	10,780	820	340	6,960	26,840		
Cuban	47,460	490,820	9,660	40,020	9,920	1,980	103,860	703,720		
Other Hisp	718,440	311,040	45,580	508,120	116,620	24,100	571,840	2,295,740		
Non-Hisp Whites	1,143,320	443,060	337,700	974,100	178,240	147,160	2,645,700	5,869,280		
Non-Hisp Blacks	59,740	176,660	15,580	356,620	28,140	5,220	288,040	930,000		
Non-Hisp Asian	1,772,800	100,120	166,880	453,440	202,560	65,140	1,381,160	4,142,100		
Non-Hisp Other	39,440	3,660	1,760	13,380	5,260	2,640	49,280	115,420		
Total Persons	6,319,980	1,589,740	813,340	2,398,600	1,466,040	481,340	5,357,480	18,426,520		

Source: 1990 U.S. Census Public Use Micro Samples.
Tabulations performed by Emilio Parrado.

Educational Attainment. The Mexican immigrant population comes to the U.S. with low levels of formal education. Male Mexican immigrants average nine years of education (see Table 2), which is substantially less than most other native and immigrant groups, who average a high school education. Because Mexico has been the single largest source of migrants to the U.S. for 30 years, and because migrants from Mexico have low levels of formal education, there has been much concern in recent years about declining skills of recent immigrants, and Mexican streams in particular.

Low Wage Workers. As a corollary to the low educational attainment of Mexican immigrants, Table 2 shows that male Mexican immigrant workers (excluding farm workers) averaged an hourly wage rate of only \$8 in 1993, which is considerably lower than most other native and immigrant groups. The annual average wage and salary income of male Mexican immigrant workers hovered around \$15,000 in 1993, almost 50% below that earned by non Hispanic white immigrants and 24% below that earned by U.S.-born Mexicans.

Labor Force Participation. Adult male immigrants from Mexico participate in the labor force at a rate of about 80% (see Table 2), which is higher than the average rate of both native and immigrant men of comparable ages. One reason for Mexican immigrants' higher labor force participation than other immigrants is age structure. Mexican immigrants are relatively young: only 1.4% of all Mexican immigrant male adults are retired, as compared with 7.8% for all immigrant male adults, and 12.9% for all native born adult males. Mexican immigrants may also work more in their older years or perhaps may not live long enough to enjoy a lengthy retirement (or may retire back to Mexico); the sample size of the Current Population Survey (on which Table 2 is based) is not large enough to allow for deeper study of this question.

All of these features of U.S.-bound Mexican migration—its volume; history; socioeconomic and demographic composition—would appear both to justify and warrant bilateral policy considerations. This is all the more so because the 2,000 mile shared border facilitates unregulated entry and poses special challenges for both the Mexican and U.S. governments. Because Mexican immigration does not include many refugees (whose entry into the U.S. satisfies humanitarian or global political criteria), it is reasonable, as a first step, to address the policy issues of Mexican immigration as a simple cost and benefit problem for the U.S. economy: if Mexican migrants are beneficial for the U.S. economy, then less restrictive immigration policies would be appropriate. If Mexican immigration is harmful to the U.S. economy, then restrictive policies are justified.

Before turning to a discussion of the different ways that international migration, and Mexican immigration in particular, may effect the U.S. economy, we offer two comments. Our reading of the recent literature about the economic impacts of

Table 2
Wages and Work Force Participation for Males

A) U.S.-born Male Workers							
Ethnic group	LFRP	Number of workers in (000)	Workers' mean years education	Mean 1993 wages	Mean number of weeks worked 1993	Hours worked per week	Mean constructed hourly wage
Mexican	73.51%	1,195	12.10	\$19,429	44.40	38.90	\$10.51
Other Hispanic	67.93%	775	12.50	\$20,497	46.00	40.10	\$10.59
Non Hispanic Black	63.54%	4,176	12.50	\$19,976	44.20	38.50	\$10.83
Non Hispanic White	76.92%	48,445	13.50	\$27,287	46.00	41.60	\$14.68
Non Hispanic Other	73.83%	1,178	13.00	\$17,668	37.50	38.70	\$15.71
TOTAL	75.65%	55,769	13.37	\$26,274	45.65	41.23	\$14.27

Table 2 (Continued)

B) Foreign-born Male Workers							
Ethnic group	LFPR	Number of workers in (000)	Workers' mean years education	Mean 1993 wages	Mean number of weeks worked 1993	Hours worked per week	Mean constructed hourly wage
Mexican	79.87%	1,427	9.40	\$14,855	46.00	38.90	\$8.10
Other Hispanic	74.51%	870	12.10	\$20,045	44.70	40.80	\$10.73
Non Hispanic Black	67.24%	315	14.00	\$19,664	44.10	41.90	\$10.29
Non Hispanic White	71.72%	1,825	14.00	\$28,823	44.70	40.60	\$15.51
Non Hispanic Other	80.79%	1,582	14.70	\$27,847	46.50	39.70	\$15.94
TOTAL	76.20%	6,019	12.82	\$23,507	45.45	40.06	\$12.90

Source: March, 1994 Current Population Survey.
 Labor Force Participation Rates include all adult males. All other columns apply only to nonagricultural adult male workers.

immigration, and our own research (including a survey of households and businesses in the mostly Mexican Chicago neighborhood called Little Village) leads us to believe that immigrants in general, and Mexican immigrants in particular are probably beneficial to the U.S. economy. We will endeavor to justify this assertion in the remainder of this paper.

