Work Disability Among Native-born and Foreign-born Americans: On Origins, Health, and Social Safety Nets

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Abstract

Public debates about both immigration policy and social safety net programs are increasingly contentious. However, little research has explored differences in health within America's diverse population of foreign-born workers, and the effect of these workers on public benefit programs is not well understood. We investigate differences in work disability by nativity and origins and describe the mix of health problems associated with receiving Social Security Disability Insurance benefits. Our analysis draws on two large national data sources—the American Community Survey and comprehensive administrative records from the Social Security Administration—to determine the prevalence and incidence of work disability between 2001 and 2010. In sharp contrast to prior research, we find that foreign-born adults are substantially less likely than native-born Americans to report work disability, to be insured for work disability benefits, and to apply for those benefits. Overall and across origins, the foreign-born also have a lower incidence of disability benefit award. Persons from Africa, Northern Europe, Canada, and parts of Asia, have the lowest work disability benefit prevalence rates among the foreign-born; persons from Southern Europe, Western Europe, the former Soviet Union, and the Caribbean have the highest rates.

Keywords

Immigration; Foreign-born; Health; Disability; Public benefits

Introduction

Immigration, employment, health, and social safety net programs in the United States are subjects of intense public debate. Nativity differences in *work disability*—a health condition

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that prevents individuals from working and, in some cases, entitles them to compensatory benefits— is a topic that straddles these contentious issues and offers a unique lens on questions regarding immigrants' health and incorporation into American society.

The prospect of employment as a conduit to economic security and social mobility has long attracted immigrants to the United States. The number of foreign-born adults grew during the late nineteenth and early twentieth century, and their share of the expanding U.S. population fluctuated between 13 % and 15 % (Greico 2012). Subsequent immigration restrictions and rapid growth in the U.S.-born population reduced the proportion of Americans who were born abroad to an all-time low of 4.7 % by the 1970 census. However, new regulations then spurred immigration waves that raised the number of foreign-born individuals to 40 million by 2010, with the foreign-born share (12.9 %) of the total U.S. population gradually approaching its prior levels (National Academies of Sciences, Engineering, and Medicine (NASEM) 2015). Over this time, America's foreign-born population has become increasingly diverse in origins, racial/ethnic composition, and socioeconomic characteristics. Still, as might be expected given the role of economic considerations in prompting migration (Massey et al. 1994), the foreign-born constitute a large fraction (16 %) of the U.S. labor force (Mosisa 2013).

Social programs designed to support America's workforce emerged during the lull in migration during the mid-twentieth century. For example, the Disability Insurance (DI) program, operated by the Social Security Administration (SSA) and funded through payroll tax contributions, was established in 1956 to insure workers and their dependents against the risk of a physical or mental impairment that hinders continued work.[1] At the end of 2010, the number of disabled-worker beneficiaries was approximately 8.2 million, with another 2 million entitled as dependents of disabled workers (SSA 2015), numbers that prompted concern about the program's solvency and sustainability (Burkhauser and Daly 2012; Reno and Ekman 2012a,b).

As the foreign-born population expanded and as public debates about both immigration policy and social safety net programs became increasingly fierce, questions about the impact of foreign-born workers on American society—and specifically, the extent to which foreign-born workers draw on public benefit programs—have taken on greater prominence. Progress in public health research has also raised new questions about whether exposure to the types of occupations available to many foreign-born workers may render them especially vulnerable to developing health conditions that lead to work disability, and whether differential exposure to disadvantaged circumstances both prior to migrating or after arriving in the United States may explain health differences among foreign-born subpopulations of varied origins.

In this study, we ask whether foreign-born adults are more or less likely than native-born Americans to experience health-related impediments to working, and whether differences

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[1]Social Security Disability Insurance (SSDI) is an earned benefit program for workers. It is distinct from the Supplemental Security Income (SSI) program, which pays benefits to individuals of very limited income and assets who are disabled, blind, or aged 65 and older. Unlike their SSDI counterparts, SSI benefits are not tied to a person's work record. Our analysis focuses solely on eligibility and receipt of SSDI benefits.

exist within the foreign-born population across regions of origin. We also look for differences by nativity and origins in eligibility for the Social Security Disability Insurance (SSDI) program as well as in rates of application for and receipt of DI benefits. Finally, we examine the mix of impairments associated with work disability.

Despite continuing national debate about how much the foreign-born contribute to or burden American society, little research has examined work disability by nativity and specific-origin regions among the foreign-born. This dearth is due both to the rapidly changing composition of the foreign-born population in recent decades and the limited availability of data on work disability by nativity and origin. We are aware of only one study (Huang et al. 2011) that examined work-related disability across origins. However, problems with the disability data from the 2000 census used in that study render its findings suspect, highlighting the need for an analysis of large data sets that are more recent and reliable.

We examine work disability among native-born and foreign-born adults with two complementary data sets. Using the American Community Survey (ACS) conducted by the U.S. Census Bureau, we estimate the prevalence of work disability. In addition, comprehensive administrative records from the SSDI program allow us to calculate the incidence of work disability. We describe how the limitations of the 2000 census data could have yielded misleading conclusions about work disability by nativity and origins, and we discuss results from our analysis of updated survey and administrative data, which stand in contrast to the prior findings. Our study shows that a healthy immigrant effect does extend to work disability and provides a unique opportunity to consider health differences across immigrant groups that differ in their employment profiles and overall experiences of incorporation. In doing so, our study provides an empirical basis for further research, policy analysis, and program planning.

Background

The Foreign-born Population

In 1960, before the legislative reforms that ushered in a new era in America's immigration history, the foreign-born population was smaller, older, and considerably less diverse than it is today (Hirschman 2005; U.S. Census Bureau 2010). Only approximately 5 % of Americans were born outside the United States, and the majority of the foreign-born (nearly 70 %) were of European origins. The median age of the foreign-born was 57.2.

Since 1960, the restructuring of immigration restrictions and quotas, the expansion of work visa programs, and the introduction of diversity visas (among other policy changes) have profoundly altered the size, age composition, and origins distribution of the U.S. foreign-born population (Logan and Thomas 2012; Massey and Pren 2012). By 2015, 13.1 % of Americans were foreign-born, with the majority (more than 70 %) originating from Latin America and Asia (NASEM 2015). Indeed, only 12 % of current immigrants report European origins (U.S. Census Bureau 2013). The new waves of immigration have led to a younger foreign-born population, with more than 80 % of its members in the 15–64 age range (U.S. Census Bureau 2013).

The growing visibility and diversity of working-age foreign-born adults have prompted much debate about the extent to which they contribute to and benefit from American society (Fussell 2014). Scholars have debated extensively about the impact of immigration on the labor market, on the wages of the native-born (particularly for relatively low-skilled workers), and on national productivity and government spending (Borjas 1999; Card 2001; Ottaviano and Peri 2012). Although empirical studies generally have not found substantial or systematic negative effects of immigration on employment and wages among the native-born or on government spending (Card 2005; Lee and Miller 1998; Longhi et al. 2015; Peri 2012; Smith and Edmonston 1997; Watson 2014), some scholars (e.g., Borjas 2011) and many in the general public remain skeptical, and questions persist as to whether public spending on the foreign-born is indeed not disproportionate to their tax contributions.

Although refugees and older immigrants do receive welfare benefits at a rate that is higher than average (Passel et al. 1996), prior research suggests that overall, the foreign-born benefit from public programs less frequently than their native-born counterparts, even after socioeconomic characteristics are controlled for (Parrott et al. 1998; Watson 2014). We might expect this to be particularly true of the SSDI program for two reasons. First, eligibility for these earned benefits depends on extensive participation in the formal labor force, and recent immigrants are less likely to have accumulated a qualifying work history. Second, the receipt of DI benefits also requires a verified qualifying health condition, and the foreign-born population as a whole is known to possess considerable health advantages, including greater longevity and lower rates of cancer, obesity, chronic conditions, functional limitations, and depression (Cunningham et al. 2008; NASEM 2015).

The foreign-born health advantage has been the subject of much research. Although it is not fully understood, its multiple contributing factors include the positive health selection of immigrants (e.g., those who are ill or disabled are less likely to migrate), the positive health behaviors of the foreign-born (particularly, lower smoking rates), and their strong social supports (Akresh and Frank 2008; Blue and Fenelon 2011; Markides and Rote 2015; Singh and Hiatt 2006). Increasing distance from the time of positive selection and changing health behaviors after immigration partially explain the often-cited finding that the foreign-born health advantage wanes as duration in the United States increases and exposures to the stresses of daily life in America accumulate (Antecol and Bedard 2006; Gubernskaya 2015; Hummer and Hayward 2015).

