

Ethnic Networks and Disability Insurance Take-up over the Business Cycle

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Abstract

We examine the role of ethnic networks in determining SSDI take-up rates among immigrants in the United States. We show that immigrants from ethnic groups with high take-up rates are more likely than those from low take-up groups to go on disability when jobs become scarce, a result potentially explained by better information sharing or lower stigma within high take-up groups. The effect is concentrated among those people with good or fair—rather than excellent or poor—levels of self-reported health, suggesting that ethnic networks play a role in driving those with marginal disabilities to apply for SSDI benefits during periods of economic downturn. Second-generation immigrants are also sensitive to ethnic network effects despite having been born and most likely raised in the United States.

Keywords: Ethnic networks, Disability insurance, Unemployment, Immigrants

JEL Classification: E24; H55, J15, J61

1. Introduction

The Social Security Disability Insurance (SSDI) program was established in 1956 to provide benefits to American workers and their families in the event of disability. Demographic changes imply that the Social Security administration's current system of funding retirement and disability benefits is not sustainable. In fact, the 2024 Trustees Report predicts that the combined Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI) Trust Funds (collectively referred to as the OASDI fund) will only be able to make scheduled payments until the year 2035 (Social Security Administration 2024). As policymakers consider changes to the system, it is important to understand the factors, beyond mere disability status, that drive SSDI participation. This paper examines the role of ethnic networks in determining whether people with marginal disabilities apply for and ultimately receive benefits from SSDI.

There is strong causal evidence that people are more likely to receive disability benefits if their parents received benefits (Dahl et al. 2014), a result suggestive of family welfare cultures. However, a growing body of work shows that a range of important health and work choices are affected by the behaviors of people within local communities—not just within families.¹ Furtado and Theodoropoulos (2013, 2016) show that immigrants who live in communities with more co-ethnics are especially likely to take-up disability benefits if they are from high take-up ethnic groups. While this finding is certainly consistent with ethnic networks driving SSDI take-up, it could also be driven by selective migration of immigrants to different local areas in the United States. In this paper, we provide evidence of the role of ethnic networks that is robust to this alternative explanation. In particular, we examine whether immigrants in high SSDI groups—i.e., groups with more information about the SSDI program and surely less stigma against take-up—are especially likely to on disability in response to economic downturns.

¹ For example, there is evidence of spillover effects in the consumption of alcohol (Eisenberg et al. 2014; Kremer and Levy 2008), cigarettes (Cutler and Glaeser 2010; Fletcher 2010; Powell et al. 2005), and most recently opioids (Cutler and Donahoe 2024). Duflo and Saez (2003) show that retirement plan enrollment is also sensitive to spillover effects within communities, while Bertrand et al. (2000) provide evidence of ethnic networks in welfare take-up.

The possibility that take-up decisions exhibit spillovers within communities is a potentially a major challenge for policymakers given the evidence that entries to SSDI increase during recessions but never fall back when the economy recovers (Maestas et al. 2021). If disability take-up rates are transmitted within social groups, this problem will be exacerbated since an individual's decision to take up disability insurance may lead others to exit (and never re-enter) the labor market, potentially resulting in a ripple effect of disability take-up throughout a community.

If everyone with a work-preventing disability applied for and ultimately received benefits, and no one who was capable of working received such benefits, there would be little scope for social networks to play a role in determining SSDI take-up. However, if applying for SSDI is complex due to paperwork or eligibility ambiguity, information sharing within social circles may help ensure that insured individuals who are genuinely incapable of working receive benefits. Moreover, if many SSDI recipients are indeed able to work, stigma within social networks may act to discourage work-capable individuals from pursuing SSDI. By exploring the role of social networks in determining take-up, we gain insight on whether SSDI benefits are generally awarded fairly and efficiently.

Any analysis of this type faces two main difficulties. The first challenge is how to measure the role of social networks without data on friendship circles. Following a large literature (e.g. Bertrand et al. 2000; Gee and Giuntella 2011; Furtado and Theodoropoulos 2013, 2016; Furtado et al. 2022), we focus our analysis on immigrants in the U.S. and assume that other immigrants from their country of origin are overrepresented in their social networks. We construct average SSDI take-up rates by country-of-origin, measured prior to our sample period to circumvent the reflection problem (Manski 1993). Immigrants in country of origin groups with historically high SSDI take-up rates are able to access more and better-quality information about the program within their ethnic networks. In addition, there is likely less stigma associated with SSDI benefits, even for individuals who are capable of working, within ethnic networks with high take-up rates.

The second challenge is to identify the individuals for whom networks are likely to matter: those with a disability severe enough to be awarded benefits but not so severe to make work impossible.² Those without a documentable disability are unlikely to be awarded benefits regardless of whether they apply, and so information sharing and stigma within ethnic networks are unlikely to drive SSDI take-up. At the other extreme, information sharing within networks is less useful for those with severe disabilities due to clear SSDI eligibility and a more straightforward application process. Additionally, there is surely little stigma against receiving benefits for those unable to work at all regardless of social network. Following Furtado et al. (2022), which builds on a growing literature showing that applicants induced into the SSDI program during the Great Recession were more likely to have only marginal disabilities (Maestas et al. 2021), we address this challenge by focusing on the role of networks in people's decisions to go on disability in response to poor labor market conditions. Since these individuals are ultimately awarded benefits, they must have a severe enough disability to convince SSDI examiners that they are incapable of work. However, because they were only induced to apply for SSDI because of a job loss, they are presumably capable of working, at least under certain conditions.

Using data from the 2005-2016 American Community Surveys, our first main finding is that immigrants from high SSDI take-up country of origin groups are more sensitive to economic downturns than immigrants in low-SSDI take-up origins, a result consistent with ethnic networks driving the decisions of marginal applicants. A potential concern with this interpretation is that same-origin country SSDI participation rates are correlated with other factors influencing take-up rates across the business cycle. For example, immigrants in high

² The SSDI application requires individuals to submit a wealth of information including clinical test results, clinical diagnoses, and physician recommendations, but there are strong indications that many of those who ultimately receive benefits are indeed capable of working (Autor and Duggan 2003; Black et al. 2002; Charles et al. 2018; Liebman 2015). In fact, Deshpande and Lockwood (2022) conclude that about half of the value of the U.S. disability system comes from its providing insurance against *non-health* risks. At the other end of the spectrum, the success of the appeals process suggests that initial SSDI denials are made to individuals who might indeed be incapable of working. According to data collected between 1995 and 2009, only one-third of applicants were allowed in the initial determination, but almost two-thirds of applicants were ultimately awarded benefits within six years of their initial determination (Maestas et al. 2013).

SSDI groups may tend to work in industries that are more sensitive to business fluctuations or may be less likely to qualify for SSDI based on their work histories and documentation status. We address these concerns in the paper with a series of robustness and heterogeneity tests along with a placebo test run on retirement-age individuals who need not provide proof of a disability in order to leave the workforce and receive benefits.

Turning next to data from the Current Population Surveys (CPS), our second main finding is that our results are driven by people with intermediate self-reported health levels. This makes sense in that information about eligibility for the program and how to prove that a disability makes work impossible is more important for those with moderate levels of disability than those with severe disabilities. Moreover, any stigma against receiving benefits is likely important only for those who have a disability which makes it difficult, but not impossible, to work. We also show evidence of ethnic network effects among second-generation immigrants who on the one hand may be less socially connected to their ethnic communities but on the other hand, are more likely to qualify for SSDI benefits.

