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## Immigrants' Employment Stability Over the Great Recession and Its Aftermath

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### Abstract

We examine immigrant men's employment stability during the Great Recession and its aftermath using a longitudinal approach that draws on data from the Survey of Income and Program Participation (SIPP), a nationally representative panel survey of U.S. residents. Discrete-time event-history models are used to estimate male immigrants' relative risk of experiencing an involuntary job loss or underemployment, defined as working less than full-time involuntarily. The analysis also investigates differences in job stability by immigrant documentation status. Undocumented immigrants are identified using a logical allocation method augmented with external information about whether the respondent was successfully matched with administrative data. We find that immigrants are at significantly higher risk of involuntary job loss, and especially of underemployment relative to native-born workers. Undocumented immigrants face a greater risk of adverse job transitions, particularly underemployment in the first part of the recession. When demographic and job characteristics are taken into account, immigrant-native and documented-undocumented differences attenuate but remain in many instances. A comparison of our findings with those from an earlier nonrecessionary period from 2004 to 2006 suggests that immigrants' higher risk of employment instability may be attributed to the recession.

### Keywords

Employment stability; Immigrants; Undocumented immigrants; Great Recession; Event-history models

### Introduction

The labor market experiences of immigrants have been a subject of long-standing scholarly and policy interest. Attention has increased as the proportion of foreign-born workers in the U.S. labor force has grown from 10.8% of the labor force in 1996 to 17.4% in 2019 (Mosisa

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2013; U.S. Bureau of Labor Statistics 2020). How immigrants fare in the labor market can affect not only their own economic well-being and long-term financial security but also the opportunities for their children, who form the second generation.

Most empirical work has focused on immigrants' earnings and labor supply (Lubotsky 2007; Villarreal and Tamborini 2018). Comparatively fewer studies have examined immigrants' employment stability (Chiswick et al. 1997; Sisk and Donato 2018; Xu 2018). Although immigrant men have considerably higher labor force participation than the native-born (78.0 vs. 67.4, respectively; U.S. Bureau of Labor Statistics 2020), particularly among lower-educated groups (Duncan and Trejo 2012), we know relatively little about their employment stability, particularly during vulnerable periods, such as recessions. This omission is substantive, given that employment instability can generate a range of negative consequences for individual well-being (Brand 2015; Grusky et al. 2011; Redbird and Grusky 2016), including financial security (Couch and Placzek 2010; Jacobson et al. 1993), retirement savings (Dushi et al. 2013), and health (Black et al. 2015; Couch et al. 2013).

In this study, we examine employment stability among immigrant men in the United States during the Great Recession and its aftermath using a longitudinal perspective. Most studies rely on unemployment (e.g., U-3) as a key indicator of employment stability. Although a critically important measure, unemployment combines job separation and the rate at which individuals are rehired (Couch and Fairlie 2010). The standard measure of unemployment also fails to capture underemployment, an important indicator of job stability. In this study, we focus on involuntary job loss and underemployment over a period of sharp economic contraction, the Great Recession. *Involuntary job loss* describes the experiences of workers who were laid off or discharged, whereas *underemployment* (as used herein) refers to situations in which individuals work fewer than 35 hours per week because of slack labor market conditions (Laird 2015; Sisk and Donato 2018; Sum and Khatiwada 2010).<sup>1</sup> Identifying immigrant-native differences in job loss and underemployment dynamically over a volatile economic period moves beyond static indicators of employment or unemployment.

Our study also seeks to understand within-group variation by examining immigrants' legal status. Despite increasing attention to the difficulties experienced by undocumented immigrants (Bean et al. 2015; Capps et al. 2018), we know little about how immigrants' employment stability differs by documentation status. Undocumented immigrants may be at greater risk of employment instability in part because of the types of jobs in which they work (Hall and Greenman 2015). National surveys lack direct measures of legal status. Our analysis relies on an established method that imputes current legal status using responses to questions about legal status upon entry, citizenship, and use of government programs, among other factors (Bachmeier et al. 2014; Capps et al. 2018; Hall et al. 2010). We also use external information—in particular, whether the respondent was successfully matched with administrative records compiled by the Social Security Administration (SSA) and had positive W-2 earnings—to examine the robustness of these survey-based estimates.

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<sup>1</sup>Our measure differs from the U-6 rate because it does not include counts of unemployed persons and marginally attached workers.

Drawing nationally representative panel data from the Survey of Income and Program Participation (SIPP), we use event-history analysis to compare the risk of involuntary job loss and underemployment between immigrant and native-born male workers and among immigrants of different documentation status. The SIPP provides repeated measures of involuntary job loss and underemployment for the same individual every four months from mid-2008 until mid-2013, a period characterized by rapid job loss, rising unemployment, and a slow recovery (Farber 2015). The SIPP migration module contains retrospective questions that probe entry and current visa status. We also utilize the 2004 SIPP panel to compare our results against an earlier pre-recession period (2004–2006).

Together, our analysis advances understanding of immigrant-native differences in employment stability during the Great Recession and its aftermath. A particularly novel aspect of our analysis brings to light differences in the risk of underemployment. Focusing only on job loss, we argue, does not capture the full range of immigrants' employment experiences, especially during recessions. The analysis also reveals how much of the observed immigrant-native differences can be explained by their human capital and the characteristics of their jobs. Finally, our study broadens understanding of differences by documentation status using methods developed by Hall et al. (2010) and Bachmeier et al. (2014). We supplement these methods with external information on matches with administrative data.

## Background

The Great Recession officially spanned from December 2007 to June 2009 and was followed by a slow and inconsistent recovery (Kalleberg and von Wachter 2017). The recession brought about substantive labor market changes beyond those elicited by prior recessions (Hoynes et al. 2012). A large literature has documented increased job loss, earnings losses, prolonged unemployment, and a rise in unstable work schedules and part-time work (Couch, Reznik et al. 2018; Farber 2015; Finnigan 2018; Hout et al. 2011).

Understanding immigrants' labor market experiences, generally and over business cycles, has become more important as the share of the U.S. labor force that is foreign-born has risen. Existing studies have largely focused on immigrants' earnings, wages, and income dynamics (Bean et al. 2015; Duleep and Dowhan 2002; Duleep and Regets 1997; Hall and Farkas 2008; Lubotsky 2007; Portes and Rumbaut 2014; Villarreal and Tamborini 2018). A smaller body of work has examined employment and unemployment (Duncan and Trejo 2012; Laird 2015), but longitudinal patterns of employment stability are far less studied. Yet, tracking employment stability is important because adverse employment spells are associated with a variety of negative outcomes. For example, the consequences of job loss and involuntary part-time work include not only substantial losses in earnings (Couch and Placzek 2010; Finnigan 2018) and household income (Sum and Khatiwada 2010) but also reductions in mental and physical health (Black et al. 2015; Brand 2015), leading to higher disability and mortality rates over time (Couch et al. 2013).

In this study, we conceptualize involuntary job loss and underemployment as stratifying life events that are important for understanding immigrants' economic and social integration.

Sociological and economic studies often examine unemployment as the principal indicator of employment stability (Chiswick et al. 1997; Redbird and Grusky 2016). However, because aggregate unemployment rates reflect both job separation and length of time to reemployment, the measure overlooks underlying entry (e.g., job loss) and exit (i.e., hiring) dynamics (Couch, Fairlie et al. 2018). Unemployment also cannot account for other types of instability (Finnigan 2018). For instance, workers experiencing shortfalls in their work hours would not be counted as unemployed but nonetheless can be viewed as exposed to an employment shock. Accounting for underemployment may be particularly valuable for understanding immigrants' labor market dynamics because of their concentration in sectors (e.g., hospitality, construction) and occupations (e.g., low-level service) where unstable scheduling is more prevalent (Laird 2015; Sisk and Donato 2018).

In considering employment stability, one common assertion, sometimes called the “first fired” hypothesis, suggests that lower-skilled or other disadvantaged groups (e.g., minorities, young) face greater risks of job loss as the economy worsens (Couch and Fairlie 2010). Thus, although immigrant men in the U.S. labor market tend to have lower unemployment rates and higher labor force participation than the native-born (Kochhar et al. 2010; Laird 2015), some evidence suggests increased unemployment and reduced employment for foreign-born men during economic downturns (Brown et al. 2014; Chiswick et al. 1997; Orrenius and Zavodny 2010; Wang and Sakamoto 2016).

Several important papers have addressed the “first fired” claim by constructing one-year longitudinal windows using the matched Current Population Survey (CPS). Couch and Fairlie (2010) found a heightened probability of entry into unemployment among Black male workers during recessions, but they found little evidence that Blacks experience a lag in reemployment (“last hired”) as business conditions improve (for analysis of the Great Recession, see Couch, Fairlie et al. 2018; Hoynes et al. 2012). Xu (2018) found that immigrants—particularly those who are low-skilled—were more likely than the native-born to transition from employed to unemployed over one-year longitudinal windows spanning the Great Recession but also had higher rehiring rates in subsequent months.

Sisk and Donato (2018) focused on low-skilled male workers from 2005 to 2010, finding no clear evidence of immigrant-native differences in unemployment during the Great Recession but increased incidence of involuntary part-time work among immigrants, especially those of Mexican origin. Using cross-sectional CPS data, Laird (2015) found higher underemployment rates among noncitizen Mexican male immigrants over a similar period as well as lower unemployment rates among Mexican male immigrants relative to the native-born, including over the Great Recession.

In this research, we also examine immigrant-native differences in the labor market over the Great Recession, but we utilize longer-term panel data that measure transitions at four-month intervals. We examine job transitions during this longer time frame, as indicated by involuntary job loss and involuntary underemployment. We also compare the experiences of documented and undocumented immigrants. Moreover, we replicate our analysis for an earlier nonrecessionary period using the 2004 SIPP to evaluate the “first fired” hypothesis: namely, that immigrant male workers experience heightened risk of involuntary job loss and

underemployment during recessionary and slow-recovery periods relative to a period marked by a stronger labor market.

