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Undocumented Migration to the United States: Perceptions and Evidence

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The past 20 years have witnessed dramatic changes in the volume and composition of immigration to the United States (Bean and Sullivan, 1985; Massey, 1981; Reimers, 1981). As the number of immigrants has risen and as their national origins have shifted to Third World countries, the attention both of the public and of policymakers has increasingly focused on the costs rather than the benefits associated with the arrival of newcomers (Morris, 1985). This seems especially true in the case of undocumented immigration. For example, two-thirds of the respondents in a recent Southern California survey agreed with the statement that "undocumented workers tend to bring down the overall level of wages in some occupations" (Muller and Espenshade, 1985: 201). Interestingly, such perceptions have arisen even though the research evidence, as we argue below, does not support such conclusions.

Negative viewpoints about undocumented immigration spring from several sources. The increasing proportions of Hispanics and Asians among legal immigrants over the past 20 years have rendered recent immigrants more visible than earlier, mostly European arrivals, thus drawing attention to the phenomenon of immigration. Direct evidence about the volume and effects of undocumented immigration was unavailable until the 1980s, thus making it difficult to subject ideas about undocumented immigration to empirical test. Moreover, the coincidence of the increase in undocumented immigration with the shifting national origins of legal immigrants may have contributed to a tendency to exaggerate the size and effects of the former. Because almost all undocumented immigrants are Hispanic or Asian in origin (Warren and Passel, 1987), the increasing numbers of legal Hispanic and Asian immigrants may have fostered the impression that the volume and impact of undocumented immigration has been greater than it actually has been.

In late 1986 Congress passed the Immigration Reform and Control Act, legislation designed primarily to curtail undocumented immigration into the United States by imposing fines on employers who hire undocumented immigrants. Public perceptions that the effects of undocumented immigration are deleterious undoubtedly played a role in the passage of this legislation. The present article reviews the evidence concerning the economic effects of undocumented immigration to the United States. We devote most of our attention to undocumented Mexican immigration, not only because it appears to constitute more than half of all illegal immigration (Passel, 1986), but also because, more so than in the case of undocumented immigration from other countries, it tends to occur for labor-related reasons (Portes and Bach, 1985), and thus is more relevant to concerns about the economic impact of immigration. Others have recently reviewed the literature on the economic consequences of legal immigration (Borjas and Tienda, 1987).

We first consider briefly the social and historical circumstances out of which contemporary immigration patterns have emerged. We then examine the evidence about the size of the undocumented population (especially the Mexican undocumented population) in the United States. We then shift to our major focus—the labor market impact of undocumented immigration. We conclude by discussing the reasons for the disparity between public perceptions and research evidence and the implications for the relationship between research and policy formulation.

Historical and social context

Both the volume and composition of immigration to the United States have changed considerably since the early 1960s, largely as the result of three developments (Massey, 1981). The first was the passage of the 1965 amendments to the Immigration and Nationality Act. These at once abolished the restrictive provisions of the national-origins quota system, raised the annual ceiling on the number of immigrants from 158,000 to 290,000,¹ and increased the number of categories of persons who could enter exempt from numerical limitations. The second was the passage of legislation that made it much easier for political refugees to enter the country, particularly those from Cuba and Indochina. The third was an apparent increase in undocumented immigration to the United States, a phenomenon that was part of the worldwide emergence during the 1960s of labor migration from less developed to more developed countries (Keely and Elwell, 1981).

The changes in law adopted in 1965 have resulted in larger numbers of immigrants. In the years since 1970 (two years after the 1965 amendments took effect), legal immigration to the United States has averaged over 490,000 persons a year, as compared with 252,000 per year during the 1950s (Immigration and Naturalization Service, 1985). In 1978, if one includes the 132,781 refugees granted lawful permanent resident status in the United States, a total of 601,442 new entrants gained lawful admission (or status) in that year, the

highest number in any year since 1924 (Immigration and Naturalization Service, 1985).

Since 1965 the ethnic composition of legal immigrants has also changed, from a preponderance of Europeans to a preponderance of Asians and Latin Americans. During the 1950s Europeans still comprised over half (52.7 percent) of all immigrants, whereas in the years since 1970 they have made up only 15.4 percent of legal entrants. By contrast, persons of Latin American origin increased their share of total immigration during this same period from 24.6 percent to 38.4 percent (Immigration and Naturalization Service, 1985). Asians also have shown a sizable increase in their fraction of immigrants. These changes are comparable to shifts that occurred in the late nineteenth and early twentieth centuries when the proportion of immigrants from Northern and Western Europe declined substantially in favor of Southern and Eastern European immigrants. This in turn contributed to a growing antforeign sentiment among native-born Americans that was a factor behind the passage in 1924 of the restrictive legislation that set quotas for new immigrants based on the national origins of the US population in 1920 (Higham, 1971). In a modern parallel, legal immigrants are not only greater in number than at any time since the early 1920s, but are perhaps also more visible than at any time in the nation's history. This may have contributed to the recent drive to modify immigration policy, a drive that ironically has been aimed more at halting undocumented migration than at changing legal immigration (Bean and Sullivan, 1985).