The remainder of the paper proceeds as follows. Section 2 provides background on the SSDI program as well the literature on ethnic networks in general and, in particular, how they relate to SSDI take-up. Section 3 presents our two complementary data sources and provides graphical evidence of some of our findings. Section 4 outlines the empirical strategy and presents the main results as well as results from two placebo tests. Section 5 explores heterogeneity, focusing on differences by self-reported health and immigrant generation. Section 6 concludes and offers policy implications.

2 Background

2.1 The Social Security Disability Insurance Program

Social Security Disability Insurance is a U.S. federal program designed to provide income to people who are unable to work as a result of a physical or mental disability. To qualify, an applicant must satisfy two requirements. First, applicants must generally have worked at least five of the past ten years and ten years in their working lives, although the actual rules depend on the applicant's age and are fairly complicated. Second, applicants must be out of work or earning less than a prescribed amount for five months after their determined "onset" date before receiving benefits.³

In addition to these rather technical requirements, medical evidence of a work-preventing disability is provided by doctors and examined at Disability Determination Offices. Examiners evaluate whether the impairment is severe and expected to last more than a year, and whether the claimant is able to perform any work in the U.S. economy. This determination is based not only on the person's disability level but also his or her age, past work experience, and education. An application of a person who is unable to perform physically demanding work may be denied for a person who has the education and experience to work in an office job, but approved for a person who would not qualify for such a job.

In general, only about a third of applicants are awarded benefits at the first determination (Maestas et al. 2013). Thirty-five percent of denied applicants appeal and most of those who appeal eventually have a hearing before an Administrative Law Judge (Liebman 2015). There are several different levels of appeals starting with a simple reconsideration determination and ending with a trial in a U.S. district court. The appeals process can be long, difficult, and expensive, but appeals are often eventually successful. In general, two thirds of all initial applications are eventually awarded (Maestas et al. 2013). Around 40 percent of Great

³ The maximum earnings limits vary by disability type and year and can be found here: <https://www.ssa.gov/oact/cola/sga.html> (accessed July 8, 2024).

Recession-induced applications were eventually awarded (Maestas et al. 2018) despite the fact that applicants were far more likely to have only marginal disabilities.

Documented immigrants, regardless of whether they are citizens, are eligible for SSDI. Undocumented immigrants do not qualify for the program. The arduous and rather opaque application process makes SSDI take-up ripe for the influence of social networks. About a quarter of denied claims are denied for nonmedical reasons (Deshpande and Li 2019)—evidence of the potential difficulty applicants face in determining whether they qualify and pointing to a potential role for ethnic networks. Potential applicants with only marginal disabilities may learn from acquaintances that applicants with certain difficult to diagnose conditions, like back pain, may eventually qualify for benefits despite work capacity. Information on how to fill out the forms and regarding the most effective lawyers can also be shared within networks. It is also possible that deception in court feels more morally comfortable for people whose friends and acquaintances have done the same thing. Finally, going on disability requires the applicant to leave the labor force, for at least the five months before applying for SSDI but for most people, during the entire application process. The psychological costs of leaving the labor force—in terms of a lost sense of identity and purpose—are likely easier to bear for people within communities where many people do not work.

2.2 SSDI Applications during Economic Downturns

Exploiting plausibly exogenous local labor demand shocks, several papers have shown that worse labor market conditions result in higher SSDI take-up rates. In a seminal article, Black et al. (2002) find that disability claims increase in coal-producing counties when energy prices drop and decrease when prices increase. Another paper conducts a similar analysis focusing on the oil and gas industries and finds similar results (Charles et al. 2018). Using an even more general source of variation in local labor demand conditions, Autor et al. (2013) uncover large increases in disability program take-up in labor markets that are more intensely exposed to Chinese import competition.

Research leveraging local labor demand shocks has shown that worse labor market conditions lead to higher SSDI application rates. In coal-producing counties, disability claims rise when energy prices fall and decline when prices rise (Black et al. 2002). Similarly, Charles et al. (2018) find increased SSDI claims in response to downturns in the oil and gas sectors. According to Autor et al. (2013), greater exposure to Chinese import competition also drives up SSDI participation.

In terms of research focusing on business cycle fluctuations, Duggan and Imberman (2009) show that almost a quarter of the increase in male SSDI participation during the late 20th century was linked to recessions. More recent work identified significant increases in SSDI awards during and after the Great Recession (Maestas et al. 2018, Mueller et al. 2016).⁴ These studies suggest that while some individuals apply for SSDI regardless of economic conditions, there is a group whose take-up of disability benefits is influenced by poor labor market conditions.

Using disability data on SSDI applications, Maestas et al. (2018) show that recession-induced entrants are generally less disabled than other entrants. Using detailed information on medical spending and mortality, Carey et al. (2022) show that when unemployment rates are higher at the time of application, future medical spending and mortality among entrants is lower. They show that the impact of worsening economic conditions is equivalent to the impact of decreasing SSDI eligibility criteria (Carey et al. 2022).

Several papers find that when the (non-pecuniary) costs of take-up decrease, the impact of worsening labor market conditions increases. Kearney et al. (2021) show that in local areas with plausibly exogenous longer SSDI appeals processing times---an added inconvenience to an already rather arduous application process---enrolments did not increase as much in response to economic downturns. Moreover, in places with the largest baseline SSDI enrolment rates,

⁴ Interestingly, SSDI applications did not increase in response to the 2020 recession induced by Covid-19 (Maestas and Mullen 2024). This may have been due to the prolonged closures of SSA field offices or the more generous unemployment insurance benefits during this time.

those with longer processing times experienced faster employment recovery rates following Great Recession shocks. In a paper most closely related to ours, Furtado et al. (2022) also present evidence that increasing the costs to take-up implies lower SSDI take-up in response to economic downturns. In particular, they show that immigrants from countries with weaker work norms (i.e., smaller utility costs to leaving the labor force) are more sensitive to economic conditions than immigrants from countries where work is considered a duty to society. We contribute to this finding by considering the impact of the role of ethnic networks more broadly.

2.3 Ethnic Networks and Immigrant SSDI Participation

There is a large literature examining the role of ethnic networks in determining program participation using data on immigrants. In a seminal paper, Bertrand et al. (2000) show that immigrants residing amidst a large number of co-ethnics are especially likely to receive welfare payments if they belong to high welfare-using language groups. As the authors explain, social networks can affect welfare participation via information sharing about the program and/or via changing stigma associated with welfare participation.

Using similar identification strategies, other researchers have uncovered ethnic network effects in health care utilization (Deri 2005; Devillanova 2008), Medicaid take-up (Gee and Giuntella 2011), and WIC participation during pregnancy (Figlio et al. 2008), to name a few examples. Battisti et al. (2022) show that immigrants living in areas with larger co-ethnic networks are more likely to be employed soon after arriving in Germany suggesting the importance of ethnic networks for finding jobs, but this advantage disappears after a few years, presumably because those with smaller ethnic networks invest more heavily in host country specific skills.