## Conceptual Framework

### Immigrant-Native Differences in Employment Stability

There are multiple reasons why we might expect immigrants to face greater employment instability risks than native-born workers, particularly during bad economic times. One explanation emphasizes human capital. Educational attainment and host country-specific work experience have been shown to drive immigrant-native differences in labor market outcomes, such as earnings (Borjas 1995, 2015; Chiswick and DebBurman 2004; Duleep et al. 2018). In addition, if education credentials and skills developed in immigrants' countries of origin are discounted in the receiving country (Chiswick et al. 1997), this might lead to greater employment risks.

Other sociodemographic differences may be important. Contemporary immigrants are more likely to identify as Hispanic or Asian, and a large literature has shown differences in the impact of economic conditions across ethnoracial groups for the native-born population (Cheng et al. 2019; Couch and Fairlie 2010) as well as for immigrants (Kim and Sakamoto 2010; Portes and Zhou 1993; Villarreal and Tamborini 2018).

The Great Recession also might have disproportionate effects on immigrants' employment for reasons related to their labor market segmentation and job characteristics. Importantly, immigrant male workers are concentrated in procyclical industries that can be hit harder during recessions, such as construction, natural resources, and occupations related to production, transportation, and material moving (U.S. Bureau of Labor Statistics 2019). Aggregate demand for labor also can vary geographically, and areas with heavy reliance on procyclical industries, such as construction and manufacturing, can experience the largest fallout (Thiede and Monnat 2016). Immigrants are also disproportionately employed in lower-level service industries and nonstandard occupations (Hall and Farkas 2008; U.S. Bureau of Labor Statistics 2020), which are more vulnerable to unstable schedules or just-in-time scheduling (Halpin 2015; Schneider and Harknett 2019). These labor market characteristics leave immigrants with greater exposure to work hour shortfalls during economic downturns as employers attempt to match employees' hours to declining demand (Sisk and Donato 2018). Furthermore, immigrants likely have less job-specific tenure (seniority) than native workers, and seniority increases job security (Couch and Fairlie 2010).

Given these points, we expect that immigrant-native differences in employment stability risks will be reduced or disappear when relative differences in immigrants' characteristics, including the jobs they have, are taken into account. Remaining net effects could be due to unobserved factors such as immigrants' lower reservation wage, discrimination, and family processes. For example, immigrants may be more likely to experience reduced hours because they have lower reservation wages or are more vulnerable generally (Laird 2015). Also, during times of macroeconomic deterioration, increased job loss among disadvantaged groups may be driven by discrimination processes (Couch and Fairlie 2010).

Because employers have less information about immigrant workers, there could be more occupational mismatch or perceptions of productivity inadequacies. Additional factors related to undocumented immigrants may arise, which we elaborate on later.

### **Within-Group Heterogeneity: Undocumented Versus**

**Documented Immigrants**—Comparisons of immigrant and native-born workers may obscure within-group heterogeneity in immigrants' employment stability. A large research literature, for example, shows earnings differences among immigrants by human capital, race/ethnicity, age, and arrival cohort (Duleep and Dowhan 2002; Duleep and Regets 1997; Portes and Rumbaut 2014; Villarreal and Tamborini 2018). Research has increasingly explored within-group variation by legal status despite data limitations (Borjas 2017; Hall et al. 2010; Hall et al. 2018). Although U.S. national surveys do not ask immigrants directly about legal status, methods have been developed to impute immigrants' legal status.

Several researchers have relied on information available in the SIPP's migration module (before the 2014 panel redesign), which contains key variables regarding immigrants' arrival status and subsequent adjustment of their status (Capps et al. 2018). Our analysis follows the approach proposed by Hall et al. (2010) and Bachmeier et al. (2014) and extends it to examine employment stability over the Great Recession. In this approach, foreign-born respondents are assigned a legal status based on survey-reported information, such as entry and current visa status, citizenship, and receipt of government transfers.

We posit that undocumented immigrants are at greater risk of job loss and underemployment over the Great Recession than documented immigrants. Numerous studies have revealed a relationship between work authorization and employment precariousness (Borjas 2017; Flippen 2012; Hall and Greenman 2015; Hall et al. 2010; Halpin 2015; Massey and Gentsch 2014). However, no research to date has examined job loss and underemployment by documentation status using nationally representative panel data.

Differences in immigrants' employment stability by legal status could be driven by socioeconomic characteristics and their labor market position. Greater educational attainment among documented immigrants (Greenman and Hall 2013) might reduce the risk of job instability. Yet, even at the same level of education, undocumented immigrants may be more vulnerable to job instability.

With respect to labor market characteristics, undocumented immigrants are more concentrated in lower-skilled service jobs characterized by informal and nonstandard arrangements, including food and hospitality and landscaping occupations (Flippen 2012; Hall and Farkas 2008; Passel and Cohn 2016). As noted, workers in such jobs might face higher risks of displacement and are also more vulnerable to shortfalls in work hours because of slack conditions (Sisk and Donato 2018). Undocumented immigrants also may have lower job tenure than documented immigrants.

Differences could also be driven by unobserved factors, which manifest as part of the residual net effect. One argument suggests that undocumented workers face greater monopsonistic discrimination, in part because their labor supply is less elastic to employers



(Hotchkiss and Quispe-Agnoli 2012). Immigrants, particularly the undocumented, have narrower job search networks, more limited information, and fewer legal protections (Hirsch and Jahn 2015; Hotchkiss and Quispe-Agnoli 2012; Laird 2015).

Undocumented immigrants may face a higher risk of a reduction in hours (underemployment) rather than outright job loss compared with documented immigrants. If undocumented immigrants have a lower reservation wage, they may be more likely to accept a reduction in hours. Moreover, employers may be more willing to reduce the hours of undocumented workers if they are perceived as less likely to quit or change jobs. This idea is consistent with Hall et al. (2018), who showed that undocumented immigrants have a higher likelihood of *job lock*—that is, of being confined to the same job or lower-wage jobs overall. Differential access to government safety-net programs, including unemployment benefits/insurance (UI) and Temporary Assistance for Needy Families (TANF), could be important, particularly during economic downturns (Moffitt 2013). For example, having less access to a safety net could increase undocumented immigrants' willingness to accept reduced hours or wages. It may also promote return migration in response to employment vulnerabilities (Laird 2015).

Finally, family and household processes not accounted for in our models could be important. Undocumented immigrants tend to live in horizontally extended households (Hall et al. 2019). The effects of living arrangements on employment stability are not clear, but living in extended family households may be a strategy to increase income and pool risk, which could influence work behavior when conditions become substandard.

## Data and Methods

### Data

We use longitudinal data from the 2008 SIPP panel encompassing Waves 1–15, for a total period of five years. Data from the 2004 SIPP panel also are drawn for comparative purposes. The SIPP is a nationally representative panel survey that provides rich demographic and labor market information about the noninstitutionalized U.S. population. Core questionnaires are administered to individuals every four months with retrospective questions regarding their experience during the prior four months.

The SIPP provides advantages to explore immigrants' employment over time. A key asset of the 2008 panel is that it collects information on the same respondents each four-month period from around the beginning of the recession (summer 2008) through its aftermath (spring 2013). The recession officially began in December 2007, and the largest increase in job loss and unemployment started in the fall of 2008 (Couch, Reznik et al. 2018). Another advantage is the short frequency of the interview schedule (every four months), which helps mitigate recall bias related to employment (Boisjoly et al. 1998). The SIPP also contains information about whether a job termination or reduction in hours was voluntary or involuntary and provides detailed information on job characteristics. Moreover, the SIPP contains one-time survey instruments called *topical modules*. We use the migration module from Wave 2 in combination with the core survey to impute immigrants' documentation status (described shortly).



Finally, we utilize SIPP linkages with administrative records contained at the SSA to conduct a robustness test of our SIPP-based proxies of immigrants' legal status. As described in more detail shortly, successful matches to administrative records (Numerical Identification System [Numident] and Detailed Earnings Record [DER]) are high in the 2008 SIPP, at around 90% overall, but much lower for immigrants (around 70%). Although there are multiple reasons why respondents cannot be matched, including opting out, immigrants who are matched with their administrative records and have positive tax earnings are highly likely to be documented.

### Target Population

Our analytical sample is restricted to men ages 21 to 52 who were employed at the start of the panel (last month Wave 1) and who are therefore at risk of an involuntary job loss or underemployment spell over the subsequent months. We exclude female workers because of complex interactions among work, nativity, and family. We also require men in our baseline sample to have positive earnings and have worked at least 35 usual hours at all jobs during the weeks worked over Wave 1. We exclude self-employed workers, defined as those who reported higher self-employment earnings than wage/salary earnings in Wave 1. We also exclude a small share of respondents classified as either a nonpaid family worker or a contingent worker. Together, these conditions allow us to examine workers' risk of experiencing an involuntary job loss or underemployment over a period that includes much of the Great Recession and the subsequent slow recovery period, from September 2008 to as late as July 2013.<sup>2</sup> The final analytic sample contains approximately 78,465 person-wave observations associated with 5,231 male workers (4,382 native-born and 849 immigrant workers).

As in all panel surveys, the baseline sample experiences attrition over time (U.S. Census Bureau 2015). Our analysis handles attrition in the following way. First, we require individuals to be observed in Wave 2 because that is when the migration module is administered. Second, we apply longitudinal survey weights (*Igtpn4wt*) provided by the Census Bureau, which essentially restricts our analysis to respondents observed through December 2012. SIPP panel weights correct for attrition and recalibrate the sample to be representative of the population in Wave 1 (U.S. Census Bureau 2015).<sup>3</sup> Nonetheless, longitudinal survey weights may not account for all potential selection biases associated with individuals who leave the survey. A primary concern is return migration. If immigrants who lose their jobs are more likely to return to their countries of origin—thereby dropping out of the survey—then our estimates for immigrants' risk of job loss would be downwardly biased. In a later section, we investigate the sensitivity of our results to longitudinal weighting.

Finally, as noted earlier, we replicate our analysis using data from the 2004 SIPP to clarify whether immigrant-native differences observed in the 2008 SIPP can be attributed to the recession. The 2004 panel has a shorter duration, with the full sample constituting 8 waves

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<sup>2</sup>SIPP panels contain four rotation groups, which are interviewed in staggered months over a four-month reference period.

