Who Goes on Disability when Times are Tough? The Role of Work Norms among Immigrants*

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Abstract

We consider how work norms affect the likelihood of people receiving Social Security Disability Insurance (SSDI) in response to worsening economic conditions. By focusing on immigrants in the US, we can examine the influence of work norms in a person's home country, which we argue are exogenous to labor market prospects in the US. We find that the probability of receiving SSDI benefits is more sensitive to economic downturns among immigrants from countries where people place less importance on work. We also provide evidence that this result is not driven by differential labor market sensitivities to the business cycle or differences in other characteristics that might be correlated with norms.

Keywords: Disability Insurance, Social Norms, Unemployment Rates, Immigrants

JEL Classification: H55, J61, I18, J15

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1 Introduction

The recent global economic shutdown as a result of the COVID-19 pandemic left millions of unemployed Americans competing for scarce jobs. Evidence from previous recessions suggests that many of them are likely to have responded to job loss by leaving the labor force altogether and applying for disability payments (e.g. Maestas, Mullen and Strand 2021). As policymakers consider potential changes to how disability payment awards are made in response to sudden economic downturns, as was the case at the start of the COVID-19 pandemic, it is important to consider the drivers of the decision to apply for disability among the pool of potential applicants who are physically able to work, perhaps despite hardship. This paper exploits variation from past recessions to help understand the role of one particular potential determinant of Social Security Disability Insurance (SSDI) take-up decisions: perceptions about people's responsibility to work to the extent that they can.

Previous studies have documented the significant role that social norms regarding work play in determining length of unemployment spells (Eugster, Lalive, Steinhauer and Zweimüller 2017; Stutzer and Lalive 2004). A large literature showing that unemployed people express more life satisfaction, relative to the employed, in countries with weaker work norms (e.g. Stam, Sieben, Verbakel and De Graaf 2016; Roex and Rözer 2018) provides some evidence that these relationships are driven by job search behaviors as opposed to labor demand conditions. However, because work norms are likely to weaken in response to worse labor market conditions (Clark 2003) or more generous welfare payments (Lindbeck, Nyberg and Weibull 2003), estimating causal impacts of work norms is difficult.

We contribute to the literature on work norms in two key ways. First, we consider a new outcome: the likelihood of receiving disability insurance benefits, focusing on recession-induced take-up. SSDI applications and awards tend to increase during economic downturns and then fall shortly after the unemployment rate peaks (Maestas, Mullen and Strand 2015;

Maestas et al. 2021; Mueller, Rothstein and von Wachter 2016). Assuming that the timing of onset of work-preventing disabilities is relatively random, this suggests that there are individuals who, despite knowing that their level of disability might qualify for SSDI, only find it worthwhile to apply when their opportunities in the labor market are sufficiently poor. By considering what determines whether one goes on disability in response to an increase in the unemployment rate, we can identify the drivers of receipt among these so-called "conditional" applicants, even without being able to identify whether a particular person in our dataset is eligible for SSDI.[1]

Second, we address endogeneity concerns by focusing on immigrants' responses to labor market conditions. When they emigrate, immigrants bring with them their cultural background and so their behavior in the US is likely to be influenced by the norms of the places from which they have come. These work norms are unlikely to be affected by US labor market and safety net policies, so we can be confident that any effect they have on SSDI receipt is not driven by reverse causality. Moreover, by focusing on how SSDI participation responds to changes in the unemployment rate, we are able to include country of origin fixed effects in our specifications to account for time-invariant country of origin specific tendencies to become disabled.

We start our analysis with a simple conceptual model describing the potential relationships between work norms and the decision to apply for SSDI. Even the strongest work norms cannot keep in the labor force those who are so disabled that they are incapable of working. However, for someone who is at the margin, work norms may play a pivotal role in the decision to apply for SSDI. Our framework predicts that weaker work norms and higher unemployment rates both increase SSDI take-up. More interestingly, our model

[1] Identifying conditional applicants does not simply require information on a person's level of disability. Two people with the exact same level of disability may make different decisions regarding SSDI take-up as a result of, for example, differences in preferences for work despite severe physical pain or differences in access to employers willing to accommodate their disabilities.

demonstrates that under reasonable assumptions, an increase in people's perceptions of the importance of work results in weaker responses to a given increase in the unemployment rate – a theoretical implication we test with the data.

To measure work norms, we gather information from the Integrated Values Survey (IVS) on responses to a question on whether people have a duty to work. We then use data on immigrants from the American Community Survey (ACS) for the years 2001-2016, merged with origin country data on work norms from the IVS and unemployment rate data from the Bureau of Labor Statistics, to examine whether, controlling for country of origin fixed effects, state-year fixed effects, and other individual characteristics, the probability of immigrants receiving SSDI in response to changes in economic conditions is affected by the strength of work norms in their home countries.

We show that immigrants from countries where less emphasis is placed on a duty to work are more likely to go on disability in response to increases in unemployment rates than immigrants from countries where survey respondents tend to agree that people have a duty to work. This is a particularly important finding because once people enter SSDI they rarely rejoin the labor force, even after the economy recovers. This creates efficiency losses for the economy as a whole and income losses for individuals who might have done better in the long term by remaining in the labor market (Maestas et al. 2021). Interestingly, we show that when comparing the role of values regarding the importance of work to values related to taking up government benefits, work norms play the crucial role.

While our baseline findings are consistent with our theoretical model, there are other potential interpretations of our results. We conduct several additional analyses to show that our results are not driven by immigrants from countries with weak norms having worse labor market outcomes because of the types of jobs they have or any other home country characteristics that are correlated with norms. We also show that our results are also robust to

the use of alternative measures of work norms. Tests for heterogeneity provide suggestive evidence that groups that are likely to be most affected by ethnicity-specific work norms, according to the existing literature, are indeed more sensitive to these norms. Finally, we use data from the Current Population Survey (CPS) to show that our findings are robust to controlling for subjective health as well as the use of better measures of SSDI take-up. Finally, we show that SSDI participation is especially sensitive to the unemployment rate among native-born children of immigrants whose fathers (but not mothers) are from countries with weak norms.

The remainder of the paper proceeds as follows. Section 2 provides some background on the Social Security Disability Insurance program and discusses how our analysis contributes to the existing literatures on SSDI take-up and work norms. Section 3 outlines our theoretical framework, and Section 4 presents our data sources. Section 5 outlines our empirical strategy and then presents our main results as well as several robustness checks and tests for heterogeneity. Section 6 presents results from a complementary data source. Section 7 concludes.

2 Background

2.1 The Social Security Disability Insurance Program

Social Security Disability Insurance is a federal program in the US designed to provide income to people who are unable to work as a result of a physical or mental disability. To be eligible, an applicant must satisfy work history requirements ("technical requirements") and provide sufficient evidence of disability ("medical requirements"). In terms of work history, applicants must generally satisfy a "recent work" test, which for most people translates to working five of the past ten years, as well as a "duration of work" test, which generally implies working about a quarter of the years since the applicant turned 21. Documented

immigrants, regardless of whether they are citizens, qualify for SSDI as long as they have the necessary work experience in formal sector jobs.[2] Undocumented immigrants do not qualify for the program.