It would be unwarranted to conclude, however, that recent drives to change immigration policy derive from purely nativistic sentiments. A national ambivalence about trends in legal immigration may have channeled efforts toward trying to "solve" the problem of undocumented immigration. Frustrations over changes in legal immigration, which find more acceptable expression in opposition to undocumented immigration, may account in part for the focus of policymakers on the latter, a preoccupation that has been manifested in the work of special commissions established to address immigration reform. For example, in 1978 President Jimmy Carter implemented legislation passed by Congress to create a Select Commission on Immigration and Refugee Policy, charged with the twin responsibilities of assessing current immigration and refugee laws and of developing recommendations concerning future law. In its final report, the Commission noted the following: "One issue has emerged as most pressing—the problem of undocumented/illegal migration" (Select Commission on Immigration and Refugee Policy, 1981: 35).

Undocumented immigration has come to be viewed as a critical problem. Because by far the largest national-origin group of illegal migrants to the United States comes from Mexico (Heer, 1979; Siegel, Passel, and Robinson, 1981; Warren and Passel, 1987; Bean and Tienda, 1988), the volume and consequences of Mexican immigration have been viewed with particular concern. Many observers have expressed concern about the future employability of Mexico's youthful population, which included 34.3 million persons (42 per-

cent) under age 15 in 1985 (Population Reference Bureau, 1986). Despite a recent decrease in Mexico's population growth rate, the country continues to confront economic difficulty, and the prospect that still larger numbers of Mexicans will seek employment in the United States is very real (Teitelbaum, 1985). And for many observers, the fact that undocumented immigration is illegal has itself constituted a sufficient basis for concern, if for no other reason than it appears to make a mockery of those who wait for years (and often in vain) for legal permanent-residence visas.

Perceptions and evidence about the size of the undocumented population

The concern that undocumented immigration to the United States was occurring on a large scale began to emerge in the 1970s. Without much evidence on the size of this population, immigration officials, often on the basis of extrapolations of apprehension statistics compiled by the Immigration and Naturalization Service (INS), conjectured that anywhere from 8 to 12 million persons resided illegally in the country (Chapman, 1975). Even though such extrapolations have been called into serious question (e.g., Bean, King, and Passel, 1986), and even though figures as high as these have largely proven inconsistent with more recent results based on demographic analyses, the heated discussions during the Congressional debates of the last few years on immigration legislation have shown that the exaggerated figures are often still taken seriously.

What does the research evidence about the size of the undocumented population reveal? After reviewing the most systematic and careful analyses conducted up to that time, researchers from the US Bureau of the Census concluded that it is improbable that more than 3 to 6 million undocumented aliens resided in the United States in 1980 (Siegel, Passel, and Robinson, 1981), and it is possible that there were many fewer. Analyses of two data sources that permit an assessment of the number who have come since 1980 indicate that by June 1986 the illegal population was probably growing by 100,000 to 200,000 persons per year (Passel and Woodrow, 1984; Woodrow, Passel, and Warren, 1987). Because most undocumented are Mexican in origin, and because no other single group constitutes more than a small fraction of this population, questions about the number of undocumented residing in the United States largely concern the size of the undocumented Mexican population. In the Mexican case, almost every new piece of evidence in recent years has pointed to a smaller number residing in the country than was previously thought. A demographic analysis of 1980 Mexican census data indicated that the number of Mexican nationals living in the United States in 1980 fell in the range of 1.5 to 3.8 million (Bean, King, and Passel, 1983), with the figure probably closer to the lower bound (Bean, King, and Passel, 1986). Subsequent research estimated that about 1.1 million undocumented Mexicans were included in the 1980 US census (Warren and Passel, 1987).

Taken together, these last two analyses can be used to indicate the upper and lower reaches of the number of undocumented Mexicans in the country

in 1980. The analyses of the Mexican census data suggest that it is very unlikely that more than 3.8 million Mexican nationals were in the United States in 1980; the analyses of the US census data tell us that at least the 1.1 million included in the 1980 census were in the country. Although there is no way to know the number not included in the census with certainty, observers think that the 1980 census included at least half of all undocumented Mexicans in the United States in 1980 (Passel, 1986; Slater, 1985). Charles Keely believes that the 1980 census had “an undercount of one-third to one-half of the undocumented aliens in the country” (1983: 17). Based on an examination of school enrollment data, Thomas Muller and Thomas Espenshade (1985) concluded that the 1980 US census probably counted most of the illegals living in Los Angeles County, where nearly half of all the undocumented Mexicans included in the 1980 census resided (Bean, Lowell and Taylor, 1988).