These health advantages are likely not uniform across all foreign-born subpopulations. Recent research has reported differences among the foreign-born from different geographic origins in life expectancy at age 65 (Mehta et al. 2016) and in several physical and mental health outcomes (Cho and Hummer 2001; Hamilton and Hummer 2011; Huang et al. 2011). Foreign-born adults of different origins differ in several domains that affect health and employment profiles—namely, educational attainment, English proficiency, immigration status, and time of entry into the United States—as well as in the physical and social circumstances they experienced in their sending countries (Feliciano 2005; Frisbie et al. 2001; U.S. Census Bureau 2013). Accordingly, we examine differences in work disability rates not only among the U.S.-born and the foreign-born as a whole but also among subgroups of different origins.

A Work Disability Puzzle

Disability is a complex concept that refers to a dynamic interaction between individual physical and mental health with the physical and social environments. The measurement of disability has changed over time, and the determination of whether a person is disabled is often quite subjective even when a precise definition is agreed upon. With respect to *work* disability, criteria such as "difficulty working due to a physical or mental impairment" used in surveys and censuses and "inability to engage in substantial gainful activity due to a condition expected to last 12 months or result in death" used by the SSDI program cannot always be applied in a completely objective manner. The high proportion of DI applications that are denied and subsequently reversed on appeal attest to the difficulty of measuring work disability, and survey-based estimates are likewise known to be extremely sensitive to question phrasing and format (Banks et al. 2009; Jette and Bradley 2000).

Ambiguous questionnaire design can compound the problem of measuring work disability. Thus, the 2000 decennial census long form and the ACS through 2002 had the question, "Because of a physical, mental, or emotional condition lasting 6 months or more, does this person have difficulty doing any of the following activities … ", followed by a list of four particulars, the last of which was answer choice "d. Working at a job or business?" Later, the Census Bureau and disability experts determined that because of the distance between the question and answer (d) on the list, some respondents misinterpreted the question to be one about employment *status* rather than about employment *disability* (Stern and Brault 2005; Weathers 2005).[2] After the disability questionnaire was modified in 2003 to include a repetition of the lead-in prompt, the number of persons reporting work disability dropped considerably (Houtenville et al. 2009).

In a recent study, Huang and his coauthors (2011) reported that the prevalence of work disability is lower among the native-born than among foreign-born adults who had arrived in the United States during the 10-year period prior to the 2000 census. Those originating from Canada, Western Europe, and East Asia were the only exceptions. This study—to our knowledge, the only one that calculated disability prevalence by region of origin for persons born abroad—was based on the 2000 census 5 % sample.

The same study found less physical disability and less mental disability among the foreign-born than among the native-born in each of the 11 defined sending regions, and usually much less. To explain why work disability is so different than other disability, the authors hypothesized that the relatively high levels of work disability among the foreign-born "may reflect the difficulty in integrating into the workforce because of language, cultural, and institutional barriers faced by most immigrants" (Huang et al. 2011:412). We offer an alternative hypothesis in light of the concerns regarding the 2000 census data: the foreign-born might have been more likely to misinterpret the long-form work disability question as asking about employment status. Furthermore, the foreign-born may have understood the phrase "difficulty working at a job or business" differently than the native-born. Differences

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[2]This mistake was made particularly often in the nonresponse follow-up, done by phone or in person. Many of the persons in the follow-up who responded affirmatively to the work disability question also reported that they were working, which led the bureau to realize that the disability question was being misunderstood (Stern 2003).

among foreign-born subpopulations in English proficiency as well as in related characteristics including educational attainment and duration in the United States may further contribute to variation in measurement error by nativity and origins.

As we show herein, survey data from the 2005–2007 ACS and the administrative data of the SSDI program clearly demonstrate that the foreign-born, in fact, have *less* work disability than the native-born.

Data and Methods

Most nationally representative surveys include only a relatively small number of foreign-born individuals and often lack questions about regions of origin. In surveys that do collect data on origins, subdividing the sample by a large number of origin groups often results in imprecise estimates for subgroups. The two data sets we use in this analysis are particularly well suited for comparing work disability outcomes by nativity and origins because of their large sample sizes and detailed information about nativity and origins.

Both data sets include country of birth. Based on these, we formed 15 region-of-origin groupings in a manner consistent with the United Nations' classification of geographic areas (United Nations Statistics Division 2013) and added an "unknown" category for records lacking a well-specified place of birth. The first level of classification is roughly by continent (Americas, Europe, Africa, Asia, Oceania), and the second is by subregion or country. Because of the relatively small numbers of sample persons born in Africa and Oceania, these continents were not subdivided. We separated Canada from the rest of the Americas because the characteristics and immigration experience of the Canadian-born differ from those migrating from Central and South America. Similarly we separated the former Soviet Union from the rest of Eastern Europe because of the distinct social and political contexts in which immigration occurred for those born in the former Soviet Union (Mehta and Elo 2012). Finally, because persons born in the U.S. territories have distinctive health patterns (Cho et al. 2004), we separated the U.S. territories from the 50 states and the District of Columbia.[3] The appendix contains the list of origin regions and the countries within.

The American Community Survey (ACS)

The 2000 decennial census was the last census to collect economic and social data from a 5 % sample of the population. Similar data are now collected through continuous measurement from the large ACS sample. The question on work disability was last included on the ACS questionnaire in 2007, and we use the 2005–2007 ACS three-year Public Use Microdata Sample (PUMS) to increase sample size. The data cover approximately the center of the 2001–2010 period, for which we have data from the SSDI program. Our sample is large: 5.4 million sample persons aged 18–64, including almost 800,000 foreign-born,

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[3]The SSDI program operates in the territories, and thus the majority of persons in the SSA database who were born in the territories still reside in the territories. On the other hand, persons born in the territories are included in the ACS only if they currently reside in one of the 50 states or the District of Columbia.

representative of a population of almost 190 million working-age adults, of whom more than 31 million are foreign-born.

We use the 2005–2007 ACS to determine the *prevalence* of work disability among working-age females and males by nativity and region of origin. Work disability was defined by an affirmative response to the question, "Because of a physical, mental, or emotional condition lasting 6 months or more, does this person have any difficulty in working at a job or business?" Our analysis also incorporates correlates of work disability: age group (<35, 35–44, 45–54, 55+); educational attainment (less than high school, high school, some college, undergraduate degree, postgraduate); marital status (married, widowed, divorced, separated, never married); and for the foreign-born, decade of entry into the United States and status of U.S. citizenship.

Social Security Data

To complement the prevalence data from the ACS, we use the comprehensive records of the SSDI program to calculate the *incidence* of work disability benefit award during the period 2001–2010 among insured persons indexed by region of birth. We also describe the different claiming experiences of applicants of varied origins and their profiles of disabilities.

The DI program provides benefits to disabled qualified workers who have not yet attained "full retirement age" (between 65 and 67, depending on year of birth) and to their spouses (either aged or caring for a child under 16) and their minor, student, and disabled children.[4] Our analytic sample is limited to insured workers and worker beneficiaries: spouse and child beneficiaries are not included. Benefits continue while the beneficiary remains disabled until full retirement age is reached. For the purpose of entitlement to benefits under the DI program, *work disability* is defined by the SSA as the inability to engage in "substantial gainful activity" because of an impairment expected to last at least 12 months or result in death. A trained disability examiner, with physician or psychologist oversight, determines whether an impairment meets this criterion. Denied applicants have the right to pursue reconsideration through several levels of court appeal, and indeed most unsuccessful applicants do request reconsideration (SSA 2015).

The data come from three SSA files that generally are not available to the public: the Disability Research File (DRF), the Continuous Work History Sample (CWHS), and the Numerical Identification System (Numident) file. We use the Social Security Number (SSN) —a unique identifier present in all three files—to link the CWHS and the DRF to the Numident.

The DRF is a longitudinal database used extensively by SSA. It tracks 100 % of disability benefit claims filed in a 10-year period through the decision and appeals process, and is enhanced by data drawn from other SSA administrative files. This administrative file provides program administrators with information on the performance of the DI program; we are aware of only one previous research study (Meseguer 2013) that used these high-

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[4]Details on program eligibility can be found at the Social Security Administration website (https://www.ssa.gov/planners/credits.html#&a0=2).

quality national data. We begin with the 2011 file, which is a record of claims filed between 2001 and 2010, and supplement it with data from the 2014 file in order to determine the adjudication of claims that were still outstanding in 2010.