The second comment relates to the efficacy of restrictive policies toward Mexican immigration. Rather than discuss specific policies in this paper, we simply note that the duration of U.S.-bound Mexican migration and the resultant size and vibrancy of the established Mexican American communities in the U.S. makes control very difficult because migrants can tap into social and familial contacts in the established Mexican American communities (which lowers the cost of migration). Massey, Donato and Liang (1990) have expressed informed skepticism about the deterrent effects of IRCA. Massey's work on immigration has emphasized the strength of social and familial ties as factors that draw Mexican immigrants to the U.S., and the impotence of governmental policies that attempt to restrict immigration after sister communities are established in the United States. Zolberg (1995) has called attention to the perverse effects and unintended consequences of U.S. immigration policies. We raise this point simply as a cautionary note for policy discussions; the complexity of the real world is humbling for those of us who work on policy issues, particularly when framed in narrowly economic terms.

The Economic Impacts of Immigration

Academic studies about the economic impacts of immigration are concerned with various different types of impacts. Accordingly, we adopt Greenwood's (1994) language in which he refers to separate and distinct channels of influence through which immigration impacts the economy of the host society. In this paper we discuss a few these channels of influence, paying special attention to labor market impacts. We will treat only briefly the most commonly studied channel of influence, that is, the direct effect of immigrants on the wages of natives. One common view of immigration sometimes found in the mass media is that immigrants take jobs away from native workers, or exert a downward force on wages by accepting lower wages than comparably skilled native workers. Immigrants, however, also create jobs by their own demand for goods and services, and immigrant workers can be complements as well as substitutes for native workers. The net effects of immigrants on the wages of natives is therefore difficult to measure, although many have tried.

The second most frequently studied channel of influence focuses on the direct fiscal impact of immigrants, and we will again be brief with this topic. Fiscal impacts concern the current account balance between what immigrants pay in taxes and

fees with what they consume in tax-supported amenities and services. Mexican immigrants earn low wages, and therefore pay lower than average income tax. Mexicans also have larger than average family size, so they may consume more in public education services than they pay in local taxes. The issue is complicated, as we note below, by the fact that Mexican (and other) immigrants pay their share of Social Security taxes, a regressive tax, and many immigrants are ineligible for Social Security benefits. We will take up the issue of fiscal channel of influence with a brief literature review below.

Instead of focusing on the labor market channel of influence, or the fiscal channel of influence, both of which have been extensively analyzed, albeit inconclusively, we focus instead on the channels of influence that derive from economies of scale, and the special contributions that immigrants may make through their inventiveness, motivation, and self-selection for willingness to work hard in order to improve their lot in life. The former consideration is important for Mexican immigration because of the sheer volume of the flow, while the later is relevant because the low educational attainment of Mexicans relative to other immigrants and U.S. natives leads to the partly inaccurate inference that Mexican immigrants are unlikely to be entrepreneurial. To make our case on these two points, we draw on a recent survey of entrepreneurship in the Mexican neighborhood of Little Village, Chicago.

The Labor Market “Channel of Influence”: A Brief Comment

Borjas and Tienda (1987) summarize many of the empirical studies of wage and labor market impacts of immigration, with the general finding that immigrants’ impact on the wages of natives are barely significant, while impacts on the wages of earlier cohorts of immigrants are discernible, albeit small. Greenwood and McDowell (1993) also provide an extensive survey of this literature, therefore we provide only a few comments. The first point is that, as Borjas (1994) notes, there are some methodological and empirical shortcomings of this line of work. Most of the labor market studies use the number of immigrants in a city as a measure of the immigrants’ influence in a particular labor market. One problem is that natives may migrate internally in response to immigration (for instance, to avoid immigrants) so that the correlation of immigrant presence with low native wages may simply represent the effect of selective internal migration by natives.

A second problem has been highlighted by Card’s (1990) empirical study of the massive and sudden wave of Cuban migration to Miami in 1980, known as the Mariel boat lift. Card has shown that this sudden wave of mostly low skilled migrants, which in the course of 6 months increased Miami’s work force by 7% (60,000 people), had no perceptible impact on Miami’s labor market for either

natives or for previous Cuban migrants. This surprising result implies that the economic impacts of migrants are not so easily isolated to their city of entry or residence as has been previously assumed. Considering that the Mariel boat lift corresponded to a wave of migration that was a full order of magnitude larger (relative to the work force of Miami) than most of the empirical studies are able to contemplate, and that no impacts were found, Card's study raises fundamental questions about the efficacy of the econometric literature on labor market impacts of migration.

