Published in final edited form as:

Lat Stud. 2010 ; 8(3): 328–354. doi:10.1057/lst.2010.29.

What Happened to the Wages of Mexican Immigrants? Trends and Interpretations

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Abstract

Over the past several decades the wages earned by Mexican immigrants stagnated relative to those earned by native Mexican Americans and non-Hispanic whites. In this article we draw on data from the decennial census and American Community Survey to understand why and how this stagnation occurred. We test two competing explanations: a decline in the quality of successive cohorts of Mexican immigrants and a shift in the political economy that increased the number of people lacking full labor rights in the United States while increasing discrimination and exclusion against such people. We present evidence in favor of the latter explanation by showing that observed quality increased rather than decreased and that what happened instead was a systematic decline in the returns to various measures of human capital and a wholesale drop in wages for all immigrants after 2000.

Something happened to undermine the economic standing of Mexican immigrants in United States during the 1980s and 1990s. This shift in economic fortunes is illustrated in Figure 1, which shows trends in the wages earned by native born and foreign born Mexicans compared with native born, non-Hispanic whites (all figures reported here and in later tables and figures on are in constant 2007 dollars). As can be seen, from 1950 through 1970 the wages of all three groups rose steadily in parallel fashion. Although Mexican immigrants earned less than Mexican Americans who, in turn, earned less than native whites, the economic fortunes of all groups improved significantly during the long, postwar economic boom, and wages grew at roughly the same pace across groups.

During the 1970s, however, the median income stagnated in the United States and income inequality increased dramatically, putting downward pressure on the wages of all groups (Danziger and Gottschalk 1995; Levy 1998; Piketty and Saez 2003). As Figure 1 shows, the wages earned by native whites fell between 1970 and 1980 and then slowly rose back toward their 1970 level between 1980 and 1990. The wages of Mexican American natives managed to increase during both decades, probably owing to expanded civil rights enforcement, though at a much slower rate than before. In contrast, the wages earned by Mexican immigrants fell steadily from 1970 to 1990. For those born in Mexico, earnings did not simply stagnate, they deteriorated.

The 1970s and 1980s were difficult economic times for all Americans, of course, but the era of stagflation was followed by a sustained boom known as the “roaring nineties” (Stiglitz 2003). During this decade, the wages of native whites and Mexicans rebounded and once again moved upward in parallel fashion. Wage growth only began to level off in the new century. Despite the general return to earnings growth in the late 20th century, however, Mexican immigrants did not share in the prosperity of the roaring 1990s and wage growth remained flat. Indeed, their wages in 2007 stood roughly at where they did in the early 1960s. What happened?

Clearly something occurred over the past several decades to undermine the status of Mexican immigrants in the United States, but there is little agreement on what that something was. On the one hand, Borjas (1995, 1999) has argued that falling Mexican wages stemmed from a decline in the “quality” of successive cohorts of immigrants to the United States, with Mexican immigrants, in particular, becoming progressively less productive over time. In contrast, Massey (2007) has emphasized exogenous shifts in the American political economy stemming from changes in U.S. immigration policy, which accumulated over time to undermine the labor market position of those born in Mexico.

Perhaps no definitive end to the debate can be achieved because theoretical constructs such as “productivity” and “quality” cannot easily be measured. Indeed, theoretical discussions of wages and productivity at times seem tautological, with falling wages being explained by declining productivity and declining productivity being proven by falling wages. Although some dimensions of worker “quality” can be measured directly---e.g. age, education, experience, occupational skill---inevitably there are certain dimensions of productivity such as motivation, drive, engagement, etc. that are likely to affect earnings but cannot be measured, at least reliably or accurately.

One important source of unmeasured heterogeneity in U.S. earnings over the past several decades has been legal status (Massey and Bartley 2005). Most studies of immigrant wages rely on data from the U.S. Census or Current Population Survey, and although these sources ask respondents whether they are U.S. citizens, no attempt is made to determine the legal status of non-citizens, an increasingly large share of Hispanics, especially those born in Mexico. Non-citizens fall into three basic categories: legal permanent residents, who share many but not all of the labor rights of citizens; legal temporary workers, who have decidedly constrained labor rights; and undocumented migrants, who have no rights at all.

The inability to control for legal status when studying earnings creates major problems not only for interpreting trends in immigrant earnings, but also for understanding the effects of immigration on the economic standing of natives, for two basic reasons. First, the percentage of all immigrants without permanent legal documents has shifted considerably over time (Massey and Bartley 2005). The undocumented population of the United States grew steadily after 1965 to reach an estimated five million in 1986, then dropped precipitously between 1987 and 1992 as more than three million people legalized under provisions of the Immigration Reform and Control Act. Thereafter the number of undocumented migrants began to grow once again and peaked at an estimated 12 million in 2005 (Passel 2006). Over the same period, the number of persons entering the United States on temporary work visas rose considerably, going from just 45,000 in 1981 to peak a record 1.1 million in 2008 (U.S. Department of Homeland Security 2009). Among groups heavily affected by immigration, therefore, the relative number of people lacking full labor rights in the United States has steadily increased since the early 1990s.

A second reason why the inability to measure legal status hampers understanding of earnings trends is that there is considerable heterogeneity over time in how documented and undocumented migrants are treated in U.S. labor markets. Before 1986, it was illegal to work in the United States without documents, of course, but employers faced no penalty for hiring unauthorized workers and there was little evidence of systematic discrimination on the basis of legal status (Chiswick 1984; Massey 1987). At the same time, macroeconomic studies found that immigration, legal and legal, had little effect on the earnings or employment rates of natives (Borjas 1984, 1987; Borjas and Tienda 1987; Bean 1988).

In 1986, however, Congress passed the Immigration Reform and Control Act, which for the first time criminalized the hiring of undocumented migrants, and thereafter employers who

“knowingly” hired unauthorized workers were subject to prosecution. In subsequent years, an earnings gap opened up between documented and undocumented migrants (Donato and Massey 1993; Phillips and Massey 1999) and econometric studies of immigration began to find some limited negative effects on the wages and employment of natives (Borjas 1993, 1997, 1999; Borjas, Freeman, and Katz 1996). Subsequent work revealed that the criminalization of undocumented hiring in 1986 dramatically changed the organization of U.S. labor markets to undermine the bargaining power not only of those working without documents, but also citizens and legal immigrants who participated in the same sectors of the labor market (Martin and Taylor 1991; Massey, Durand, and Malone 2002).