In terms of SSDI participation, Furtado and Theodoropoulos (2016) show that immigrants residing amidst a large number of co-ethnics are especially likely to receive disability payments when their ethnic groups have higher take-up rates. In a separate analysis, they show that while immigrants in networks with high Supplemental Security Income (SSI) for disability

participation are more likely to apply for SSI for a disability, conditional on applying, they are in fact less likely to be awarded benefits (Furtado and Theodoropoulos 2013). This suggests that high take-up ethnic networks induce people with marginal disabilities to apply for benefits, but applications of people with marginal disabilities are often denied.⁵

A main identification problem with this literature is that immigrants choose where to live, and those that are most similar to their ethnic groups might be especially likely to choose to live in ethnic enclaves. Thus, what appears as the impact of ethnic networks may actually simply reflect geographic sorting. For this reason, we do not rely on variation across geographic areas for identification of the role of ethnic networks. Instead, we focus on variation across origin groups in conjunction with variation across the business cycle.

Our paper links the literature on the role of ethnic networks in program participation with the literature on the cyclical nature of SSDI take-up. As discussed previously, SSDI benefits are intended for people who are no longer able to work because of a physical or mental disability; the SSDI program is not structured to provide unemployment insurance. By considering how ethnic networks affect recession-induced take-up decisions, we are able to identify impacts specifically on individuals who would prefer to and are able to work despite having a disability severe enough to be awarded benefits.

3. Data and Descriptive Statistics

Initially, we use data from the 2001 to 2016 samples of the American Community Survey (ACS), as reported by the Integrated Public Use Microdata Series (IPUMS, Ruggles et al. 2017). Our baseline ACS sample consists of immigrants (naturalized citizens and noncitizens) between the ages of 25 and 61 who have been in the US for at least five years and do not reside in group quarters. To clearly link people to their country of origin communities, we drop

⁵ Consistent with this general idea, Borjas and Slusky (2022) show that the relationship between medical conditions and self-reported disability status is stronger for the foreign born with legal status than for those who are likely to be undocumented. They interpret this finding as evidence that workers who are eligible for SSDI exaggerate their disabilities in order to receive benefits.

individuals without a clear country of birth listed in the ACS (for example, they may be listed as “Central Africa, ns”). Finally, we drop widows and widowers from the sample because our measure of SSDI receipt is less informative for this population.

The ACS does not directly ask about SSDI income. Instead, the survey asks individual respondents about their Social Security income more broadly, but our sample limitations help to identify SSDI beneficiaries.⁶ We supplement our analysis with data from the Annual Social and Economic Supplement (ASEC) to the March CPS from the years 2001 to 2019 (IPUMS, Flood et al. 2020). Compared to the ACS, the CPS dataset provides a more accurate measure of SSDI income. The dependent variable in the CPS sample is defined as whether a person received Social Security income *for a disability* in the previous year. The CPS also contains information about whether a person is a second-generation immigrant and better health measures.

We construct SSDI take-up in a person’s origin country using the share of people born in the same country who report receiving SSDI payments in the 5 percent sample of the 2000 U.S. Census (Ruggles et al. 2017). Since this is before our sample period, it is less likely to suffer from Manski’s (1993) reflection problem. We gather data on annual state unemployment rates from the Local Area Unemployment Statistics program within the Bureau of Labor Statistics (BLS).

Table 1 shows descriptive statistics of the variables used in the analysis. Our final ACS sample consists of 2,537,827 observations. On average, 1.4 percent of the immigrants in our sample receive SSDI, a number very close to the average origin group SSDI rate in the year

⁶ The ACS includes a general question about Social Security income. Social Security income can come from four sources: SSDI benefits, public pensions, survivor benefits, and Railroad Retirement insurance. Given that our study focuses on working-age individuals, it is unlikely that the Social Security income recipients in our sample are receiving retirement income or Railroad Retirement insurance. Additionally, since we exclude widows and widowers from the sample, survivor benefits are not a likely source of Social Security income. Although most individuals receiving Social Security income in our sample are likely to be beneficiaries of SSDI due to their own disabilities, there are instances where non-disabled spouses and children of disabled workers might also receive SSDI benefits. While the ACS data does not allow us to distinguish whether recipients are obtaining SSDI benefits due to their own disabilities, aggregate statistics indicate that over 80% of SSDI recipients are beneficiaries due to their own impairments (Social Security Administration 2017).

2000 (1.6 percent). The average unemployment rate in our sample is just under seven percent. The average immigrant in our sample is 42 years old. About fifty-one percent are males, fifty-one percent are Hispanic and sixteen percent are white. Sixty-four percent have children, and sixty-five percent are married (with the spouse present). Twenty-six percent have a high school degree, about twenty percent have some college, and twenty-seven percent have a college or higher educational qualification. Those with cognitive, vision/hearing, or independent living difficulties each account for around two percent of the sample. Around three percent have an ambulatory difficulty and one percent a self-care difficulty.

[Table 1 here]

We next graphically explore the relationship between unemployment rates and SSDI take-up separately for immigrants from countries with high and low SSDI receipt. Figure 1 shows, unsurprisingly, that immigrants from countries in the top 25 quantile (triangles) of historical SSDI receipt are substantially more likely to receive benefits than those in the bottom 25 quantile (dots). More important, this difference widens as the unemployment rate increases pointing to the possibility that when jobs are scarce ethnic networks play a stronger role in determining take-up. This may be because marginally disabled individuals, capable of working, are incentivized to pursue SSDI payments upon job loss, but only those with access to information about the program and little stigma to take-up end up receiving benefits.

[Figure 1 here]

4. Empirical Specification

Certain immigrant groups may have higher SSDI participation rates for relatively minor idiosyncratic reasons (for example, their ethnic neighborhoods may have coincidentally been located close to Social Security field offices or immigrants from certain groups may have systematically held occupations that tended to result in work-preventing injuries). Regardless of the explanations for the high SSDI participation rates in certain groups in the past,

immigrants connected to ethnic networks with high SSDI participation are likely to face lower costs to participation, perhaps because they can more easily find information about the program, get assistance with filling out applications, and even perhaps learn about the most lenient doctors and effective lawyers. While the complicated rules about eligibility and rather arduous appeals process may make it difficult for anyone to navigate the system, they are likely to be especially difficult for immigrants who are often unfamiliar with U.S. programs and may not be proficient in English. In addition, taboos against leaving the workplace despite having only a marginal disability are likely to be weaker in high take-up ethnic groups – again, decreasing the cost to applying despite potentially being able to work.

The main empirical specification used in the analysis is:

$$SSDI_{iost} = \beta_1 UR_{st-1} \times \overline{SSDI}_o + \beta_2' \mathbf{X}_{iost} + \gamma_o + \delta_{st} + \varepsilon_{iost} \quad (1)$$

where $SSDI_{iost}$ is equal to 1 if person i born in country o , living in state s in year t receives any SSDI income, 0 otherwise. Our right-hand side variable of interest is the interaction between the state unemployment rate, UR , in the year prior to the survey and the SSDI take-up rate among immigrants from the same country of origin in 2000, \overline{SSDI} . Empirically, the β_1 parameter is identified from variation across countries of origin (140 origin countries) and state-year unemployment rates. By using a measure of average SSDI take-up from before our sample period, we alleviate concerns related to Manski's reflection problem.

The vector \mathbf{X} controls for a series of individual characteristics including gender, race, marital status, whether there are children in the household, educational attainment, disability level (measured with broad categories of disability in the ACS analysis and subjective health in the CPS analysis), and a full set of age as well as years in the U.S. dummy variables. The state-year fixed effects (δ_{st}) control for all factors affecting all immigrants living in the same state in the same year equally. The country-of-origin fixed effects (γ_o) absorb any unobserved tendencies for immigrants from particular backgrounds to take up SSDI.