While local offices confirm that applicants satisfy the technical requirements and collect the medical evidence provided by medical doctors, the medical evidence is examined at Disability Determination Offices. Examiners first evaluate whether the impairment is severe and whether it is expected to last more than a year (or likely to end in death before that), but even if they determine it is, the claim will not be allowed if the claimant is able to perform his or her past work or any work in the US economy. In general, only about a third of applicants are awarded benefits at the first determination (Maestas, Mullen, and Strand 2013). Denied applicants can and often do appeal initial decisions.[3]

2.2 Economic Conditions and SSDI Applications

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

In terms of the impact of recessions on SSDI, Duggan and Imberman (2009) find that

[2] In contrast, non-citizens generally do not qualify for Supplementary Security Income (SSI), the other major income-support program for people with disabilities, even if they are legal permanent residents.
[3] For further details about the work history requirements, see the Social Security Administration website at https://www.ssa.gov/planners/credits.html. For more information regarding the disability determination process and the system of appeals when initial claims are denied, see Furtado, Papps, and Theodoropoulos (2021).

nearly 25 percent of the increase in male SSDI participation in the late 20th century was due to recessions. While this cyclicality decreased at the start of 21st century (von Wachter 2010), there were rather large increases in SSDI awards during and shortly after the Great Recession (Maestas et al. 2021, Mueller et al. 2016). Surely, there are some people who are so disabled that they choose SSDI regardless of economic conditions and others who are insufficiently disabled to ever do so. However, the cyclicality of SSDI receipt suggests that, there is a subset of the population that only takes up disability if their labor market prospects are sufficiently poor.[4] While we know from prior research that these applicants tend to have less severe disabilities,[5] little is known about the factors driving the application decisions of this population. We contribute to this literature by examining whether people with different work norms and values react differently to business cycle fluctuations in terms of receipt decisions.

2.3 Work Norms

A social norm is a "behavioral regularity that is based on a socially shared belief of how one ought to behave" (Fehr and Gächter 2000). Work norms can be thought of as a set of expectations that able-bodied individuals should support themselves through work. These beliefs about what constitutes appropriate behavior are often transmitted from parents to children (Lindbeck and Nyberg 2006; Corneo 2013), but norms are also enforced within social circles. Deviating from the social norm to work can result in internal sanctions in the form of guilt as well as external sanctions in the form of shame and social exclusion (Lindbeck and Nyberg 2006; Roex and Rözer 2018).

Several studies have shown that the subjective well-being of the unemployed is lower in countries with strong work norms, presumably because of stigma connected to

[4] To borrow terminology from the treatment effects literature, those who only apply for SSDI if they cannot find an adequate job are the "compliers", in contrast to the "always takers" or "never takers".
[5] During the Great Recession, applications were more likely to be denied initially (Maestas et al. 2015) but then awarded on appeal (Maestas et al. 2021). Moreover, significantly fewer of the recession-induced awardees had impairments that were severe enough to automatically qualify for SSDI (Maestas et al. 2021).

unemployment (Stam et al. 2016; Stavrova, Schlösser and Fetchenhauer 2011). Even conditional on own work ethic, the unemployed living in countries with stronger work norms report lower levels of well-being, relative to the employed, compared to those in countries with weaker work norms (Roex and Rözer 2018).

Self-imposed guilt from failing to live up to society's standards as well as social sanctions and shame can lead to changes in labor market outcomes. Using two different measures of work norms, Stutzer and Lalive (2004) and Eugster et al. (2017) both present evidence that jobseekers with weak work norms spend relatively more time out of work. Bertrand, Luttmer and Mullainathan (2000) find 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. While they are not able to rule out information sharing as potential mechanism, they note that stigma associated with welfare participation might be lower within high welfare participation groups.

We might conclude from this literature that work norms impact work decisions, but there is also literature suggesting that work decisions impact norms. Using data on self-reported wellbeing from several different countries, Clark (2003) shows that the unemployed are happier when they are living in countries with higher unemployment rates. This is important given Lindbeck, Nyberg, and Weibull's (1999, 2003) theoretical models showing that if work norms decrease as more people deviate from these norms, then even temporary increases in the unemployment rate (or generosity of a welfare program) can result in permanent increases in the number of welfare beneficiaries. A particularly deep recession could thus lead to an eventual collapse of the welfare state (Lindbeck et al. 1999).

2.4 The Epidemiological Approach

The theoretical work on the importance of work norms is compelling, and there are certainly several empirical papers pointing to a relationship between work norms and labor market outcomes. However, it is difficult to interpret these as causal impacts given the theoretical and empirical evidence that work outcomes affect work norms. To address this issue, we follow the epidemiological approach by linking behaviors of immigrants in the US to norms in their home countries (see Fernández 2011 for a review of the epidemiological approach to uncovering the role of norms).

The idea behind this approach is that immigrants are not subject to the labor markets and institutions of their home countries but bring with them the norms and culture from their home countries. Blau, Kahn, and Papps (2011) and Fernández and Fogli (2009) show that higher country of origin fertility and female labor force participation rates are associated with higher employment and fertility rates among first-generation and second-generation immigrants in the US, respectively. Using similar approaches, other researchers have uncovered a role of culture in determining divorce decisions (Furtado, Marcén and Sevilla 2013), living arrangements (Giuliano 2007), participation in the stock market (Osili and Paulson 2008), and the decision to take out a large mortgage (Rodrígues-Planas 2018).

2.5 Immigrants and SSDI Receipt

Furtado and Theodoropoulos (2016) use an approach similar to that of Bertrand et al. (2000) and show that immigrants residing amidst a large number of co-ethnics are especially likely to receive disability payments when their ethnic groups have higher receipt rates suggesting that network effects play a role in SSDI receipt. 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 due to a disability, conditional on applying, they are in fact less likely to be awarded benefits (Furtado and Theodoropoulos 2013). This

suggests that high receipt rate ethnic networks induce people with marginal disabilities to apply for benefits, but applications of people with marginal disabilities are often denied. Consistent with this general idea, Borjas and Slusky (2018) 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.

The question we ask in this paper is what determines which immigrants go on disability when hit with an economic shock and which continue working (or searching for work) despite having a disability that would qualify for benefits. We answer this question by linking the literatures on the role of norms and culture with the literature on the cyclicality 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 work norms affect recession-induced SSDI benefit receipt, we are able to identify the effect of these norms specifically on individuals who would most likely prefer to and are able to work despite having a disability severe enough to be awarded benefits.

3 Theoretical Background

While the SSDI program is intended only for people who are unable to work due to a disability, because disability is very difficult to observe and costly to verify, a major determinant of who ends up on disability is who decides to apply for benefits (Deshpande and Li 2019). In this section, we lay out a framework for thinking about how individuals make decisions about whether to apply for SSDI, focusing on how work norms might impact the way a change in the unemployment rate translates into take-up rates, through their effect on

the costs of participation.