The Fiscal Channel of Influence

Empirical studies about fiscal channels of influence has been weighted down by studies that examine only part of the fiscal picture (i.e., welfare) and studies that examine only local impacts. Simon (1984, 1989, and 1996) has presented a series of analyses based on the most comprehensive data source available, the 1976 Study of Income and Expenditures. He showed that immigrants are net fiscal contributors to the U.S. economy mainly because they contribute to, but do not receive benefits from the Social Security program. This is because immigrants have a high worker to dependent ratio, and because immigrants of retirement age are generally not eligible for benefits. Social Security is a federal program, and Simon points out, as do Greenwood and McDowell (1993), that much of the fiscal burden of immigration is felt by states and localities.

The peculiarities of the distribution of the fiscal effects of immigration implies that local and state governments probably are burdened by immigration, but that this burden is more than balanced by immigrants' support of Social Security. The fiscal burden felt by states and localities in regard to immigration is, therefore, not a real "cost" of immigration, but rather a problem in the fiscal balance between the federal government and the states, and more specifically between the states with few immigrants (whose retirees are partly subsidized by immigrants) and the immigrant receiving states. Precisely because they ignore federal programs like Social Security, studies that focus on local fiscal impacts, such as Mines and Martin (1986), Muller and Espenshade (1985) and McCarthy and Valdez (1986), have left the possibly mistaken impression that immigrants are a fiscal drain on the U.S. economy.

Rothman and Espenshade (1992) were rather critical of Simon's analysis for two reasons. One reason is that Simon aggregated immigrants of all national origins, and the second is that he applied national average figures for taxation and per pupil school expenditure to populations that are not evenly distributed across the country. Neither criticism invalidates Simon's inference that Social Security payments by immigrants make them net fiscal assets to the U.S. economy (although the lack of

national disaggregation does pose some problems for applying Simon's findings to the case of Mexican immigrants only).

In the particular case of Mexican immigrants, the issue of fiscal impacts is complicated by the fact that there are legal and illegal immigrants, who use services and transfers at very different rates, and whose contributions to Social Security and to federal taxes differ depending on whether they are formally or informally employed, and depending on their legal status in the United States.

Heer (1990) and Weintraub and Cardenas (1984) claimed that undocumented Mexicans use fewer services or transfers (because they are either not eligible for them, or are wary of any contact with officials). This implies that undocumented workers are essentially a fiscal windfall for employers and also for state and national coffers (because they do pay taxes). Weintraub and Cardenas (1984) estimated that the state of Texas received a fiscal benefit of at least \$120 million per year from undocumented aliens (mostly Mexicans), although Rothman and Espenshade (1992) point out that Weintraub and Cardenas' data is based on a non-random interview sample. Undocumented workers occupy a peculiar space in the rhetoric about immigration. Undocumented workers, or illegal immigrants, are the object of much political backlash against migration, yet (if Heer and Weintraub and Cardenas are correct) they may be the most fiscally beneficial of migrants.

Economies of Scale and Innovation

The first modern essay on population growth and the economy is credited to Malthus, who assumed that natural resources were fixed and that therefore a larger population would necessarily mean a lower standard of living for everyone. Simon (1993) notes that Malthus wrote five different editions of his famous essay, and each subsequent edition was less alarmist about the consequences of larger populations. Adam Smith and the other early innovators of modern economic theory took a different view. For Smith, a greater population meant a greater division of labor, which implied greater efficiency and product per person, and therefore increasing returns to scale; twice as many workers would create more than twice as much product. One of Smith's famous examples is the pin factory, where the manufacture of pins is divided into eighteen different tasks, each performed by one person. The assumption is that such specialization (for which a substantial population is a necessary ingredient) leads to greater efficiency, and greater per capita production.

Simon (1993) cites a number of 19th century economists who directly confronted Malthus' initial supposition that natural resources are fixed; he quotes Henry George who wrote "Both the jayhawk and the man eat chickens, but the more jayhawks the fewer chickens, while the more men the more chickens." This same anti-Malthusian

view is developed at some length in Simon (1989). The basic premise is the classical economic notion that the price mechanism ensures that as demand for a given natural resource rises while supply falls, technology and innovation will be applied to find more or to create substitutes for the important resource. Simply put, the greater the human demand for chickens, the more farmers will devote themselves to new and more efficient ways to produce chickens. Technology, in other words, overcomes some of, if not all, the apparent limits of natural resources. Not all resources are as easy to replenish as chickens, of course, and Simon takes his argument considerably further. He argues that, despite the claims of the environmentalists, natural resources from fresh water to forests to oil reserves have never been more plentiful (at least in terms of the resources that are directly accessible by society).