Persons insured for a disability benefit are those with a substantial enough and recent enough work history. Applicants for benefits whose work history is deemed insufficient will be "technically" denied; applicants with a sufficient work history who fail to meet the disability criterion will be "medically" denied. The required tenure in employment covered by SS varies according to the applicant's age. Those under age 43 at the time of application must have worked for a number of years—between 1.5 and 5 years—depending on the applicant's age at the time of disability onset. After age 42, an additional quarter (three months) of work per year of age is required, up to a maximum of 10 years. The criterion for recentness of employment is 20 of the last 40 quarters for persons aged 31 and older, scaled down for persons younger than 31. These criteria apply for foreign and U.S.-born workers alike.[5]

The disability insured status of any person is determined from the record of his or her work history, which is housed in yet another large SSA administrative file, the Master Earnings File (MEF), containing more than 450 million accounts. For a 1-in-100 sample of accounts (more than 4.5 million), work histories from the MEF are brought into the CWHS. We calculate disability insured status for records in the CWHS as of the beginning of each year covered by the DRF, 2001–2010, using the same computer program that the SSA uses in its determination of the size of the insured population.[6] The CWHS also contains information about whether each person is already a disability beneficiary at the beginning of each year, allowing us to exclude such persons from the calculation of disability incidence.

Although each record in the DRF and CWHS encompasses an array of program-relevant information, place of birth information is not included in either of these administrative files; for the foreign-born, time of arrival in the United States is not included in the DRF. The Numident file is the record of almost 1 billion applications and reapplications for an SSN, and it includes information about each individual's place of birth and date of initial SSN application. Individuals whose origins information is missing from the Numident file are categorized here as having unknown origins. We use the SSN application date as a proxy for the applicant's time of arrival in the United States. Although application for a SSN may occur years after arrival in the United States, we assume that persons typically apply for a SSN soon after arrival in order to engage in the many activities for which a SSN is required (e.g., working, going to school, opening a bank account, getting medical coverage, and applying for government benefits). The proximity of the arrival and SSN application dates is certain for immigrants who participated in the SSA Enumeration at Entry (EAE) program

[5]The 1996 Welfare Reform Act affected the eligibility of foreign-born individuals for many public assistance programs but not the SSDI program. Although the act barred illegal aliens from receiving SSDI benefits, the same individuals were also not eligible to obtain a SSN for work and thus would not be included in the data sets used in this analysis unless they obtained or used a number fraudulently.
[6]See the 2015 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, available online (https://www.ssa.gov/oact/tr/2015/tr2015.pdf).

(established in 2002), which incorporates the SS card application into the visa application, resulting in the card being issued as soon as the immigrant enters the country.

Analysis

We begin with the 2005–2007 ACS. After describing the basic characteristics of the working-age population by nativity and across regions of origin, we calculate the prevalence of work disability for each subpopulation. Next, we present the sharp contrast between the ACS results and the 2000 decennial census results. Then, we estimate two multivariate logistic regression models to more precisely measure differences in work disability by origin. The first is applied to the full data set. The second, which includes citizenship and time of entry into the United States, applies only to the foreign-born. Analyses are stratified by gender, and ACS sampling weights are applied throughout.

Next, to get a sense of whether the likelihood of being disability-insured varies by region of origin, we compare the distribution of persons by origin in the working-age population, from the ACS, with the distribution of persons by origin in the disability-insured population, according to the CWHS. We then calculate several origin-specific rates using information about applications and dispositions in the DRF. The *application rate* is calculated by dividing the number of applications (claims) on which a medical decision was made by the size of the insured population. The "*technical denial*" *ratio*[7] is the proportion of claims that are denied for nonmedical reasons, most commonly an insufficient work history. The *medical allowance rate* is the number of allowances divided by the number of applications after excluding technical denials. Finally, the overall *award rate* is the proportion of all applicants (including technical denials) that were ultimately awarded benefits.[8]

We calculate 10-year disability incidence rates by age group, gender, and region of origin as the quotient of the number of disability allowances awarded in 2001–2010 (from the DRF) by the sum of the counts of persons who are disability-insured at the beginning of each year (from the CWHS). To assure comparability of numerator and denominator, we exclude approximately 5,000 awardees who qualified for DI based on a combination of work in the United States and work in a foreign country under totalization agreements.[9] Incidence rates are then standardized to the age and gender distribution of the native-born.

To more precisely measure differences in work disability incidence across origin groups, we estimate multivariate negative binomial regression models. Negative binomial regression is used to estimate count or rate models in grouped data while correcting the standard errors for overdispersion. We follow standard practice in employing a log-link function with group-

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[7]We use the term "ratio," rather than "rate," because technical denials include people who lack a qualifying work history and are thus not a true subset of the insured population.
[8]Our population total rates are consistent with the annual rates reported by the SSA (https://www.ssa.gov/policy/docs/statcomps/di_asr/2011/sect04.html).
[9]Totalization agreements are international social security treaties between the United States and other countries that eliminate dual Social Security taxation and provide benefit protection for workers who have divided their careers between the United States and another country. The United States has totalization agreements with Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, South Korea, Spain, Sweden, Switzerland, and the United Kingdom (42 U.S.C. § 433).

specific population size as an offset. The exponentiated regression coefficients represent work disability incidence rate ratios.

Finally, to investigate whether variation in case mix could explain some of the variation in allowance rates among regions, we calculate allowance rates for categories of impairments and determine the mix of impairments for each origin group.

Results

According to the 2005–2007 ACS, the foreign-born constitute one-sixth (16.7 %) of the U.S. working-age population (those aged 18–64), slightly more for men (17.3 %) and slightly less for women (16.2 %). Overall, the foreign-born in this population are younger, less educated, and more likely to be married than the native-born (Table 1). The difference in age is more pronounced in men than in women. Foreign-born men are more likely to be in the labor force and be employed than their native counterparts, but foreign-born women are less likely to be in the labor force than native-born women. Although the foreign-born are approximately three times as likely as the native-born to have no high school education, they are also approximately equally likely to be college graduates. The foreign-born are less likely to be never married or divorced than the U.S.-born, about as likely to be widowed, and more likely to be separated.

Among the foreign-born, there is considerable variation in key demographic characteristics across origins (Table 2). The median age ranges from 36 to 46, and the proportion married ranges from 50.5 % to 75.6 %. Citizenship rates are higher than 60 % for those from Southeastern Asia, Western Asia, Southern Europe, and Western Europe. Interestingly, the majority of citizens originating in Western Europe are not naturalized but rather were born to American citizens. The lowest rate of naturalization that we observe is for those originating in Central America, a group that is also notable for its youth as well as its lower educational attainment. Those originating from South Central Asia, East Asia, and the former Soviet Union have particularly high educational attainments. Based on the modal decade of entry, those born in Western Europe are the earliest arrivals among the foreign-born, and those from South America and Oceania are the most recent arrivals.

Working-age foreign-born adults as a whole are less likely than the working-age native-born to report various functional difficulties (Table 1). In particular, the prevalence of work disability in the working-age population is approximately one-half as much for the foreign-born as for the U.S.-born (3.6 % vs. 7.9 % for men, 4.4 % vs. 8.2 % for women). This finding is consistent with previous research documenting an immigrant health advantage, and is to be expected given that working-age adults born in the United States are more likely to have developed disabilities in early life than their foreign-born peers. Furthermore, the prevalence of work disability is lower among the foreign-born than among the native-born for every region of origin (Table 3). Work disability prevalence is lowest for those born in East Asia (2.7 % for men, 3.1 % for women) and highest for those born in Southern Europe (6.5 % for men, 7.4 % for women).

These estimates by place of birth are contrasted in Table 3 with estimates from the 2000 census 5 % sample, just six years earlier. The difference is marked and seems most likely to reflect measurement error in the census data. Overall, the prevalence of work disability in the working-age population is 50 % higher in the census than in the ACS. For certain foreign-born subgroups, the census estimates are as much as six or eight times greater. The implicit measurement error in the census is more severe for the foreign-born, which could explain the findings in the Huang et al. (2011) study.

Another measure of the difference between two prevalence rates is the odds ratio. Before adjustment, the odds ratios for the prevalence of work disability among the foreign-born (relative to the native-born) are 0.44 for men and 0.52 for women. As is well known—and is shown in Table 4—the prevalence of disability in a population generally increases with increasing age and with decreasing educational attainment, and it is lower for married persons than for those not married. Controlling for these characteristics in a logistic regression framework yields odds ratios of 0.39 for men and 0.40 for women (Table 4).