Another approach to determining the size of the undocumented population is to calculate what it would be under a range of assumptions about the undercount rate. If there were 1.5 million Mexican undocumented living in the United States in 1980—the lowest number suggested by the analyses of Mexican census data—this would imply a minimum undercount rate of about 27 percent (e.g., the 1.1 million included in the 1980 US census is 73 percent of 1.5 million). Interestingly, this undercount rate is not much above the highest rate measured in the United States for any given race-sex-age group in 1980—an undercount rate of 20 percent for black males aged 20–29 (Passel, Siegel, and Robinson, 1982).

Taking the number included in the 1980 census as a point of departure, we calculate that an undercount rate of 33 percent would imply that about 1.7 million undocumented Mexicans were living in the United States in 1980, while an undercount rate of 50 percent would imply about 2.3 million. If the latter figure were close to correct, and if Mexicans made up about 60 percent of all undocumented (as considerable evidence seems to suggest), then one would expect an additional 1.5 million non-Mexican undocumented to have been in the United States in 1980, for a total of about 3.8 million undocumented. In short, the results of recent research point to numbers of undocumented aliens living in the United States in 1980 that are in the lower portion of the range of estimates based on systematic empirical analyses.

Perceptions and evidence about the labor market impact

Even if many fewer undocumented are in the United States than once was thought, the number is nonetheless considerable. Thus the legislative debate on illegal immigration has turned to the labor market impact of undocumented immigration, particularly from Mexico. This issue has often been approached by focusing on two sub-questions: Whether undocumented receive lower wages and earnings than other workers; and whether undocumented affect the wages and earnings of other workers. We consider each of these in turn, although we concentrate on the question of the effect on others' wages.

Douglas Massey (1987) has reviewed the literature on the effect of legal status on wages and identifies two schools of thought. One is represented by Wayne Cornelius (1978), who argues that undocumented workers experience little wage discrimination *per se*, but rather receive lower wages because they are younger, have less education, less work experience, and lower English-language competence than legal immigrants. The other view is represented by Vernon Briggs (1975, 1984), who argues that undocumented workers constitute a “shadow labor force” that is easily exploited and that receives lower wages as a result. Which view is more accurate has “important implications for . . . [undocumented] immigration’s effect on wage rates” (Massey, 1987: 237). If the former is correct, then increases in undocumented workers, such as those occurring in the United States during the 1970s (Warren and Passel, 1987), should not affect wage rates, other than perhaps through increasing the supply of immigrant labor. If the latter is correct, then a rising number of undocumented migrants should depress wage rates.

As far as the evidence goes, almost all of the studies conducted fail to take selectivity biases into account. In his own research, Massey uses a new source of data collected in Mexico as well as appropriate statistical techniques to control for selectivity into the employed migrant work force and for selective emigration. He finds that undocumented status has no direct effect on wage rates, but that by “reducing the duration of employment . . . [and] the amount of employer-specific capital accruing to undocumented migrants, . . . [it] lowers wage rates relative to legal migrants” (1987: 236), thus supporting the view that undocumented immigrants in the United States do not experience direct wage discrimination.

Concerning the effects of undocumented immigration on the wages of other groups again two points of view have emerged. One is that undocumented workers induce competitive pressures in the labor market that result in reduced wages and earnings for other groups of workers. In this view, immigrants are seen as competing with natives for jobs and as constituting a source of labor supply that deprives natives of employment and earnings (e.g., Briggs, 1984; Marshall, 1987). Implicit in this argument is the idea that immigrants and natives (or at least many natives) compete in a similar (or even a unified) labor market for employment and wages, although it is often argued that native youth, women, and minorities are especially likely to be adversely affected. While some theorists have hypothesized in more rigorous terms that immigrants, and especially undocumented immigrants, might exert negative effects on domestic low-skilled workers and positive effects on high-skilled workers (Johnson, 1980), this view basically sees undocumented immigrants as a source of competition that places the jobs and earnings of natives in jeopardy.

The second perspective suggests that entirely different processes of labor market dynamics are at work. Immigrants are seen as constituting a low-skilled labor pool with a tendency to fill jobs native workers disdain. Without immigrants, it is argued, these jobs might cease to exist, either because of capital

substitution or their exportation to more labor-intensive nations (Piore, 1979). The implication is that the wages of natives are little influenced by the presence of such workers. Moreover, it may be hypothesized that the real wages of natives are increased by the presence of low-skilled and undocumented immigrants who provide goods and services to the native community at lower prices than would otherwise prevail, and who save (and perhaps create) the jobs of supervisory and complementary workers (who are likely to be natives) in industries requiring cheap labor for their survival.