Since the past two centuries of history in the developed world has proven that Malthus' alarmist view of population growth is insufficient, Preston (1989) and Simon (1989) and others have reemphasized the positive economic potential of population growth. Some public goods, such as national defense, do not depend directly on the size of the population. An increase in population ought not to increase the need for national defense, but would increase the number of people paying for defense, thus lowering the cost per capita and lessening the burden on the native residents; this would be experienced as a direct increasing return to scale. Most services are not like national defense in that an increase in population would ordinarily require an increase in services provided (education, police protection, health care, electricity and sewer service to name a few). If the marginal cost of providing a service decreases as the population grows (holding the quality of the service constant, which is easier to do in theory than in practice), then population growth will lower the per capita cost of that service and everyone will benefit from increasing returns to scale.

In theory (and usually in practice), an increasing population leads to higher population density, and higher density areas receive most services at a lower cost per person. For example, rural electrification costs much more per person served than urban electrification. Some rural schools may be less costly per pupil than urban schools, but unlike the provision of electricity the quality of education services is not easily comparable. Preston (1989) points out that in the United States, which has a relatively low average population density, the majority of the population is crowded around large metropolitan areas, leaving many rural counties almost vacant. Workers in the city earn more than rural workers, and city residents have access to many goods and services that are unavailable in rural areas. The residential settlement patterns of U.S. residents seems to be evidence that economies of scale are a real force drawing people to settle in areas of higher concentration. Both Preston and Simon cite the powerful Japanese economy, with high population density and few natural resources, as an example of the continuing relevance of economies of scale.

The Japanese enjoy minimal transportation and communication costs because their population density is so high.

On the question of returns to scale and economic history, the central figure is Simon Kuznets. Kuznets (1960, [1967] 1973, [1972] 1973) argued that not only are there increasing returns to scale in industry because of greater specialization and because of technological innovation, but that technological innovation itself is subject to a scale economy. The reasoning is as follows: there are a fixed proportion of innovators and geniuses in any population. Because different branches of knowledge are interrelated, and because engineering and technical innovations rest on an established base of knowledge (the cumulative effects of earlier innovations), it stands to reason that larger societies will have a greater number of innovators and geniuses (because of sheer numbers). Furthermore, this larger number of innovators and geniuses will feed off each other's work to create an economy of scale for innovation, which will in turn make the entire society more efficient. As Kuznets writes (1960: 328), "The greatest factor in growth of output per capita is, of course, the increasing stock of tested, useful knowledge."

If there are in fact increasing returns to scale as Kuznets and Simon and the classical economists claimed, the implication for immigration is fairly clear: more people make the whole society more efficient, and immigration, on balance, should be beneficial to the host society. The issue is, of course, more complex because there can also be diseconomies of scale, and because the extent of increasing or decreasing returns to scale is the subject of substantial disagreement in the empirical literature. The question of returns to scale is central, however. The pro-immigration studies generally assume, as Simon (1989) does, a positive return to scale for population growth. And most anti-immigrant work emphasizes over crowding, over use of limited resources, and other implicit decreasing returns to scale for population growth.

The economic literature that employs explicit models for the impacts of immigration, such as Borjas (1995), almost invariably assumes constant returns to scale in the production functions. Despite the fact that the measurement of real returns to scale presents many empirical problems, and therefore the assumption of constant returns to scale is a defensible assumption, we believe that this common assumption builds an inherent bias against possible economic benefits immigration. Kuznets' economic history of the U.S. makes a strong case for the importance of returns to scale over time, and Simon has pointed out that there is little reason to believe these historical arguments are any less relevant today.

The returns to scale issue is further complicated for the case of Mexican immigrants because Mexicans are, on average, the immigrant group with the fewest years of formal education (see Table 2 and also Chiswick, 1986; Borjas 1992; Borjas and Freeman 1992). This means that arguments about the innovative capacity of

Mexican migrants may be a bit harder to make. On the other hand, the size and duration of the flow of migrants from Mexico (and the resultant size, development, and division of labor within the established Mexican American communities) provides many possibilities for scale economies internal to the Mexican American neighborhoods themselves.

As we will see in the vignettes from our Little Village (Chicago) survey, this immigrant Chicago neighborhood has enough Mexicans to support a fully differentiated economy of goods and services. Because the Little Village community is growing, and because the consumer tastes and language of the Little Village residents is best understood by other co-ethnic residents, there are ample opportunities for business, entrepreneurship, and economic innovation in Little Village and in other Mexican American communities. Little Village, in other words, is conducive to a myriad of formal and informal economic activities which are largely invisible to formal accounting systems and surveys. Moreover, there is more economic innovation in these communities than the low level of formal education of the Mexican migrants might lead one to believe.