Odds ratios (relative to the U.S.-born) from the regression model for the prevalence of work disability for men and women born in each of the regions are shown on the bottom left of Table 4. The odds ratios are almost always much less than 1.00, reflecting the significantly lower prevalence of work disability for foreign-born adults across regions. Except for the former Soviet Union and U.S. territories, the odds ratios from the model are no higher than 0.79 (for women from Western Asia) and are as low as 0.26 (for men from Central America). The former Soviet Union is a notable outlier: the odds ratios are 1.10 for men and 1.32 for women, indicating a higher prevalence, although not statistically significantly different from 1.00 for men.[10]

Research on immigration has commonly found that the morbidity advantage of persons entering the United States diminishes with increasing time spent in their new country.[11] The second logistic regression model thus focuses only on the foreign-born and includes the decade of entry into the United States as well as citizenship status. As shown on the right side of Table 4, odds ratios increase monotonically as time in the United States increases, and noncitizens have lower odds of work disability than both naturalized citizens and persons born abroad to U.S. citizens. As in the first model, the highest and lowest odds in this model belong to women from the former Soviet Union and men from Central America, respectively.

With the exception of those born in Eastern European countries outside the former Soviet Union, the share of the foreign-born in the population insured for work disability (based on the SSA data) is smaller than their share in the working-age population (based on the ACS) (Table 5). This finding is to be expected because (1) disability-insured status requires a work history of substantial duration, and many of the foreign-born are relatively recent arrivals;

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[10]Sensitivity analyses exploring alternative specifications of the age variable showed little to no effect on the origin coefficients or their statistical significance, although under one specification, the odds ratio for men born in the former Soviet Union increased from 1.10 to 1.14 and became statistically significant (results available upon request).
[11]The decade of arrival may have historical significance in addition to being a marker for the duration of time immigrants have spent in the United States, but the two effects cannot be disentangled.

and (2) some of the foreign-born, particularly among the undocumented, do not have their employment reported to the SSA. The SSA-to-ACS ratios for foreign-born women are particularly low across nearly all regions. Low formal employment rates for foreign-born women relative to men of all origins and native-born women, as well as a relative concentration in occupations (e.g., paid domestic and caregiving roles) that may not confer eligibility for SS benefits, likely also help account for these low ratios.[12]

The particularly low and particularly high region-specific ratios in Table 5 warrant an explanation. The low ratios for Central America and South America probably reflect the circumstance that many persons from these regions are working in employment not reported to the SSA, or that many persons from these regions work in the United States on a temporary visa before returning to their region of origin (Myers 2006; NASEM 2015; Wilson 2013) for reasons that may include poor health (Arenas et al. 2015). The particularly high ratio for the U.S. territories reflects the fact that the DI program operates in those locales, and thus the disability-insured population born in the territories includes persons still living in the territories as well as individuals who migrated to the 50 states, unlike the working-age population coming from the ACS.

The credible application rate for disability benefits in the disability-insured population is 1.1 % overall, with significantly lower rates for the foreign-born (Table 6). Although this finding suggests that the foreign-born are less likely to be disabled than the U.S.-born, it is possible that some of the foreign-born do not file because of the difficulty of negotiating the application process. The U.S. territories have a notably high application rate, while East Asians have the lowest rate, at just over one-third of the overall rate.

As for the adjudication outcomes, there is a surprisingly large variation across the regions in the fraction of claims denied for technical reasons (i.e., nonmedical reasons, usually lack of insured status), ranging from less than 20 % for claimants born in Southern Europe to more than 50 % for claimants born in the former Soviet Union. Also surprising is the frequency with which claims are denied for technical reasons: more than one-fourth of the time.

The overall high number of technical denials reflects a change in SSA procedure for processing claims during the decade under consideration. According to program statistics, in the year 2000, only one-tenth of disability claimants were denied for technical reasons. However, by the end of the decade, the fraction was more than one-third (SSA 2015). The increase is largely the result of a policy change at the SSA to adjudicate all claims to Supplemental Security Income (SSI) program benefits as if they simultaneously are claims to DI program benefits, even if the claimant lacks a qualifying work history.

Among applicants who were not denied for technical reasons, the overall medical allowance rate is approximately 58.1 %. This result is driven by a 57.7 % allowance rate for the approximately 90 % of all applicants born in the 50 states and the District of Columbia. The foreign-born have a medical allowance rate that is higher than average, most notably those

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[12]Whereas the ACS sample includes all working-age adults, the SSA sample is limited to those who are disability insured. Many working-age people are not in the labor force, and this difference in sample definitions contributes to the discrepancy between the ACS and SSA distributions.

born in Southern Europe (78.0 %), the former Soviet Union (71.6 %), and other Eastern European countries (71.3 %).

Approximately two-fifths of applicants are ultimately awarded DI benefits, with regional award rates ranging from 34.6 % (Western Asia) to 61.7 % (Southern Europe). Because the award rate is the product of the medical allowance rate by the complement of the technical denial ratio, groups with high numbers of technical denials—such as claimants born in the former Soviet Union, South Central Asia, or Western Asia—have low overall award rates.

The most important results from the SSA disability data are the incidence rates over the 10-year period of 2001–2010. The incidence of work disability for persons born in the United States is computed from the DRF and the CWHS to be 6.56 per thousand (Table 7). This is consistent with the official incidence rate for the United States as a whole published by SSA. [13] The incidence rates for the foreign-born are much lower, at 4.16 per thousand for men and 4.36 per thousand for women. The median incidence rate for the 17 regions of origin outside the United States is 4.25 per thousand. After all areas are standardized to the sex-age distribution of persons born in the United States, the median for the 17 regions is 4.51 per thousand, with region-specific incidences ranging from 2.28 per thousand (East Asia) to 5.66 per thousand (the Caribbean). Clearly, then, the DI program is one program in which the foreign-born insured under the program are drawing benefits at a lesser rate than the native-born insured under the program.

The right column in Table 7 displays incidence rate ratios (IRRs) from a multivariate negative binomial regression model applied to all disability-insured individuals. Except for U.S. territories and Unknown, all IRRs are significantly less than 1, and none higher than 0.77. A supplemental model for the foreign-born (results available upon request) shows a steep gradient by decade of application for a SSN—our proxy for date of arrival in the United States—with higher IRRs associated with earlier decades.

One final question is whether the substantial regional variation in medical allowance rates is driven in part by variation in case mix. In fact, the medical allowance rate does vary substantially by impairment category. Table 8, obtained from the DRF, shows that allowance rates vary from less than 47 % for the Injuries and Endocrine/Nutritional/Metabolic categories to more than 86 % for Neoplasms.

However, case mix does not vary much across regions (Table 9). Eastern Asia does have a relatively large proportion of neoplasms, but this does not translate into a remarkable medical allowance rate for this region. Perhaps most noteworthy about the case mix is that the former Soviet Union is the only region for which mental impairments, rather than musculoskeletal impairments, is the modal category. The overall allowance rate for mental impairment is not unusual, however; thus, case mix does not seem to be the explanation for the high allowance rate for persons from the former Soviet Union.

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[13]These data are available on the SSA website(https://www.ssa.gov/policy/docs/statcomps/di_asr/2011/sect04.html).

Discussion

We have determined the extent of work disability in the foreign-born population of working age, using two complementary data sets and methods. Together, these analyses provide a novel, more detailed picture of the association between region of origin, on the one hand, and perceived employment disability and the uptake of disability insurance benefits on the other. The conclusion across both analyses is the same: work disability is much less likely among the foreign-born—both collectively and for each region of origin—than among those born in the United States and its territories. These results are consistent with prior research documenting the morbidity and mortality advantages of the foreign-born (Markides and Rote 2015).

The first set of analyses determined the *prevalence* of work disability in the working-age population from responses to the 2005–2007 ACS. The ACS data cover the entire population of working-age individuals, including both the employed and unemployed, the disability-insured and disability-uninsured, those who may have been denied work disability benefits, and those who may lack the resources needed to successfully navigate the process of pursuing SS benefits. A respondent is counted as disabled if he or she reports that a physical, mental, or emotional issue makes it difficult to work. The higher prevalence of work disability among the U.S.-born relative to the foreign-born is likely due both to the selectivity of working-age immigrants as well as the greater likelihood of early-life disability among U.S.-born working-age adults relative to their foreign-born counterparts.