The workers most who are most likely to be affected by changes in the number and treatment of undocumented migrants are persons of Mexican origin, particularly those born abroad. In this analysis we focus on Mexican immigrants to interpret earnings trends in the context of recent shifts in U.S. immigration and border policies. The potential influence of undocumented migration on Mexican earnings is huge. By 2008, 60% of all Mexican immigrants present in the United States were unauthorized, and undocumented migrants constituted more than one fifth of all persons of Mexican origin (Massey 2010). In the ensuing sections we examine trends in wages earned by native and foreign born Mexicans and compare these to trends for native born, non-Hispanic whites. We argue that the changing political economy of migration constitutes the most plausible explanation for the declining earnings of Mexican immigrants rather than changes in the quality of immigrants themselves. Although we cannot definitively eliminate declining cohort quality as a competing explanation, we argue that it is less consistent with the observed facts.

ANALYZING IMMIGRANT WAGES

The outcome of interest here is hourly wages, expressed in constant 2007 dollars earned by Mexican and non-Hispanic white males between 1950 and 2007. We focus on male workers because undocumented Mexican migration continues to be dominated by men. We also wish to leave the analysis of gender interactions for a separate study currently being developed. Our data come from decennial U.S. Censuses from 1950 through 2000 and from the American Community Surveys fielded in 2005 and 2007. For ease of comparability across census years, we used the Integrated Public Use Microdata Samples published by the Minnesota Population Center (Ruggles et al. 2009). For the years 1950, 1960, and 1970 we used 1% samples, whereas for all other years we used 5% samples, and from each source we selected the sub-samples of interest: 1) Mexican-born males, 2) US-born males of Mexican ancestry, 3) non-Hispanic native born white males, and 4) foreign-born white males.

In order to define males of Mexican ancestry in 1950 through 1970, we selected all those who reported at least one parent born in Mexico, which was the Census Bureau’s method of determining Mexican ancestry at the time. For the years 1980 through 2007, however, we selected all those who reported “Mexican” as their first ancestry. Unfortunately, a question on the nativity of parents has not been included in the census long-form questionnaire since 1970 and to date has not been a part of the American Community Survey, making it impossible to identify the second generation uniquely. In this study, foreign-born white males are those who report their birthplace as other than the United States or Mexico, and who reported their race as white and did not self-identify as Hispanic. In all cases we consider only active workers---those currently in the labor force who worked at least one week during the prior year. We also narrowed our focus to consider workers only in the prime-age labor force ages (25 to 62). The 1990 and 2000 samples of native-born, non-Hispanic white male workers were particularly large, so we randomly sub-sampled these groups to reduce the amount of computer memory required for analyses.

The census does not directly report hourly wages, so we estimated them using the worker's reported wage and salary income from the prior year divided by the usual number of hours worked per week times weeks worked during the year. In 1950, this information was only reported for a random sub-sample of the 1% sample of individuals. When weeks worked or hours worked were reported as ranges rather than point estimates, we used the midpoint of the interval. All income and salary amounts were adjusted for inflation using the consumer price index calculator from the US Bureau of Labor Statistics (Bureau of Labor Statistics 2009).

CHANGING CONTEXTS OF RECEPTION

At any point in time, people of Mexican origin in the United States, both native and foreign, enter labor markets in which they either enjoy or lack certain rights and privileges, a defining feature of what Portes and Rumbaut call the context of reception (1990, 2001, 2006). Although they formulated this concept with immigrants in mind, it can be generalized to apply to all persons of Mexican origin entering the American economy as new workers. Immigrant Mexicans enter from families and households in Mexico, whereas native Mexican Americans enter from families and households in the United States, which are often themselves headed by immigrants.

Upon entering the U.S. labor market, workers in different legal status groups encounter various processes of exploitation and exclusion that have fluctuated in nature and intensity over time (Massey 2007). Exploitation occurs when people are compelled to work for less than the full value of their labor, and in labor markets the characteristic expression of exploitation is discrimination—paying members of one group (e.g. Mexican immigrants) less than one would pay other equally qualified workers from another group (e.g. native non-Hispanic whites). Exclusion occurs when actions taken by one group restricts another group's access to a valuable resource, in this case stable, high-paying jobs (Tilly 1998). Prior to the civil rights era, persons of Mexican origin in the American southwest were routinely paid less for performing the same work as “Anglos” and blocked from entering certain occupations that were socially defined as reserved for non-Hispanic whites (Gutierrez 1995). Wage discrimination was legal and widespread until the 1960s and the residential segregation of Mexicans was enforced through a combination of *de jure* and *de facto* mechanisms (Grebler, Guzman, and Moore 1970; Massey 1979; Bean and Tienda 1987; Telles and Ortiz 2008).

The 1964 Civil Rights Act outlawed discrimination and exclusion on the basis of race and ethnicity and subsequent enforcement efforts and affirmative action initiatives improved the status of formerly excluded groups such as African Americans (Heckman and Payner 1989) and Mexican Americans (Poston, Alvarez, and Tienda 1976). Rising civil rights enforcement likely accounts for the observed improvement in Mexican American wages during the 1970s, even as the real wages of native whites declined (see Figure 1). At the time the Civil Rights Act was passed, there were virtually no undocumented migrants present in the United States because U.S. law provided ample opportunities for legal entry (Massey, Durand, and Pren 2009). Up through the early 1960s, a large guest worker program admitted hundreds of thousands of Mexicans each year and there were no limits on the annual number of Mexicans who could be admitted as legal immigrants.

This situation changed dramatically in 1965, however. Congress unilaterally terminated the guest worker program at the end of 1964 and in 1965 placed new limits on legal immigration from the Western Hemisphere (Zolberg 2006). Subsequent legislation specifically targeted immigrants from Mexico and drastically reduced their opportunities for legal entry (Massey, Durand, and Malone 2002; Zolberg 2006). Whereas Mexicans in the

late 1950s enjoyed unlimited access to immigrant visas and upwards of 400,000 guest worker visas, by 1976 the annual number of legal resident visas allocated to Mexico stood at 20,000 and temporary work visas were all but eliminated (Massey 2009).