We assume that an individual who qualifies for the program (i.e. who is legally in the US with the necessary work experience and some documentable disability) applies if the expected benefits of participation exceed the costs of participation. We can conceptualize the benefits of participation as the net utility a person would obtain from leaving the labor force but receiving monthly SSDI payments. We can think about these benefits as equal to the difference between the monthly income benefits provided by SSDI, D, and the expected income from working. We let the expected income from working be equal to the person's wage income, w, weighted by the expected probability of having a job. We assume that this expected probability of having a job is equal to 1 minus the unemployment rate, U. Thus, benefits can be written, D-(1-U)w.

It is also reasonable to assume that the wage a person can receive in the labor market is a decreasing function of the person's disability severity, S. This can be because the disability makes the person less productive while on the job. For simplicity, we assume that S is uniformly distributed and varies between 0 and 1, taking the value 0 for those who are not at all disabled and 1 for those who are completely disabled.[6] We also assume that wage income is a linear function of disability severity, $w = a - bS$ and that both a and b are positive. In order to ensure that wage income is never negative, we assume that a is greater than b. Benefits from SSDI receipt can thus be written as,

$$Benefits = D\text{-}(1\text{-}U)w = D\text{-}(1\text{-}U)(a\text{-}bS)$$

Note that because $a > b$, the benefits of SSDI receipt will always increase when the unemployment rate increases.

We assume that the financial costs of applying for SSDI are the same for everyone. However, the psychological costs of receipt will be higher for people with strong work norms.

[6] Allowing S to have a more realistic distribution does not change the basic predictions of the theory, as shown in the appendix.

People who believe that working is a moral imperative will pay a higher non-pecuniary cost to leaving the labor force to receive benefits, both because they have a stronger individual preference for working and because of the social stigma involved in such a decision. Total (i.e. the financial plus psychological) costs are assumed to be equal to *C*. To make the problem interesting, we assume without loss of generality that $C < D$ since if $C > D$, then even someone with zero wages would not apply for SSDI.

If the benefits of SSDI participation are increasing in disability severity and the costs are constant, then there exists a disability severity, *S**, such that people with a disability level lower than *S** choose not to apply for benefits and people with more severe disabilities do apply.[7] In our model, *S** can be written,

$$S^* = \frac{a(1-U)-(D-C)}{b(1-U)} \qquad (1)$$

Given the assumption of a uniform distribution for *S*, the probability of choosing SSDI is then equal to:

$$P(S > S^*) = 1 - \frac{a(1-U)-(D-C)}{b(1-U)}$$

and so we can derive the following comparative statics:

$$\frac{\partial P(S > S^*)}{\partial U} = \frac{D-C}{b(1-U)^2} \qquad (2)$$

$$\frac{\partial P(S > S^*)}{\partial C} = -\frac{1}{b(1-U)} \qquad (3)$$

[7] We assume that costs are not a function of disability severity for simplicity. It is certainly possible, however, that applying for SSDI (and asking doctors to fill out paperwork documenting the disability) comes at higher costs for people with less severe disabilities given the knowledge that the SSDI program is meant for people who are unable to work. Moreover, paying expensive lawyers is likely to be more important for people with relatively minor disabilities. Making costs a decreasing function of severity would complicate our model slightly but would not change the model's predictions. A more problematic issue, however, would occur if application costs are increasing in disability, as would be the case if people with more severe disabilities find it especially difficult to fill out an application (see Deshpande and Li 2019). It seems unlikely that stronger work norms would make it more difficult to fill out an application. Moreover, even if they did, we would still be able to solve for *S** as long as disability severity has a larger impact on the benefits of SSDI than on the costs of application, an assumption we believe to be very reasonable. In any of these cases, the basic intuition provided in this section remains relevant.

Because we assume $C < D$, equation (2) implies that an increase in the unemployment rate will result in an increase in the probability of a person claiming SSDI. This prediction is consistent with the empirical findings of Maestas et al. (2015) who show that, during the Great Recession, SSDI applicants tended to have less severe disabilities. As can be seen by equation (3), the receipt probability decreases with the cost of SSDI receipt. If the costs of receipt are high enough, only those with very severe disabilities will take advantage of the program. This implication has been supported empirically by papers using different measures of increased costs (Deshpande and Li 2019; Foote, Grosz and Rennane 2019). However, to our knowledge, ours is the first paper to focus on the impacts of increased costs resulting from social norms.

For our purposes, we are most interested in how the responses to increases in the unemployment rate vary with the costs of receipt, namely:

$$\frac{\partial^2 P(S > S^*)}{\partial U \partial C} = \frac{-1}{b(1-U)^2} \qquad (4)$$

which is negative. Taken together, equations (2) and (4) imply that while an increase in the unemployment rate leads to an increase in the likelihood of a person applying for SSDI the magnitude of this increase is smaller for people who face stronger work norms.

Figure 1 provides a graphical illustration of these general relationships. The dashed lines depict the benefits from SSDI participation. Both are increasing in disability severity, but the line associated with the higher unemployment rates (gray) always lies above the line associated with lower unemployment rates (black). More interestingly, the high unemployment line has a smaller slope, conveying the idea that with higher unemployment rates, the additional benefits from SSDI resulting from a more severe disability are lower.[8]

[8] To take an extreme example, for someone who is so severely disabled that wages are zero, an increase in the unemployment rate will not affect the benefits of SSDI. On the other hand, for someone who has such a marginal disability that wages are really high, an increase in the unemployment rate will have a very large

The horizontal lines convey the different costs of SSDI participation. The black line depicts costs for a person facing low costs of SSDI receipt while the gray line depicts costs for a person with higher costs.

As can be seen from the figure, a person with strong work norms – and therefore high participation costs – facing low unemployment rates will apply for SSDI if his or her disability severity is above S_4*. If the unemployment rate increases, this person's threshold disability will drop to S_3*. The corresponding values for someone with low costs are S_2* and S_1*. From the figure, it can be seen that, conditional on the unemployment rate, disability thresholds are always lower for the people with low costs than for those with high costs. It can also be seen that regardless of whether costs of SSDI are low or high, an increase in the unemployment rate will decrease S* and therefore increase the receipt rate. Most importantly, however, the figure shows that the impact of an increase in the unemployment rate on the threshold values is larger for people with lower costs of receipt. Since we have assumed a uniform distribution for S, an increase in the threshold disability translates to a proportional increase in the probability of someone applying for SSDI. To conclude, our theoretical model provides an illustration of why the SSDI participation decisions of people with weak work norms may be more sensitive to increases in unemployment rates than for people with strong norms.

4 Data

4.1 Integrated World Values Survey-European Values Survey (IVS) Data

To measure work norms, we use data from the World Values Survey (WVS) and the European Values Survey (EVS)—two large-scale, cross-national and longitudinal survey research programs. While the two surveys are processed by different organizations, their

impact on the benefits of SSDI since a high enough unemployment rate means the person does not have access to those high wages.

questions overlap. For our analysis, we use the Integrated Values Surveys (IVS) 1981-2014 data file which includes four waves of the EVS conducted between 1981 and 2008 and six waves of the WVS conducted between 1981 and 2014 (Inglehart et al. 2014). These surveys have been used by economists to study a wide variety of issues ranging from how income affects happiness (see Frey and Stutzer (2002) for a review) to the role of luck versus hard work in achieving success (Fisman and O'Neill 2009).