<sup>3</sup>We did not use Wave 16 because the entire sample was not interviewed as a result of a government shut-down in October 2013.

rather than 15. For this analysis, we therefore restrict the observational window for the 2008 SIPP to the first eight waves (through April 2011).<sup>4</sup>

## Analysis

Our estimation strategy follows an event-history framework to examine the employment stability of immigrants over the Great Recession and its immediate aftermath (Allison 1984). Involuntary job loss is the first outcome of interest. The SIPP questionnaire asked respondents whether they experienced a job termination over the prior four months and why their job ended. We consider a job loss to be involuntary if the main reason reported was “layoff,” “discharged/fired,” “slack work or business conditions,” “employer bankrupt,” “employer sold business,” or “job was temporary and ended.” Respondents who reported job separations for voluntary or health reasons were set to missing for those months because they are not at risk of an involuntary job loss.<sup>5</sup> A one-wave lag for all independent variables allowed for the measurement of job characteristics when the respondent was employed, before termination, or underemployment.

The second outcome reflects a more comprehensive measure of employment stability by including both involuntary job loss and underemployment (whichever comes first). The definition of underemployment varies. In this study, underemployment refers to working fewer than 35 hours in some weeks over the prior four months because of an inability to “find [a] full-time job” or “slack work or material shortage.” This definition is consistent with what the U.S. Bureau of Labor Statistics (BLS) calls “involuntary part-time workers” or “part-time for economic reasons” (U.S. Bureau of Labor Statistics 2008). Involuntary part-time work also accounts for part of the sub-population that makes up the BLS’ U-6 measure and reflects one aspect of labor force underutilization (Sum and Khatiwada 2010). Workers reporting transitioning to part-time work for voluntary reasons are set to missing for that wave.<sup>6</sup>

Consistent with an event history framework, we use logistic regression models to examine involuntary job loss and involuntary underemployment conditional on not having experienced it in previous waves (Allison 1984). Workers are required to be at risk as we move forward in time, for example, by requiring individuals to have reported at least 35 usual hours worked in the prior wave during weeks worked. We also tested multinomial regression models in which job loss and underemployment were considered as competing outcomes. The results (not reported here) were consistent with those presented here.

We present a baseline model for each outcome and then successively add independent variables of interest. Because of the problem of rescaling of the coefficients across nested nonlinear probability models (Breen et al. 2018; Mize 2019), we utilize the Karlson-Holm-Breen (KHB) method for nonlinear probability models to assess differences in the effect of immigrant status across nested models (Karlson et al. 2012). The KHB method

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<sup>4</sup>Here, we use the longitudinal weight covering Waves 1–7 (*LGTPNWT2*) for both panels.

<sup>5</sup>Job losses defined as voluntary include the following reasons: retirement, childcare problems, personal obligations, illness/injury, school/training, quit to take another job or other reason, and unsatisfactory work arrangements.

<sup>6</sup>Reasons classified as voluntary include “wanted to work part-time,” “temporarily unable to work full-time because of injury, injury, or a chronic health condition,” “caregiving,” “vacation,” “school enrollment,” or “other.”

also decomposes the overall effect of immigrant status into direct and indirect effects, allowing us to estimate how much of the immigrant-native differences are explained by the mechanisms we consider. Our analyses generate standard errors that adjust for clusters among individuals and apply longitudinal survey weights (*Igtpn4wt*). As noted, individuals' characteristics used as predictors are obtained from the last month in each four-month wave.

### Independent Variables

The primary predictor distinguishes between native and foreign-born workers. Immigrants are defined as foreign-born individuals who were not adopted by a U.S. citizen or born in a U.S. territory (e.g., Puerto Rico). We distinguish immigrants' documentation status using criteria described in the next section.

The duration of exposure to the risk of employment instability is measured in waves (1–14). A squared term accounts for a nonlinear relationship: namely, a declining risk as the economic recovery advances. We considered other measures of exposure, such as grouping waves into one-year periods and adding a cubed term. The results using these specifications were consistent with those presented herein.

Control variables for all models include age (and age squared), metropolitan residence, and an indicator of whether a respondent was enrolled in school. In addition, we include the average state-level monthly unemployment rate for the corresponding four months of the wave based on respondents' state of residence using data from the Local Area Unemployment Statistics (LAUS) program. We also constructed a time-varying continuous variable indicating the difference in unemployment between the current and previous wave to capture changes in state-level aggregate demand. These controls help us account for heterogeneous conditions in labor market demand across states (Couch, Fairlie et al. 2018).

Education is captured by time-varying dummy variables for highest attainment: less than high school, high school graduate, and bachelor's degree or higher. We control for the ethnoracial identification of respondents using five mutually exclusive categories: non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, Hispanic, and other.<sup>7</sup>

Several indicators account for respondents' job characteristics. Job tenure measures the length of time in years a worker has held their current job (0–3 years; 3–10 years; and more than 10 years). We include binary indicators of whether the respondent worked in the construction or manufacturing industries, which declined significantly during the recession (Goodman and Mance 2011). We also include dummy variables for the natural and hospitality industries. Additionally, to account for greater vulnerability to underemployment, we include dummy variables indicating whether the respondent had a blue-collar or a lower-level service occupation based on three-digit codes (Sum and Khatiwada 2010).<sup>8</sup> Finally, a dummy variable measures employment in the public sector (local, state, or

<sup>7</sup>Because immigrants may not report themselves as Hispanic in surveys, we assign Hispanic to any immigrant who reported a national origin from Mexico/Central America or South America. The results are not affected by this choice.

<sup>8</sup>We define blue collar as those in occupations related to natural resources; construction and extraction; installation; maintenance and repair; and production, transportation, and material moving. Lower-level service/support occupations encompass healthcare support; protective service; food preparation; building and grounds cleaning; maintenance; personal care; and service, sales, and office support.

federal government). Public sector workers are less vulnerable to job loss during economic downturns, and immigrants are less likely to have public sector jobs.

### Estimating Documentation Status

Following Hall et al. (2010) and Bachmeier et al. (2014), we use information about entry and current visa status, citizenship, enrollment in government programs, and other characteristics contained in the SIPP's Wave 2 migration module and core survey. Our main approach essentially creates a set of rules to assign documentation status and is consistent with what Bachmeier et al. (2014) called "logic-based reallocation."

The approach follows several steps with the end goal of assigning immigrants into one of two groups: likely documented or likely undocumented. We first set all census-based imputations to missing. In other words, imputed values for questions used to infer documentation status are not considered under this approach. We proceed to move immigrants into the likely documented category based on their responses to several questions. First, foreign-born individuals reporting U.S. citizenship are considered likely documented. Second, immigrants who are not U.S. citizens but report entering the United States as legal permanent residents are assigned likely documented.<sup>9</sup> Third, the remaining immigrants, who are not U.S. citizens and did not enter as legal permanent residents, but who report changing their status to permanent resident after arriving, are considered likely documented.

Finally, we use information in the SIPP's core questionnaire to assign immigrants to the likely documented category based on characteristics that would imply legal status. We consider immigrants likely documented if they reported receiving any of the following public benefits: Medicaid, public assistance (TANF), Supplemental Security Income (SSI), veterans' compensation, military pension, military health insurance, and food stamps.<sup>10</sup> These benefits are usually available only to citizens and legal permanent residents. Immigrants who report working for the government at any level are set to likely documented, as are those who work, or whose spouse works, in a relatively small set of industries or occupations that would suggest work authorization.<sup>11</sup> Immigrants active in the military are considered likely documented. Finally, married immigrants whose spouse is native-born are assigned to likely documented. The aforementioned characteristics are taken from Wave 1 to avoid endogeneity bias because an involuntary job loss could lead to a greater need for the receipt of government benefits.

The remaining immigrants—those not classified as likely documented—are assigned to the likely undocumented status. A small share of these immigrants could be legal temporary workers (e.g., Temporary Protected Status [TPS]) or refugees or asylees who have not become permanent residents or naturalized citizens. The entry status of these immigrants

<sup>9</sup>SIPP lumps immigrants under the following visa categories as "other": temporary workers, refugees and asylees, tourist/business travelers, and diplomats and other political representatives.

<sup>10</sup>Noncitizens with legal status may be prohibited from receiving federal benefits until they have lived in the United States for at least five years.

<sup>11</sup>For occupations, these include lawyer, paralegals, legal assistance, police officer, eligibility, and interviewers for government programs. For industries, they include executive offices and legislative bodies, public finance, other general government support, justice and public order, and safety activities, national security, and international affairs.

is coded as “Other” in the SIPP public use file, which is not a major concern given their relatively small share of the overall population (Hall et al. 2019). Moreover, any person with legal, TPS, refugee, or asylee status could be picked up using the additional characteristics noted earlier or in our supplemental analysis using the administrative matching criteria.

In an ancillary analysis, we provide alternative estimates to the logic-based reallocation approach described earlier. First, we incorporate external information indicating whether the foreign-born SIPP respondent was successfully matched with administrative records compiled at SSA: namely, Numident and the DER. SIPP linkages with these administrative data have been used to examine longitudinal earnings patterns (e.g., Goldin and Mitchell 2017; Villarreal and Tamborini 2018). We use the matched data here only to allow alternative estimates of documentation status based on additional information.

In particular, we move immigrants categorized as likely undocumented using the logical allocation approach to likely documented if they were successfully matched with their administrative files and had at least one year of positive earnings between 1981 and 2013 (Duleep and Dowhan 2002; Favreault and Nichols 2011). We do not assume that those who are not successfully matched are undocumented because there are other reasons for unsuccessful matches. Nonetheless, as noted, match rates are substantially lower for immigrants. Within our longitudinal baseline sample, match rates are as high as 95% for the native-born population compared with 73% for foreign-born.

In addition to leveraging administrative linkages, we also replicate our estimates using different SIPP-based approaches for assigning documentation status. We describe these analyses in a later section.

## Results

### Descriptive Patterns

Table 1 shows the weighted descriptive characteristics of our sample of male workers at baseline (Wave 1). Immigrants account for 18% of our sample. Therein, 26% were assigned a likely undocumented status based on the logical allocation method. This finding is consistent with estimates provided by Bachmeier et al. (2014), who found approximately 26% of the adult (aged 15 or older) foreign-born population is likely undocumented using the 2004 SIPP. Our estimate is also consistent with Passel’s (2005) residual-based method using the 2004 CPS, according to which 29% of the total foreign-born population, including children, is considered likely undocumented.