Not surprisingly, undocumented migration from Mexico rose sharply after 1965 and by 1986 the undocumented population was estimated to be around five million persons (Warren 2003). The growing number of “illegals” in the United States sparked a backlash in public discourse in which Mexican immigrants were increasingly framed as a threat to America’s security, workers, culture, and way of life, a trope that Chavez (2001, 2008) labeled the “Latino threat narrative.” Among national magazine covers he examined from 1965 through 1999, two-thirds framed immigration as threatening and the frequency of this framing rose sharply over time (Chavez 2001:21–24). Although the initial framing metaphors were hydraulic---depicting immigration as a “flood” threatening to “drown” American culture and society---as time went on the metaphors became increasingly martial in nature, with the border region depicted as a “battleground” and the border itself as a “line of defense” that was “under attack” by “alien invaders.” Within the United States, immigrants were said to constitute a “time bomb” that would ultimately “explode” to destroy American culture and society. Border Patrol Officers became “defenders” who were “outgunned” in their efforts to “hold the line” against attacking “hoards” who launched “Banzai charges” against overwhelmed “defenses” (Dunn 1996; Andreas 2000). In *LA Times* coverage of Proposition 187 from 1992 to 1994, war metaphors were used in 23% of the stories about immigration and in 20% of the stories about immigrants (Santa Ana 2002).

The rise of such martial rhetoric was accompanied by an actual militarization of the Mexico-U.S. border that began with the passage of the Immigration Reform and Control Act (IRCA) in 1986 (Dunn 1996; Massey, Durand, and Malone 2002). Most Americans remember IRCA for legalizing of 3.1 million former undocumented migrants, 2.3 million of whom were Mexican; but it also launched a surge in hiring by the Border Patrol that was disproportionate to any change in the underlying traffic of undocumented migrants (Massey, Durand, and Malone 2002; Massey 2009). IRCA began what would prove to be two decades of rapidly escalating border enforcement and by 2009 the Border Patrol budget had grown to 7.4 times its 1986 level, the number of Border Patrol officers by a factor of 5.4, and the number of hours spent patrolling the border had risen 8.6 times (Massey and Sanchez 2010).

This dramatic increase in the U.S. enforcement effort greatly increased the costs and risks of undocumented border crossing, tripling the death rate (Massey Durand and Malone 2002) and increasing smuggling fees by a factor of six (Massey, Durand, and Pren 2009). Paradoxically, however, the rising costs and risks of border crossing did not deter unauthorized migrants from coming to the United States in the first place, but instead induced the undocumented to stay put once they had gained entry (Massey, Durand, and Malone 2002). Having run the gauntlet at the border, those without documents simply hunkered down to stay in the United States instead of returning to Mexico and thus facing the high costs and risks of border-crossing at some point in the future. As a result, the annual probability of return migration following a successful entry plummeted from just under 50% before 1986 to only 7% in 2008 (Massey, Durand, and Pren 2009).

As already noted, a second far-reaching provision of IRCA was its criminalization of undocumented hiring and its requirement that employers collect and maintain files proving they had inspected documents confirming an employee’s identity and right to work in the United States. Rather than eliminate the magnet of U.S. jobs, however, employer sanctions had more pernicious consequences, the first of which was a rise in discrimination against Hispanics. Given that 85% of all undocumented migrants come from Latin America, with 60% from Mexico alone, an easy way to reduce the risk of violating IRCA’s provisions was

simply not to hire anyone who “looked” Hispanic, and this is apparently what many employers did (Lowell, Teachman, and Jing 1995). Among those migrants who did manage to get hired, moreover, earnings fell as employers lowered wages to compensate themselves for the risks associated with hiring foreigners (Cobb-Clark, Shiells, and Lowell 1995; Fry, Lowell, and Haighighat 1995; Lowell and Jing 1994; Sorensen and Bean 1994).

A second, more profound consequence was a radical transformation of the hiring process in sectors that routinely employed immigrants. Whereas direct hiring was the rule before 1986, afterward indirect hiring became the norm as employers turned to labor subcontractors to shield themselves from employer sanctions (Massey, Durand, and Malone 2002). In an indirect hiring regime, an employer signs a contract with a subcontractor who is a citizen or resident alien, and that person, in turn, agrees to provide a given number of workers for a defined period of time to perform a specified task at particular wage rate. Since contractors themselves are legally present in the United States, employers are in compliance with the law. If immigration officials raid the worksite and discover undocumented migrants being paid, it is the subcontractor who is liable, not the employer; but of course authorities first have to find the subcontractor, who is typically not on site and never resurfaces but later reappears under a different name.

In return for assuming the risks of prosecution and the burdens of paperwork under IRCA, subcontractors take a cut of the total wage bill, deducting a share of the wages that would otherwise go to workers. Once indirect hiring became the norm, many job seekers were required to work through subcontractors, whether documented or not. After 1986, legal immigrants and even citizens increasingly had their wages garnished by middleman labor entrepreneurs (Massey, Durand, and Malone 2002). Under the new arrangements, employers got easy access to inexpensive workers and subcontractors collected rents by controlling access to jobs while workers, both legal and illegal, got exploited (Phillips and Massey 1999; Aguilera and Massey 2004).

Rising levels of discrimination and exclusion directed against Mexicans, along with a militarized border that prompted immigrants to stay rather than return, created a perfect storm for wage depression among Mexican workers in the United States. As more people stayed rather than returning to Mexico, net undocumented immigration actually rose and the undocumented population grew more rapidly than ever before (Massey, Durand, and Malone 2002). From the point when IRCA’s legalization process ended around 1993 until around 2005, the size of the undocumented population grew from around 2 to 12 million, seven million of whom were from Mexico (Massey 2010). This increase occurred at a time when those without documents were subject to rising rates of discrimination owing to IRCA. In short, among Mexican Americans generally and Mexican immigrants in particular there were more exploitable people subject to greater discrimination and exclusion than ever before.