Although Huang et al. (2011), using the same approach, arrived at opposite findings regarding work disability among the foreign-born, we are confident that the work disability question on the 2000 decennial census long form was often misunderstood and failed to elicit the desired information—especially from the foreign-born and particularly from those with more limited English proficiency. Indeed, the same authors declined to use the 2000 work disability measure in another paper (Elo et al. 2011), citing concerns about its reliability. Our supplementary analyses (results available upon request) show that the discrepancies between our findings and prior research cannot be attributed to the minor difference in reference dates (2005–2007 vs. 2000) or to the limited scope in the Huang et al. (2011) study, which dealt only with recent entrants. Our analysis corrects the previous record, offering a more accurate foundation for subsequent research and policy debates on nativity and origin differences in health and disability.

The second set of analyses determined the *incidence* of work disability benefit award over a 10-year period in an insured population below full retirement age from administrative data collected by the SSA, featuring two data files that are little known outside the agency: the DRF and the CWHS. Disability is defined as the inability to engage in "substantial gainful activity" because of a physical or mental impairment that is expected to last at least 12 months or result in death. The lower incidence of benefit award for the foreign-born is consistent with the observation that the foreign-born are generally less likely than the native-born to obtain government program benefits (Watson 2014). These data also suggest that the foreign-born are less likely to suffer work disability; however, other factors might contribute to their lower frequency of receipt of benefits, such as difficulty in successfully negotiating

the process of benefit application. We also found that the insured foreign-born were less likely than the insured native-born to apply for benefits and, as expected, that the foreign-born were less likely to be insured.

Neither the criterion used in the ACS nor the criterion used in the DI program is an unambiguous measure of work disability. Indeed, ambiguity in the questions on disability in the ACS led to their replacement beginning with 2008 with questions focusing on functional and participation limitations (Brault 2009). Albeit broad, the ACS work disability question may nonetheless capture functional incapacity that matters for individuals' well-being and labor force participation, and thus the 2005–2007 ACS provides the last opportunity to investigate the prevalence of work disability in a large national survey.

Similarly, despite the very precise definition of disability in the Social Security Act and SSA efforts to administer its program uniformly throughout the country, in practice the state agencies responsible for adjudicating disability claims follow different procedures and hiring practices, leading to substantial state-to-state variation in allowance rates, all else equal (Rupp 2012). Given that the proportion of foreign-born residents differs markedly across states—ranging from 1 % in West Virginia to 27 % in California (Greico et al. 2012)—and different immigrant groups tend to reside in different areas of the country, some of the origin-region difference in award rates could be influenced by place of residence. Unfortunately, because the CWHS data do not include geographic information, we were not able to provide estimates for specific states or regions. Furthermore, because our data focus only on the SSDI program, individuals who receive benefits via the SSI program are not included in our estimates. For origin groups with a substantial number of working-age SSI benefit recipients, our findings thus represent only a partial estimate of the total work disability burden.

Although the prevalence and incidence of work disability among the foreign-born are almost uniformly lower than among the native-born, there is substantial variation by region of origin. Foreign-born subpopulations vary in their age composition, time and mode of arrival in the United States, educational attainment, and occupational profiles—all of which have implications for health. Origin differences in work disability among the foreign-born may further reflect differing social, economic, and epidemiologic conditions in their sending countries, as well as differential patterns of immigrant selection and varied experiences of integration into American society.

According to the results from our multivariate models, persons from Central America and from South America have the lowest prevalence of work disability, followed by persons from Eastern Asia. Persons from Eastern Asia and South Central Asia have the lowest adjusted incidence of disability benefit award. These results are consistent with the literature about the Hispanic advantage, summarized by Markides and Rote (2015), and with the recent finding by Mehta et al. (2016) of particularly low old-age mortality for persons from Eastern Asia.

Those from regions as varied as Africa, Canada, Northern Europe, Southeastern Asia, and South Central Asia also experience relatively little work disability. The health advantage of

those originating from Canada and Northern Europe likely reflects the high levels of education and health in these sending regions, and numerous similarities with the United States may further ease the integration process for those born there. Strong positive educational and health selection for persons born in Asia and Africa (Feliciano 2005; Hamilton and Hummer 2011) and the positive social and economic adaptation experiences of East Asians (Frisbie et al. 2001), in particular, may likewise contribute to their health advantage.

Persons from Southern Europe and from Western Europe have odds of work disability prevalence that are higher than average. This finding may be partly explained by their earlier arrival in the United States, given the ample evidence that the foreign-born morbidity advantage diminishes with time spent here (Cho et al. 2004; Gubernskaya 2015; Hamilton and Hummer 2011; Hummer and Hayward 2015). The high proportion of persons born abroad to U.S. citizens among those originating in Western Europe also tends to make the health profile for those born there more similar to that of the native-born, who experience more work disability. Among the foreign-born insured for work disability, persons from the Caribbean, Southern Europe, and Western Europe have the highest incidence of disability benefit award.

Persons born in the former Soviet Union stand out in a number of ways. First, they had a higher self-reported prevalence of work disability than native-born adults, controlling for age, education, and marital status (although the difference is not quite statistically significant at the 95 % confidence level). Second, persons from the former Soviet Union who applied for SSDI had a very high technical denial ratio. Given that many technical denials stem from SSI claims by persons with no work history or a weak work history, if persons from the former Soviet Union are particularly likely to apply for SSI disability benefits, that would be at least a partial explanation for the high technical denial ratio.

One reason to think that persons from the former Soviet Union are more likely to apply for SSI disability benefits than foreign-born individuals of other origins is that many of them are classified as refugees. Refugees who are disabled are eligible for SSI benefits prior to age 65 even if they are not naturalized citizens, which is not the case for nonrefugees. Furthermore, refugees are less likely to be positively selected on health than other immigrants (Akresh and Frank 2008), which might further explain the finding of high work disability among those from the former Soviet Union.

Work-disabled individuals originating in the former Soviet Union are also unique in the large role that mental health problems play in prompting work disability. This finding is also potentially related to the high proportion of refugees in this foreign-born population and reflects the impact of widespread exposure to the economic, social, and political hardships associated with the collapse of the Soviet Union (Blomstedt et al. 2007; McKee and Shkolnikov 2001; Mehta and Elo 2012).

Work disability offers a unique perspective into the extent to which the American dream of hard work and social mobility may be contingent on health. The relatively high rate of work disability claims associated with musculoskeletal conditions suggests that further research

into the effect of occupational sectors on the health of workers is warranted. Further studies exploring differences in employment and health by nativity and origins will help enhance our understanding of the unique advantages and disadvantages faced by the foreign-born and the ways in which accumulated life course experiences differentiate profiles of well-being in America's increasingly heterogeneous population.

Whether foreign-born adults place demands on public resources that are disproportionate to the contributions they make to American society has long been a contentious question at the heart of debates about immigration policy and social safety net programs. Our analysis offers accurate and updated information about the health and benefit receipt of the foreign-born to inform ongoing policy debates. In confirming that the healthy immigrant effect likely extends to work disability and by describing the scope and variation of work disability across diverse subgroups, we also provide scaffolding for further research about nativity and origin differences in health and employment. Such research should continue to recognize the heterogeneity across immigrant populations and explore the implications of diverse employment profiles and experiences of incorporation for population health and well-being.