4.1 Main Findings (ACS Data)

We begin our analysis by confirming that, like the general population, the immigrants in our sample are more likely to go on disability when the unemployment rate increases. Column 1 of Table 2 shows that indeed they are. In column 2, we add the origin average SSDI take-up in the year 2000 (before the sample period) along with its interaction with the unemployment rate. As expected, the estimate of the coefficient on the interaction term is positive and significant, suggesting that immigrants in groups with higher take-up are especially sensitive to economic conditions. In column 3, we replace the un-interacted unemployment rate and state-year fixed effects and the un-interacted origin average SSDI rates with country of origin effects, thereby estimating equation (1). The coefficient on the interaction term between historical SSDI and lagged unemployment rate is little changed.

The estimate of 2.44 in column 3, our preferred specification, suggests that a percentage point increase in the unemployment rate results in a 0.11 percentage point increase in SSDI take-up for Cape Verdean immigrants, the highest SSDI take-up group (4.3 percent of Cape Verdean immigrants were on disability in the 2000 Census), but no increase for immigrants from Saudi Arabia, the lowest SSDI take-up group (no Saudi Arabians were receiving benefits that year).⁷ In sum, despite the rather demanding set of controls we use in our regression analysis, the pattern depicted in Figure 1 persists: Ethnic networks appear especially important during economic downturns when the more marginally disabled are applying for benefits.

[Table 2 here]

There are two main alternative explanations for our baseline results. One is that immigrants in high SSDI take-up groups are simply more likely to become unemployed during economic downturns. Another potential explanation arises if the variation across origin groups in SSDI take-up arises mainly from variation in eligibility for SSDI, for instance due to work experience in the formal sector as well as legal status in the United States. It may be then that,

⁷ Table A1 in the Appendix presents the average origin group SSDI in 2000 along with the number of observations for all 140 origin countries in our sample.

regardless of ethnic group, all immigrants who are eligible for SSDI would apply during downturns given the opportunity, but immigrants in high SSDI groups are simply more likely to be eligible. We take several different approaches to exploring these possibilities.

We start by adding several interactions between the lagged unemployment rates and average characteristics, besides average SSDI, of the origin group. First, we include the interaction between the unemployment rate and average years of schooling because people with fewer years of schooling are more likely to lose their jobs during economic downturns (Hoynes et al. 2012) and because the foreign born with very low levels of education are more likely to be undocumented immigrants (Borjas 2017). By controlling for the education-unemployment rate interaction, we are not allowing the 2000 average SSDI rate interaction coefficient to simply pick up these relationships. Similarly, we include the average age-unemployment rate interaction because younger individuals are also more sensitive to labor markets (Hoynes et al. 2012) and are more likely to be undocumented (Borjas 2017). Finally, we include the average years in the U.S.-unemployment rate interaction because immigrants with fewer years in the U.S. are less likely to have worked in the U.S. for enough years to qualify for SSDI. In column 1 of Table 3, the estimated coefficient on the interaction between unemployment rates and average SSDI take-up increases in magnitude and remains statistically significant when the additional interaction terms are included in the model. This suggests that country of origin differences in schooling, age, and years in the United States are not driving the different business cycle sensitivities to average origin SSDI take-up.

To further address concerns about differential job loss responses to changes in state unemployment rates, we start by constructing unemployment rates within more narrowly defined cells. To do this, we construct the unemployment rates ourselves from the ACS data because the BLS does not produce unemployment rates within the narrowly defined cells. In column 2 of Table 3, we show that our baseline estimates are practically unchanged regardless of whether we use the BLS state unemployment rates (column 3 of Table 2) or our own ACS-constructed state unemployment rates. Next, we replace the state unemployment rates with immigrants' country of origin-specific state unemployment rate and then interact this variable

with average SSDI take-up.⁸ This is not our preferred specification because many of these origin-state-year cells have few observations and so sampling error is likely to attenuate our estimates. Nevertheless, the results in column 3 of Table 3 show that while the estimate is certainly smaller than the estimate in our baseline, it remains positive and statistically significant despite potentially suffering from severe attenuation bias.

Next, since many of the immigrants in our sample have very low levels of education, and low-skill labor markets tend to be more sensitive to business cycles (Hoynes et al. 2012), we construct unemployment rates within education-state-year cells. As seen in column 4 of Table 3, the estimate of the coefficient on our interaction is positive and statistically significant in this specification as well.

In column 5 of Table 3, we construct unemployment rates within occupation–state–year cells. Again, the estimate of the interaction coefficient between this unemployment rate and average disability take-up within origin group is positive, statistically significant, and of a magnitude similar to that in our baseline specification. While certainly comforting, this is also not our preferred specification because so many of the people on disability, even those new to the system, have not worked in many years (Mueller et al. 2016) and so do not list an occupation or industry in the ACS.⁹

We next turn to two placebo tests to address potential concerns. We start by considering impacts on wages. If our baseline results were indeed driven by differential sensitivities to the state unemployment rate (for example, because immigrants in high SSDI groups work in industries with more cyclical demand), then we might expect lower wages in response to increases in the unemployment rate for immigrants in high SSDI groups. To test this, column

⁸ Because there are some countries of origin represented in a state in one year but not in the previous year, we are unable to construct lagged unemployment rates for some observations. In order to make clear comparisons across the different specifications in Table 3, we drop observations with missing data on any of the three measures of the unemployment rate.

⁹ Survey respondents who have not worked within the past five years do not list an occupation in the ACS. We assigned all individuals without a listed occupation the average unemployment rate for people from their country of origin living in their state in the same year. We also added a dummy variable to the model to control for whether the person’s state-year-occupation unemployment rate was imputed in this manner.

6 shows results from running our baseline specification on a sample of employed immigrants but replacing the outcome variable with the log of wages. The estimate of the interaction coefficient statistically insignificant, again suggesting that our baseline estimates are indeed driven by network effects in SSDI applications.

Taking yet a different approach to addressing both recession severity and eligibility for SSDI issues at the same time, we conduct another placebo-style analysis. Following Furtado and Theodoropoulos (2016), we take advantage of the fact that eligibility rules for Social Security retirement benefits are very similar to eligibility rules for disability benefits. In fact, Social Security is a term often used to refer to the federal Old-Age, Survivors, and Disability Insurance (OASDI) program, which provides benefits to those who are either above retirement age or below retirement age but with a disability making it impossible to work. Undocumented immigrants are not allowed to claim Social Security retirement benefits just like they are not allowed to claim SSDI. Also, the work experience necessary to qualify for SSDI is very similar to the work experience necessary to qualify for Social Security retirement benefits.¹⁰ The monthly benefits from claiming disability are exactly the same as the benefits from claiming retirement at full retirement age (age 65 for the people in our sample). Moreover, just like SSDI applications increase during recessions (Maestas et al. 2015), people are more likely to leave the labor force and collect (retirement-based) Social Security earlier if there is a recession around the time they reach retirement age (Coile and Levine 2011).