In Section 3, we showed theoretically that the degree to which a person's likelihood of applying for SSDI increases when the unemployment rate rises depends on the psychological costs of receiving SSDI faced by that person. In our empirical work, we focus on the psychological costs associated with work norms. Starting with IVS individual-level data from several different countries over several years, we construct our measure of weak work norms by calculating, for each birth country over all available years, the share of respondents who "strongly disagree" with the statement: "Work is a duty towards society."[9] This is an ideal measure of work norms for our purposes because it is likely to capture both the individual cost and the social cost of giving up work. Individuals who see work as a duty are likely to have a stronger preference for being in the labor force (or at least a weaker preference for being out of it) than people who do not see work as a duty. Moreover, people from communities where many people view work as a duty are likely to experience high levels of disapproval from others if they apply for SSDI, and so even if they personally do not believe that people have a moral obligation to work, they may not apply for SSDI in order to avert social judgment.[10] To check for robustness of our main results and to learn more about

[9] For the questions asking whether people agree with certain statements, survey respondents answered with a 1 through 5, 1 corresponding to strongly agree and 5 corresponding to strongly disagree. Appendix Table A2 shows the share of individuals in each country strongly disagreeing with the statement that work is a duty towards society.

[10] While our theoretical model relies on applicants' individual work norms, our identification strategy, based on the epidemiological approach, relies on using variation in origin country norms in order to causally identify the impact of norms on participation decisions. Given that emigrants from a country are not a randomly selected sample of the population, readers may question whether the norms of immigrants actually reflect home country norms. To address this issue, we examined the relationship between the norms of all people in a country and the

the specific norms driving SSDI receipt, we also construct other measures of norms from the IVS.

4.2 American Community Survey Data

For our main analysis, 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 between the ages of 25 and 61 who have been in the US for at least five years, and who do not reside in group quarters.[11] Only naturalized citizens and noncitizens are included in the sample; Puerto Ricans and people from other US territories as well as individuals born abroad of American parents are dropped from the sample. To clearly link people to their country of origin communities, we drop individuals without a clear country of birth listed in the ACS (for example, they may be listed as "Central Africa, ns"). We also drop widows and widowers from the sample because our measure of SSDI receipt is less informative for this population. Finally, in order to use our preferred measure of work norms from the IVS, we only keep individuals from countries in which IVS respondents were asked opinions about whether people have a duty to work. Our final ACS sample consists of 1,899,295 observations.

The ACS does not directly ask about SSDI income. Instead, the survey asks individual respondents about their Social Security income more broadly. There are four different sources of Social Security income: Social Security disability insurance, Social Security pensions (Old Age Insurance), survivor benefits, and US government Railroad Retirement insurance payments. Because our sample consists of working age individuals, the people in our sample will not be receiving retirement income and few will be receiving

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norms of all emigrants from that country (regardless of where they reside). This was found to be highly statistically significant, with a one unit increase in the former increasing the latter by 0.348.

[11] The results in the next section were essentially unchanged when we restricted the sample to immigrants who had been in the US for ten, rather than five, years. See Online Appendix Table OA-1, column 1.

Railroad Retirement insurance payments. Because we drop widows and widowers, Social Security benefits will not be from survivor benefits. Another issue to consider is that, while most Social Security income recipients in our sample will be receiving SSDI for their own disabilities, in some cases, non-disabled spouses and children of the disabled workers also qualify for SSDI benefits based on someone else's disability. We are not able to determine in our ACS sample if people are receiving benefits for their own disabilities, but we know from aggregate data that over 80 percent of SSDI beneficiaries receive benefits for their own disabilities (Annual Statistical Supplement to the Social Security Bulletin 2017). Moreover, in supplementary analyses of Current Population Survey (CPS) data, we show that our results are robust to using a more accurate measure of SSDI receipt. We gather data on annual state unemployment rates from the Local Area Unemployment Statistics program within the Bureau of Labor Statistics (BLS), and merge these data with our ACS sample by state and year.[12] Finally, we merge our work norms variables, constructed from the IVS data, with our ACS data by country of origin.[13]

Table 1 shows descriptive statistics of the variables used in the analysis. On average, 1.35 percent of the immigrants in our sample receive SSDI. The average unemployment rate in our sample is 6.74 percent. The average immigrant in our sample is almost 42 years old. Fifty one percent are males, fifty percent are Hispanic and eighteen percent are white. Sixty-five percent have children, and sixty-seven percent are married (with the spouse present). Twenty-five percent have a high school degree, eighteen percent have some college, and twenty-seven percent have a college or higher educational qualification. Three percent of the

[12] The (non-seasonally adjusted) data were downloaded from the BLS webpage: https://www.bls.gov/lau/data.htm.

[13] We also tried matching IVS data to immigrants in the ACS by both country of origin and completed education. In this case, our estimated coefficient of interest was positive and statistically significant but smaller in magnitude than our preferred estimate (see our Online Appendix Table OA-1, column 2), perhaps as a result of attenuation bias due to the smaller IVS cells. We were unable to exploit variation in home country norms over time within countries because the work duty question was only asked in two waves (1999-2004 and 2005-2009) and few countries asked the question in both waves. Among the countries that did, there was very little variation in responses between those years.

immigrants in our sample have an ambulatory difficulty, two percent have a cognitive difficulty, two percent have a vision or hearing difficulty, two percent have a difficulty with independent living, and one percent have a self-care difficulty.

5 Evidence from the American Community Survey

5.1 Empirical Strategy

The main empirical specification we use in the analysis is

$$\mathrm{DI}_{iost} = \beta_1 \mathrm{UR}_{st-1} \times \overline{\mathrm{WKNM}}_o + \mathbf{X}_{iost}\boldsymbol{\beta}_2 + \gamma_o + \delta_{st} + \varepsilon_{iost} \qquad (5)$$

where DI_{iost} takes on the value one if person *i* from country of origin *o*, living in state *s* in year *t* receives any disability insurance income and the value zero otherwise. Our right-hand side variable of interest is the interaction between the state unemployment rate, *UR*, in the year prior to the survey[14] and $\overline{\mathrm{WKNM}}$, the fraction of people in the person's country of origin who strongly *disagree* with the statement, "work is a duty towards society". Hence, a higher value for $\overline{\mathrm{WKNM}}$ indicates that people from origin country *o* tend to have weaker work norms. Empirically, the β_1 parameter is identified from variation across countries of origin (73 origin countries, shown in Appendix Table A2) and state-year unemployment rates. Assuming that weaker work norms reflect lower costs of SSDI receipt, a positive estimate of β_1 is consistent with the predictions of the theoretical model presented in Section 3.[15]

[14] We use the unemployment rate in the year prior to the survey because it can take several months to even years for ultimately successful SSDI applications to be awarded. Among a sample of SSDI applicants receiving medical determinations in 2005 and ultimately awarded benefits before 2012, the average total processing time was 15 months (Table 1, Autor, Maestas, Mullen, and Strand 2015). Appendix Table A1 columns 1-4 shows that our results are robust to using different lag structures. This robustness may be explained partly by the high level of heterogeneity in the time between application and ultimate benefit receipt.