Acknowledgments

Appendix. Composition of Geographic Regions Used in the Analysis

United States of America

50 states and District of Columbia

U.S. territories (Guam, Northern Marianas, United States Virgin Islands, American Samoa, Puerto Rico)

Canada

Other Americas

Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama

Caribbean: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, Bonaire, Saint Eustatius and Saba, British Virgin Islands, Cayman Islands, Cuba, Curaçao, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Montserrat, Saint-Barthélemy, Saint Kitts and Nevis, Saint Lucia, Saint Martin (French part), St. Pierre and Miquelon, Saint Vincent and the Grenadines, Saint Maarten (Dutch part), Trinidad and Tobago, Turks and Caicos Islands

South America: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, Falkland Islands (Malvinas), French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela (Bolivarian Republic of)

Europe

Northern Europe: Åland Islands, Channel Islands, Denmark, Faeroe Islands, Finland, Greenland, Guernsey, Iceland, Ireland, Isle of Man, Jersey, Norway, Sark, Svalbard and Jan Mayen Islands, Sweden, United Kingdom of Great Britain and Northern Ireland

Western Europe: Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Monaco, Netherlands, Switzerland

Southern Europe: Albania, Andorra, Bosnia and Herzegovina, Croatia, Gibraltar, Greece, Holy See, Italy, Malta, Montenegro, Portugal, San Marino, Serbia, Slovenia, Spain, (he former Yugoslav Republic of) Macedonia

Former Soviet Union: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Lithuania, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Latvia

Other Eastern Europe: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia

Africa

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mayotte, Morocco, Mozambique, Namibia, Niger, Réunion, Rwanda, Sao Tome and Principe, Seychelles, Somalia, South Africa, South Sudan, Sudan, Swaziland, Tunisia, Uganda, United Republic of Tanzania, Western Sahara, Zambia, Zimbabwe

Asia

Eastern Asia: China; China, Hong Kong Special Administrative Region; China, Macao Special Administrative Region; Democratic People's Republic of Korea, Japan, Mongolia, Republic of Korea

South Central Asia: Afghanistan, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Maldives, Nepal, Pakistan, Sri Lanka

Southeast Asia: Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Viet Nam

Western Asia: Bahrain, Cyprus, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, State of Palestine, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen

Oceania

Australia, Cook Islands, Fiji, French Polynesia, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, New Zealand, Niue, Norfolk Island, Palau, Papua New Guinea, Pitcairn, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Wallis and Futuna Islands

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Table 1

Selected characteristics (%) of native-born and foreign-born adults ages 18–64

	Native-born[a]			Foreign-born[b]		
	Men n = 2,254,098	Women n = 2,382,872	All n = 4,636,970	Men n = 382,737	Women n = 395,270	All n = 778,007
Age						
<35	37.2	35.9	36.6	40.5	36.5	38.5
35–44	22.4	22.4	22.4	27.6	27.7	27.7
45–54	23.2	23.7	23.5	20.1	21.6	20.8
55+	17.2	18.0	17.6	11.8	14.2	13.0
Education						
<High school	12.2	9.6	10.9	31.4	27.4	29.4
High school	32.1	29.4	30.7	24.7	24.4	24.6
Some college	30.6	34.5	32.6	18.6	21.8	20.1
Baccalaureate	16.6	17.8	17.2	14.5	17.2	15.8
Postgraduate	8.4	8.8	8.6	10.9	9.2	10.1
Marital Status						
Married	51.5	52.0	51.7	61.0	62.4	61.7
Widowed	0.8	2.8	1.8	0.6	2.7	1.6
Divorced	10.9	13.5	12.2	5.7	8.8	7.2
Separated	2.0	2.9	2.5	2.5	4.3	3.4
Never married	34.7	28.8	31.8	30.2	21.9	26.2
Employment Status						
Employed	75.5	67.3	71.3	81.9	59.2	70.9
Unemployed	5.2	4.5	4.9	4.2	4.5	4.4
Not in labor force	19.3	28.2	23.8	13.9	36.3	24.7
Functional Difficulties						
Dressing	2.4	2.7	2.6	1.1	1.4	1.2
Hearing/vision	3.7	2.6	3.1	1.9	1.9	1.9
Going out	3.3	4.0	3.7	1.7	2.5	2.1
Physical activity[c]	8.0	8.8	8.4	3.8	4.9	4.3

	Native-born[a]			Foreign-born[b]		
	Men $n = 2,254,098$	Women $n = 2,382,872$	All $n = 4,636,970$	Men $n = 382,737$	Women $n = 395,270$	All $n = 778,007$
Remembering	5.6	5.2	5.4	2.2	2.7	2.5
Working	7.9	8.2	8.1	3.6	4.4	4.0
Any of previous	14.0	13.6	13.8	7.1	8.5	7.8

Source: American Community Survey, 2005–2007. All estimates are calculated using ACS sample weights.

[a]Includes 28,229 persons born in the U.S. territories. Sensitivity analyses (available on request) indicate that those born in the territories are somewhat older, are less likely to be married, have lower educational attainment, are less likely to be employed, and are more likely to report functional difficulties than persons born in the 50 states and the District of Columbia. However, the pattern documented in the table for the U.S.-born would not change by excluding persons born in the territories.

[b]Includes 44,375 persons born abroad to American parents. Sensitivity analyses (available on request) indicate that those born abroad to American parents are somewhat younger, are less likely to be married, have a higher educational attainment, are more likely to be employed (particularly among women), and report slightly more functional impairments than those born abroad without citizenship. However, the pattern documented in this table for the foreign-born would not change by excluding American citizens born abroad.

[c]Difficulty with one or more basic physical activities, including walking, climbing stairs, reaching, lifting, or carrying.

Table 2

Selected characteristics of Americans ages 18–64, by region of origin ($n = 5,414,977$)

Region of Origin	n	Age		Education			Married (%)	Citizenship Status		Decade of Entry Mode
		Mean	Median	Mean Years	<HS (%)	College and Above (%)		Naturalized (%)	Citizens Born Abroad, (%)	
United States (50 states and DC)	4,608,741	41.9	43.0	13.5	10.8	25.9	51.8	—	—	—
U.S. Territories	28,229	43.1	44.0	12.1	29.0	15.4	47.0	—	—	1980–1989[a]
Canada	20,016	44.2	45.0	14.5	6.5	44.1	63.5	35.0	12.6	1990–1999
Other Americas										
Caribbean	60,807	42.7	43.0	12.6	22.1	19.5	50.5	50.3	2.4	1990–1999
Central America	272,759	37.3	36.0	9.5	55.5	5.7	59.7	22.6	1.4	1990–1999
South America	50,804	40.5	41.0	13.3	15.4	28.0	58.3	39.2	2.7	2000–2009
Africa	26,451	39.5	39.0	14.1	11.1	38.3	56.6	39.4	3.7	1990–1999
Asia										
Eastern Asia	75,209	41.5	42.0	14.6	10.4	50.2	67.3	48.1	6.8	1990–1999
South Central Asia	51,873	39.8	39.0	15.4	7.7	65.8	75.6	47.9	1.2	1990–1999
Southeastern Asia	81,945	42.0	42.0	13.3	16.0	35.9	65.3	61.9	3.7	1980–1989
Western Asia	14,093	40.4	40.0	13.9	14.2	38.3	67.6	57.1	6.4	1990–1999
Europe										
Northern Europe	24,070	44.6	45.0	14.5	4.8	43.2	63.6	33.9	17.2	1980–1989
Southern Europe	23,966	45.1	46.0	12.5	21.9	23.6	69.1	54.0	9.1	1990–1999
Western Europe	34,722	43.1	44.0	14.3	5.8	37.7	57.5	27.2	45.7	1960–1969
Former Soviet Union	18,085	39.5	39.0	14.9	5.5	49.9	64.3	52.9	1.4	1990–1999
Other Eastern Europe	16,101	42.0	42.0	14.2	7.6	36.2	65.4	52.6	1.4	1990–1999
Oceania	4,869	40.8	40.0	13.7	12.4	31.5	63.7	28.3	10.6	2000–2009
Unknown[b]	2,237	41.1	41.0	13.4	17.0	31.6	64.3	52.0	6.2	1980–1989

Source: American Community Survey, 2005–2007. All estimates are calculated using ACS sample weights.

[a] Decade of entry for those born in the territories indicates the timing of a move to the 50 states and the District of Columbia.

[b] Origins were classified as unknown when place of birth was not well specified for foreign-born individuals.

Table 3

Prevalence (%) of work disability in the working-age (18–64) population, by gender and region of origin: 2005–2007 ACS vs. 2000 census

Region of Origin	Men		Women	
	ACS 2005–2007 *n* = 2,636,835	Census 5 % Sample 2000 *n* = 4,232,418	ACS 2005–2007 *n* = 2,778,142	Census 5 % Sample 2000 *n* = 4,342,028
U.S. (50 states and DC)	7.9	12.3	8.1	10.8
U.S. Territories	12.6	20.2	14.9	17.3
Native-born Subtotal	7.9	12.4	8.2	10.8
Canada	4.2	9.0	4.6	7.3
Other Americas				
Caribbean	5.6	20.2	6.3	18.1
Central America	3.0	23.3	4.0	15.7
South America	2.8	17.8	3.5	13.9
Africa	3.0	16.9	3.6	12.9
Asia				
Eastern Asia	2.7	11.2	3.1	8.8
South Central Asia	2.8	16.2	3.9	11.0
Southeastern Asia	4.7	18.4	4.8	15.3
Western Asia	4.9	15.6	6.2	10.5
Europe				
Northern Europe	3.4	8.1	4.2	7.8
Southern Europe	6.5	16.3	7.4	13.1
Western Europe	5.2	9.6	5.7	8.7
Former Soviet Union	5.3	17.2	6.8	14.9
Other Eastern Europe	3.7	15.5	3.8	11.7
Oceania	4.8	12.5	4.2	11.0
Unknown[a]	4.1	16.2	4.8	13.3
Foreign-born Subtotal	3.6	9.5	4.4	6.7
All-Region Total	7.2	13.3	7.6	11.2

Note: ACS estimates are calculated using ACS sample weights; the decennial census sample is self-weighting.