The situation for Mexican immigrants grew more perilous after the United States launched its war on terror in the late 1990s. The 1996 Anti-terrorism and Effective Death Penalty Act declared all non-citizens subject to immediate deportation if they had ever entered the country illegally or had ever committed a crime, no matter how long ago. Given that two thirds of legal Mexican immigrants first came to the United States initially without documents (Massey and Malone 2003), this legislation placed the vast majority of those born in Mexico in an extremely vulnerable and exploitable position, whether they were currently legal or not. The war on terror morphed into a full-scale war on immigrants with the passage of the USA PATRIOT Act in 2001. This legislation authorized the deportation of any alien—legal or illegal—that the Attorney General had “reason to believe” might

commit, further, or facilitate acts of terrorism” and required no judicial hearing or any presentation of evidence.

After 2001, and for the first time since the 1930s, immigrant neighborhoods and workplaces within the United States were systematically targeted for immigration enforcement. By 2008 deportations had soared to 32 times their 1986 level and reached a record number of 349,000, compared to only 139,000 per year at the height of the deportation campaigns of the 1930s (Massey, Durand, and Pren 2010). The launching of the “ICE raids” (referring to Homeland Security’s Bureau of Immigration and Customs Enforcement) dramatically increased the degree of fear and apprehension among immigrants, driving them further underground and rendering them more fearful and vulnerable than ever.

The final shift in immigration policy relevant to the labor market situation of Mexican immigrants was the quiet but massive expansion in the number of temporary worker visas after the terrorist attacks of September 11, 2001. Although a modest guest worker program had been re-authorized by congress in 1976, Mexican participation in it remained small until 2000, when the number of temporary workers arriving from Mexico surpassed 100,000 for the first time since 1964. Thereafter the number of temporary workers accelerated exponentially to reach 360,000 in 2008, a number not equaled since the height of the Bracero Program in the late 1950s (Massey, Durand, and Pren 2009). Given that the entire Mexican-born population of the United States grew by only 590,000 persons between 2007 and 2008, the entry of 360,000 Mexican guest workers obviously constitutes a large fraction of total growth in the Mexican labor force.

In sum, despite the passage of the Civil Rights Act in 1964, which improved the bargaining position of Mexican Americans vis-a-vis non-Hispanic whites, and should have done so for Mexican immigrants as well, landmark changes in U.S. immigration policy beginning in 1965 worked in precisely the opposite direction, increasing the number of undocumented migrants while simultaneously raising the penalties, both formal and informal, for being in undocumented status. As noted above, never before have so many Mexicans in the United States found themselves in such a vulnerable and exploitable position.

DECONSTRUCTING THE WAGES OF MEXICAN IMMIGRANTS

In order to shed light on reasons for the observed stagnation of Mexican immigrant wages over time we estimated a series of wage regressions using data from the U.S. censuses of 1950 through 2000 and the American Community Surveys of 2005 and 2007. In each year we pooled data for persons of Mexican origin and non-Hispanic whites and regressed the natural log of the hourly wage on a set of independent variables that included age, age-squared, marital status, education, occupation, state of residence, work experience, family size, and veteran status, along with dummy variables identifying foreign born Mexicans, native-born Mexicans, and foreign born non-Hispanic whites, leaving native non-Hispanic whites as the reference category. This equation was estimated using ordinary least squares.

The Changing Effect of Foreign Birth

The estimated equations are included in Appendix A; but for illustrative purposes Figure 2 shows changes in the effect of being a Mexican immigrant over time, holding constant the influence of other variables in the model. Other things equal, we expect immigrants to be positively selected on unmeasured traits such as motivation and ambition so it is not surprising that Mexican immigrants in 1950 earned a wage premium relative to native whites. Although the observed wages of Mexicans may be substantially lower than those earned by native whites or native Mexican Americans (as in Figure 1), these lower wages reflect the lower levels of education and skill possessed by Mexican immigrants, and once

these variables are statistically controlled in the regression model, Mexican immigrants actually turn out to earn higher wages than other workers.

According to Figure 2, the immigrant wage premium rose steadily from 1950 to 1960, a time when virtually all Mexicans working in the United States were documented, either as legal guest workers or permanent residents. With the restriction of legal options for entry in 1965, however, this wage premium disappears, being cut in half between 1960 and 1970 (going from about 40% to 20%) before stabilizing in the 1970s, perhaps owing to rising rates of unionization and greater civil rights enforcement. The decline resumes after 1980, however, and by 1990 the wage premium is under 10% and by 2000 it drops below 5% and by 2007 is literally gone. Over the same period, the amount of variance explained by variables in the model (indicated by the value of R^2) also dropped significantly, going from around 30% in 1950 to around 10% by 1990 and remaining stuck at that level thereafter. This drop in variance explained means that observed human capital characteristics such as age, experience, skill, and education became progressively less important in predicting wage outcomes over time.

Trends in Observed and Unobserved Characteristics

The declining influence of foreign birth is consistent with both of the competing scenarios described earlier. It could reflect a decline in the “quality” of Mexican immigrants with respect to labor productivity or a shift in the political economy of migration characterized by greater discrimination and exclusion of Mexican immigrants. Although unobserved traits such as ambition, discipline, and work ethic may be unobservable, we argue that they should at least be positively associated with other, observable indicators of productivity, such as education. Other things equal, ambitious and disciplined people with tenacity and a strong work ethic should not only earn higher wages, they should also go farther in school and accumulate more years of education.

A drop in educational attainment across successive cohorts of immigrants would thus constitute support for the argument of declining immigrant quality over time; but the observed quality of immigrant workers has not declined over time, as shown in Figure 3, which graphs educational attainment by year among Mexican immigrants. Rather than declining, levels of education have steadily improved, with the percentage having less than 12 years of education dropping steadily from 90% in 1950 to 55% by 2007 while the percentage having the equivalent of a high school education rises from 5% to 30% and the share with some college training increases from 3% to 10%. These trends partly reflect rising levels of education in Mexico, but also stem from Mexico’s shift to a neoliberal economic order after 1982, which brought declines in employment within government and state-owned and state-subsidized sectors that pushed many better educated Mexicans into migration (Cornelius 1990; Massey, Sanchez, and Behrman 2006; Durand and Massey 2010).