[15] Our theoretical model makes predictions regarding the relationship between the unemployment rate and the decision to apply for SSDI benefits while our empirical work examines the likelihood of receiving benefits. To our knowledge, no publicly available data set contains information both on country of birth and SSDI application date. The ACS data set is one of the few collected every year with a large enough sample of immigrants to allow a comparison across immigrants from different countries. If individuals apply for SSDI as the economy worsens, as our theoretical model predicts, and a substantial share of beneficiaries receive benefits shortly after submitting their applications, then we should see the largest increases in SSDI participation following the years with the highest unemployment rates. We examine transitions into SSDI using longitudinal CPS data in the next section.

We include in the **X** vector a series of individual characteristics including gender, race, marital status, whether there are children in the household, educational attainment, several broad measures of disability (such as whether the person has difficulty hearing or seeing or has an impairment making it difficult to perform self-care activities like bathing or dressing), and a full set of age as well as years in the US dummy variables. The state-year fixed effects (δ_{st}) control for all factors affecting all immigrants living in the same state at the same time equally. The country-of-origin fixed effects (γ_o) will absorb any unobserved tendencies for immigrants from particular backgrounds to take up SSDI. We cluster standard errors within state and country of origin cells, but Online Appendix Table OA-3 shows that our results are robust to clustering in different ways.

5.2 Baseline Results

To establish the pattern between SSDI receipt and work norms in the data, we start by graphically exploring the relationship between unemployment rates and SSDI receipt, after accounting for state fixed effects, separately for immigrants from strong and weak work norm origin countries. As seen in the scatter plot shown in Figure 2, there is a noticeable difference in the relationship between the unemployment rate and SSDI receipt between immigrants from countries in the top quartile of responses to the "work duty" question and those in the bottom quartile. People from countries with weak work norms, depicted with triangles in the figure, become increasingly likely to receive SSDI payments as the unemployment rate increases. For immigrants from strong work norm countries, there is no positive relationship between the unemployment rate and SSDI receipt; in fact, the correlation is negative, possibly reflecting the fact that workers with strong work ethics may be more likely to suffer workplace injuries when jobs are plentiful. To the extent that the "work duty" question reflects psychological costs borne by immigrants as a result of leaving the labor force to

receive SSDI, the growing distance in receipt rates between the two groups as the unemployment rate increases is consistent with the theoretical framework in Section 3.

Before turning to the regression specification in equation (5), we estimate a series of simpler models, to describe the basic relationship between work norms, state unemployment rates and SSDI receipt. In column 1 of Table 2, we start by regressing the SSDI participation dummy on the unemployment rate and the individual controls in vector **X**. As predicted by our model and consistent with the prior literature on the general US population (Maestas et al. 2021), immigrants are more likely to receive SSDI benefits when they reside in states with higher unemployment rates a year prior. In column 2, we replace the country-of-origin fixed effects (as well as the race fixed effects) with our measure of home country work norms, which varies only by country of origin. As can be seen in the table, weaker work norms are associated with increases in the likelihood of receiving SSDI benefits, but the estimate is not statistically significant. This may not be surprising given that norms are unlikely to be important for people who are not disabled enough to even consider applying for SSDI or who are so disabled that they cannot work regardless of norms. A main innovation of our analysis is the focus on SSDI participation responses to norms across the business cycle, which allows us to identify impacts on marginal applicants. This is what we consider in column 3, and just as predicted by our theoretical model, the estimate of the coefficient on the interaction between the unemployment rate and our measure of work norms is positive and statistically significant. In column 4, we replace the un-interacted lagged unemployment variable with state-year fixed effects and the un-interacted norms measure with country of origin fixed effects, thereby estimating the empirical model described by equation (5). The country of origin fixed effects allow us to control for unobserved country of origin characteristics that may be correlated with both work norms and SSDI receipt rates.

The estimate of 1.30 suggests that the same one percentage point increase in the

unemployment rate results in a 0.13 percentage point larger increase in the probability of take up in France (the country with the weakest work norms, see Appendix Table A2) than in Egypt (the country with the strongest work norms). While this difference may appear small, it represents about 10 percent of the average SSDI take-up in our sample. Most importantly for the purposes of our study, the baseline result suggests that indeed work norms matter in the decisions of conditional applicants, the very population that policymakers may care most about.[16]

5.3 Alternative Definitions of Norms

We use perceptions of duty to work as our preferred measure of work norms because we believe it nicely measures people's perceptions about the innate value of work as opposed to how much fulfilment they get from their specific jobs or enjoyment of leisure time. To measure work norms, Corneo (2013) uses reactions to the statement "It is humiliating to receive money without having to work for it," but we argue that this question measures high social costs from applying for government assistance as opposed to a high innate preference for working. Nevertheless, we show that our results are robust to using this and a variety of other related IVS questions in Table 3.[17]

For convenience, we report our baseline specification results again in column 1 of Table 3. In column 2, we use as our measure of weak norms the fraction of people who strongly disagree that people who do not work turn lazy; in column 3, we use the fraction

[16] The relationship appears to be monotonic. To confirm this, we assigned countries to four equally-spaced bins between the minimum and maximum values of the work norm variable (excluding France and Belgium which are significant outliers and which we added to the top bin). The estimated coefficients on the interactions between the unemployment rate and the bin dummy variables were larger in magnitude for the bins corresponding to higher values of the work norm. We did a similar exercise for the unemployment rate and again, the results pointed to a monotonic relationship. See Online Appendix Table OA-2, columns 1 and 2.

[17] See Appendix Table A3 for further details on the different questions. It is possible that a single question might have different connotations depending on its translation to the language used in each IVS country. However, there is no reason to think this would be related to SSDI receipt levels in the US and, in any case, the phrasing of the various questions in Table 3 is quite different.

who strongly disagree that to develop talents one needs to have a job; in column 4, we use the fraction who strongly disagree that it is humiliating to receive money without having to work for it (the measure in Corneo 2013); and in column 5 we use the fraction of people who strongly disagree that work should come first even if it means less spare time. In all cases, the estimated coefficient on the interaction of the measure of work norms with the unemployment rate suggests a significant positive effect on the probability of a person receiving SSDI. However, the magnitude of the effects in these columns is smaller than when "work duty" is used as the measure of work norms. This may reflect the fact that the work duty question measures a person's views on people's responsibility to work, regardless of the particular job being done, regardless of the utility from leisure, and regardless of the availability of income from sources not requiring work.

In column 6 of Table 3, we use the measure of work norms perhaps most often used in the literature (Stam et al. 2016; Roex and Rözer 2018; Stavrova et al. 2011), namely, the first principal component when principal components analysis is applied to the five individual work-related questions described above. All the five factor loadings of the first component are between 0.4 and 0.5 indicating that each of the variable has a strong positive effect on the principal component. However, the two components that load onto the most are the work duty (0.466) and people who do not work turn lazy (0.475). The interaction of this with the unemployment rate has a significant positive effect on the probability of SSDI receipt.