Arguments about national level diseconomies of scale generally rest on the inefficiency of large enterprises due to inertia and the inability to change and adapt. Robinson (1960) presents multinational data on the cost of national administration (health, education, services and defense), and argues that the large countries (which in most of his samples, means the U.S.) are not necessarily more efficient in providing services than the smaller countries (Great Britain, France, Italy, Jamaica). Robinson's data shows that U.S. spends less per capita on national administration, except for defense where the U.S. spends far more. The problem with this kind of data is that there is no way to account for differences in the quality of the services provided, so one does not know whether India is either a tremendously efficient provider of national services, or a provider of very sparse administrative services (the latter is probably closer to the truth). Robinson (1960: xvii) makes the rather bold claim that 'it seemed to be our general impression that most of the major industrial economies of scale could be achieved by a relatively high- income nation of 50 million,' which would imply, of course, that the U.S. is far too big to enjoy any further advantages from scale economies. The problem, however, is that the 50 million person limit is arbitrary, and no empirical data or sound reasoning is cited to support it.

Jewkes (1960) makes an argument about the diseconomies of scale that seems to contradict Kuznets directly on the issue of economies of scale for innovation. Jewkes argues that although there are some examples of large corporate research and development making technological breakthroughs that would have been impossible for individual inventors to make (he cites the DuPont corporation's invention of Nylon), most inventions are made by individuals working alone. Jewkes

points out that the aircraft jet engine was invented simultaneously by a British air force cadet and a German undergraduate, working by themselves. In terms of Kuznets' theory, what is relevant for our argument is that the inventors of the jet engine lived in the well populated developed countries, and were therefore able to take advantage of a stock of knowledge, and had access to other innovators and ideas that would not have been available to an equally talented inventor living in Costa Rica or Belize. The invention of the jet engine by two separate individuals does not, therefore, undermine the idea of scale economies in knowledge.

When Kuznets refers to innovation and technology as the engines for economic growth (see Kuznets [1972] 1973), he mainly refers to technologies like the steam engine, the light bulb, the telephone, the internal combustion gasoline engine, or the more recent advent of atomic energy. These technological advances have had profound and lasting effects on the economy, without doubt (although the legacy of atomic energy may not be as clear as Kuznets imagined). But Kuznets' emphasis on the highest levels of technological input leave open the question of whether working class immigrants can be considered as advantages in a scale economy of knowledge, which according to Kuznets' examples, would seem to favor mainly the immigration of physicists, engineers, doctors and other highly trained people.

Simon (1989: 175) offers one answer to this question. In his words:

It cannot be emphasized too strongly that 'technological advance' does not mean only 'science' and scientific geniuses are just one part of the knowledge process. Many technological advances come from people who are neither well educated nor well paid: the dispatcher who develops a slightly better way of deploying the taxis in his ten-taxi fleet; the shipper who discovers that garbage cans make excellent cheap containers; the supermarket manager who finds a way to display more merchandise in a given space; the supermarket clerk who finds a quicker way to stamp prices on cans; the market researcher in the supermarket chain who experiments and finds more efficient and cheaper means of advertising the store's prices and sale items and so on.

Simon appropriately acknowledges that it is not only the Enrico Fermis and Albert Einsteins who contribute to knowledge and hence economic efficiency, but also motivated, entrepreneurial and innovative immigrants who, despite a lack of formal education, may contribute to a society's economic well being. It is well to remember that much of the economic literature assumes that years of schooling is a direct measurement of skill and hence of worker productivity. Simon (1989) argues that immigrants bring with them knowledge based on the experience of how things are done in other places, and may therefore be highly productive in their host society despite a limited formal education. The burgeoning literature on ethnic enterprise in America would appear to support this view.

Supplementary to Simon's argument about working class innovation and entrepreneurship are studies that consider how immigrants may be self-selected for entrepreneurial spirit and work ethic. Chiswick (1978: 901) argues that the good performance (in excess of what their moderate schooling levels would lead one to expect) of immigrants in the U.S. economy is evidence that the immigration process self selects migrants for 'motivation' and 'innate ability.' Chiswick's empirical findings have been repeatedly questioned by Borjas (1992, 1994) who argues that Chiswick confused an assimilation effect with a cohort effect; Borjas' point is that there has been a decline in immigrant skills rather than an assimilation of immigrants over time.