It is hard to weigh these two views for several reasons. Studies have been conducted at different levels of analysis ranging from micro-level, local-area case studies to macro-level, economy-wide studies, making comparisons difficult. Moreover, evidence that immigrants compete with groups of native workers has often been indirect. For example, the presence of both natives and immigrants (including undocumented workers) in certain occupations and industries has been cited as *prima facie* evidence that competition and wage depression are occurring (Briggs, 1984). The argument is that the presence of substantial numbers of natives in these categories indicates that natives and immigrants are not entirely structurally separated from one another in the labor market. This reasoning, however, overlooks the possibility that immigrants and natives might be complements in production, a possibility that George Borjas (1984) has shown is entirely consistent with economic theory. Whether the presence of immigrants or undocumented workers has a positive or negative effect on the wages of other groups is an empirical question requiring the direct examination of data for its resolution.

Macro-level data to directly test the economic effects of undocumented immigration have been unavailable until recently, forcing researchers to rely on two alternative approaches. One has been to conduct local-area case studies of undocumented immigrants, and the second has been to extrapolate the effects of undocumented immigration from the effects of immigrant groups in general. Recently, however, the inclusion for the first time of substantial numbers of undocumented persons in the 1980 census, as well as the development of appropriate methodologies for estimating the numbers included (Warren and Passel, 1987), has made it possible to bring direct evidence to bear on the question.

What does the evidence reveal about the labor market effects of undocumented immigration? We consider evidence from three types of research: the local-area case studies mentioned above; larger scale studies that empirically measure the impact of immigration on earnings or on unemployment rates; and large-scale model-based studies that rely on aggregate production functions involving combinations of labor inputs as a basis for specifying estimable equations and assessing the degree to which various labor groups are complements or substitutes in the labor market. Both empirically based and model-based studies rely on (1) data on immigrant groups that are presumed to include undocumented immigrants and from which the effects of illegal immigrants might thus be extrapolated; or (2) direct data on illegal immigrants. (Table 1

TABLE 1 Summary of studies that assess the impact of undocumented immigration on US labor markets

Source	Data	Approach	Control for skill level	Control for endogeneity ^a	Control for capital	Results
Empirically based studies (data on immigrants)						
Smith and Newman 1977	1970 US census	Regression analysis	Yes	No	No	Wages of low-skilled Mexican-Americans are more seriously affected than those of high-skilled workers as a result of Mexican-American concentration in labor markets.
DeFreitas and Marshall 1984	1970–78 Current Population Surveys	Regression analysis	Yes	No	No	Immigrants dampen the wages of low-skilled native workers in the manufacturing sector once immigrant concentration reaches 20 percent.
Simon and Moore 1984	Unemployment data (UI), Current Population Surveys, INS <i>Annual Report</i>	Regression analysis	No	No	No	No observed increase in unemployment due to total legal immigration in the United States.
Muller and Espenshade 1985	1970 and 1980 US census	Regression analysis	No	No	No	Mexican immigrants increase black family income and decrease black unemployment.
McCarthy and Valdez 1986	1970 and 1980 US census	Examination of earnings growth	No	No	No	Latino wage growth was less than the national average in areas with large Mexican immigrant population.
Stewart and Hyclack 1986	1970 1/100 public use sample, US census	Regression analysis	Yes	Yes	No	Immigrants from Mexico have no effect on the wages of central-city black males, while Cuban and West Indian migrants have complementary effects and all other immigrants have negative effects on black male wages.
Empirically based studies (data on undocumented)						
North and Houston 1976	Surveys of apprehended undocumented	Inference based on characteristics of undocumented and "authors' experience in the study of alien workers"	No	No	No	Undocumented workers displace low-skilled legal resident workers, depress educational and skill levels of the labor force, and create a new class of disadvantaged workers based on national origin and immigration status.
Van Arsdol et al. 1979	Nonapprehended undocumented in Los Angeles	Comparisons of income with Hispanic workers	No	No	No	Undocumented males were not competitors with Hispanic population in Los Angeles. Female undocumented were crowded in same low-skill jobs as Hispanic females.