Even though educational levels among Mexican immigrants have been rising over time, so have schooling levels in the United States. It is thus possible that Mexican educational levels fell further behind relative to those in the United States, despite observed absolute increases. When we computed the gap in years of schooling between Mexican immigrants and native white Americans, however, we found this was not the case. Among males, the average schooling gap fell from 5.5 years in 1980 to 4.7 years in 2007, whereas among females the gap declined from 5.0 years to 4.4 years over the same period. Similar trends are observed with respect to occupational skill, with the share of Mexican immigrants working in skilled manual jobs rising from 10% in 1950 to 28% in 2007 and the share in agriculture dropping from 40% to 14%.

The Changing Returns to Human Capital

Thus, although we cannot eliminate the possibility that worker quality declined across successive cohorts of Mexican immigrants, this explanation is not consistent with observed trends if we assume a positive correlation between observed and unobserved productivity-related characteristics. However, the one unobserved trait we certainly know changed over time is the relative share of undocumented migrants, which went from near 0% in 1950 to 60% today. Until 1986 the rising prevalence of undocumented had few effects on wages, but since then U.S. policy deliberately sought to induce exclusion by employers on the basis of legal status. By failing to provide employers with adequate means of verifying legal status, the shift in policy induced discrimination against all immigrants by employers wishing to avoid potential prosecution under the law. Although we cannot measure the effect of legal status directly, we can assess its effect indirectly by considering changes in the returns to human capital characteristics over time.

Specifically, if undocumented status is increasingly penalized in U.S. labor markets because of shifts in U.S. policy, then we would expect to observe declining rates of return to observed indicators of human capital such as education, skill, and linguistic ability. To consider this possibility, we once again estimated a series of cross-sectional wage regressions. This time, however, we focused on the period from 1980 to 2007, for three reasons: first because the sharpest increase in the share of undocumented migrants occurred during this period; second because the penalties for being undocumented increased after 1986 while the penalties for being a non-citizen increased because of laws passed in 1996 and 2001; and third, it is only after 1980 that data on citizenship status, English language ability, and time spent in the United States become available for analysis.

We proceed as before, estimating wage regressions for 1980, 1990, 2000, and 2007 but adding citizenship, time since arrival, and English ability into the models, as these have been shown to constitute critical determinants of economic assimilation for documented and undocumented immigrants alike (Chiswick 1984; Massey 1987). The full regressions are included in Appendix B and here we present graphs of predicted wages to illustrate how the effects of selected human capital variables have changed over time. Rather than interpret the equations directly, for heuristic purposes we use them to generate predicted values of the earnings enjoyed by immigrants under different conditions at different points in time. We accomplished this task by varying factors of interest---education, experience, English ability---from minimum to maximum and multiplying the resulting range of values by the associated regression coefficient holding the effects of other variables constant at their means.

Figure 4, for example, plots expected earnings at different levels of English language ability for individuals who are average with respect to other variables. In all years, the lines move upward from left to right, indicating that wages rise as English ability improves, consistent with human capital theory. In 1980 the improvement in wages is especially marked: if an immigrant in that year were to shift from speaking no English to speaking it well, his expected hourly wage would rise from \$6.37 to \$7.23, an increase of nearly a dollar per hour. Although predicted wages decline slightly as one moves from speaking English well to speaking it very well, the dip is not significant statistically and probably indicates a trailing off of returns at higher levels of ability.

We observe this same pattern again in 1990. Although the entire curve shifted slightly upward between 1980 and 1990, it follows the same basic pattern, with steep increases as English improves from none to well, but a modest increase going from well to very well. At both dates, in other words, there were clear rewards to learning English well. By the year 2000 the roaring nineties had boosted wage rates across the board and shifted the entire

curve markedly upward at all linguistic abilities. However, by 2000 the returns to learning English had flattened out, especially at lower levels of linguistic ability. Whereas in 1990 a move from speaking no English to speaking it not well increased expected wages from \$6.53 to \$6.85 (roughly 5%), in 2000 there was no increase at all. Likewise, the returns to mastering English very well, compared with not speaking it at all were 16% in 1990 but 7% in 2000.

By 2007, the entire curve had shifted downward again, reflecting increasing turmoil in the U.S. economy, but possibly also growing exclusion and discrimination against immigrants. In contrast to earlier years, moreover, the biggest wage gains come not from moving from not speaking English to speaking it well, but from moving from speaking it well to speaking it very well. In 2007, learning to speak English well brought a gain of 6% compared to not speaking it at all, but learning to speak it very well brought a gain of 16%. In the new century, the returns to learning a little bit of English or even speaking it well have plummeted, and only mastering at a high level of proficiency (and thus losing a marker of foreign origin) brings significant wage gains. For the vast majority of immigrants, the incentives to struggle with English all but disappeared.

The cumulative amount of time spent in the United States has long been recognized as a prime determinant of wages earned by immigrants to the United States (e.g. Chiswick 1978), and trends in the monetary returns to U.S. experience, shown in Figure 5, generally replicate the pattern observed for English language ability. In 1980 and 1990 we observe a sharp increase in wages across the first three experience categories followed by a leveling off thereafter. In 1990, for example, wages rise from an average of \$6.29 per hour at 0–5 years to \$7.23 at 11–15 years (an increase of 15%) and then moves upward slowly from \$7.23 to \$7.73 as one shifts from the 11–15 year category to the 30+ category (an 8% increase).

As in the figure showing returns to language ability, we see a marked upward shift in the curve between 1990 and 2000 followed by a downward shift in 2007. In both cases, moreover, the wage returns sag noticeably across the first few categories and by the latter year they were almost nonexistent. For example, in 2007 a Mexican immigrant with 0–5 years of U.S. experience earned \$7.29, but one with 11–15 years of experience earned \$7.43, an increase of only 1.8% for ten years worth of experience. As with language ability, by 2007 the greatest wage returns were only observed at the highest categories. Instead of leveling off, as was the case before 2000, by 2007 the wage returns accelerate as one moves from 11–15 years of U.S. experience (\$7.43) to 30+ years of experience (\$8.69—an increase of 17%). A proportionate wage increase that took 11–15 years to achieve in 1990 took 30 years or more by 2007.