While we are predominantly interested in the role of work norms in SSDI receipt decisions, it may actually be differences in attitudes regarding cheating the government that are driving our results. We consider this possibility in column 7 of Table 3. Interestingly, immigrants from countries where people respond that "claiming government benefits to which the individual is not entitled" is "always justifiable" are not especially likely to go on disability in response to bad economic conditions; the estimate is small, statistically

insignificant and even has a negative sign.[18] We view this as evidence that it is work norms, rather than moral views regarding cheating the government, that is responsible for the pattern of results that we have uncovered.

We do two final robustness checks using the question on whether work is a duty towards society. First, we construct the work norm variable as the share of people who *either* strongly disagree or just disagree with the statement. As can be seen in column 8 of Table 3, the estimated coefficient of interest when using this weaker measure of work norms is, naturally, smaller in magnitude than the comparable estimate shown in column 1. However, it remains positive and highly statistically significant suggesting that immigrants from countries with especially strong views are not the sole drivers of our results. Similarly, when we define our norm measure as one minus the fraction of people who strongly agree with the statement that work is a duty towards society, we continue to find a significant positive coefficient, as reported in column 9 of Table 3.[19]

5.4 Differential Sensitivities to the Business Cycle

The identifying assumption in our baseline specification is that any variation in norms across home countries is uncorrelated with the error term in equation (5). A country's average responses to the IVS questions are unlikely to have been affected by the experiences of emigrants from that country to the US, ruling out the possibility of reverse causality. However, there remains the possibility that our measure of norms is correlated with unmeasured characteristics of immigrants that affect their propensity to receive SSDI.

[18] For the questions asking whether it is justifiable to engage in certain behaviors (like claiming government benefits to which the individual is not entitled), survey respondents answered with a 1 through 10, 1 corresponding to never justifiable and 10 corresponding to always justifiable.

[19] In Online Appendix Table OA-1 we also show that our results are robust to dropping immigrants from the largest sending country (Mexico, column 3), dropping immigrants from the four countries with the weakest work norms (France, Belgium, Belarus, and Slovakia, column 4) and dropping immigrants from the four countries with the strongest work norms (Egypt, Jordan, Malaysia, and Vietnam, column 5).

We now consider alternative potential explanations for our baseline results, starting with the concern that immigrants from weak work norm countries may simply be more likely to become unemployed during economic downturns. To address this issue, we construct unemployment rates within more narrowly defined cells. We do this by constructing the unemployment rates ourselves from the ACS data because the BLS does not produce unemployment rates within the narrowly defined cells. In column 1 of Table 4, we show that our baseline estimates are practically unchanged regardless of whether we use the BLS state-year unemployment rates or our own ACS-constructed state-year unemployment rates. 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, Miller and Schaller 2012), we construct unemployment rates within education-state-year cells. As seen in column 2 of Table 4, the estimate of the coefficient on our interaction is positive and significant in this specification as well.

Next, we look directly at occupation and industry specific unemployment rates. In column 3 of Table 4 we construct unemployment rates within 1-digit occupation–state–year cells, and in column 4 we construct unemployment rates within 1-digit industry–state–year cells. Again, in both cases the estimate of the interaction coefficient between the unemployment rate and our work norms measure is positive and statistically significant. These specifications account for the fact that different groups of immigrants are concentrated in jobs that are vulnerable to the business cycle to different degrees. However, they are not our preferred specifications because unemployment rates are constructed with a smaller number of observations and so are more susceptible to measurement error. Another issue with the occupation and industry-specific unemployment rates is that 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.[20]

We then return to our original BLS measure of state unemployment, but consider the sub-sample of immigrants who are in the labor force and explore whether those in weak work norm groups are especially likely to become unemployed during recessions. If it is true that immigrants with weak work norms are more likely to lose their jobs during recessions, then we might expect individuals with no underlying disability (i.e., who do not qualify for SSDI) to simply become unemployed. On the other hand, if they are not differentially likely to experience job loss during recessions, we should observe no statistically significant impact on the likelihood of becoming unemployed for this group. As can be seen in column 5 of Table 4, the estimated coefficient on the interaction of work norms and the state unemployment rate is statistically insignificant and actually negative in sign.

Finally, we examine impacts on wages of workers. If immigrants from weak work norm groups are more adversely affected by recessions, then we should expect them to experience larger wage losses during these periods. On the other hand, if our baseline findings are driven by values regarding work, then if anything, we should expect those with a stronger work ethic to accept lower wages if it means returning to work more quickly. This would imply that immigrants from countries with weaker work norms have higher average wages during recessions. Using a sample of individuals who earned positive wages in the previous year and who worked in the previous week, column 6 of Table 4 shows no impact on hourly wages. The estimate is statistically insignificant, very small in magnitude, and has a positive sign, a result consistent with work norms playing a leading role in driving our baseline SSDI estimates.

[20] Survey respondents who have not worked within the past five years do not list an occupation or industry in the ACS. To keep our samples the same across specifications, we assigned all individuals without a listed occupation a value and created a dummy variable equal to one when this was done. We then added to our model an interaction term between the dummy variable and the unemployment rate to control for whether the person's state-year-occupation unemployment rate was imputed in this manner.

5.5 Omitted Immigrant Group Characteristics

Beyond our particular concern regarding differential labor market sensitivities to the business cycle, there may be other characteristics that vary systematically between immigrants from strong vs. weak work norm countries that influence SSDI receipt rates during economic downturns. In fact, any characteristic that would make people in some immigrant groups more likely than others to qualify for SSDI (for example, having a greater likelihood of satisfying the SSDI work history requirements or of having a qualifying disability) might result in differential likelihoods of taking up SSDI in response to an economic downturn. All workers may want to apply for benefits after a job loss, but only those who qualify can be awarded benefits.

To address this possibility, we add several interactions between the lagged unemployment rate and average characteristics of the origin group to equation (5). First, we include an interaction between the unemployment rate and average years of schooling because individuals with very low levels of education may be more likely to become disabled (and more likely to receive SSDI, see Autor and Duggan 2006), and the foreign born with less than a high school degree are more likely to be undocumented (Borjas 2017). By controlling for the education-unemployment rate interaction, we are not allowing the work norms interaction coefficient to simply pick up these relationships. Similarly, we include an average age-unemployment rate interaction because younger individuals are less likely to become disabled (see Duggan and Imberman 2009) and more likely to be undocumented (Borjas 2017).[21] We also include an average years in the US-unemployment rate interaction because immigrants with fewer years in the US are less likely to have worked in the US for enough years to qualify for SSDI. Finally, we include an interaction of GDP per capita in a

[21] People with fewer years of schooling and those who are younger are more likely to lose their jobs during economic downturns (Hoynes et al. 2012), and so adding these control variables also helps to address concerns about labor market sensitivities to the business cycle.

person's country of origin (taken from World Bank and OECD National Accounts data files) with the unemployment rate to control for the possibility that work norms simply reflect a country's level of economic development which may be correlated with immigrants' likelihoods of qualifying for SSDI.

As seen in columns 1-4 of Table 5, the estimated coefficient on the interaction between the unemployment rate and work norms is little changed 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, years in the US, and GDP per capita are not driving the different business cycle sensitivities by country of origin.