Model-based studies (data on immigrants)

Grossman 1982	1970 US census	Translog production function	No	No	Yes	Total foreign-born persons: ^b second-generation wages - .2% third-generation wages - .3%
Borjas 1984	1970 1/100 public use sample and 1980 1/20 public use microdata sample-A(PUMS-A), US census	Generalized Leontief production function	Yes	Yes	Yes	Total immigrant males (1980) ^b : young white male earnings - 1.2% old white male earnings + 0.6% young black male earnings + 2.7% old black male earnings + 1.5% native females - 1.5%
Borjas 1986	1970 1/100 public use sample and 1980 1/20 PUMS-A, US census	Generalized Leontief production function	Yes	Yes	Yes	Total immigrant males have almost no effect on white males and are slightly complementary to black males. ^b
King et al. 1986	1970 public use sample, US census	Regression equation based on human capital and Leontief production function	Yes	No	No	Foreign-born Hispanics have little effect on the earnings of natives.
Borjas 1987	1980 1/20 PUMS-A, US census	Generalized Leontief production function	Yes	Yes	Yes	Total Hispanic immigrants: ^b white native wage 0% black native wage + .1% Hispanic native wage + .2%
Model-based studies (data on undocumented)						
Bean et al. 1988	1980 US census	Generalized Leontief production function	Yes	Yes	No	Undocumented Mexican males: ^b Mexican-origin native US males 0% black males - .1% white males + .1% total females + .5%

^a Endogeneity controls account for the fact that the labor supply may be endogenous rather than exogenous.

^b Results expressed as the effect of a 10 percent increase in the number of immigrants.

summarizes the design and empirical results for each of the empirically based and model-based studies discussed below.)

Local-area case studies

Several case studies have assessed the labor market impact of undocumented workers in key industries within geographic areas where such workers comprise large portions of the work force. In a survey of owners and managers, Sheldon Maram (1980) found that immigrants, irrespective of legal status, negatively affected only the wages of other immigrants in the garment industry, while undocumented workers in the restaurant industry helped to depress the wages of most other workers. Mario Vasquez (1981) also observed wage depression in the Los Angeles garment industry. Studies in the New York City/New Jersey—area garment, restaurant, and construction industries, however, found little evidence of wage depression affecting the native work force except, in some cases, for women (Waldinger, 1983; Bailey, 1987). These studies all showed that immigrants, especially undocumented workers, were concentrated in menial and physically difficult jobs that were highly differentiated from jobs filled by native workers. A clear exception to this pattern is Michael Miller's (1981) study of a border city (Brownsville, Texas), which showed a sharp rise in unemployment and a drop in the real wages of low-skilled native workers as a result of immigration from Mexico.

Due to the rapid shift in employment and immigration away from agriculture, most studies have focused on urban industries. During the post-World War II years of the *bracero* program (1953 to 1964), however, a much larger proportion of the US work force was employed in agriculture, thus raising questions about the employment impact of *braceros*. (During World War II Congress permitted the entry of temporary labor, chiefly from Mexico, under a system of government-supervised contracts. Known as the *bracero* program, the arrangement was terminated at the end of the war, legalized again during the Korean War, and finally terminated in 1964.) Donald Wise (1974) showed that the termination of the *bracero* program, which temporarily meant a halt to cheap labor from Mexico, substantially increased domestic employment and wages, while reducing production in the California strawberry and winter melon industries. More recently, however, a study of the California citrus industry, where virtually all workers were Mexican nationals, found little evidence of job displacement by the temporary and mostly undocumented work force affecting the settled, legal work force (Mines and Anzaldúa, 1982).

Empirically based studies

Using data on immigrants in general, two widely cited studies were carried out by the Urban Institute (Muller and Espenshade, 1985) and by the Rand Corporation (McCarthy and Valdez, 1986). Neither limits attention to the examination of labor market impacts; rather, both analyze a broad set of economic effects of immigration on natives. However, both consider a restricted population, namely Mexican immigrants in California. Although the

studies make no effort to distinguish between legal and undocumented immigrants, it is widely recognized that a high proportion of immigrants in California are undocumented. Both hypothesize that the Los Angeles labor market is especially affected by immigration because recent immigrants in that city comprise a larger share of the labor force than in other urban areas of California and the United States.

Kevin McCarthy and R. Burciaga Valdez find little effect on the wages of the native work force, except in the case of Latino workers, whose wages grew at less than the national average rate between 1970 and 1980. They suggest that Mexican immigration served to improve the work conditions and employment opportunities of native workers by providing a boost to otherwise failing, low-wage industries. Their analysis is admittedly inferential and limited to a rough examination of quite general, industry-level categories and employment and earnings growth in the United States, California, and Los Angeles. They do not control for other factors that might affect native earnings. Furthermore, it is not clear whether Latinos are disaggregated by nativity. The results of this analysis should be regarded as speculative in light of its methodology.

Muller and Espenshade reach similar findings through a regression approach designed to depict the functioning of the labor market. They focus especially on differences in black family income due to differences in immigration across labor markets. The variables they use to explain such differences are percent Hispanic in 247 US labor markets (or percent Mexican-born in their analysis of 51 Southwest Standard Metropolitan Sampling Areas—SMSAs); population growth from 1970 to 1980; percent income in construction and durable goods manufacturing; percent black who have completed 12 years of schooling; and white income, which they view as a control for local economic factors affecting all workers. Percent Hispanic (percent Mexican-born) is meant to serve as an indicator of Mexican immigration under the assumption that such immigration is directly related to the Hispanic (Mexican-born) population of geographic labor markets. For the United States, the Hispanic population has a small negative effect on black family income, while in the Southwest a positive relation is found for percent Mexican-born. The authors conclude that, positive or negative, the effect on black family income is small.