The main difference between the two Social Security programs is that anyone with appropriate work experience can claim Social Security retirement benefits starting at age 62 (receiving a portion of their full benefits) and their full retirement benefits starting at age 65. To claim full benefits before age 65, an applicant must provide proof of a disability. To explore whether SSDI eligibility or even experienced severity of the recession are driving our results, we simply rerun our analysis using a sample of immigrants age 62 and above. If all of our results were driven by differences in legal status, work experience, or labor market conditions

¹⁰ The only difference between the two programs is that SSDI has a recent work experience requirement while no such requirement exists for claiming retirement benefits.

by country of origin, we would expect to see especially large increases in Social Security claiming during bad economic times for immigrants in groups with high average SSDI take-up.

If, in contrast, our results are driven by information sharing or norms related to exaggerating a disability or leaving the workforce before retirement age, then average SSDI take-up will not be associated with the impact of business cycles on Social Security retirement claims. As can be seen in Column 7 of Table 3, the latter is more likely. In this sample of age 62 and above immigrants, the estimate of the coefficient on the interaction between unemployment rates and average SSDI take-up is not statistically different from zero, fairly small in magnitude relative to the mean of the dependent variable, and even has a negative sign.

[Table 3 here]

Next, for even further evidence that our results are driven by ethnic networks, we examine whether those immigrants that are likely more socially connected to their ethnic communities are indeed more likely to go on disability when hit with economics shocks if they are in high SSDI groups. We start by splitting the sample by whether the immigrant is fluent in English, expecting those who are more fluent in English to be less sensitive to ethnic network effects. Comparing columns 1 and 2 of Table 4, we can see that our results are driven by immigrants who are not fluent in English (as defined by whether they self-report speaking English either “not at all”, “speak English but not well” or “speak well”). While the estimate of interest is positive for those are fluent in English (as defined by speaking English “very well” or “only English”), it is not statistically significant and is much smaller in magnitude than our baseline estimates in column 3 of Table 2.

In the last two columns of Table 4, we compare immigrants who are geographically isolated from co-ethnics to those who live closer to other immigrants born in the same country. Immigrants living in states alongside many others from their country of origin may be more likely to have their social circles comprised predominantly of co-ethnics while those living in states with few others from their origin country are likely to have friends who are either native born or are foreign born from different origin countries. If our results are explained mostly by

ethnic networks, we should expect stronger results for immigrants surrounded by co-ethnics. As can be seen in column 3 of Table 4, the estimate of the interaction coefficient is positive but statistically insignificant when using a sample of immigrants living in a state where the share of same-origin inhabitants is less than the median in the overall sample (.008). In contrast, for non-isolated immigrants (in column 4 of Table 4), the estimate of the interaction coefficient is positive, statistically significant, and considerably larger in magnitude compared to our baseline estimate shown in column 3 of Table 2.

[Table 4 here]

Taken together, we view these results as rather strong evidence in favour of a role played by ethnic networks. Immigrants connected to groups with high SSDI take-up may face less stigma for exiting the labor force to receive SSDI benefits (despite having only a marginal disability)—a result consistent with findings in Furtado et al. (2022) considering the role of work norms. It is also possible that ethnic network effects are driven by information sharing about the SSDI program. While we are not able to differentiate these two mechanisms, both of which are likely to occur at the same time, we can provide a rather informal test for information sharing separating the sample by education level. Under the assumption that people with higher levels of education can retrieve information about SSDI and the application process without relying as much on information shared within social circles, we would expect to see larger estimates for people with lower levels of education if information sharing plays an important role. Columns 1 and 2 in Table 5 are consistent with this hypothesis. The estimated coefficient of interest is quite small and statistically insignificant for college graduates (column 2), a result consistent with information sharing.

[Table 5 here]

In Table 6, we further disaggregate the sample. Our results appear to be solely driven by males and not females (as seen in columns 1 and 2). We also examine whether ethnic network effects are stronger in specifically parts of the country. As can be seen in columns 3-6 of Table 6, our results are concentrated in the South; our estimated coefficient of interest is not significant in any other region. Similarly, in their study of how longer wait times during

economic downturns affect SSDI enrolment, Kearney et al. (2021) also find the strongest impacts in the South.

[Table 6 here]

5. Heterogeneity by Immigrant Generation and Self-Reported Health (CPS data)

We now turn to Current Population Survey (CPS) data where we observe information on self-reported health of the individual. When we repeat equation 1 using CPS data in column 1 of Table 7 using controls for a person's health level in place of the disability controls from the ACS, a somewhat larger coefficient on the interaction of historical SSDI and lagged unemployment rate is found, perhaps because of the better measure of SSDI in the CPS data, but this is only marginally significant due to the smaller sample size in the CPS. However, this weak overall effect appears to mask significant variation across health groups. When the regression is repeated separately for each health status group in columns 2-6, a highly significant estimate of the coefficient on the average SSDI-unemployment rate interaction term is found for those with good self-reported health but not for those with excellent, very good, fair or poor health. This is consistent with the idea that people in perfect health do not qualify for SSDI, and people with the worst health apply for and are awarded benefits regardless of the state of the economy or average SSDI take-up in their origin groups. These results are also consistent with the findings of Maestas et al. (2021) that it is applicants with marginal disabilities who are most likely to go on disability during bad economic times. Our findings suggest that at least in part, this pattern is driven by social factors and is much more pronounced among applicants from historically high take-up groups.

[Table 7 here]

Next, using the information from the CPS on parental country of birth, we examine whether ethnic spillovers exist among second-generation immigrants. This group is much more likely to qualify for SSDI benefits than the first generation, since they are U.S. citizens from birth and are more likely to have the necessary work experience. However, it is unclear whether

they retain social links to immigrants from their parents' countries of origin. In columns 2 and 3 of Table 8, we repeat equation 1 on a sample of those who were born in the U.S. but whose parents were not born in the U.S. Here we use the father's (in column 2) or mother's (in column 3) country of birth as country o in equation 1. In these regressions, we exclude controls for years in the U.S. In both columns, we find a weakly significant positive interaction effect that is around twice as large as for the first-generation sample (repeated in column 1 of Table 8). However, average SSDI take-up among the second generation is also around double that for the first generation. Taken together, these results suggest that ethnic network effects in SSDI take-up are quite persistent.

[Table 8 here]

6. Conclusion

In December 2022 disability benefits were paid to about 8.9 million people and payments to disabled beneficiaries totaled almost \$12.6 billion (Social Security Administration 2022). In this paper, we find that immigrants from groups with high SSDI take-up rates are especially likely to receive SSDI in response to increases in the unemployment rate. This result persists across immigrant generations and does not appear to be driven by differences across ethnic groups in terms of eligibility for the program or sensitivity to business cycles. Instead, our findings are explained by variation in take up among those with mid-range subjective health. We view these results as evidence that SSDI take-up decisions exert spillovers within social networks. Those with marginal disabilities are more likely to move onto disability when jobs are scarce if they belong to groups with high existing rates of SSDI receipt. This suggests that those individuals who withdraw from the labor market even temporarily might result in deterioration of their human capital depreciation, thus making more difficult for people to find a job when the economy improves (Autor et al. 2017). If those individuals withdraw from the labor market completely, then this could have persistent effects on employment after the economy is recovered.