Figure 6 performs a comparable analysis of the returns to education. In this case, however, the returns to education are small across the first three schooling categories in 1980 and 1990 and only rise significantly with the attainment of a college degree. In 1990, for example, someone with 12 years of schooling earned just \$7.11 compared with \$7.04 for someone with less than 12 years of schooling; and someone with 13–15 years of education earned just \$7.25, meaning that the wage return for a college degree was just 21 cents an hour. With the emergence of tighter labor markets during the 1990s, however, significant returns to education began to be observed. In 2000, 12 years of schooling yielded an average wage of \$8.13 compared with \$7.43 for someone with less schooling, and having 13–15 years schooling brought a wage of \$9.12 while having 16 or more yielded \$10.59, representing respective gains of 7%, 19%, and 38%.

After 2000, however, the returns to education collapsed, at least for levels of education accessible to the vast majority of immigrants. Indeed, there was no payoff at all to

completing 12 years of schooling and only a 5% premium for 13–15 years of schooling. By 2007, only the equivalent of a college education brought significant rewards to Mexican immigrants in the U.S. labor market, with a gain of 30% over the base category (\$9.88 compared with \$7.60). As in the other graphs, moreover, there was a downward shift in the entire wage curve between 2000 and 2007.

EXPLAINING THE STAGNATION OF IMMIGRANT WAGES

The foregoing charts generally tell a story of diminishing returns to human capital for Mexican immigrants working in U.S. labor markets. With respect to language ability and U.S. experience, diminishing returns emerge between 1990 and 2000 despite an overall increase in wages, and then flatten further between 2000 and 2007 as the real value of wages falls across the board. With respect to education, the returns to the equivalent of high school or some college that emerged during the 1990s disappeared by 2007. Although we do not plot the data here, we observe similar trends with respect to occupational skill and age, with diminishing returns especially between 2000 and 2007. Such a pattern, we argue, is more consistent with an exogenous shift in the structure of immigrant labor markets than with a scenario of declining immigrant “quality”. The structural shift, we argue, stems substantially from the rising share of undocumented migrants and increasing exploitation and exclusion on the basis of legal status during the 1990s, followed by increasing marginalization of all immigrants in the context of a deteriorating economy after 2000.

Although we cannot directly observe changing returns to legal status in U.S. labor markets, we can observe the changing returns to U.S. citizenship and another token of civic engagement: military service. U.S. citizenship or permanent resident status is not required to serve in the United States armed forces, and a growing number of Mexicans have turned to the military as a means of securing legal status. Indeed, recruiters have increasingly targeted immigrant neighborhoods and offered potential recruits fast tracks to citizenship in return for enlistment (Preston 2009).

Figure 7 shows changes in the wage returns to citizenship, active military duty, and veteran status from 1980 to 2007. The wage premium for citizenship remains flat at around \$7 in 1980 and 1990, but rises sharply between 1990 and 2000, going from \$7.16 to \$8.61 before leveling off again (the premium was \$8.63 in 2007). The premium for prior military service, meanwhile, rises from \$7.73 in 1980 to \$8.64 in 1990 and then after stalling in 2000 goes to \$9.78 in 2007. Active military service experiences steady gains throughout the period from 1980 to 2007, with the wage premium for soldiers moving from \$6.31 to \$7.90 to \$8.21 to \$11.23 compared to agricultural workers. In short, the returns to citizenship and military service have steadily increased over time as the returns to human capital have fallen.

All of the foregoing data suggest that the stagnation of Mexican immigrant wages in recent decades has come about less from changes in the characteristics of immigrants themselves than from exogenous shifts in how those characteristics are rewarded or penalized in U.S. labor markets. Figure 8 demonstrates this fact by undertaking a counterfactual analysis using the wage regressions estimated for Mexican immigrants in 1980 and 2007. The left-hand bar shows the expected wage generated by applying 1980 means to coefficients in the 1980 equation, yielding an estimated wage \$14.90 for the average migrant in 1980. The stagnation in wages is illustrated when 2007 means are inserted into the 2007 equation to generate the expected wage for the average migrant in 2007, which is \$15.05 and indicated by the right-hand bar, an increase of just 1% over 27 years.

The two counterfactual predictions in the middle show the relative effects of changing characteristics versus changing returns on observed characteristics. The right hand counterfactual was generated by inserting 1980 means into the 2007 equation, yielding the

hypothetical wage that would be observed if immigrant characteristics remained fixed at 1980 levels but returns to these characteristics shifted as observed between 1980 and 2007. This operation yields an expected wage of just \$14.28 per hour, lower than the wage observed either in 1980 or 2007. The fact that the hypothetical wage is lower than the observed average in 2007 means that the observed quality of immigrants rose to offset the effect of diminishing returns. In the absence of rising human capital among Mexican immigrants, in other words, wages would not simply have stagnated—they would have fallen. Likewise, the fact that the counterfactual is below the 1980 wage confirms that it was a change in returns to measured quality and not a change in quality itself that produced the stagnation.

The left-hand counterfactual prediction was obtained by inserting the 2007 means into the 1980 equation, which yields the wage that would be expected if the returns had remained constant at 1980 rates while the characteristics of immigrants were allowed to change as observed between 1980 and 2007. Under this scenario, the predicted wage for 2007 is \$16.43, 9% higher than the wage actually observed. In other words, if the returns to human capital had not collapsed for Mexican immigrants between 1980 and 2007, they would be earning \$1.38 more per hours than they actually did.

As already noted, these results cannot definitively eliminate the hypothesis that the stagnation of Mexican immigrant wages was caused, at least in part, by unobserved declines in labor productivity across successive immigrant cohorts, but it certainly casts doubt on this explanation, for to hold it one needs to argue that observed and unobserved indicators of worker quality are negatively correlated and that the wage returns to unobserved characteristics did not decline in tandem with the returns to observed characteristics. A far more plausible account, we propose, and one more consistent with the observed facts, is that U.S. immigration policy evolved to generate a larger population of people without labor rights in the United States, inducing scrupulous employers to exclude undocumented migrants as well as those who look like they might be undocumented, while at the same time providing unscrupulous employers with new leverage to increase exploitation of all workers, both documented and undocumented.