Muller and Espenshade analyze unemployment using the same regression model. Black unemployment, the primary dependent variable in their analysis, is slightly lowered by the presence of recent immigrants, a result the authors attribute to the relative lack of job competition between Mexican immigrants and blacks. The two groups are employed in different occupations and industries because of different levels of education. Moreover, they surmise that the presence of immigrants facilitated the upward mobility of blacks, especially in public service employment.

Barton Smith and Robert Newman (1977) observe that the real income of Mexican-Americans is lower along the border than in Houston, where a far smaller percent of the population is Mexican-born. Their analysis of border

and nonborder SMSAs shows a negative relationship between areas with high concentrations of Mexican-Americans and Mexican-American incomes, particularly for low-skilled Mexican-Americans. Gregory DeFrietas and Adriana Marshall (1984) note that immigrants are heavily concentrated in the less skilled jobs of the manufacturing sector. In a regression analysis of 35 SMSAs, they find that the rate of wage growth between 1970 and 1978 is negatively related to increases in the percent of foreign-born manual workers. This effect is significant once immigrant concentration passes the 20 percent mark. James Stewart and Thomas Hyclak (1986), analyzing 1970 SMSA-level census data, find that the presence of Mexican-born workers has no effect on the earnings of central-city black males, while there is some substitution between blacks and the non-Mexican foreign-born.

Julian Simon and Stephen Moore (1984) have also studied the effect of immigration on unemployment. These authors use a regression model to determine how differential immigration in cities is related to change in the total person-years of unemployment across cities. A three-year lag between immigration and unemployment is built into their assessment because they argue that it provides the most critical test of the labor market's ability to adjust. They conclude that little or no displacement occurs due to immigration. Others have argued that a reanalysis of their data with a different lag gives different results (General Accounting Office, 1986).

Some of the studies described above investigated wage differences, while others focused on changes in unemployment. Generally, earnings or wages rather than unemployment is preferred as the dependent variable in the analysis of labor market effects because its use is less problematic. Unemployment statistics generally do not include the category of discouraged workers. Moreover, many economists view an increased supply of labor as directly affecting wage levels but not necessarily unemployment. Unemployment is seen as an individual response to a change in wages, so that immigration theoretically would not directly displace native workers from their jobs but rather would reduce their wages (Killingsworth, 1983).

Using data on undocumented immigrants in a landmark study prepared for the US Department of Labor, David North and Marion Houstoun (1976) provide "a preliminary analysis of the labor market role and impact of illegals, and their manpower policy implications." The authors infer from the characteristics of apprehended aliens that illegals probably cluster in specific geographic areas. They infer that natives with low skills in these same areas suffer from lower wages and poorer working conditions. Another study of non-apprehended undocumented workers in Los Angeles inferred that the absence of an earnings gradient across occupations for males as compared with a wide gradient for the general Hispanic population suggests that undocumented male workers do not compete with other labor force groups (Van Arsdol et al., 1979). For females, the presence of an earnings gradient and salaries similar to those of the larger Hispanic female labor force in Los Angeles suggested

that female undocumented immigrants are more likely to compete for the same low-skill jobs as other Hispanic women.

Model-based studies

Data on immigrants in general have been used to analyze labor market impacts with a formal model of labor market operations. Employing the basic theory of labor demand and assuming that firms seek to maximize profits, these studies have used a model of the labor market to assess the degree of substitutability or complementarity among labor force aggregates. Such a methodology involves estimating how the earnings of native workers are affected by the numbers of immigrant workers across labor markets. (For further information on the theory and choice of methodologies, see Hamermesh and Grant, 1979.) To our knowledge, only six studies have employed an aggregate production function to analyze the impact of immigrants on the native labor force. The consensus from this research is that there are only slight substitution effects between the immigrant and native labor force groups when immigrant groups are not disaggregated by legal status. The only substantial negative effects observed are on the earnings of the immigrants themselves.

The first of these studies used a translog production function to test for substitution effects between capital, the stock of immigrants in the United States, and the native work force in 1970 (Grossman, 1982). The native work force is divided into second generation (sons of immigrants) and third generation (all others). Jean Grossman finds that immigrants and both second- and third-generation workers are only slight substitutes in production. The inclusion of capital had no effect on the labor substitution results. Grossman's findings, however, may not apply to Mexican or undocumented immigration since the stock of *all* immigrants is primarily legal, better educated, composed of many nationalities, has lived more years in the United States, and is dispersed into more labor markets. Furthermore, the study did not control for differences in skill levels, thus resulting in the comparison of quite different groups that might rarely, if ever, compete in the labor market.