Policy implications, however, depend on whether low SSDI take-up ethnic groups have inefficiently low levels or, alternatively, high take-up groups have inefficiently high levels. In other words, from a social welfare perspective, would it be better to increase participation rates among Saudi Arabian immigrants (and other low take-up groups) or to decrease participation rates among Cape Verdean immigrants (and other high take-up groups)? It is possible that some of those induced into SSDI participation after a job loss are genuinely only able to work for specific employers who can accommodate their disabilities. Many of these individuals in low take-up groups might not apply for SSDI benefits because they do not have access to information about how to navigate the very long and complicated application process, instead remaining unemployed and experiencing unnecessary poverty. If these applicants were driving most of our results, then a policy implication would be to provide more assistance with the application process—perhaps especially to those unable to acquire information within their social networks.

On the other hand, if many of the applicants induced into SSDI as a result of a job loss can indeed work, then a policy implication may be to improve SSDI screening. Redirecting them to the unemployment insurance system, with an accompanying reallocation of funding, might limit spillovers within social networks before they can begin. If it is too difficult to screen out applicants without denying benefits to those who are genuinely disabled, another policy might involve restructuring the SSDI system to incentivize returns to the labor force when jobs are relatively plentiful. Although spillovers might still drive entrants into the system during recessions under this approach, this effect might be at least partially offset during expansions. Unfortunately, previous attempts of the SSDI to incentivize work among recipients have not had tremendous success (Thorton et al. 2007).

Declarations

Conflict of interest The authors declare no competing interests

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Tables and Figures

Table 1. Summary Statistics for the ACS Sample (2001-2016)

	Mean	Standard deviation	Minimum	Maximum
Disability Insurance Receipt (SSDI)	0.014	0.119	0	1
Average origin group SSDI in 2000	0.016	0.006	0	0.043
Lagged unemployment in state-year cells	0.067	0.022	0.023	0.137
Age	42.018	9.794	25	61
Male	0.505	0.500	0	1
Hispanic	0.509	0.500	0	1
White non-Hispanic	0.161	0.367	0	1
Black non-Hispanic	0.073	0.261	0	1
Asian non-Hispanic	0.256	0.436	0	1
Other race, non-Hispanic	0.015	0.121	0	1
Children	0.641	0.480	0	1
Married (spouse-present)	0.647	0.478	0	1
Less than high school	0.272	0.445	0	1
High school	0.263	0.440	0	1
Some college	0.196	0.397	0	1
College degree or more	0.269	0.444	0	1
Cognitive difficulty	0.020	0.139	0	1
Ambulatory difficulty	0.033	0.179	0	1
Independent living difficulty	0.020	0.141	0	1
Self-care difficulty	0.010	0.101	0	1
Hearing/vision difficulty	0.020	0.141	0	1
Years in the U.S.	20.093	10.727	5	62
Observations		2,537,827		

Notes. Our sample consists of non-widowed, non-institutionalized immigrants, aged 25-61, who have lived in the United States for at least five years. Only naturalized citizens and non-citizens are included meaning that Puerto Ricans and people from other U.S. territories as well as individuals born abroad of American parents are dropped from the sample. We also exclude individuals whose countries of origin are not clearly specified in the data. SSDI is a dummy variable that equals one if the person receives Social Security income. The variable, average origin group in 2000, is constructed using the 5% sample of the 2000 U.S. Census. The lagged unemployment variable is obtained from BLS's (Bureau of Labor Statistics) Local Area Unemployment Statistics program (<https://www.bls.gov/lau/>). Estimates are weighted using the appropriate person-level weights provided by the ACS.

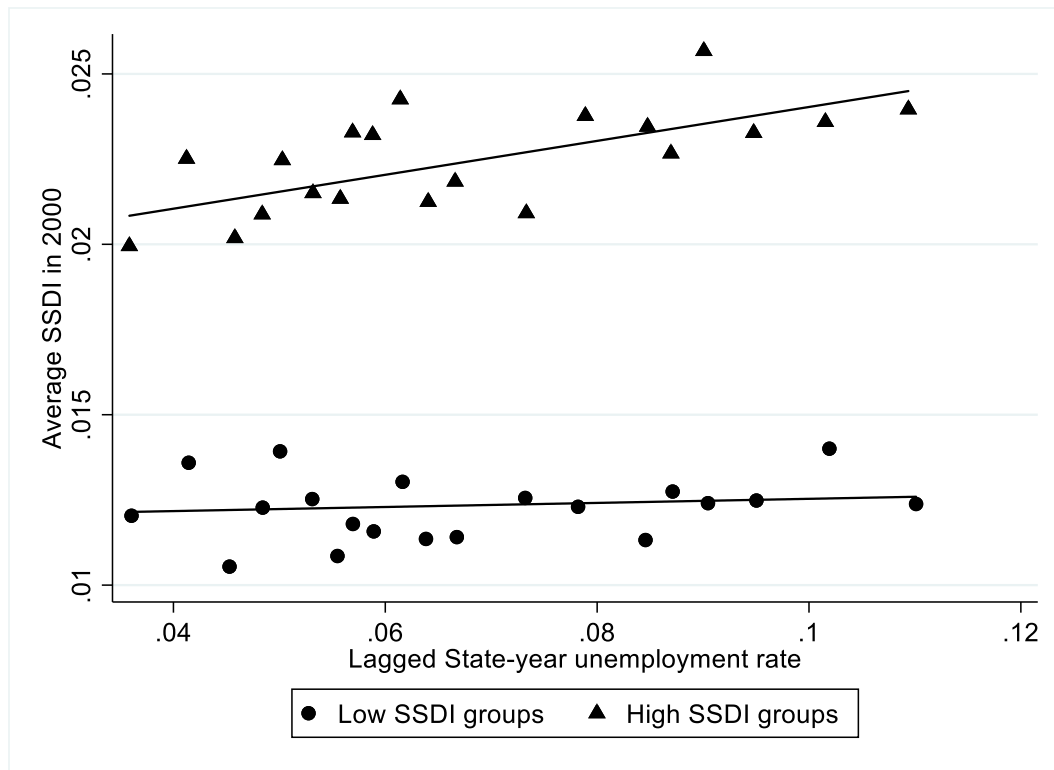


Figure 1. State-Year Unemployment Rate and Average SSDI Receipt in 2000

Notes. Average SSDI in 2000 is constructed using the 5% sample of the 2000 U.S. Census. Lagged unemployment is obtained from BLS's (Bureau of Labor Statistics) Local Area Unemployment Statistics program (<https://www.bls.gov/lau/>). To create the figure, we first regress both SSDI and lagged unemployment rate on a full set of state of residence fixed effects. We then group the residual lagged unemployment rate from this regression into twenty equal sized bins (triangles or dots) and plot the residual unemployment rate against the corresponding residual SSDI receipt in each bin.