[a] Origins were classified as unknown when place of birth was not well specified for foreign-born individuals.

Table 4

Multivariate odds ratios, with 95 % confidence intervals, for correlates of self-reported work disability among U.S.-born and foreign-born persons ages 18–64

	Full Sample		Foreign-born	
	Men *n* = 2,636,835	Women *n* = 2,778,142	Men *n* = 382,737	Women *n* = 395,270
Age Group[a]				
<35	(ref.)	(ref.)	(ref.)	(ref.)
35–44	2.72 (2.65–2.78)	2.77 (2.71–2.83)	1.81 (1.67–1.96)	2.04 (1.91–2.20)
45–54	5.00 (4.90–5.11)	4.69 (4.59–4.80)	3.26 (3.01–3.53)	3.75 (3.49–4.03)
55+	10.04 (9.82–10.27)	7.43 (7.26–7.59)	6.68 (6.15–7.25)	7.18 (6.65–7.76)
Education				
<High school	10.88 (10.52–11.26)	9.43 (9.15–9.72)	5.93 (5.37–6.55)	5.06 (4.61–5.56)
High school	4.87 (4.71–5.03)	3.87 (3.75–3.98)	3.63 (3.29–4.00)	2.78 (2.53–3.04)
Some college	3.24 (3.13–3.35)	2.67 (2.59–2.75)	2.73 (2.47–3.01)	1.96 (1.79–2.15)
Baccalaureate	1.40 (1.34–1.45)	1.26 (1.22–1.31)	1.55 (1.39–1.72)	1.28 (1.16–1.42)
Postgraduate	(ref.)	(ref.)	(ref.)	(ref.)
Marital Status				
Married	(ref.)	(ref.)	(ref.)	(ref.)
Widowed	2.16 (2.06–2.26)	2.16 (2.10–2.21)	1.76 (1.48–2.08)	2.06 (1.91–2.22)
Divorced	2.08 (2.04–2.11)	2.04 (2.01–2.07)	1.74 (1.62–1.87)	1.75 (1.66–1.86)
Separated	2.29 (2.21–2.38)	2.55 (2.47–2.62)	1.96 (1.75–2.19)	1.83 (1.69–1.99)
Never married	2.81 (2.76–2.86)	2.22 (2.18–2.26)	2.02 (1.91–2.15)	1.90 (1.79–2.01)
Foreign-born[b]	0.39 (0.38–0.39)	0.40 (0.39–0.41)		
Citizenship				
Noncitizen			(ref.)	(ref.)
Naturalized			1.18 (1.12–1.25)	1.12 (1.07–1.17)
Born abroad to U.S. citizens			1.49 (1.34–1.65)	1.62 (1.47–1.78)
Decade of entry				
Before 1960			(ref.)	(ref.)
1960–1969			1.07 (0.97–1.18)	1.07 (0.97–1.17)
1970–1979			0.93 (0.84–1.03)	1.00 (0.91–1.10)
1980–1989			0.76 (0.69–0.85)	0.85 (0.77–0.94)
1990–1999			0.61 (0.55–0.69)	0.73 (0.65–0.81)
2000 and after			0.43 (0.38–0.49)	0.55 (0.49–0.62)
Origin				
U.S. (50 states and DC)	(ref.)	(ref.)	—	—
U.S. Territories	1.00 (0.93–1.08)	1.15 (1.08–1.22)	—	—
Canada	0.59 (0.52–0.67)	0.59 (0.52–0.66)	0.95 (0.81–1.12)	0.97 (0.84–1.11)
Other Americas				
Caribbean	0.50 (0.47–0.53)	0.48 (0.45–0.50)	1.08 (0.95–1.23)	1.05 (0.94–1.16)
Central America	0.26 (0.25–0.27)	0.28 (0.27–0.29)	0.67 (0.59–0.76)	0.72 (0.65–0.80)

	Full Sample		Foreign-born	
	Men n = 2,636,835	**Women** n = 2,778,142	**Men** n = 382,737	**Women** n = 395,270
South America	0.34 (0.31–0.38)	0.35 (0.33–0.38)	0.74 (0.65–0.86)	0.78 (0.69–0.88)
Africa	0.53 (0.48–0.60)	0.48 (0.43–0.54)	1.12 (0.95–1.31)	1.10 (0.95–1.28)
Asia				
Eastern Asia	0.45 (0.42–0.49)	0.40 (0.37–0.42)	0.82 (0.72–0.94)	0.75 (0.67–0.84)
South Central Asia	0.67 (0.61–0.73)	0.71 (0.65–0.77)	1.21 (1.05–1.40)	1.40 (1.24–1.58)
Southeastern Asia	0.62 (0.58–0.66)	0.52 (0.49–0.55)	1.17 (1.03–1.33)	1.05 (0.94–1.16)
Western Asia	0.75 (0.65–0.85)	0.79 (0.69–0.90)	1.37 (1.15–1.63)	1.53 (1.31–1.79)
Europe				
Northern Europe	0.52 (0.46–0.59)	0.51 (0.45–0.57)	0.80 (0.68–0.95)	0.79 (0.68–0.91)
Southern Europe	0.60 (0.55–0.66)	0.60 (0.55–0.66)	1.03 (0.90–1.18)	1.0 8 (0.95–1.22)
Western Europe	0.77 (0.70–0.86)	0.72 (0.67–0.78)	(ref.)	(ref.)
Former Soviet Union	1.10 (0.98–1.23)	1.32 (1.20–1.46)	2.16 (1.84–2.53)	2.63 (2.30–3.01)
Other Eastern Europe	0.52 (0.45–0.59)	0.48 (0.42–0.55)	0.97 (0.82–1.16)	0.92 (0.78–1.08)
Oceania	0.76 (0.60–0.96)	0.50 (0.40–0.64)	1.47 (1.14–1.90)	1.00 (0.78–1.29)
Unknown[c]	0.54 (0.39–0.74)	0.46 (0.33–0.65)	0.95 (0.69–1.32)	0.88 (0.63–1.24)

Notes: All estimates are calculated using ACS sample weights. Because of the weighting the actual sampling error may be slightly larger than that shown in the table.

Source: American Community Survey, 2005–2007.

[a] Sensitivity analyses exploring alternative treatments of age as continuous variable showed no effect on most origin coefficients or their statistical significance.

[b] Estimates are from a model that replaced *Origin* indicator variables with a binary *Nativity* variable.

[c] Origins were classified as unknown when place of birth was not well specified for foreign-born individuals.

Table 5

Working-age population and disability-insured population, by gender: Percentage distribution by region of origin

	Men			Women		
	U.S. Population Aged 18–64 (a)	Disability-Insured Population (b)	Ratio (b/a)	U.S. Population Aged 18–64 (c)	Disability-Insured Population (d)	Ratio (d/c)
Sample Size (*n*)	2,636,835	6,435,034		2,778,142	7,226,650	
Region of Origin						
United States (50 states and DC)	82.10	85.03	1.04	83.18	87.12	1.05
U.S. territories	0.60	1.32	2.20	0.64	1.19	1.86
Canada	0.32	0.31	0.97	0.37	0.32	0.86
Other Americas						
Caribbean	1.31	1.26	0.96	1.50	1.37	0.91
Central America	7.35	4.35	0.59	5.61	2.76	0.49
South America	1.11	0.76	0.68	1.16	0.74	0.64
Africa	0.68	0.58	0.85	0.56	0.44	0.79
Asia						
Eastern Asia	1.32	1.05	0.80	1.60	1.18	0.74
South Central Asia	1.15	1.01	0.88	0.96	0.59	0.61
Southeastern Asia	1.43	1.41	0.99	1.74	1.60	0.92
Western Asia	0.34	0.33	0.97	0.26	0.17	0.65
Europe						
Northern Europe	0.41	0.42	1.02	0.41	0.39	0.95
Southern Europe	0.50	0.38	0.76	0.45	0.31	0.69
Western Europe	0.57	0.57	1.00	0.65	0.33	0.51
Former Soviet Union	0.35	0.28	0.80	0.41	0.30	0.73
Other Eastern Europe	0.32	0.43	1.34	0.35	0.40	1.14
Oceania	0.10	0.10	1.00	0.10	0.09	0.90

Notes: Sample sizes for women and men in the ACS are from the 2005–2007 file. CWHS sample sizes are the sum of the 1 % samples on January 1 of each year, 2001–2010. Persons entitled to benefits are excluded from the insured population. Individuals of unknown origins constitute 0.05 % of the ACS sample and 0.4 % of the SSA sample.