The average age of native and foreign-born workers in our sample is similar. However, native-born workers were more likely to be identified as non-Hispanic White and less likely to be identified as non-Hispanic Asian. As expected, immigrant workers have lower educational attainment with higher proportions employed in blue-collar and lower-level service occupations and in the construction and hospitality industries.

Before turning to the event history models, we examine the descriptive pattern of employment stability by nativity and documentation status. Figure 1 shows the incidence

of involuntary job loss (panel a) and involuntary job loss or underemployment (panel b) over the observation period, respectively. Unlike the upcoming event-history analysis, the job loss and underemployment rates in these graphs are computed using cross-sectional rather than longitudinal weights, and thus, do not require respondents to survive the entire panel. Three-wave moving averages are used to smooth out short-term fluctuations.

As shown in panel a of Figure 1, the likelihood of experiencing an involuntary job loss was higher for immigrant workers than for native-born workers over most of the entire five-year period. The difference between immigrant and native workers disappears only in the later part of the recovery period. The immigrant-native difference is higher and longer-lasting when underemployment is included (Figure 1, panel b).

When immigrant workers are separated by their likely documentation status, as shown in Figure 2, we observe higher rates of involuntary job loss among undocumented immigrants during the initial phase of the recession and immediate aftermath. Panel b of Figure 2, which includes underemployment, shows a consistently higher rate for both subgroups of immigrants, especially for the likely undocumented.

### Event-History Models of Involuntary Job Loss and Underemployment

Our logistic regression models examine workers' risk of experiencing an involuntary job loss and their risk of experiencing an involuntary job loss or underemployment over a five-year follow-up period. Model 1 adjusts for exposure using time (wave) and time squared, demographic characteristics (age, age squared, metropolitan residence, and school enrollment), and time-varying controls for local economic conditions (state unemployment rate and the difference in unemployment between the current and previous wave). Model 2 adds individuals' race/ethnicity and educational attainment, and Model 3 introduces job characteristics. We report the logit coefficients for each model, as well as the results from our analysis using the KHB method, which tests whether the change in the logit coefficient for immigrant is significant when additional explanatory variables are added. The superscript "a" indicates a significant change ( $p < .05$ ) from Model 1, and "b" indicates a significant change from Model 2.

The left panel of Table 2 reports the results for involuntary job loss, and the right panel reports results for the involuntary job loss or underemployment outcome. Model 1 in the left panel shows that immigrant workers were at a significantly higher risk of experiencing a job loss than native-born workers over the period (OR = 1.504). The greater odds among immigrants remain statistically significant in the additive models including workers' race/ethnicity and education (Model 2) and job characteristics (Model 3). The KHB method shows that the size of the immigrant-native difference in the odds of a job loss significantly narrowed with the introduction of job characteristics in Model 3 compared with Model 2 ( $p < .05$ ). This finding highlights how immigrants' position in the labor market explains only part of their greater risk of job loss.

The right panel of Table 2 turns to the more comprehensive outcome including transitions to underemployment. These models show a greater risk of employment instability among immigrants relative to their native-born counterparts than when only job loss is considered.



In Model 1, the odds of experiencing a job loss or underemployment were 82.6% higher for immigrant men compared with native men over the follow-up period (OR = 1.826). In Model 3, which includes job characteristics, immigrants still had substantially higher odds of job loss or underemployment than native workers, but the difference narrowed (OR = 1.380). This attenuation is significant ( $p < .05$ ) and again illustrates that job characteristics make immigrants more vulnerable to employment instability during economic downturns.

More detailed mediation analysis using the KHB method is provided in Table A1 in the online appendix. It shows, for example, that 44% of the total effect (Model 1) of immigrant status on the outcome including underemployment is due to job characteristics (Model 3). In addition, Figures B1 and B2 in the online appendix present the predicted cumulative probabilities of both outcomes for immigrant and native workers according to Model 3 in Table 2. The graphs show a larger immigrant-native gap in the cumulative probability of job instability when underemployment is included in our measure.

Table 3 contains the same set of logistic regression models but adds interactions between immigrant and time to explore whether immigrants' higher risk of job instability was greater in the initial or later stages of the recession and recovery. Four periods are distinguished and correspond to approximately one-year intervals, except for the last period, which is longer by one wave (Waves 1–3, 4–6, 7–9, and 10–14 of the survey).

The results indicate that immigrants' greater risk of job loss relative to native workers was concentrated in the height of the recession: namely, in the fall of 2008 through 2009 (Waves 1–3). By contrast, immigrants' greater risk of underemployment, although also greater in earlier waves, extended further into the recovery. For example, Models 1 and 2 show that immigrants had a significantly higher risk of experiencing underemployment or job loss through Waves 7–9 (fall of 2010). KHB analysis shows that the estimated size of immigrant-native differences in job instability significantly attenuates once job characteristics are introduced ( $p < .05$ ). More specifically, approximately 41% of immigrants' higher odds of job loss or underemployment may be attributed to characteristics such as the types of jobs they have and how long they have had them (Table A2, online appendix).

Together, the results show that immigrant male workers were more likely to experience employment instability during the Great Recession, along with the immediate aftermath. The time interactions suggest that this risk was greater when the labor market was weakest, providing evidence supportive of the notion that immigrant-native differences in employment stability are sensitive to economic conditions. To evaluate this claim further, we examine additional nonrecessionary years using the 2004 SIPP panel in a subsequent subsection.

### Variation by Likely Documentation Status

Table 4 disaggregates immigrants by their likely documentation status based on the logical allocation method. The specifications are otherwise similar to those presented earlier. According to the results (left panel of Table 4), both documented and undocumented immigrant workers were at higher risk of experiencing an involuntary job loss than native-born workers in Model 1. However, once we control for race/ethnicity and educational



attainment (Model 2) as well as job characteristics (Model 3), the difference between undocumented immigrants and native workers becomes nonsignificant. This finding implies that undocumented immigrants' greater risk of involuntary job loss over the observational period is largely explained by their job characteristics. This pattern makes sense given the concentration of undocumented immigrants in procyclical industries, such as construction. Also, undocumented immigrants would not have access to public sector employment, which is more stable during downturns. KHB analysis confirms that differences across these nested models, particularly for undocumented immigrants, are significant ( $p < .05$ ).

The right panel of Table 4 reports results for job loss or underemployment. In contrast to the results for job loss only, undocumented immigrants experienced a significantly higher risk of job loss or underemployment than documented immigrants in Model 1 (OR = 2.29 and 1.67 relative to native-born workers, respectively). The difference between documented and undocumented immigrants narrows as covariates are added to the specifications, especially in Model 3. This pattern again highlights the importance of job characteristics in explaining the greater vulnerability of undocumented immigrants to employment instability during economic downturns. It is likely, for example, that a concentration of undocumented immigrants in construction and lower-level service sector jobs (i.e., hospitality and leisure) makes them more vulnerable to involuntary reductions in hours during slack conditions. Ancillary analysis using the KHB method (Table A3, online appendix) further illustrates this pattern. For example, 63% of the total difference between likely undocumented immigrants and natives in the odds of job loss/underemployment in Model 1 is due to characteristics primarily related to their employment (Model 3) compared with only 34% of the difference between likely documented immigrants and natives.

### Comparison With 2004 SIPP Panel

A comparison between the 2004 and 2008 SIPP panels clarifies whether observed differences in the risk of employment stability between immigrants and natives may be attributed to the recession. Table 5 compares results of the logistic regression models for the comprehensive measure that includes job loss or underemployment using data from the 2008 SIPP panel with those using data from the 2004 SIPP panel. Because the 2004 SIPP has a shorter follow-up period, we restricted the 2008 panel models to Waves 1–8.

The results for the 2004 SIPP panel show much narrower immigrant-native differences in employment instability when labor market conditions were stronger compared with the period covered by the 2008 panel, when economic conditions were much weaker. In fact, the coefficients for immigrants are not statistically significant in the 2004 panel after race/ethnicity and educational attainment are taken into account. Furthermore, in the models examining only involuntary job loss (see Table C1, online appendix), the immigrant coefficient is statistically nonsignificant and negative in all specifications. Overall, the results using the 2004 SIPP suggest that the disadvantage experienced by immigrant workers in the 2008 panel may be attributed largely to the Great Recession and its slow recovery. Ancillary analysis pooling the two panels and including immigrant-panel interactions show a similar pattern (available upon request).

## Robustness Checks

We evaluated the sensitivity of our results to various conditions. In terms of documentation status, Van Hook et al. (2015) called attention to the uncertainty involved in assigning immigrants' legal status. We tested the sensitivity of our results using alternative approaches for assigning documentation status.

First, we incorporated external information: in particular, whether the SIPP respondent was successfully matched with tax records compiled by the SSA. In doing so, we move likely undocumented immigrants under the logical allocation method to likely documented if they were matched to administrative records successfully and had earnings recorded in a prior year. Notably, we find that among our likely documented sample based on the logical allocation method, the match rate to administrative records was 83.3%. In contrast, the match rate for the likely undocumented immigrant sample was, as expected, much lower at 43.2%. Overall, this procedure thus resulted in a noteworthy decline in the estimated share of likely undocumented in our immigrant sample, from 26% to 15%. At the national level, this difference could mean that estimates of undocumented immigrants using the prevailing methodology based on survey data may be prone to a substantial upward bias. However, the results of our regression models using these criteria were quite similar to our main results (see Table 6).<sup>12</sup>

We also replicated our models in Table 4 following a more straightforward procedure to assign documentation status outlined by Bachmeier et al. (2014). The method uses all SIPP values, including census-allocated responses, and assigns likely undocumented status to all foreign-born respondents who did not report U.S. citizenship and who did not enter as a permanent resident or report adjusting their status to legal permanent resident since arrival. Results from these models using a basic assignment were similar to our main results (Table D1, online appendix). Next, we estimated these same models but also added the administrative match criteria, moving those immigrants matched with their tax earnings to the likely documented category. Although incorporating the administrative match criteria again reduced the share of immigrants assigned a likely undocumented status, the regression results were similar to those presented in Table 4 (Table D2, online appendix).