While these results are certainly comforting, there could be other factors driving variation across origin group in the likelihood of satisfying SSDI requirements, many of which are unobserved in our data or not measurable in general. As a more comprehensive measure of eligibility for SSDI, we use past SSDI receipt among immigrants in the US from the same country of origin. Specifically, we add to our main specification an interaction term between the unemployment rate and average SSDI receipt rates from the 2000 Census (which occurred before our sample period) for the person's country of origin group. In this specification, we are examining whether, among immigrants from groups with the same past SSDI receipt rate, immigrants from countries placing less emphasis on work are especially likely to go on disability in response to an increase in the unemployment rate. As can be seen in column 5 of Table 5, this interaction term does not have a statistically significant impact on SSDI receipt. Our estimated coefficient of interest remains positive and statistically significant in this model. In column 6, we include all of the interaction terms reported in columns 1 to 5 simultaneously. Our estimate of interest retains its magnitude and statistical significance.

For further evidence of robustness, in column 7 of Table 5 we add country of origin-state fixed effects to our baseline model. These fixed effects control for any time-invariant characteristic of immigrants from a particular country living in a particular state.[22] Again, the estimated coefficient of our interaction term remains positive, statistically significant and of roughly the same magnitude suggesting that immigrants from countries with weak work norms are not especially likely to reside in states that tend to have high unemployment rates.

Once people start receiving benefits, they typically continue to receive them until reaching retirement age. The state-year fixed effects will control for any permanent increases in SSDI participation rates following previous increases in the unemployment rate. In addition, the age fixed effects control for the fact that older workers have been exposed to a longer time series of labor market shocks and hence always have a greater chance of having already exited the workforce (and never re-entered). Finally, the country-of-origin fixed effects will absorb the permanent differences between receipt rates of immigrants from strong and weak work norm countries resulting from increases in unemployment rates that occurred before the start of our sample period. However, since our model implies that immigrants from weak work norm countries are most sensitive to the unemployment rate at every point during their career, we might expect it to be the oldest people from the weakest work norm countries who are most likely to be on SSDI, regardless of the unemployment rate at any point in time. To examine whether this might bias our estimates, we replaced the separate age and country fixed effects with age-country of birth fixed effects. As can be seen in column 8 of Table 5, when we do this, our estimated coefficient of interest falls only slightly and remains highly significant.[23]

[22] These will control for any permanent differences between the receipt rates of immigrants from strong versus weak norm countries resulting from differential state-specific unemployment shocks occurring before our sample period.

[23] The fact that people also rarely leave the SSDI rolls after entering implies that people should be more sensitive to economic downturns than recoveries. We examined this by splitting the sample by whether the unemployment rate in a state is rising or falling, as seen in columns 6 and 7 respectively of Table OA-1. As

In yet another approach to determining whether work norms drive our baseline estimates, we examine whether immigrants that are more tightly connected to their ethnic communities are more likely to take up SSDI during recessions when they are from weak work norm origin countries.[24] After all, immigrants who happen to hold values similar to those in their country of origin group are more likely to remain socially connected to them, and immigrants who are more socially connected are likely to experience social pressure to act according to group values. To measure social attachment to country of origin group, we use whether the immigrant is fluent in English. Comparing columns 1 and 2 of Table 6, there is some suggestive evidence 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"). The estimate of interest is about 70 percent larger in this sample than it is in the sample of those who are fluent in English (as defined by speaking English "very well" or "only English"). The two estimates, however, are not statistically different from each other.

For even further evidence that our estimates are measuring the role of work norms, we separate our sample into groups that may be differentially sensitive to work norms. As described in Akerlof and Kranton (2000), a person's sense of self can change the payoffs from different actions. For example, following the societal prescriptions for one's gender can be self-affirming while violating them can generate anxiety. Thus, if society makes stronger prescriptions for labor market work for men while emphasizing caregiving within the family for women, then we might expect men to be more sensitive to work norms than are women. Consistent with this idea, males' self-reported levels of well-being tend to be more sensitive to work norms than are females' (Roex and Rözer 2018; Clark 2003; Hetchko, Knabe and

expected, the coefficient is larger during recessionary years than during recovery years. However, the gap between these is not statistically significant.

[24] Using a similar approach, Stutzer and Lalive (2004) show that social norms are more important in smaller communities where people mostly know their neighbors. They also find weaker impacts of norms among those whose mother tongue is not the local language.

Schöb 2013). To test this hypothesis using our data, we separate the sample by gender. As can be seen by comparing the point estimates in columns 3 and 4 in Table 6, male sensitives to work norms are almost double that of females. In fact, the female estimate is only statistically significant at the ten percent level. Again, however, our sample sizes are not large enough to be able to detect statistically significant differences between the male and female estimates.

Using a similar identity-based argument, we may expect work norms to be more important for individuals in prime working age than for people approaching retirement age. After all, Hetschko et al.'s (2013) finding that the unemployed experience larger life satisfaction gains upon reaching retirement age than the employed suggests that the social prescriptions to work decrease with age. The results in columns 5 and 6 of Table 6, which separate the sample by whether individuals are below or above the median age in our sample (age 41), may at first glance suggest the opposite result since the estimated coefficient is in fact smaller in magnitude for the younger population. However, not only are the estimates not statistically different from each other, it is important to keep in mind that SSDI receipt is significantly higher for older individuals than younger individuals (2.30% percent receipt for those older than 41, and 0.51% for those under 41). When comparing estimates relative to mean receipt rates, there is some suggestive evidence that norms play a more important role for younger individuals.

6 Additional Evidence from the Current Population Survey

We supplement our analysis with data from the Annual Social and Economic Supplement (ASEC) to the March CPS from the years 2001 to 2017, also provided by the Integrated Public Use Microdata Series (IPUMS, Flood et al. 2017). The CPS is a monthly survey covering approximately 60,000 households. The advantages of the CPS data over our ACS

data are that the CPS dataset provides a more accurate measure of SSDI income, it has a panel structure (since respondents are surveyed for 8 months over a 16 month period), it has better health measures, asks a series of questions allowing us to make predictions about whether an immigrant is undocumented, and provides information on parental country of birth, which can be used to identify second-generation immigrants. The disadvantage of the CPS data compared to the ACS data is the smaller number of observations.

Initially, we make the same sample restrictions on the CPS data that we used for the ACS sample, and we only include households that have been in the CPS for four months or less to ensure that the same household does not appear in the sample twice. The dependent variable is now defined as whether a person received Social Security income *for a disability* in the previous year. The share of people from a person's home country strongly disagreeing that "work is a duty toward society", constructed from the IVS surveys, is merged in at the country of birth level, and the lagged unemployment rates from the BLS are merged in at the state-year level.

Estimating the primary specification using the CPS sample produces a positive coefficient of interest that is larger than the corresponding estimate from the ACS (see column 1 of Table 7), perhaps because of the more accurate measure of SSDI receipt in this analysis. The estimated coefficient of interest falls in magnitude (see column 2) when adding controls for a person's self-reported health status, but not substantially, providing some comfort that our results are not driven by immigrants from weak norm countries becoming increasingly likely to suffer health shocks in bad economic times.