Table 2. Business Cycles and SSDI Benefit Receipt (ACS 2001-2016)

	(1)	(2)	(3)
Average origin group SSDI in 2000 × Lagged unemployment in state-year cells		2.5061*	2.4367*
		(1.087)	(0.974)
Lagged unemployment in state-year cells	0.0189**	-0.0718**	
	(0.007)	(0.023)	
Average origin group SSDI in 2000		0.2119**	
		(0.077)	
Male	0.0000	0.0001	0.0001
	(0.000)	(0.000)	(0.000)
Hispanic	0.0003	-0.0036**	0.0001
	(0.001)	(0.001)	(0.001)
White	-0.0003	-0.0010	-0.0005
	(0.001)	(0.001)	(0.001)
Black	0.0006	-0.0015	0.0005
	(0.001)	(0.001)	(0.001)
Asian	-0.0031**	-0.0005	-0.0031**
	(0.001)	(0.001)	(0.001)
Child	-0.0011**	-0.0010**	-0.0011**
	(0.000)	(0.000)	(0.000)
Married (Spouse present)	-0.0052**	-0.0051**	-0.0052**
	(0.000)	(0.000)	(0.000)
High school degree	-0.0029**	-0.0026**	-0.0029**
	(0.000)	(0.000)	(0.000)
Some college	-0.0057**	-0.0052**	-0.0057**
	(0.000)	(0.000)	(0.000)
College degree or more	-0.0085**	-0.0076**	-0.0085**
	(0.000)	(0.000)	(0.000)
Cognitive difficulty	0.0650**	0.0650**	0.0648**
	(0.003)	(0.003)	(0.003)
Ambulatory difficulty	0.0803**	0.0806**	0.0804**
	(0.002)	(0.002)	(0.002)
Independent living difficulty	0.0655**	0.0659**	0.0658**
	(0.005)	(0.003)	(0.003)
Self-care difficulty	0.0490**	0.0488**	0.0488**
	(0.004)	(0.004)	(0.004)
Hearing/vision difficulty	0.0143**	0.0142**	0.0142**
	(0.002)	(0.002)	(0.002)
Age fixed effects	Yes	Yes	Yes
Years in the U.S. fixed effects	Yes	Yes	Yes
Country of origin fixed effects	Yes	No	Yes
Year fixed effects	No	Yes	No
State fixed effects	No	Yes	No
Year-state fixed effects	No	No	Yes
Observations	2,537,827	2,537,827	2,537,827
Adjusted R-squared	0.076	0.076	0.076
Dependent variable (mean)	0.0144	0.0144	0.0144

Notes. See Table 1 for information on sample restrictions. Coefficients are estimated using linear probability models. In column 1, we cluster the standard errors by state-year cells and in columns 2 and 3, we cluster the standard errors by state, year, and country of origin cells. Estimates are weighted using the appropriate person-level weights provided by the ACS. Levels of significance: ** p<0.01, * p<0.05, + p<0.1.

Table 3. Additional Specifications (ACS 2001-2016)

Sample:	Checks for Robustness					Placebo Tests	
	Working Age Individuals					Workers	Individuals Age 62 and Above
Outcome variable:	SSDI					Log (Wages)	Receipt of Social Security Retirement Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Average origin group SSDI in 2000 × Lagged unemployment in state-year cells	3.0951* (1.271)					-10.7085 (7.401)	-6.925 (5.230)
Average origin group SSDI in 2000 × ACS Lagged unemployment in state-year cells		2.3627* (1.035)					
Average origin group SSDI in 2000 × ACS Lagged unemployment in state-year-country of birth cells			0.3456* (0.154)				
Average origin group SSDI in 2000 × ACS Lagged unemployment in state-year-education cells				4.0693** (0.425)			
Average origin group SSDI in 2000 × ACS Lagged unemployment in state-year-occupation cells					2.9592** (0.048)		
Additional interactions (with average schooling, age, years in the U.S.)	Yes	No	No	No	No	No	No
Observations	2,537,827	2,537,827	2,516,244	2,516,244	2,516,244	1,276,014	621,603
Adjusted R-squared	0.076	0.076	0.076	0.077	0.092	0.382	0.215
Dependent variable (mean)	0.0144	0.0144	0.0144	0.0144	0.0144	2.932	0.744

Notes. See Table 1 for information on sample restrictions and Table 2 (column 3) for information on the control variables and fixed effects included. In column 1, interactions between the state-year unemployment rate and average years of schooling, average age, and average number of years in the United States are included in the model. Column 2 replicates column 3 of Table 2 but replaces the BLS state-year unemployment rate with the state-year unemployment rate constructed using ACS data. Columns 3-5 are estimated on a smaller number of observations because lagged unemployment rates were not available for some people in narrowly defined cells. For ease of comparison, in columns 3 to 5 we restrict the sample to individuals with non-missing information on all three measures of the unemployment rate. Survey respondents who have not worked within the past five years do not list an occupation in the ACS. We assigned all individuals without a listed occupation the average unemployment rate for people from their country of origin living in their state in the same year. We also added a dummy variable to the specification to control for whether the person's state-year-occupation unemployment rate was imputed in this manner. In column 6, we restrict the sample to workers who worked in the past 12 months. In column 7, we restrict the sample to individuals old enough to receive retirement benefits. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. We cluster the standard errors by state, year, and country of origin cells. Levels of significance: ** p<0.01, * p<0.05, + p<0.1.

Table 4. Immigrants' Connection to Their Ethnic Communities (ACS 2001-2016)

Dependent variable: SSDI receipt	Sample: Fluent in English	Sample: Not fluent in English	Sample: Share same country of origin in state below median	Sample: Share same country of origin in state above median
	(1)	(2)	(3)	(4)
Average origin group SSDI in 2000 × Lagged unemployment in state-year cells	0.9515 (1.143)	4.1314* (1.676)	1.3354 (1.197)	5.0901** (1.676)
Observations	1,268,502	1,269,325	1,308,915	1,228,912
Adjusted R-squared	0.086	0.073	0.075	0.079
Dependent variable (mean)	0.0126	0.0161	0.0144	0.0144

Notes. See Table 1 for information on sample restrictions and Table 2 (column 3) for information on the control variables and fixed effects included. Column 1 is restricted to individuals who speak only English or speak English very well. Column 2 is restricted to individuals who speak English well, speak English but not well, or do not speak English. Column 3 is restricted to individuals who live in states where the share from the same country of origin is below the median (below 0.008) and column 4 to those individual living in states where the share from the same country of origin is above the median (above 0.008). Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. We cluster the standard errors by state, year, and country of origin cells. Levels of significance: ** p<0.01, * p<0.05, + p<0.1.

Table 5. Heterogeneity by Completed Schooling (ACS 2001-2016)

Dependent variable: SSDI	(1)	(2)
	Less than college degree	College degree or more
Average SSDI receipt in origin country × Lagged unemployment in state-year cells	2.3922+ (1.384)	0.7937 (1.096)
Observations	1,771,156	766,671
Adjusted R-squared	0.081	0.053
Dependent variable (mean)	0.0169	0.0077

Notes. See Table 1 for information on sample restrictions and Table 2 (column 3) for information on the control variables and fixed effects included. Coefficients are estimated using linear probability models. For reasons of brevity, we only present estimates for the interaction variable. Estimates are weighted using the appropriate person-level weights provided by the ACS. We cluster the standard errors by state, year, and country of origin cells. Levels of significance: ** p<0.01, * p<0.05, + p<0.1.

Table 6. Heterogeneity by Gender and Region

Dependent variable: SSDI	Gender		Region			
	(1) Males	(2) Females	(3) North East	(4) Mid - west	(5) South	(6) West
Average SSDI receipt in origin country × Lagged unemployment in state-year cells	3.3834** (1.255)	1.3277 (1.293)	2.3715 (2.068)	4.2313 (2.868)	4.2053** (1.566)	0.6939 (1.745)
Observations	1,229,487	1,308,340	515,389	241,260	779,953	1,001,225
Adjusted R-squared	0.089	0.066	0.081	0.082	0.079	0.072
Dependent variable (mean)	0.0139	0.0149	0.0165	0.0142	0.0138	0.0138

Notes. See Table 1 for information on sample restrictions and Table 2 (column 3) for information on the control variables and fixed effects included. Coefficients are estimated using linear probability models. For reasons of brevity, we only present estimates for the interaction variable. Other controls include those shown in column 3 of Table 2. Estimates are weighted using the appropriate person-level weights provided by the ACS. We cluster the standard errors by state, year, and country of origin cells. Levels of significance: ** p<0.01, * p<0.05, + p<0.1.