We also investigated the sensitivity of our results to attrition. First, we compared the Wave 1 demographic and socioeconomic characteristics of our longitudinal baseline sample using the panel weights to those of a sample using cross-sectional weights (from Wave 2). The estimates (see Table E1, online appendix) show strong similarities across the samples.

Second, we replicated the regression models in Table 2 using longitudinal weights that require respondents to be observed for shorter durations. Specifically, we applied longitudinal weights that require respondents to be fully observed only through December 2011 and December 2010, respectively. Results from these robustness checks (Tables E2

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<sup>12</sup>The use of an administrative match as an indicator of legal status is not without some uncertainty. Importantly, a nonmatch does not necessarily mean unauthorized status: 10% of native-born respondents in the 2008 SIPP are also not able to be matched. Likewise, a successful match does not guarantee current legal status. For example, some immigrants matched successfully could have worked legally for some years before their legal status lapsed. Respondents might also be using another person's information in their household.

and E3, online appendix) show few substantive differences from our main results. Also, when we adjusted the longitudinal weights for differential probability of attrition by imputed documentation status, the main results were not affected.

## Discussion

Research has called attention to immigrants' labor market experiences because they can affect their well-being and long-term financial security as well as the economic prospects of their children. Few studies, however, have examined the patterning of immigrants' employment stability using longitudinal data. Moreover, although recent studies have begun to address how economic outcomes among immigrants differ by their documentation status, no research to date has examined variation in immigrants' employment stability by documentation status. In this study, we use nationally representative panel data to examine whether immigrant male workers experienced different patterns of employment stability than native-born male workers during the Great Recession and its aftermath, how the pattern varies by likely documentation status, and the extent to which human capital and job characteristics help explain observed patterns.

This study makes several contributions. First, whereas past studies have often relied on cross-sectional reports, we provide novel longitudinal evidence that sheds light on adverse labor market transitions among male immigrant workers during difficult economic times despite their relatively high employment rates generally. Starting with a sample of employed men during the summer of 2008, we use an event-history approach to examine how workers' experiences unfold over almost a five-year follow-up period. Because we use longitudinal data, the models are able to adjust for a range of covariates before the adverse employment spell, including workers' human capital and job characteristics as well as state-level unemployment rates. The findings document a significantly higher risk of employment instability among immigrant men than comparable native-born workers over the observational window. Specifically, immigrant men had greater risks of experiencing an involuntary job loss and of experiencing an involuntary transition to underemployment, with the measure including underemployment showing wider immigrant-native differences.

Second, the findings highlight the importance of economic conditions for immigrants. Immigrant men had higher employment rates generally—particularly, lower-skilled workers—but they experienced a greater risk of employment instability when economic conditions are weakest. By contrast, we observe no (job loss) and substantially narrower (underemployment) immigrant-native differences during pre-recessionary times, providing further evidence of vulnerabilities in immigrants' employment during deteriorating macroeconomic conditions. Together, these findings extend prior research suggesting that lower-skilled workers, as well as other disadvantaged groups (e.g., minorities, young), are at higher risk of experiencing adverse employment outcomes as the economy worsens, what some have called the “first fired” hypothesis (Couch and Fairlie 2010; Sisk and Donato 2018; Xu 2018).

Third, our analysis extends conceptualizations of employment stability. Prior studies generally rely on unemployment as a key indicator of how demographic groups fare

in the labor market. Fewer studies have examined involuntary job loss, and even fewer have investigated transitions to underemployment dynamically. In doing so, prior research has likely understated the full impact of economic downturns for immigrants and their underlying employment vulnerabilities. Our longitudinal analyses, using a more comprehensive measure that includes not only involuntary job loss but also transitions to underemployment, show that the immigrant-native difference in employment instability is much wider and extends beyond the official recession. Because of the types of jobs in which immigrants work and perhaps their relative lack of access to government safety net programs, economic downturns appear to result in a reduction of work hours for immigrants rather than outright job loss.

Fourth, this study is the first to examine heterogeneity in immigrants' employment stability over the Great Recession by likely documentation status. Using a logical allocation method, we estimate differences in the risk of job loss and underemployment for immigrants of different documentation status. We find that the risk of adverse employment spells was much larger for likely undocumented immigrants, especially transitions to underemployment. This finding supports the idea that documentation status plays an important role in stratifying labor market outcomes among immigrants. It also suggests that when immigrants as a whole are examined, documentation status is an important source of within-group variation underlying group trends overall.

Finally, our results clarify some of the important mechanisms shaping immigrants' employment stability. Immigrants' greater risk of job loss and underemployment during bad economic times is partly explained by the characteristics of the jobs in which they work. With the inclusion of job characteristics in our models, the immigrant-native and documented-undocumented differences narrowed substantially, particularly in terms of underemployment. In large part, this narrowing is because immigrants are concentrated in procyclical sectors, such as construction and in blue-collar and lower-level service jobs. They are also less likely to be employed in public sector jobs and have less seniority. Interestingly, the KHB method shows that employment vulnerabilities among likely undocumented immigrants are particularly driven by the jobs they have.

Also noteworthy is that we still find significant net effects in our full model. Employer perceptions (i.e., attractiveness and/or discrimination) might explain the remaining gaps. A lower reservation wage among immigrants (particularly the undocumented) may also lead to a situation where employers are more willing to reduce their hours, especially during economic contractions. Lower eligibility for social insurance programs, such as unemployment insurance, may make immigrants more vulnerable as well as more likely to continue to work in substandard conditions.

Several limitations of this study are worth underscoring. We lack a sufficient sample size to examine reemployment rates. Securing employment following a job loss and the speed with which immigrants are able to work again can moderate the impact of a job loss on a person's long-term economic prospects (Couch et al. 2013) and those of their children (Johnson et al. 2012). Moreover, longer time spent without work may make it more difficult to obtain comparable reemployment because of the negative signaling effects

of long-term unemployment (Brand 2015; Kroft et al. 2016). We are similarly unable to explore the consequences of employment instability for individual earnings or family income because of sample size limitations. Additionally, return migration could be selective of those immigrants who lost jobs, which might lead to an underestimate of the negative impact of the recession on immigrants' employment. Future research addressing these and other issues related to immigrants' employment and their implications over the life course could advance current scholarship on immigrants' incorporation in the labor market. ■

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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## References

- Allison P (1984). Event history analysis: Regressions for longitudinal event data. Newbury Park, CA: Sage Publications.
- Bachmeier JD, Van Hook J, & Bean FD (2014). Can we measure immigrants' legal status? Lessons from two U.S. surveys. *International Migration Review*, 48, 538–566. [PubMed: 25525285]
- Bean FD, Brown SK, & Bachmeier JD (2015). *Parents without papers: The progress and pitfalls of Mexican-American integration*. New York, NY: Russell Sage.
- Black SE, Devereux PJ, & Salvanes KG (2015). Losing heart? The effect of job displacement on health. *ILR Review*, 68, 833–861.
- Boisjoly J, Duncan GJ, & Smeeding T (1998). The shifting incidence of involuntary job losses from 1968 to 1992. *Industrial Relations: A Journal of Economy and Society*, 37, 207–231.
- Borjas GJ (1995). Assimilation and changes in cohort quality revisited: What happened to immigrant earnings in the 1980s? *Journal of Labor Economics*, 13, 201–245. [PubMed: 12291239]
- Borjas GJ (2015). The slowdown in the economic assimilation of immigrants: Aging and cohort effects revisited again. *Journal of Human Capital*, 9, 483–517.
- Borjas GJ (2017). The labor supply of undocumented immigrants. *Labour Economics*, 46, 1–13.
- Brand JE (2015). The far-reaching impact of job loss and unemployment. *Annual Review of Sociology*, 41, 359–375.
- Breen R, Karlson KB, & Holm A (2018). Interpreting and understanding logits, probits, and other nonlinear probability models. *Annual Review of Sociology*, 44, 39–54.
- Brown JD, Genc S, Hotchkiss JL, & Quispe-Agnoli M (2014). Undocumented workers' employment across U.S. business cycles. *Contemporary Economic Policy*, 32, 653–670.
- Capps R, Bachmeier JD, & Van Hook J (2018). Estimating the characteristics of unauthorized immigrants using U.S. census data: Combined sample multiple imputation. *Annals of the American Academy of Political and Social Science*, 677, 165–179.
- Cheng S, Tamborini CR, Kim C, & Sakamoto A (2019). Gains and losses: Educational variations in the cohort trends in the Black-White earnings gap among men in the United States. *Demography*, 56, 2253–2277. [PubMed: 31792875]
- Chiswick BR, Cohen Y, & Zach T (1997). The labor market status of immigrants: Effects of the unemployment rate at arrival and duration of residence. *ILR Review*, 50, 289–303.