Sources: American Community Survey for estimates of the U.S. working-age population, and the SSA 1 % CWHS file for estimates of the disability-insured population.

Table 6

Disability Insurance program applications and final dispositions, by region of origin, 2001–2010

Region of Origin	Insured Populations[a]	Applications[b]	Medical Decisions	Allowances	Application Rate (%)	Technical Denial Ratio (%)	Medical Allowance Rate (%)	Award Rate (%)
50 U.S. States and DC	1,175,114,300	18,303,237 (89.2)	13,365,174	7,704,883	1.1	27.0	57.7	42.1
U.S. Territories	17,251,200	460,742 (2.2)	326,601	216,124	1.9	29.1	66.2	46.9
Canada	4,353,800	32,752 (0.2)	25,903	17,436	0.6	20.9	67.3	53.2
Other Americas								
Caribbean	17,874,600	274,020 (1.3)	177,608	107,474	1.0	35.2	60.5	39.2
Central America	49,229,600	524,449 (2.6)	389,859	218,803	0.8	25.7	56.1	41.7
South America	10,308,200	92,905 (0.5)	64,943	38,951	0.6	30.1	60.0	41.9
Africa	7,046,200	59,012 (0.3)	36,955	22,001	0.5	37.4	59.5	37.3
Asia								
East Asia	15,168,700	83,288 (0.4)	58,964	36,905	0.4	29.2	62.6	44.3
South Central Asia	11,098,600	80,282 (0.4)	46,668	28,321	0.4	41.9	60.7	35.3
Southeast Asia	20,450,800	179,031 (0.9)	121,864	72,767	0.6	31.9	59.7	40.6
Western Asia	3,519,600	44,959 (0.2)	26,493	15,564	0.8	41.1	58.8	34.6
Europe								
Northern Europe	5,500,600	38,144 (0.2)	30,270	19,917	0.6	20.6	65.8	52.2
Southern Europe	4,723,400	59,154 (0.3)	48,696	36,515	1.0	17.7	75.0	61.7
Western Europe	8,157,800	82,968 (0.4)	64,909	38,818	0.8	21.8	59.8	46.8
Former Soviet Union	3,957,000	45,424 (0.2)	22,371	16,027	0.6	50.8	71.6	35.3
Other Eastern Europe	5,642,100	55,033 (0.3)	40,347	28,748	0.7	26.7	71.3	52.2
Oceania	1,306,800	12,843 (0.1)	9,199	5,549	0.7	28.4	60.3	43.2
Unknown	5,465,100	102,480 (0.5)	75,258	45,727	1.4	26.6	60.8	44.6
Total	1,366,168,400	20,530,723 (100)	14,932,082	8,670,530	1.1	27.3	58.1	42.2

Notes: Technical denials are generally due to an insufficient number of work credits but also include a small number of denials for other nonmedical reasons. *Medical decisions* are the total applications excluding technical denials. *Allowances* are approved claims (using adjudication data up to 2014). *Application rate* refers to medical decisions divided by total insured population. *Medical allowance rate* is medical allowances divided by medical decisions. *Award rate* is medical allowances divided by total applications.

Sources: Disability Research File and (for the insured population) the Continuous Work History Sample, Social Security Administration.

[a]Population sizes are the sums of the 10 insured populations at the beginning of each year, 2001–2010.

[b]Numbers in parentheses are percentages of the total.

Table 7

Incidence rates, 2001–2010, before and after standardization, and incidence rate ratios (IRR) with 95 % confidence intervals

	Unadjusted Incidence Rate	Standardized Incidence Rate	IRR, Full Sample
Female (ref. = male)			1.02 (0.96–1.09)
Age (ref. = <35)			
35–44			2.00 (1.83–2.18)
45–54			5.38 (4.93–5.87)
55+			11.31 (10.36–12.35)
Region			
United States	6.56	6.56	(ref.)
Canada	4.00	3.47	0.47 (0.39–0.57)
Other Americas			
Caribbean	6.01	5.66	0.77 (0.64–0.93)
Central America	4.44	5.38	0.62 (0.52–0.74)
South America	3.78	3.77	0.49 (0.41–0.59)
Africa	3.12	3.90	0.53 (0.44–0.64)
Asia			
Eastern Asia	2.43	2.28	0.33 (0.27–0.39)
South Central Asia	2.55	2.93	0.36 (0.30–0.43)
Southeastern Asia	3.56	3.64	0.49 (0.40–0.58)
Western Asia	4.42	4.75	0.63 (0.53–0.76)
Europe			
Northern Europe	3.62	3.05	0.44 (0.37–0.53)
Southern Europe	7.73	5.63	0.76 (0.63–0.91)
Western Europe	4.76	4.38	0.68 (0.53–0.76)
Former Soviet Union	4.05	4.69	0.57 (0.47–0.68)
Other Eastern Europe	5.10	4.67	0.60 (0.50–0.72)
Oceania	4.25	4.51	0.58 (0.48–0.70)
U.S. Territories	12.53	12.86	1.82 (1.52–2.19)

Sources: Disability Research File and (for the insured population) the Continuous Work History Sample, Social Security Administration.

Table 8

Allowance rates by impairment category

Impairment Category	Number of Final Medical Determinations	Allowance Rate (%)
Neoplasms	1,015,512	86.7
Circulatory Diseases	1,419,288	67.2
Respiratory Diseases	542,750	66.0
Nervous System Diseases	1,154,182	61.9
Mental	3,194,434	58.7
Infectious and Parasitic	190,630	57.9
Musculoskeletal Diseases	4,520,908	56.3
Injuries	800,829	46.6
Endocrine/Nutritional/Metabolic	649,109	46.4
Other	753,555	63.2
Unknown[a]	690,885	12.0
Total	14,932,082	58.1

Source: Disability Research File, 2001–2010 applications, excluding those technically denied.

[a] The impairment type is occasionally left out in denial decisions.

Table 9

Percentage distribution of work disability benefit allowances by impairment category, for regions of origin

Impairment Category	Americas				Asia				Europe					AFR	AUS	US	TER	UNK
	CAN	CAR	CAM	SAM	EAS	SCA	SEA	WAS	NE	SE	WE	FSU	OEE					
Neoplasms	14	10	9	13	21	11	16	11	16	12	13	13	13	11	11	10	5	9
Circulatory	11	13	11	11	10	14	13	13	10	12	10	11	13	12	15	11	9	11
Respiratory	4	2	1	2	2	2	2	2	4	2	3	1	2	2	3	4	2	3
Nervous System	9	7	9	9	10	10	8	8	10	7	9	7	7	9	10	8	7	8
Mental	20	20	11	17	20	20	21	23	20	15	22	34	20	22	14	22	32	20
Infectious and Parasitic	1	3	1	2	1	1	1	1	1	1	1	<1	<1	3	1	1	1	1
Musculoskeletal	29	30	37	33	22	28	23	30	26	38	28	22	33	25	29	29	33	31
Injuries	4	5	6	5	4	4	4	4	4	5	4	4	5	5	5	4	4	6
Endocrine/Nutritional/Metabolic	2	3	6	3	2	3	3	3	2	2	3	2	2	2	5	3	3	4
Other	5	5	8	6	6	6	8	4	6	4	6	3	4	8	8	5	4	6
Unknown	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	17,436	107,474	218,803	38,951	36,905	28,321	72,767	15,564	19,917	36,515	38,818	16,027	28,748	22,001	5,549	7,704,883	216,124	45,727

Notes: CAN: Canada, CAR: the Caribbean, CAM: Central America, SAM: South America, EAS: Eastern Asia, SCA: South Central Asia, SEA: Southeastern Asia, WAS: Western Asia, NE: Northern Europe, SE: Southern Europe, WE: Western Europe, FSU: former Soviet Union, OEE: other Eastern Europe, AFR: Africa, AUS: Australia and other nations in Oceania, US: United States, TER: US territories, UNK: Unknown.

Source: Disability Research File, 2001–2010 applications.