Borjas (1992) refers to the declining skills of recent immigrant cohorts, but his own tables show that overall immigrant educational attainment has risen steadily over time (from 9.5 years in 1940 to 12 years in 1980); U.S. native educational attainment has simply risen faster, so that it is not immigrant skills that are declining but rather U.S. native skills (measured by years of education) that are outpacing the skills of the immigrants, and precisely at a time when the returns to skill have been rising markedly. The educational attainment of Mexican male immigrants to the U.S. has crept up from about 7 years in the 1950s to a bit less than 9 years today (in our Table 2, their educational attainment is reported as 9.4 years, but this is for only non agricultural workers; the full sample of Mexican male immigrants has 8.7 years of education). As such, the "skills" of Mexican immigrants (as measured by education) have not declined over time. The education gap between Mexican immigrants and natives may have increased over time, but Chiswick's analysis still rests on the advantage that immigrants have due to their self-selection for determination and creativity, if not formal schooling. Since both Chiswick and Borjas rely mainly on cross sectional data from the decennial census, it is not entirely possible to adjudicate between their competing conclusions interpretations because neither can adequately model period effects which have greatly altered opportunities for earning a living.

Kao and Tienda (1995) have recently demonstrated a result which bolsters Chiswick's idea that immigrants are self selected for innate skill and motivation. Using the National Education Longitudinal Survey (NELS:88), they showed that the children of first generation immigrants have higher scholastic aspirations and test scores than their native-born counterparts of similar socioeconomic standing. Although the effect that Kao and Tienda measure is strongest for the children of Asian immigrants, the children of Hispanic immigrants also seemed to benefit from this optimism and strong immigrant work ethic.

If Mexican immigrants are self selected for innate skill and motivation, it is partly due to the fact that Mexican immigrants come to the U.S. for economic opportunity rather than fleeing Mexico for political reasons. Political refugees, as

Chiswick (1978) notes, migrate for noneconomic reasons, and therefore would not necessarily represent the most fit, able, or motivated citizens. Economic migrants (like the Mexican migrants), who assume the costs and risks of migration would naturally be most likely to migrate if they considered their own abilities and determination would produce higher returns in the destination country. This, at any rate, is the rationale for believing that economic immigrants might be self selected for innate ability. There is, of course, no direct way to measure innate skills. What we offer, instead, is a glimpse into the Little Village neighborhood of Chicago which shows substantial levels of economic activity and entrepreneurship.

Mexican Immigrants' Entrepreneurship and Innovation

The Little Village Household Survey, hereafter LVHS, consists of in depth interviews from 330 households in Chicago's mostly Mexican Little Village community (see Tienda and Raijman, 1996 for a more detailed description). The survey uncovered considerably higher rates of self employment and informal employment for Mexicans (especially Mexican immigrants) than had been previously found. According to 1980 U.S. Census figures (Fratoe, 1986), 4.9% of all Americans were self employed. Some ethnic groups, such as Russians and Lebanese, were self-employed at rates approaching 10%, while for Mexicans the self-employment rate hovered around 2%. According to the LVHS, self employment rates for Mexicans in Little Village were about 10%. While the higher rate of self employment may be partly due to the urban setting of the Little Village community (which excludes the farm worker population, almost none of whom would be self-employed), the LVHS in-depth interviews also uncovered that much self employment occurs in the informal economy, which is a kind of economic activity that standard surveys seldom detect.

Following Portes and Sassen-Koob (1987), we note that the level of self employment, and especially self employment via informal activities, can be viewed as a source of economic innovation at the margins of a developed economy (there is considerable debate about the value of the informal sector in both developing and developed countries; see Portes and Schauffler 1993 for a review). In fact, according to preliminary analysis of the LVHS, many Mexican migrants have charted a labor market history that starts with low wage employment, proceeds to a mixture of low wage jobs with informal self employment to smooth income levels, and sometimes proceeds to full-time informal self employment. A sizable proportion of the formally self employed Mexican immigrants in Little Village started those businesses in the informal sector, so that the informal economy can also be seen as a pipeline into the formal economy. By definition, informal

businesses do not pay taxes and license fees, which is seldom examined by analyses who estimate the fiscal balance between immigrants and natives. Before going further into the possible benefits and drawbacks that immigrant entrepreneurship entails for the wider economy, we turn to a LVHS interviews themselves for examples. Consider the case of Yolanda (now age 40) who immigrated from the Mexican state of Jalisco to Chicago in 1975. She has a second grade education, and is married with 8 children. The following is a verbatim excerpt from her interview.

She came to the U.S. with economic necessity and she had always like the fruit business. She went to Maxwell Street where there was a man who sold fruit. She started selling fruit (tomatoes) for the man without him telling her to do so. He like the way she sold fruit and within 3 weeks, he looked for her to ask her to help him sell in the flea market. He paid her \$25 per day. One day, he made her cry in front of everyone. He accused her of stealing \$25. She held in her anger and stayed there, but she started thinking that maybe she, too, could sell fruit and that way nobody would humiliate her. She told the man she was going to steal whatever she could. Within 3 weeks she stole \$100. She returned the money to him to show him that she was no thief. But because he had humiliated her, he gave her the money. Then she began to study the way he sold, where he got his merchandise, how much he sold it for, etc. Then she asked him to pay her with vegetables instead of with money so that she could sell them. She got a grocery cart (she said she found it in the street—she stressed that she didn't steal the cart). She sold the merchandise that he gave her and made almost twice the amount she earned by working with the man. She saved a little and bought whatever she could from the man so that she could sell it. With \$250 she set up a stand at Maxwell Street (a flea market in Chicago). In three years she saved \$1000, plus \$10,000 for a down payment on a house. When she found out that Maxwell Street would be closing, she decided to open up a store. With \$1000 she started the store 2 years ago and until now, she has invested \$30,000 in it. She has no debts; she didn't ask for loans because she doesn't like debt. She started the business on her own and she continues to develop it on her own.