- Chiswick BR, & DebBurman N (2004). Educational attainment: Analysis by immigrant generation. *Economics of Education Review*, 23, 361–379.
- Couch KA, & Fairlie R (2010). Last hired, first fired? Black-White unemployment and the business cycle. *Demography*, 47, 227–247. [PubMed: 20355692]
- Couch KA, Fairlie R, & Xu H (2018). Racial differences in labor market transitions and the Great Recession. In Polachek SW & Tatsiramos K (Eds.), *Research in labor economics: Vol. 46. Transitions through the labor market: Work, occupation, earnings and retirement* (pp. 1–53). Bingley, UK: Emerald Publishing.
- Couch KA, & Placzek DW (2010). Earnings losses of displaced workers revisited. *American Economics Review*, 100, 572–589.
- Couch KA, Reznik GL, Iams HM, & Tamborini CR (2018). The incidence and consequences of private sector job loss in the Great Recession. *Social Security Bulletin*, 78(1), 31–46.
- Couch KA, Reznik GL, Tamborini CR, & Iams HM (2013). Economic and health implications of long-term unemployment: Earnings, disability benefits, and mortality. In Polachek SW & Tatsiramos KS (Eds.), *Research in labor economics: Vol. 38. New analyses of worker well-being* (pp. 259–308). Bingley, UK: Emerald Group Publishing.
- Duleep HO, & Dowhan DJ (2002). Insights from longitudinal data on earnings growth of U.S. foreign-born men. *Demography*, 39, 485–506. [PubMed: 12205754]
- Duleep HO, Liu X, & Regets M (2018). Country of origin, earnings convergence, and human capital investment: A new method for the analysis of U.S. immigrant economic assimilation (GLO Discussion Paper, No. 247). Maastricht, the Netherlands: Global Labor Organization.
- Duleep HO, & Regets M (1997). Measuring immigrant wage growth using matched CPS files. *Demography*, 34, 239–249. [PubMed: 9169280]
- Duncan B, & Trejo SJ (2012). The employment of low-skilled immigrant men in the United States. *American Economic Review: Papers & Proceedings*, 102, 549–554.
- Dushi I, Iams HM, & Tamborini CR (2013). Contribution dynamics in defined contribution pension plans during the Great Recession of 2007–2009. *Social Security Bulletin*, 73(2), 85–102. [PubMed: 23914623]
- Farber HS (2015). *Job loss in the Great Recession and its aftermath: US evidence from the Displaced Workers Survey* (NBER Working Paper No. 21216). Cambridge, MA: National Bureau of Economic Research.
- Favreault MM, & Nichols A (2011). *Immigrant diversity and social security: Recent patterns and future prospects* (CRR Working Paper 2011–8). Chestnut Hill, MA: Center for Retirement Research at Boston College. Retrieved from [https://crr.bc.edu/wp-content/uploads/2011/05/wp\\_2011-8\\_5081.pdf](https://crr.bc.edu/wp-content/uploads/2011/05/wp_2011-8_5081.pdf)
- Finnigan R (2018). Varying weekly work hours and earnings instability in the Great Recession. *Social Science Research*, 74, 96–107. [PubMed: 29961492]
- Flippen CA (2012). Laboring underground: The employment patterns of Hispanic immigrant men in Durham, NC. *Social Problems*, 59, 21–42. [PubMed: 22844159]
- Goldin C, & Mitchell J (2017). The new life cycle of women's employment: Disappearing humps, sagging middles, expanding tops. *Journal of Economic Perspectives*, 31(1), 161–182.
- Goodman CJ, & Mance SM (2011). Employment loss and the 2007–09 recession: An overview. *Monthly Labor Review*, April, 3–12.
- Greenman E, & Hall M (2013). Legal status and educational transitions for Mexican and Central American immigrant youth. *Social Forces*, 91, 1475–1498.
- Grusky DB, Western B, & Wimer C (Eds.). (2011). *The Great Recession*. New York, NY: Russell Sage Foundation.
- Hall M, & Farkas G (2008). Does human capital raise earnings for immigrants in the low-skill labor market? *Demography*, 45, 619–639. [PubMed: 18939664]
- Hall M, & Greenman E (2015). The occupational cost of being illegal in the United States: Legal status, job hazards, and compensating differentials. *International Migration Review*, 49, 406–442. [PubMed: 26190867]
- Hall M, Greenman E, & Farkas G (2010). Legal status and wage disparities for Mexican immigrants. *Social Forces*, 89, 491–513.

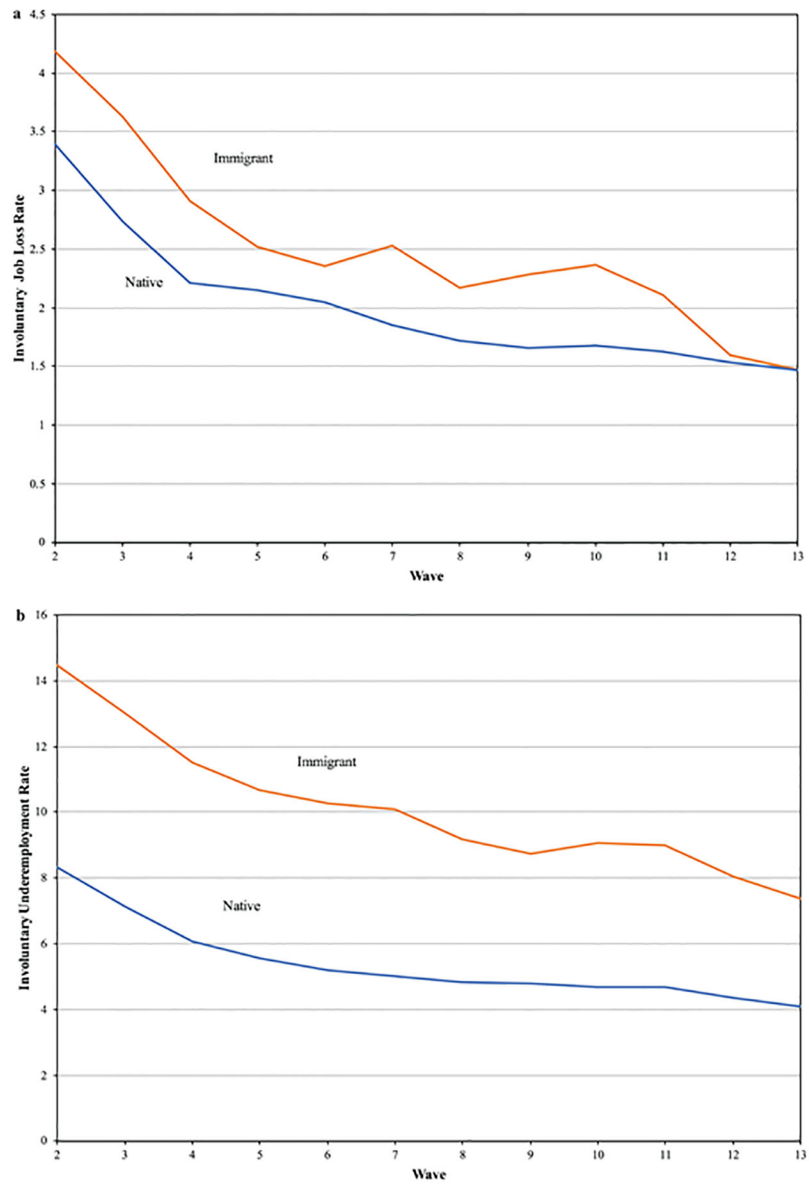


- Hall M, Greenman E, & Yi Y (2018). Job mobility among unauthorized immigrant workers. *Social Forces*, 97, 999–1028.
- Hall M, Musick K, & Yi Y (2019). Living arrangements and household complexity among undocumented immigrants. *Population and Development Review*, 45, 81–101.
- Halpin BW (2015). Subject to change without notice: Mock schedules and flexible employment in the United States. *Social Problems*, 62, 419–438.
- Hirsch B, & Jahn EJ (2015). Is there monopsonistic discrimination against immigrants? *ILR Review*, 68, 501–528.
- Hotchkiss JL, & Quispe-Agnoli M (2012). Employer monopsony power in the labor market for undocumented workers (Working Paper No. 2009–14d). Atlanta, GA: Federal Reserve Bank of Atlanta.
- Hout M, Levanon A, & Cumberworth E (2011). Job loss and unemployment during the Great Recession. In Grusky DB, Western B, & Wimer C (Eds.), *The Great Recession* (pp. 59–91). New York, NY: Russell Sage Foundation.
- Hoynes HW, Miller DL, & Schaller J (2012). Who suffers during recessions? *Journal of Economic Perspectives*, 26(3), 27–47.
- Jacobson L, LaLonde RJ, & Sullivan D (1993). Earnings losses of displaced workers. *American Economic Review*, 82, 685–709.
- Johnson RC, Kalil A, & Dunifon RE (2012). Employment patterns of less-skilled workers: Links to children's behavior and academic progress. *Demography*, 49, 747–772. [PubMed: 22246798]
- Kalleberg AL, & Von Wachter TM (2017). The U.S. labor market during and after the Great Recession: Continuities and transformations. *Russell Sage Foundation Journal of the Social Sciences*, 3(3), 1–19.
- Karlson KB, Holm A, & Breen R (2012). Comparing regression coefficients between same-sample nested models using logit and probit: A new method. *Sociological Methodology*, 42, 286–313.
- Kim C, & Sakamoto A (2010). Have Asian American men achieved labor market parity with White men? *American Sociological Review*, 75, 934–957.
- Kochhar R, Soledad Espinoza C, & Hinze-Pifer R (2010). After the Great Recession: Foreign born gain jobs; Native born lose jobs (Hispanic Trends report). Washington, DC: Pew Research Center. Retrieved from <http://www.pewhispanic.org/2010/10/29/after-the-great-recession-brforeign-born-gain-jobs-native-born-lose-jobs/>
- Kroft K, Lange F, Notowidigdo MJ, & Katz LF (2016). Long-term unemployment and the Great Recession: The role of composition, duration dependence, and nonparticipation. *Journal of Labor Economics*, 34(S1), S7–S54.
- Laird J (2015). Unemployment among Mexican immigrant men in the United States, 2003–2012. *Social Science Research*, 49, 202–216. [PubMed: 25432614]
- Lubotsky D (2007). Chutes or ladders? A longitudinal analysis of immigrant earnings. *Journal of Political Economy*, 115, 820–867.
- Massey DS, & Gentsch K (2014). Undocumented migration to the United States and the wages of Mexican immigrants. *International Migration Review*, 48, 482–499. [PubMed: 27134328]
- Mize TD (2019). Best practices for estimating, interpreting, and presenting nonlinear interaction effects. *Sociological Science*, 6, 81–117.
- Moffitt RA (2013). The Great Recession and the social safety net. *Annals of the American Academy of Political and Social Science*, 650, 143–166. [PubMed: 27065356]
- Mosisa AT (2013). BLS spotlight on statistics: Foreign-born workers in the U.S. labor force. Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics.
- Orrenius PM, & Zavodny M (2010). Mexican immigrant employment outcomes over the business cycle. *American Economic Review: Papers & Proceedings*, 100, 316–320.
- Passel JS (2005). Unauthorized migrants: Numbers and characteristics (Hispanic Trends report). Washington, DC: Pew Research Center. Retrieved from <https://www.pewresearch.org/hispanic/2005/06/14/unauthorized-migrants/#about-the-paper>
- Passel JS, & Cohn D (2016). Size of U.S. unauthorized immigrant workforce stable after the Great Recession (Report). Washington, DC: Pew Research