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Biographies

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Appendix A. Regression of selected characteristics on wages of persons of Mexican and non-Hispanic white origin

	1950	1960	1970	1980	1990	2000	2005	2007
Age	0.029 *** (0.0056)	0.040 *** (0.0033)	0.044 *** (0.0032)	0.077 *** (0.0017)	0.036 *** (0.0014)	0.037 *** (0.0015)	0.084 *** (0.0027)	0.093 *** (0.0026)
Age Squared	-0.000 *** (0.0000)	-0.000 *** (0.0000)	-0.000 *** (0.0000)	-0.000 *** (0.0000)	-0.000 *** (0.0000)	-0.000 *** (0.0000)	-0.001 *** (0.0000)	-0.001 *** (0.0000)
Origin (Ref= Native NHW)								
Mexican Born	0.312 *** (0.0554)	0.406 *** (0.0309)	0.197 *** (0.0265)	0.192 *** (0.0079)	0.085 *** (0.0059)	0.040 *** (0.0047)	0.013 (0.0091)	0.005 (0.0086)
Mexican Ancestry	0.180 ** (0.0645)	0.104 *** (0.0266)	0.058 ** (0.0222)	-0.008 (0.0063)	-0.036 *** (0.0060)	-0.023 *** (0.0068)	-0.047 ** (0.0147)	-0.023 (0.0146)
Foreign Born White	-0.029 * (0.0142)	0.010 (0.0098)	0.082 *** (0.0100)	0.024 *** (0.0045)	0.018 *** (0.0043)	0.003 (0.0040)	-0.021 * (0.0084)	-0.031 *** (0.0081)
Living in Union	-0.034 ** (0.0111)	0.076 *** (0.0071)	0.095 *** (0.0063)	0.123 *** (0.0026)	0.143 *** (0.0026)	0.151 *** (0.0025)	0.177 *** (0.0047)	0.172 *** (0.0046)
Education (Ref=HS)								
High School	0.017 (0.0198)	-0.025 * (0.0112)	0.013 (0.0103)	0.043 *** (0.0055)	0.148 *** (0.0055)	0.150 *** (0.0060)	0.073 *** (0.0109)	0.040 *** (0.0109)
Some College	0.057 (0.0300)	0.058 *** (0.0170)	0.088 *** (0.0158)	0.027 ** (0.0083)	0.241 *** (0.0070)	0.267 *** (0.0074)	0.168 *** (0.0137)	0.125 *** (0.0136)
Bachelor's or Higher	0.230 *** (0.0419)	0.189 *** (0.0242)	0.194 *** (0.0229)	0.038 ** (0.0125)	0.437 *** (0.0104)	0.511 *** (0.0110)	0.376 *** (0.0191)	0.337 *** (0.0190)
Occupation (Ref=Farming)								
Managerial-Professional	1.136 *** (0.0160)	1.550 *** (0.0103)	1.846 *** (0.0108)	1.941 *** (0.0050)	1.584 *** (0.0053)	1.332 *** (0.0053)	1.460 *** (0.0100)	1.422 *** (0.0097)
Technical-Sales-Admin	1.987 *** (0.0163)	2.146 *** (0.0104)	2.050 *** (0.0109)	1.835 *** (0.0050)	1.445 *** (0.0053)	1.194 *** (0.0052)	1.317 *** (0.0099)	1.294 *** (0.0097)
Service	1.803 *** (0.0216)	1.924 *** (0.0134)	1.853 *** (0.0127)	1.745 *** (0.0057)	1.334 *** (0.0059)	1.071 *** (0.0058)	1.184 *** (0.0110)	1.145 *** (0.0107)
Precision Prod.-Crafts	2.149 *** (0.0146)	2.281 *** (0.0097)	2.071 *** (0.0104)	1.830 *** (0.0049)	1.336 *** (0.0052)	1.015 *** (0.0051)	1.097 *** (0.0098)	1.090 *** (0.0096)
Operators-Laborers	2.148 *** (0.0141)	2.366 *** (0.0094)	2.158 *** (0.0103)	1.989 *** (0.0049)	1.468 *** (0.0052)	1.103 *** (0.0051)	1.177 *** (0.0099)	1.142 *** (0.0097)
Military	2.136 *** (0.0359)	2.897 *** (0.0176)	2.717 *** (0.0176)	1.901 *** (0.0085)	1.475 *** (0.0095)	1.184 *** (0.0116)	1.455 *** (0.0217)	1.396 *** (0.0214)
State (Ref=Traditional)								
New Destination	-0.071 *** (0.0105)	-0.077 *** (0.0058)	-0.053 *** (0.0051)	-0.030 *** (0.0022)	-0.020 *** (0.0024)	-0.001 (0.0024)	-0.005 (0.0044)	-0.013 ** (0.0043)
Border State	-0.041 (0.0459)	-0.075 *** (0.0220)	-0.077 *** (0.0193)	-0.086 *** (0.0073)	-0.107 *** (0.0074)	-0.055 *** (0.0067)	-0.027 * (0.0118)	-0.001 (0.0117)
Potential Work Experience	-0.020 *** (0.0044)	-0.038 *** (0.0027)	-0.031 *** (0.0026)	-0.038 *** (0.0014)	-0.001 (0.0012)	0.002 (0.0012)	-0.024 *** (0.0021)	-0.031 *** (0.0021)
Family size	-0.009 *** (0.0025)	-0.006 *** (0.0014)	0.002 (0.0013)	0.006 *** (0.0007)	0.000 (0.0008)	0.002 ** (0.0007)	0.004 ** (0.0014)	0.006 *** (0.0014)
Veteran	0.059 *** (0.0091)	0.095 *** (0.0051)	0.071 *** (0.0045)	0.090 *** (0.0019)	0.069 *** (0.0023)	0.056 *** (0.0024)	0.077 *** (0.0049)	0.073 *** (0.0049)
Intercept	-0.060 (0.0905)	-0.133 ** (0.0509)	0.022 (0.0484)	42-0.758 *** (0.0244)	0.201 *** (0.0230)	0.479 *** (0.0244)	-0.396 *** (0.0442)	-0.505 *** (0.0434)
N	86930	311767	333719	1803308	1479687	1479689	472413	479491
Adjusted R-squared	0.278	0.221	0.153	0.110	0.100	0.094	0.111	0.115