The first point to be made about Yolanda's story is that, as Simon (1989) has pointed out, economic innovation can originate among persons of all social classes. Yolanda's second grade education and modest income did not keep her from finding a better way to sell tomatoes. The second point concerns how much immigrants "take" from the host society in their endeavors to find a better life for themselves. For this question, we take Yolanda's shopping cart as a metaphor. If, as Yolanda claims, her shopping cart (with which she started her fruit selling business) was indeed simply "found in the street," we see the immigrant taking resources that are

essentially wasted and returning them into the economy by dint of their own hard work and innovative use.

If, for a moment, we imagine that Yolanda (perhaps a different Yolanda) had stolen the cart, we get the other side of the economic argument. If the cart had been stolen, then Yolanda was not contributing to efficiency but simply cutting in on an already existing market for retail fruit, and perhaps undercutting the sales of a legitimate retail fruit store by selling fruit from a stolen cart without paying any sales tax to the state.

The question of fiscal contributions is a bit more complex, but it seems that Yolanda eventually is also contributing through this economic channel of influence. At first, Yolanda works for the other fruit merchant, and we can assume that no income taxes are being paid from Yolanda's \$25 a day salary, and no sales taxes are paid from sales in the Maxwell Street flea market. In the second stage, Yolanda is selling fruit from her own cart, and again we can assume that no sales taxes are being paid. In the third and final stage, Yolanda is reinvesting her money into a house and her own fruit store, which denotes a shift from the informal to the formal economy. In the final stage, Yolanda is presumably paying taxes on a business and a property that were capitalized out of her own effort and creativity. Sassen-Koob (1989) describes the tension between immigrant informal economies that innovate, create and incubate entrepreneurial ideas (and are presumably an asset to the overall economy) versus informal sectors that simply represent tax and regulation avoidance by subcontractors tied to larger, formal firms (this kind of informal business is presumably a drain on the overall economy). Both kinds of informal businesses exist in Little Village.

As Yolanda's story is a bit unusual, we offer a few other representative stories taken from the Little Village survey. Hugo, age 48 was born in Mexico and has a U.S. born wife, two children, and a Mexican high school education. His father worked on the railroads in Mexico. Hugo started his own business because he did not want to work for others.

I started this business in 1985 after working for the Lawndale Bank as a vice president. There I discovered that many people wanted to send documents and letters to Mexico and since no one offered this kind of service I decided to establish this business. It took me a year to acquire sufficient understanding of this area. I decided to start this business because of the demand by the people for the service; in this area there are many people that come to make deposits and I think that if they had more education it would work better but none the less we are growing.

Jesus was born in Mexico, immigrated to Chicago in 1965, and now lives with his wife, one child and his mother in law. Jesus had a third grade education in

Mexico. He had been part owner of a restaurant in Nuevo Laredo, Mexico and sold it to come to the U.S.; he says he thinks about business all the time.

In 1968, there was no latinos here, I was one of the first. The neighborhood was Polish. I rented a garage in which I sold tortas and food. I began to let them taste my food- tacos and everything and I began to do better and better. It was a small place- a garage. I formed it into a restaurant. I paid rent to a Polish man, when he saw me working hard, he promised to sell it to me. In 1972, the owner of the building financed and sold it to me. It's been 25 years.

José and Efigenia are from Tamaulipas, Mexico and are both over 50 years old. José reports zero formal education. He says he went into business to be independent.

I came illegally to the U.S. from Mexico where I was a barber. I started working as a barber in my house, and when I had sufficient clientele I rented a small place which was completely equipped, and that's how I got to the first level. After a long time, I got my savings together and started my own business with my own equipment, although I still rent the space.

The modest stories of Hugo, Jesus, José and Efigenia illustrate a few important points about Mexican migration to the U.S. Despite a lack of formal education, both Jesus and José exhibit the traits of entrepreneurship. Both abandoned businesses in Mexico in order to come to the U.S. where, presumably, they expected to receive better returns for their skills. Admittedly, this is circumstantial evidence for the theoretical proposition that immigrants from Mexico, and other non- refugee countries are self selected for innate skill, or entrepreneurial spirit. But absent direct empirical evidence, many have concluded that low education levels are inconsistent with innovation and entrepreneurial activity.