Borjas, in a series of articles, has analyzed various immigrant and native work force disaggregates using specifications derived from a generalized Leontief production function (Borjas, 1984, 1986, 1987). He introduces controls for the skill levels of individuals so that wage levels are not affected by skill differentials. The first of these articles (1984) disaggregates the labor force into various groups and tests the substitutability among them. All immigrant males aged 18–64 are aggregated into one labor input. Borjas finds that immigrant males are complements in production with all native-born male groups, while Hispanic immigrant males, a smaller sample group, have no effect on native males. Both groups of immigrants are found to be substitutes with female natives, a pattern that is observed for almost all native male groups.

In additional research Borjas (1986) seeks to discover whether the estimates of cross-sectional labor demand functions are sensitive to a method of

estimation that accounts for change. An analysis of cross-sections at two points in time is expected to better account for demographic change within labor markets than a simple comparison between labor markets in which an event occurred and those in which it did not. The major findings of the study are that immigrant males (with no further disaggregation) have effects on the native labor force in the direction of previous findings, but that the magnitudes of the effects are less.

Recognizing the deficiency of previous studies in aggregating diverse groups, Borjas (1987) further divides labor market inputs by race and nationality. He finds relatively small effects (both positive and negative) on native-born groups. White native-born men are the most adversely affected by an increase in the immigrant labor supply, while black native-born men gain slightly. The supply of Hispanic immigrants is not disaggregated by nationality, except where immigrants and US natives are combined. In this case, an increase in the supply of each of the various Hispanic groups has small effects on the earnings of non-Hispanics, but sizable effects on the earnings of the Hispanic groups themselves.

A study of ours (King, Lowell, and Bean, 1986) employs both a Leontief production function and a human capital approach as bases for specifying earnings equations. Using 1970 data, the authors examine the effects of immigrant Hispanic workers on the earnings of second- and third-generation Hispanics. Native Hispanic workers in labor markets with higher concentrations of Hispanic workers do not fare significantly worse than natives in markets less populated by immigrants, except in the case of unskilled laborers, where there is a slight negative impact.

The only model-based research we know of that used data on undocumented immigrants is one of our own projects (Bean, Lowell, and Taylor, 1988). This study focuses on the impact of the undocumented portion of Mexican immigrants on legal US workers in Southwestern metropolitan labor markets. Enumerations of Mexican undocumented workers in SMSAs in the 1980 census are used to estimate earnings elasticities based on a Leontief model of earnings determination (Bean, Lowell, and Taylor, 1988).² Undocumented workers are found to exert little impact on the earnings of individuals in each of five other labor force groups. Of considerable interest is the finding that different effects emerge for the undocumented and the legal Mexican populations. For example, the supply of legal Mexican workers exhibits a negative impact on female earnings, whereas undocumented Mexican workers show a positive effect on female earnings. As shown in Table 1, a 10 percent increase in the supply of Mexican undocumented workers is estimated to increase female earnings by about 0.5 percent. The earnings of black as well as native Mexican workers do not appear to be significantly affected by the relative numbers of undocumented workers in local labor markets. This finding is especially interesting because black and native Hispanic minorities are thought to work in industries most affected by undocumented workers. Neither does there appear to be a significant effect of increases in the supply of undocumented workers

on the earnings of white workers, although interestingly the direction of the effect is positive. We argue that the findings of small complementarities between undocumented Mexicans and some other groups, together with the finding of small substitutions between legal immigrants and some groups, are more consistent with the argument that undocumented workers may hold jobs that others disdain than they are with the view that undocumented workers compete with natives and (especially) minorities for jobs and wages.

Discussion and conclusions

The size of the undocumented population in the United States appears to be smaller than many observers have speculated. The wages of undocumented immigrants do not appear to be affected by their immigrant status *per se*, and studies of labor market impact have found that the effects of immigrants (both legal and undocumented) on the wages and earnings of other labor force groups are either nonexistent or small (and sometimes positive). As we noted earlier, however, public perceptions have often run in the opposite direction. What are some of the factors that have contributed to this discrepancy? We think at least six reasons may be cited for the discrepancy between perceptions and research results.

1 Observers have often failed to specify the population to which estimates refer. Estimates of the size of undocumented populations discussed above usually refer to the population “stock,” or the size of the population in residence in the country at a particular time (Passel, 1986). The “flow” of persons into and out of the country over a given time may be much larger, especially if the duration of stay of many of the persons involved is relatively brief and if they make repeated trips to the United States. Under these circumstances, the “flow” of undocumented immigrants may substantially exceed the stock and create the impression that the stock is larger than it really is.