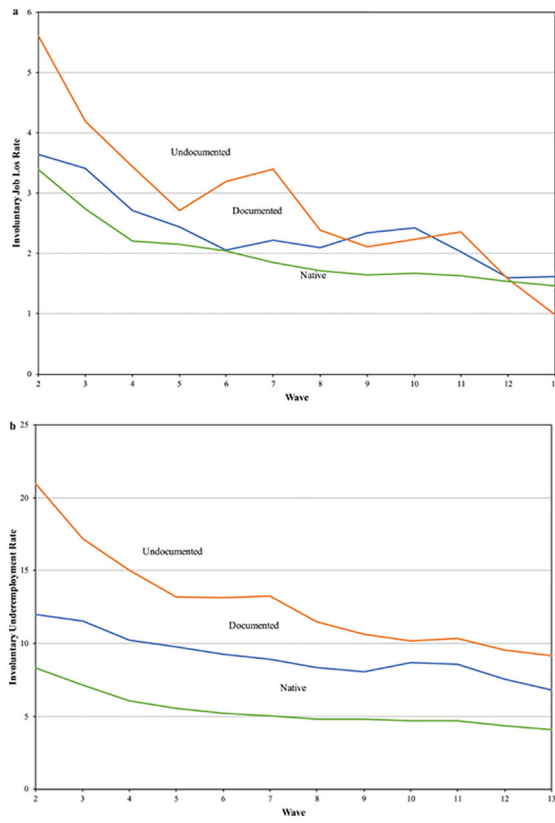


Center. Retrieved from [https://www.pewresearch.org/hispanic/wp-content/uploads/sites/5/2016/11/LaborForce2016\\_FINAL\\_11.2.16-1.pdf](https://www.pewresearch.org/hispanic/wp-content/uploads/sites/5/2016/11/LaborForce2016_FINAL_11.2.16-1.pdf)

- Portes A, & Rumbaut RG (2014). *Immigrant America: A portrait* (4th ed.). Berkeley: University of California Press.
- Portes A, & Zhou M (1993). The new second generation: Segmented assimilation and its variants. *Annals of the American Academy of Political and Social Science*, 530, 74–96.
- Redbird B, & Grusky DB (2016). Distributional effects of the Great Recession: Where has all the sociology gone? *Annual Review of Sociology*, 42, 185–215.
- Schneider D, & Harknett K (2019). Consequences of routine work-schedule instability for worker health and well-being. *American Sociological Review*, 84, 82–114. [PubMed: 33311716]
- Sisk B, & Donato KM (2018). Weathering the storm? The Great Recession and the employment status transitions of low-skill male immigrant workers in the United States. *International Migration Review*, 52, 90–124.
- Sum A, & Khatiwada I (2010). The nation’s underemployed in the “Great Recession” of 2007–09. *Monthly Labor Review*, November, 3–15.
- Thiede BC, & Monnat SM (2016). The Great Recession and America’s geography of unemployment. *Demographic Research*, 35, 891–928. 10.4054/DemRes.2016.35.30 [PubMed: 28663712]
- U.S. Bureau of Labor Statistics. (2008). *Involuntary part-time work on the rise* (Issues in Labor Statistics, Summary 08–08). Washington, DC: U.S. Department of Labor. Retrieved from <https://www.bls.gov/opub/btn/archive/involuntary-part-time-work-on-the-rise.pdf>
- U.S. Bureau of Labor Statistics. (2020, May 15). *Foreign-born workers: Labor force characteristics—2019* [BLS News Release, USDL-20–0922]. Retrieved from <https://www.bls.gov/news.release/pdf/forbrn.pdf>
- U.S. Census Bureau. (2015, April 15). *Survey of Income and Program Participation (SIPP) 2008 panel: Source and accuracy statement for the longitudinal analysis of Waves 1 to 16 public use files* [Memorandum]. Retrieved from [https://www2.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements/2008/final.-stamped.-survey-of-income-and-program-participation-\(sipp\)-2008-panel-source-and-accuracy-statement-for-longitudinal.pdf](https://www2.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements/2008/final.-stamped.-survey-of-income-and-program-participation-(sipp)-2008-panel-source-and-accuracy-statement-for-longitudinal.pdf)
- Van Hook J, Bachmeier JD, Coffman DL, & Harel O (2015). Can we spin straw into gold? An evaluation of immigrant legal status imputation approaches. *Demography*, 52, 329–354. [PubMed: 25511332]
- Villarreal A, & Tamborini CR (2018). Immigrants’ economic assimilation: Evidence from longitudinal earnings records. *American Sociological Review*, 83, 686–715. [PubMed: 30555169]
- Wang SX, & Sakamoto A (2016). Did the Great Recession downsize immigrants and native-born Americans differently? Unemployment differentials by nativity, race and gender from 2007 to 2013 in the U.S. *Social Sciences*, 5, 49. 10.3390/socsci5030049
- Xu H (2018). First fired, first hired? Business cycles and immigrant labor market transitions. *IZA Journal of Development and Migration*, 8, 19. 10.1186/s40176-018-0127-5



**Fig. 1.** Involuntary job loss and underemployment rates for immigrant and native men (three-wave moving average)



**Fig. 2.** Involuntary job loss and underemployment rates for immigrant men by documentation status (three-wave moving average)

**Table 1**

Characteristics of the analytical sample at Wave 1, male workers aged 21–52

	All	Native	Immigrant
<b>Immigrant Status</b>			
Immigrant	17.9	0	100.0
Likely documented	13.2	0	73.7
Likely undocumented	4.7	0	26.3
<b>Demographic Variables</b>			
Age (mean)	37.4	37.4	37.4
Metropolitan area	81.5	80.4	86.8
Enrolled (full-time) in school	2.0	2.2	1.1
Married	60.0	58.3	67.8
<b>Race/Ethnicity</b>			
Non-Hispanic White	65.1	76.8	11.9
Non-Hispanic Black	9.3	9.7	7.3
Hispanic	19.3	9.8	63.1
Non-Hispanic Asian	4.2	1.5	16.4
Other	2.1	2.2	1.4
<b>Education</b>			
Less than high school	9.6	5.4	28.9
High school	57.8	61.3	42.1
College or more	32.6	33.4	29.0
<b>Job Characteristics</b>			
Blue-collar occupation	35.7	33.2	47.0
Lower service/support occupation	26.9	26.8	27.2
Construction industry	11.9	10.4	18.6
Manufacturing industry	17.0	16.9	17.4
Natural industries	2.1	1.6	3.9
Hospitality/leisure industry	5.3	4.2	10.6
Public sector	16.5	18.4	7.9
<b>Job Tenure</b>			
0–3 years	36.0	35.8	37.0
3–10 years	36.7	35.3	42.9
>10 years	27.3	28.9	20.1
<b>Economic Conditions</b>			
State unemployment rate	7.4	7.3	7.5
State unemployment change <sup>a</sup>	1.4	1.4	1.4
Persons	5,231	4,382	849

Notes: SIPP longitudinal weights use *Igtpn4wt*. Estimates reflect the fourth reference month in Wave 1 (May–August 2008).

<sup>a</sup>This value captures the change in state-level unemployment from the wave of observation of job loss relative to the prior wave (unemployment from Wave 2 – Wave 1 in this case).

Table 2

Logit coefficients from discrete-time models predicting involuntary job loss and underemployment, 2008–2013

	Job Loss			Job Loss or Underemployment		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Exposure						
Waves 1–14	–0.231** (0.056)	–0.225** (0.056)	–0.189** (0.057)	–0.320** (0.043)	–0.307** (0.043)	–0.294** (0.044)
Wave, squared	0.008* (0.004)	0.007* (0.004)	0.007† (0.004)	0.012** (0.003)	0.011** (0.003)	0.011** (0.003)
Immigrant Status						
Immigrant	0.408** (0.099)	0.465** (0.144)	0.309* <sup>b</sup> (0.145)	0.602** (0.061)	0.501** (0.089)	0.322** <sup>a,b</sup> (0.089)
Demographic Variables						
Age	–0.129** (0.043)	–0.108* (0.043)	–0.059 (0.044)	–0.092** (0.028)	–0.064* (0.028)	–0.037 (0.027)
Age, squared	0.002** (0.001)	0.001* (0.001)	0.001† (0.001)	0.001** (0.000)	0.001* (0.000)	0.001† (0.000)
Metropolitan area	–0.042 (0.102)	0.028 (0.104)	0.060 (0.110)	–0.146* (0.064)	–0.047 (0.066)	0.000 (0.066)
Enrolled in school	0.542* (0.273)	0.573* (0.273)	0.651* (0.265)	0.272 (0.211)	0.339 (0.210)	0.472* (0.207)
Married	–0.247** (0.082)	–0.212** (0.082)	–0.226** (0.083)	–0.257** (0.055)	–0.222** (0.055)	–0.219** (0.054)
Race/Ethnicity (ref. = Non-Hispanic White)						
Non-Hispanic Black		0.117 (0.159)	0.063 (0.160)		0.076 (0.104)	0.077 (0.102)
Hispanic		–0.075 (0.145)	–0.095 (0.144)		0.069 (0.093)	0.051 (0.092)
Non-Hispanic Asian		–0.691** (0.244)	–0.585* (0.246)		–0.520** (0.170)	–0.406* (0.169)
Other		0.077 (0.248)	0.094 (0.251)		0.120 (0.165)	0.136 (0.160)
Education (ref. = no high school)						
High school		–0.194 (0.151)	–0.085 (0.153)		–0.381** (0.088)	–0.269** (0.087)
College or more		–0.600** (0.165)	–0.285 (0.177)		–0.921** (0.103)	–0.534** (0.113)
Job Characteristics						
Blue-collar occupation			0.356**			0.401**

	Job Loss			Job Loss or Underemployment		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
			(0.118)			(0.083)
Lower service/support occupation			0.168			0.198 <sup>*</sup>
			(0.119)			(0.084)
Construction industry			0.590 <sup>**</sup>			0.622 <sup>**</sup>
			(0.121)			(0.078)
Manufacturing industry			0.217 <sup>*</sup>			0.205 <sup>**</sup>
			(0.105)			(0.072)
Natural industries			-0.386			-0.041
			(0.307)			(0.179)
Hospitality/leisure industry			-0.102			0.357 <sup>**</sup>
			(0.211)			(0.114)
Public sector			-0.937 <sup>**</sup>			-0.856 <sup>**</sup>
			(0.191)			(0.127)
Job tenure (ref. = >10 years)						
0–3 years			1.246 <sup>**</sup>			0.700 <sup>**</sup>
			(0.114)			(0.076)
3–10 years			0.631 <sup>**</sup>			0.469 <sup>**</sup>
			(0.112)			(0.073)
Economic Conditions						
State unemployment rate	0.006	0.006	0.009	0.003	0.000	0.006
	(0.025)	(0.025)	(0.025)	(0.016)	(0.016)	(0.016)
State unemployment change	0.088	0.090	0.083	0.136 <sup>**</sup>	0.141 <sup>**</sup>	0.137 <sup>**</sup>
	(0.058)	(0.057)	(0.056)	(0.043)	(0.043)	(0.043)
Constant	-0.889	-1.036	-3.491 <sup>**</sup>	-0.532	-0.636	-2.354 <sup>**</sup>
	(0.817)	(0.831)	(0.887)	(0.519)	(0.520)	(0.539)
Person-Waves	58,934	58,934	58,934	61,743	61,743	61,743

Note: SIPP longitudinal weights use *lgtpn4wt*.