Standard errors in parentheses

* p<0.05

** p<0.01

Appendix B. Regression of selected characteristics on wages of Mexican immigrants

	1980	1990	2000	2005	2007
Age	0.041 *** (0.0077)	0.028 *** (0.0046)	0.011 ** (0.0035)	0.031 *** (0.0081)	0.022 ** (0.0078)
Age Squared	-0.000 * (0.0001)	-0.000 *** (0.0000)	-0.000 *** (0.0000)	-0.000 *** (0.0001)	-0.000 *** (0.0001)
Living in Union	0.090 *** (0.0160)	0.089 *** (0.0090)	0.074 *** (0.0065)	0.062 *** (0.0148)	0.059 *** (0.0141)
Education (Ref=HS)					
High School	0.005 (0.0297)	0.011 (0.0168)	0.063 *** (0.0118)	-0.013 (0.0286)	-0.018 (0.0277)
Some College	-0.053 (0.0412)	0.044 * (0.0221)	0.178 *** (0.0159)	0.070 (0.0393)	0.051 (0.0380)
Bachelor's or Higher	0.066 (0.0590)	0.180 *** (0.0338)	0.328 *** (0.0243)	0.223 *** (0.0573)	0.262 *** (0.0545)
Occupation (Ref=Farming)					
Managerial-Professional	0.038 (0.0314)	0.216 *** (0.0206)	0.360 *** (0.0150)	0.399 *** (0.0332)	0.355 *** (0.0308)
Technical-Sales-Admin	0.054 (0.0289)	0.128 *** (0.0175)	0.207 *** (0.0124)	0.272 *** (0.0282)	0.283 *** (0.0266)
Service	0.090 *** (0.0239)	0.196 *** (0.0142)	0.233 *** (0.0106)	0.279 *** (0.0240)	0.262 *** (0.0226)
Precision Prod.-Crafts	0.237 *** (0.0207)	0.239 *** (0.0127)	0.287 *** (0.0093)	0.330 *** (0.0206)	0.326 *** (0.0194)
Operators-Laborers	0.353 *** (0.0185)	0.364 *** (0.0116)	0.353 *** (0.0087)	0.406 *** (0.0200)	0.370 *** (0.0188)
Military	0.124 (0.1082)	0.329 *** (0.0774)	0.354 *** (0.0791)	0.589 ** (0.2018)	0.576 *** (0.1625)
State (Ref=Traditional)					
New Destination	0.098 *** (0.0215)	0.053 *** (0.0122)	0.063 *** (0.0068)	0.088 *** (0.0145)	0.094 *** (0.0136)
Border State	-0.064 * (0.0297)	-0.131 *** (0.0187)	-0.037 ** (0.0123)	0.043 (0.0261)	0.042 (0.0246)
Potential Work Experience	-0.029 *** (0.0051)	-0.015 *** (0.0026)	-0.001 (0.0020)	-0.014 ** (0.0052)	-0.007 (0.0051)
Family size	0.002 (0.0029)	0.001 (0.0016)	0.002 (0.0012)	0.003 (0.0032)	-0.001 (0.0031)
Veteran	0.132 *** (0.0244)	0.198 *** (0.0227)	0.028 (0.0154)	0.164 ** (0.0525)	0.241 *** (0.0543)
Noncitizen	0.002 (0.0146)	-0.005 (0.0092)	-0.096 *** (0.0070)	-0.124 *** (0.0160)	-0.148 *** (0.0153)
English Ability (Ref=Very Well)					
Well	0.022 (0.0182)	-0.025 * (0.0108)	-0.028 *** (0.0079)	-0.075 *** (0.0185)	-0.090 *** (0.0174)
Not Well	-0.060 ** (0.0190)	-0.100 *** (0.0110)	-0.073 *** (0.0081)	-0.097 *** (0.0192)	-0.120 *** (0.0182)
Not at All	-0.104 *** (0.0228)	-0.147 *** (0.0142)	-0.072 *** (0.0101)	-0.129 *** (0.0233)	-0.145 *** (0.0224)
US residence (Ref=<5 Years)					
6 to 10 years	0.121 *** (0.0176)	0.046 *** (0.0133)	0.048 *** (0.0103)	0.002 (0.0222)	0.008 (0.0222)
11 to 15 years	0.160 *** (0.0200)	0.139 *** (0.0132)	0.084 *** (0.0098)	0.041 (0.0233)	0.018 (0.0236)
16 to 20 years	0.216 *** (0.0225)	0.185 *** (0.0143)	0.092 *** (0.0109)	0.103 *** (0.0234)	0.052 * (0.0239)
21 to 30 years	0.211 *** (0.0222)	0.206 *** (0.0155)	0.156 *** (0.0107)	0.128 *** (0.0240)	0.099 *** (0.0238)
More than 30 years	0.126 *** (0.0300)	0.220 *** (0.0206)	0.182 *** (0.0146)	0.180 *** (0.0298)	0.175 *** (0.0289)
Intercept	1.492 *** (0.1262)	1.569 *** (0.0814)	1.866 *** (0.0613)	1.576 *** (0.1405)	1.793 *** (0.1347)
N	25456	56324	108431	25690	29232
Adjusted R-squared	0.052	0.056	0.047	0.054	0.049

Standard errors in parentheses

*

$p < 0.05$

**

$p < 0.01$

$p < 0.001$

Figure 1.
Trends in real hourly wages

Figure 2.
Trends in the wage effect of being a Mexican immigrant

Figure 3.
Educational achievement among Mexican immigrants

Figure 4.
Trends in the reward for English language ability

Figure 5.
Trends in the returns to U.S. experience

Figure 6.
Returns to education among Mexican immigrants

Figure 7.
Trends in the effect of citizenship and military service on the wages of Mexican immigrants.

Figure 8.
Counterfactual analysis of wages earned by Mexican immigrants in 1980 and 2007