2 Distinctions have not always been drawn among different types of undocumented immigrants. Some undocumented workers come intending to establish permanent settlement. Such immigrants have been referred to as “settlers” (Sullivan, 1986; Passel, 1986); others intending to stay only a short while have been called “sojourners.” Persons in the latter category may gradually move into the former, often with the assistance of social networks that enable them to find employment and housing (Massey, 1985; Massey et al., 1987). It is likely that the census has enumerated a higher proportion of settlers than sojourners and that estimates of the size of the undocumented population are more accurate in the case of the former than the latter group.

3 Another major factor contributing to confusion is that legal immigrants, as noted above, have grown in number over the past two decades. Since many of these persons have only limited English-language skills, their increasing numbers in the United States may have fostered the impression that the undocumented population is larger and is growing faster than is actually the case. Moreover, legal immigrants have been found in many instances to

exert a small negative effect on the wages and earnings of other groups, thus inviting the generalization that undocumented immigrants might have the same effect. As we have found, however (Bean, Lowell, and Taylor, 1988), undocumented Mexican immigrants appear to generate small increases in the earnings of some other groups.

4 The ethnic composition of legal immigrants has changed over the past 20 years to include higher proportions of Hispanics and Asians. Since most undocumented are of these national origins, the growing presence of legal immigrants may again have generated confusion about differences between the size and growth of the legal and undocumented populations.

5 A number of highly respected scholars have argued that undocumented exert a negative impact on the economy (e.g., Briggs, 1984; Marshall, 1987). As noted above, their reasoning has often rested on the observation that the occupations and industry groups in which undocumented are most likely to work have increased their immigrant composition over time, thus indicating job displacement and wage depression. It has also been suggested that aggregate unemployment rates have increased at the same time that increases in the number of undocumented immigrants have occurred. It is questionable, however, whether undocumented are responsible for trends in unemployment and whether there is any necessary relationship between undocumented composition and wages.

6 A substantial time lag often exists between the development of policy concerns and the accumulation of research evidence relevant to those concerns. Certainly this is true with respect to undocumented immigration. Substantial evidence on the size of the undocumented population based on demographic analysis has emerged only in the past five or six years. It is easy to forget that what now seems to be a rather strong consensus about the size of this population was until recently a matter of much greater dissension. And on the question of labor market impacts, direct evidence about the effects of undocumented on earnings has become available even more recently.

It is impossible to say with certainty that the preceding are the circumstances that have generated the discrepancy between perceptions and evidence concerning the undocumented population in the United States. However, it is clear that recent research casts doubt on two frequently believed ideas about the undocumented population. One is that an enormously large and disruptive undocumented labor force resides in the United States. The second is that it is impossible to verify any conclusion to the contrary about this population. Reaching the conclusion that undocumented immigrants do not exert negative labor market effects does not mean that one is "in favor of" undocumented immigration. Such immigration is, after all, illegal. But the conclusion that the labor market effects are minimal does have important policy implications. It might incline one, for example, to be more favorably disposed toward legal employment programs than would be the case if substantial negative effects had been observed.

Recent research on the size and effects of illegal immigration thus has clear policy implications and illustrates the usefulness of empirical investigation. At the same time, the success of the recent legislative efforts designed to curtail a presumably damaging undocumented immigration might seem to suggest that research has little bearing on policy formulation. Such a conclusion, however, is premature. It is difficult to know what legislation might have been passed in the absence of the results of social science research. Moreover, as the process of policy formulation continues, recent research results provide a basis for guiding and shaping future policy initiatives.

Notes

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1 The ceiling was initially set at 290,000 and subsequently lowered to 270,000.

2 The technology parameters of the Leontief model were estimated for 1980 Metropolitan Areas (SMSAs) in the Southwest, or the labor markets with most of the undocumented population. An estimate of the legally resident Mexican population was made using alien registration (I-53) data for 1980 from the Immigration and Naturalization Service and data on legally admitted aliens. This estimate was subtracted from the total Mexican alien population enumerated in the 1980 census. Various corrections and adjustments were made and are

detailed in previous work (Warren and Passel, 1987; Passel and Woodrow, 1984). In order for the estimated impact to be substantially different, the distribution of nonenumerated undocumented workers across local labor markets would have to be implausibly at variance with the enumerated population.

In the statistical analysis, it was first established that a system which disaggregates undocumented and legal immigrants is significantly different from one which does not. A disaggregation of the undocumented and legal population was therefore considered. And because the Leontief model preferably includes the wages of each group considered—note that the identification of undocumented individuals is problematic in the census—several alternative systems were analyzed. Controls for individual skill levels, as well as a correction for the endogeneity of labor supply, were introduced in the statistical models.

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