Table 7. Business Cycles and SSDI Benefit Receipt in the CPS Sample by Health Status (2001-2019)

Dependent variable: SSDI receipt	Sample: All health levels (1)	Sample: Health excellent (2)	Sample: Health very good (3)	Sample: Health good (4)	Sample: Health fair (5)	Sample: Health poor (6)
Average origin group SSDI in 2000× Lagged unemployment in state- year cells	6.4652+ (3.7257)	0.3845 (3.7927)	2.3685 (3.4011)	21.343** (8.1098)	13.0467 (25.5192)	-58.2136 (72.4007)
Observations	129,209	33,859	42,853	39,512	9,846	2,698
Adjusted R-squared	0.057	0.028	0.011	0.055	0.062	0.079
Dependent variable (mean)	0.0108	0.0018	0.0030	0.0085	0.0488	0.1268

Notes: See Table 1 for information on sample restrictions and Table 2 (column 3) for information on the control variables and fixed effects included. To avoid including households twice, only observations from the first four months a household is in the CPS sample are included. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the CPS. We cluster the standard errors by state, year, and country of origin cells. Levels of significance: ** p<0.01, * p<0.05, + p<0.1.

Table 8. Business Cycles and SSDI Benefit Receipt in the CPS Sample by Immigrant Generation (2001-2019)

Dependent variable: SSDI receipt	First generation sample (1)	Second generation sample (2)	Second generation sample (3)
Average origin group SSDI in 2000× Lagged unemployment in state-year cells	6.4652+ (3.7257)		
Father's origin group SSDI in 2000× Lagged unemployment in state-year cells		14.9780* (6.5672)	
Mother's origin group SSDI in 2000× Lagged unemployment in state-year cells			11.9631+ (6.6651)
Age fixed effects	Yes	Yes	Yes
Years in the U.S. fixed effects	Yes	Yes	Yes
Country of origin fixed effects	Yes	No	No
Father's country of origin fixed effects	No	Yes	No
Mother's country of origin fixed effects	No	No	Yes
Year-state fixed effects	Yes	Yes	Yes
Health status fixed effects	Yes	Yes	Yes
Observations	129,209	38,357	39,336
Adjusted R-squared	0.057	0.119	0.110
Dependent variable (mean)	0.0108	0.0198	0.0177

Notes: See Table 1 for information on sample restrictions and Table 2 (column 3) for information on the control variables included. To avoid including households twice, only observations from the first four months a household is in the CPS sample are included. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the CPS. We cluster the standard errors by state, year, and country of origin cells. Levels of significance: ** p<0.01, * p<0.05, + p<0.1.

Table A1. SSDI Receipt by Country of Origin Ranked from Highest to Lowest (5% Sample Census 2000)

Country	Average origin group SSDI in 2000	Observations
Cape Verde	0.043	676
Albania	0.040	380
Yemen Arab Republic (North)	0.038	386
Croatia	0.037	889
Portugal	0.036	6938
Italy	0.035	10340
Hungary	0.032	1710
Yugoslavia	0.030	1907
Paraguay	0.030	263
Cuba	0.029	20965
Greece	0.028	4406
Dominican Republic	0.028	17880
Kosovo	0.028	104
Senegal	0.027	225
Macedonia	0.025	500
Dominica	0.025	426
Byelorussia	0.024	603
Uruguay	0.023	703
Afghanistan	0.023	1160
Jordan	0.023	1390
Barbados	0.023	1455
Republic of Georgia	0.023	147
Panama	0.022	2828
Iraq	0.022	2037
Lithuania	0.022	348
Germany	0.022	16145
Poland	0.022	10272
Bahamas	0.022	639
Eritrea	0.022	440
Spain	0.021	2010
Haiti	0.021	11264
Antigua-Barbuda	0.021	541
Cambodia (Kampuchea)	0.020	4408
Laos	0.020	6137
Nicaragua	0.019	6219
Turkey	0.019	1787
Slovakia	0.019	299
Fiji	0.019	780
Colombia	0.018	12174
Trinidad and Tobago	0.018	5287
Ecuador	0.018	7571
Romania	0.018	2620
Jamaica	0.018	14603
Costa Rica	0.018	1742
Czech Republic	0.018	1067
St. Vincent	0.017	546
Ukraine	0.017	3972
France	0.017	3131
Mexico	0.017	238305
Armenia	0.017	1517
Belize/British Honduras	0.017	1115
Honduras	0.016	6662
Brazil	0.016	4051
Ireland	0.016	3587
Bermuda	0.016	223
Peru	0.016	7254

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Country	Average origin group SSDI in 2000	Observations
Canada	0.016	18028
Serbia	0.015	195
Argentina	0.015	3052
Somalia	0.015	288
Ghana	0.015	1479
Thailand	0.015	3445
Australia	0.015	1336
Latvia	0.015	405
Moldavia	0.015	302
Israel/Palestine	0.015	3143
United Kingdom	0.015	12963
Grenada	0.014	738
Lebanon	0.014	3172
Austria	0.014	1163
Finland	0.014	460
Egypt/United Arab Rep.	0.014	2866
Tonga	0.014	528
Guatemala	0.013	12707
Norway	0.013	586
Sierra Leone	0.013	480
Japan	0.013	6810
Philippines	0.013	39554
Iran	0.013	8495
Netherlands	0.013	2228
El Salvador	0.012	24318
Denmark	0.012	655
Switzerland	0.012	881
Zimbabwe	0.012	241
Uzbekistan	0.012	361
Sudan	0.012	253
Syria	0.012	1438
Vietnam	0.012	29876
Belgium	0.012	656
China	0.012	22391
Ethiopia	0.012	1546
Uganda	0.011	319
Nigeria	0.011	3172
Indonesia	0.011	1482
South Africa (Union of)	0.011	1456
Venezuela	0.011	2112
Guyana/British Guiana	0.011	5656
Bosnia	0.011	602
South Korea	0.010	21847
Liberia	0.010	787
Cameroon	0.010	237
Bangladesh	0.010	1901
Bolivia	0.009	1280
Kenya	0.009	812
Burma (Myanmar)	0.009	921
Singapore	0.009	462
Algeria	0.009	247
Malaysia	0.009	1212
Chile	0.009	2048
Morocco	0.008	797
India	0.008	24606
Cyprus	0.008	299

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Country	Average origin group SSDI in 2000	Observations	
Hong Kong	0.007	6273	
New Zealand	0.007	610	
Nepal	0.007	194	
Sweden	0.006	1039	
Bulgaria	0.006	506	
Sri Lanka (Ceylon)	0.006	679	
St. Lucia	0.006	345	
St. Kitts-Nevis	0.006	328	
Azerbaijan	0.005	223	
Pakistan	0.005	5415	
Taiwan	0.005	9825	
Kuwait	0.004	416	
Tanzania	0.001	282	
Saudi Arabia	0.000	185	

Notes. 5% sample of the 2000 U.S. Census.