<sup>a</sup>Change in immigrant coefficient relative to Model 1 was significant ( $p < .05$ ) using the KHB method.

<sup>b</sup>Change in immigrant coefficient relative to Model 2 was significant ( $p < .05$ ) using the KHB method.

<sup>†</sup> $p < .10$ ;

<sup>\*</sup> $p < .05$ ;

<sup>\*\*</sup> $p < .01$  (two-tailed tests)

**Table 3**

Logit coefficients from discrete-time models predicting involuntary job loss and underemployment with time interactions, 2008–2013

	Job Loss			Job Loss or Underemployment		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Exposure (ref. = Waves 1–3)						
Waves 4–6	-0.361** (0.140)	-0.355* (0.141)	-0.297* (0.143)	-0.502** (0.105)	-0.488** (0.106)	-0.466** (0.107)
Waves 7–9	-0.774** (0.155)	-0.768** (0.155)	-0.619** (0.158)	-0.807** (0.115)	-0.798** (0.115)	-0.736** (0.117)
Waves 10–14	-1.054** (0.141)	-1.047** (0.140)	-0.825** (0.145)	-1.322** (0.112)	-1.313** (0.112)	-1.217** (0.114)
Immigrant Status						
Immigrant × Waves 1–3	0.472** (0.139)	0.517** (0.170)	0.340 <sup>†b</sup> (0.174)	0.732** (0.090)	0.616** (0.108)	0.424** <sup>a,b</sup> (0.110)
Immigrant × Waves 4–6	0.285 (0.226)	0.348 (0.249)	0.201 <sup>b</sup> (0.245)	0.547** (0.157)	0.454** (0.172)	0.283 <sup>†a,b</sup> (0.170)
Immigrant × Waves 7–9	0.489 <sup>†</sup> (0.271)	0.540 <sup>†</sup> (0.298)	0.414 <sup>b</sup> (0.301)	0.573** (0.191)	0.451* (0.206)	0.294 <sup>a,b</sup> (0.209)
Immigrant × Waves 10–14	0.366 (0.227)	0.418 <sup>†</sup> (0.252)	0.278 <sup>b</sup> (0.256)	0.263 (0.198)	0.142 (0.211)	-0.018 <sup>a,b</sup> (0.212)
Demographic Variables	Yes	Yes	Yes	Yes	Yes	Yes
Race/Ethnicity		Yes	Yes		Yes	Yes
Education		Yes	Yes		Yes	Yes
Job Characteristics			Yes			Yes
Economic Conditions	Yes	Yes	Yes	Yes	Yes	Yes
Person-Waves	58,934	58,934	58,934	61,743	61,743	61,743

Notes: SIPP longitudinal weights use *Igtpn4wt*. See Table 2 for a full list of demographic variables, racial/ethnic and education categories, job characteristics, and economic conditions

<sup>a</sup>Change in immigrant coefficient relative to Model 1 was significant ( $p < .05$ ) using the KHB method.

<sup>b</sup>Change in immigrant coefficient relative to Model 2 was significant ( $p < .05$ ) using the KHB method.

<sup>†</sup> $p < .10$ ;

\* $p < .05$ ;

\*\* $p < .01$  (two-tailed tests)



**Table 4**

Logit coefficients from discrete-time models predicting involuntary job loss and underemployment by immigrant documentation status, 2008–2013

	Job Loss			Job Loss or Underemployment		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Exposure						
Waves 1–14	–0.231 ** (0.056)	–0.225 ** (0.056)	–0.189 ** (0.057)	–0.319 ** (0.044)	–0.307 ** (0.043)	–0.294 ** (0.044)
Wave, squared	0.008 * (0.004)	0.007 * (0.004)	0.007 † (0.004)	0.011 ** (0.003)	0.011 ** (0.003)	0.011 ** (0.003)
Immigrant Status						
Documented	0.390 ** (0.112)	0.479 ** (0.149)	0.346 ** <sup>b</sup> (0.149)	0.515 ** (0.070)	0.473 ** (0.093)	0.323 ** <sup>a,b</sup> (0.092)
Undocumented	0.460 * (0.181)	0.417 † (0.223)	0.180 <sup>a,b</sup> (0.224)	0.828 ** (0.104)	0.587 ** <sup>a</sup> (0.130)	0.320 ** <sup>a,b</sup> (0.129)
Demographic Variables	Yes	Yes	Yes	Yes	Yes	Yes
Race/Ethnicity		Yes	Yes		Yes	Yes
Education		Yes	Yes		Yes	Yes
Job Characteristics			Yes			Yes
Economic Conditions	Yes	Yes	Yes	Yes	Yes	Yes
Person-Waves	58,934	58,934	58,934	61,743	61,743	61,743

Notes: SIPP longitudinal weights use *lgtpn4wt*. See Table 2 for a full list of demographic variables, racial/ethnic and education categories, job characteristics, and economic conditions.

<sup>a</sup>Change in immigrant coefficient relative to Model 1 was significant ( $p < .05$ ) using the KHB method.

<sup>b</sup>Change in immigrant coefficient relative to Model 2 was significant ( $p < .05$ ) using the KHB method.

†  $p < .10$ ;

\*  $p < .05$ ;

\*\*  $p < .01$  (two-tailed tests)

**Table 5**

Logit coefficients from discrete-time models predicting involuntary job loss or underemployment, 2004–2006 (2004 SIPP) and 2008–2010 (2008 SIPP)

	2004 SIPP			2008 SIPP		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Exposure						
Waves 1–8	–0.310 ** (0.063)	–0.298 ** (0.063)	–0.255 ** (0.064)	–0.558 ** (0.064)	–0.532 ** (0.065)	–0.526 ** (0.065)
Wave, squared	0.018 * (0.008)	0.017 * (0.008)	0.014 † (0.008)	0.039 ** (0.007)	0.037 ** (0.007)	0.038 ** (0.007)
Immigrant Status						
Immigrant	0.260 ** (0.077)	0.106 (0.103)	0.009 <sup>a,b</sup> (0.101)	0.569 ** (0.057)	0.449 ** (0.082)	0.280 ** <sup>a,b</sup> (0.080)
Demographic Variables	Yes	Yes	Yes	Yes	Yes	Yes
Race/Ethnicity		Yes	Yes		Yes	Yes
Education		Yes	Yes		Yes	Yes
Job Characteristics			Yes			Yes
Economic Conditions	Yes	Yes	Yes	Yes	Yes	Yes
Person-Waves	63,359	63,359	63,359	50,462	50,462	50,462

Notes: Each panel is followed through Wave 8 (32 months). SIPP longitudinal weights use *lgtpn2wt* for both panels. See Table 2 for a full list of demographic variables, racial/ethnic and education categories, job characteristics, and economic conditions.

<sup>a</sup>Change in immigrant coefficient relative to Model 1 was significant ( $p < .05$ ) using the KHB method.

<sup>b</sup>Change in immigrant coefficient relative to Model 2 was significant ( $p < .05$ ) using the KHB method.

<sup>†</sup> $p < .10$ ;

\* $p < .05$ ;

\*\* $p < .01$  (two-tailed tests)

**Table 6**

Logit coefficients from discrete-time models predicting involuntary job loss and underemployment by immigrant documentation status incorporating administrative match criteria, 2008–2013

	Job Loss			Job Loss or Underemployment		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Exposure						
Waves 1–14	–0.231 ** (0.056)	–0.225 ** (0.056)	–0.189 ** (0.057)	–0.319 ** (0.044)	–0.307 ** (0.043)	–0.294 ** (0.044)
Wave, squared	0.008 * (0.004)	0.007 * (0.004)	0.007 † (0.004)	0.011 ** (0.003)	0.011 ** (0.003)	0.011 ** (0.003)
Immigrant Status						
Documented	0.386 ** (0.106)	0.466 ** (0.146)	0.327 * <sup>b</sup> (0.146)	0.537 ** (0.065)	0.481 ** (0.091)	0.324 ** <sup>a,b</sup> (0.090)
Undocumented	0.539 * (0.237)	0.455 † (0.273)	0.167 <sup>a,b</sup> (0.282)	0.943 ** (0.134)	0.631 ** <sup>a</sup> (0.159)	0.312 † <sup>a,b</sup> (0.159)
Demographic Variables	Yes	Yes	Yes	Yes	Yes	Yes
Race/Ethnicity		Yes	Yes		Yes	Yes
Education		Yes	Yes		Yes	Yes
Job Characteristics			Yes			Yes
Economic Conditions	Yes	Yes	Yes	Yes	Yes	Yes
Person-Waves	58,934	58,934	58,934	61,743	61,743	61,743

Notes: SIPP longitudinal weights use *lgtpn4wt*. See Table 2 for a full list of demographic variables, racial/ethnic and education categories, job characteristics, and economic conditions.

<sup>a</sup>Change in immigrant coefficient relative to Model 1 was significant ( $p < .05$ ) using the KHB method.

<sup>b</sup>Change in immigrant coefficient relative to Model 2 was significant ( $p < .05$ ) using the KHB method.

†  $p < .10$ ;

\*  $p < .05$ ;

\*\*  $p < .01$  (two-tailed tests)