A second point relates to the size of Chicago's Mexican American community, and the differentiated economy that is implied by residential concentration within the city limits. Because Little Village was (or became) populous and diversified, there were ample opportunities for new and innovative kinds of businesses, like Hugo's document and currency transmission service. The information that Hugo needed in order to start his business was an experiential knowledge based on having lived in Mexico and the U.S., and having contact with the consumer needs of households in Little Village, rather than formal education.

Conclusion

The literature on the effects of population growth on economic development is justifiably modest in its claims and predictions. Kuznets himself ([1967] 1973)

readily admitted that increased population could have different impacts on an economy, depending on many factors, and that therefore there is no single “population effect.” Mexican migrants to the U.S. are almost always viewed in the recent literature as low wage labor market drones- people who are willing to work picking lettuce or sewing pants in a factory for just a few dollars a day. The bulk of the literature then turns on whether this low wage labor is more beneficial to the U.S., or detrimental because the migrants exert a downward pressure on wages and also use state services. Our point in this paper is that Mexican migrants, despite their low average formal education, may contribute significantly to the U.S. economy through economic and cultural innovations, and returns to scale for a larger population.

Direct national returns to scale may be due to a greater national division of labor, or to a larger number of persons to share fixed costs, such as defense (since the cost of defense does not depend directly on the number of residents, a larger population would presumably lower per capita defense costs). The country as a whole may also benefit from a larger population due to an increased number of technical and practical innovations; this is Kuznets’ theory and Simon has reminded us that beneficial innovations can come from people of any class or educational background. While the flow of immigrants from Mexico may provide a somewhat lower yield of scientific innovations (because of the low proportion of Mexican immigrants who have postgraduate education), the Mexican migrants are able to take advantage of a different, local kind of scale economy. Because of the size and duration of the flow of migration from Mexico, Mexican migrants are integrated into the U.S. economy through Mexican American communities that are themselves large enough and diverse enough (especially the urban neighborhoods like Little Village in Chicago) to support innovative new businesses.

Mexican immigrants are workers; their labor force participation is high because they come to the U.S. in their prime working years. Because the flow of Mexican migrants is so heavily weighted toward young workers and contains so few retirees, Mexican immigrants make an especially positive fiscal contribution to the national Social Security program. Mexican migrants may also be self selected for talent, motivation and innate skill, as Chiswick would argue, which would imply that the low educational attainment of Mexican immigrants underestimates their real skill and productivity. We cannot deny, however, that the low educational attainment of Mexican migrants also correlates with low annual and hourly wages, so that the economic returns to this (supposed) high level of innate skill and motivation is not easily detected in the Current Population Survey. Chiswick would argue that the respondents in the CPS (especially the Mexican immigrants) are weighted to the most recent immigrants (because the flow of immigration from Mexico has been increasing over time—see Table 3), and that it takes time for the

Table 3
Historical Trends in Legal Mexican Migration to the U.S.

Period	Number of legal Mexican Immigrants	Total (all countries) legal immigrants	Mexican immigration as % of Total
1901-1910	49,642	8,273,667	0.60%
1911-1920	219,004	5,763,263	3.80%
1921-1930	459,287	4,100,777	11.20%
1931-1940	22,319	531,405	4.20%
1941-1950	60,589	1,044,638	5.80%
1951-1960	299,811	2,519,420	11.90%
1961-1970	453,934	3,313,387	13.70%
1971-1980	640,294	4,509,113	14.20%
1981-1989	974,200	5,801,600	16.79%
1990	680,186	1,536,483	44.27%
1991	947,923	1,827,167	51.88%
1992	214,128	973,977	21.98%
1993	126,642	904,292	14.00%
1994	111,415	804,416	13.85%
1990-1994	2,080,294	6,046,335	34.41%

Source: 1994 Statistical Yearbook of the INS.

Note: From 1989–1994, 2.67 million persons, most of them of Mexican origin, received amnesty due to provisions or IRCA (1986) and were counted as new immigrants for those years.

innate skills of immigrants to lift their earnings to the level of native workers. Chiswick (1986) reports that the earnings of Mexican immigrants exceeds the earnings of native workers when the Mexican immigrants have been in the U.S. labor market for 15 years.

We have not considered migrants' possible effect on the U.S. economy through their consumer purchases. Migrants not only increase the size of the U.S. consumer market but they also have particular tastes and needs that may affect the tastes of natives. Immigrants, as Simon (1989) points out, have throughout history been viewed as the bearers of new ideas, new ideas that have been tested in other societies and contexts. Despite the fact that the effect of population growth on economic

growth is quite resistant to formal quantification because of the myriad ways that population increase can trigger economic effects, we believe that questions about economies of scale ought to be considered more systematically. There is no sound reason to think that the U.S. has passed some magic population density that makes it immune to any further benefits from economies of scale. The implications of increasing returns to scale are simply that, other things being equal, a larger population will tend to increase the economic efficiency of the entire society.

Note

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