Except for those who exit the survey prematurely, all CPS respondents should be observed in March of two consecutive years. This allows us to examine how norms affect the rate at which people *enter* the SSDI program, rather than just the overall fraction of people who are recipients. Since very few people ever leave the program, the effect of norms on

inflows is likely to be much stronger than its effect on outflows. To test this, we use the full CPS sample, matching people across waves. We then condition the sample on those who did not receive SSDI in the previous year and run the same regression as in column 2. The results (presented in column 3) confirm that the interaction term has a much stronger effect on the probability of entering SSDI than it had on the overall probability of someone receiving SSDI – the coefficient is over three times larger.

The CPS data also allow us to more directly address a concern discussed in Section 5.5, namely, that all people want to leave the labor force to receive SSDI benefits during economic downturns, but only those who are eligible for benefits actually apply and receive them. In the case of immigrants, legal status in the US is an important eligibility criterion, and one which may be correlated with home country work norms.

Using our original CPS sample, we are able to identify likely documented immigrants following the procedure described in Borjas (2017) and used again in Borjas and Slusky (2018). We then separate our sample by probable legal status. In the undocumented sample (column 4 of Table 7), it is not surprising that the work duty-unemployment rate term does not affect the likelihood of receiving SSDI, since this group does not qualify for SSDI. More important, we find a significant positive coefficient when the sample is restricted to probable documented immigrants (column 5 of Table 7), a result suggesting that differences in the number of undocumented immigrants across origin countries are not driving our main findings.

While our study focuses on immigrants, we see no obvious reason to believe that the mechanisms driving the relationship between unemployment rates and SSDI participation should be substantially different for immigrants and natives. If anything, because many of the foreign born in our sample are not eligible for the SSDI program, it is more difficult for us to uncover any impacts in this population. To examine this issue, we turn to a sample of the

native-born children of immigrants. Second-generation immigrants are an especially interesting demographic group because, like third- and higher-generation immigrants, they were born in the US and so most likely qualify for SSDI. However, like first-generation immigrants, they may still have strong connections to their ethnic communities (Borjas 1992; Guiso, Sapienza, and Vingales 2006; Bisin and Verdier 2011). In columns 6 and 7 of Table 7, we examine whether the work norms in a person's father's or mother's country, respectively, affect the likelihood of receiving SSDI when unemployment rates increase. Only work norms in the father's – not the mother's – country are found to have a significant effect. This is consistent with our earlier finding that work norms have a stronger effect for men than for women and suggests that fathers pass their attitudes to work on to their children. The estimated coefficient of interest is substantially larger in magnitude for the children of male immigrants than it is for first-generation immigrants. Part of this is likely due to the fact that native born children of immigrants are more likely to qualify for SSDI. However, even relative to the average value of the dependent variable, the coefficient in column 7 is larger than the coefficient in column 2.

7 Conclusion

In the 2018 fiscal year, SSDI paid benefits of about $141 billion (SSA Agency Financial Report, Fiscal Year 2018) from a trust fund which, according to projections made *before* COVID-19, would be exhausted by 2052 (Trustees Report, 2019). Regardless of pandemic responses, policymakers will soon face difficult decisions regarding whether to cut benefits or replenish funding. With overly stringent eligibility criteria, people in need may not receive important benefits. On the other hand, overly lenient criteria may not only be very costly to taxpayers but could also create perverse work incentives. To address the latter concern while still making it possible for the most disabled applicants to qualify if they apply, many social

insurance programs rely on people's own notions of ethical behavior regarding receipt in order to keep receipt rates low (Lindbeck et al. 1999; 2003). Our paper is the first to examine the impact of work norms on receipt of SSDI, a program designed for those who are permanently disabled and unable to work. We focus specifically on increases in benefit receipt rates in response to difficult economic times, when there is no particular reason to expect higher rates of disability, in order to identify the effect of work norms on conditional applicants.

Using home country attitudes regarding whether work is a duty towards society to measure work norms, we show that immigrants from countries with weaker work norms are more sensitive to economic conditions than immigrants from countries with stronger work norms. Interestingly, taboos against taking up government benefits to which one is not entitled do not seem to influence the relationship between economic conditions and SSDI receipt. Further analyses suggest that our baseline findings are indeed driven by work norms as opposed to differences in experienced severity of recessions or other immigrant group characteristics that might be correlated with work norms.

More generally, our analysis provides further support for the notion that the SSDI program is not being used solely to provide insurance against the possibility of becoming permanently disabled. It seems to also work as insurance against the possibility of job loss for certain groups of people. This is problematic for the recession-induced SSDI participants themselves given that once they start receiving disability benefits, they rarely return to the labor force in any meaningful way, even when the economy improves. In addition, if as suggested by Lindbeck et al. (1999, 2003) the strength of work norms diminishes as more people are out of the labor force, then SSDI take-up is likely to increase even more during future economic downturns, putting further financial strain on the program.

While a potential policy implication of our analysis is to somehow strengthen work

norms, it is likely to be difficult to directly change norms in practice. However, given the evidence in this paper that work norms matter for SSDI decisions, policymakers might want to consider how both SSDI and other labor market policies will indirectly affect future SSDI receipt rates through their impacts on work norms. For example, in response to sharp economic downturns, of the type observed at the start of the pandemic, policymakers may favor policies that keep people in the workforce, even part time. Moreover, if indeed work norms weaken in response to higher SSDI receipt rates, perhaps through the values parents instill in their children (see Dahl, Kostøl and Mogstad 2014; Dahl and Gielen 2021; Lindbeck and Nyberg 2006), our finding that work norms matter implies that any policy directly changing the SSDI-related behaviors of even a small number of people might have substantial multiplier effects. Given that the SSDI Trust Fund faces exhaustion in the coming years (Trustees Report, 2019), policy makers will need to consider these issues if the program is to survive.

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Appendix

Instead of assuming that S is uniformly distributed, assume that it is log-normally distributed, so that:

$$\ln S \sim N(0,1)$$

As a result, S will be right skewed, which likely matches the true distribution of disability severity better than does a uniform distribution. Given the other assumptions made in Section 3, the probability of someone choosing SSDI is now:

$$P(S > S^*) = 1 - \Phi(\ln(\frac{a(1-U) - D + C}{b(1-U)}))$$

where Φ is the standard normal CDF. The derivative of this probability with respect to U is:

$$\frac{\partial P(S > S^*)}{\partial U} = \phi(\ln(\frac{a(1-U) - D + C}{b(1-U)}))\frac{1}{1-U}\frac{D-C}{a(1-U) - D + C} > 0$$

where ϕ is the standard normal PDF. Using the fact that $\phi'(z) = -z\phi(z)$, the second derivative of the receipt probability with respect to U and C is:

$$\frac{\partial^2 P(S > S^*)}{\partial U \partial C} = \phi(\ln(\frac{a(1-U) - D + C}{b(1-U)}))\frac{1}{(a(1-U) - D + C)^2}(-(D-C)\ln(\frac{a(1-U) - D + C}{b(1-U)}) - a)$$

The sign of this second derivative will be determined by the sign of the final term in parentheses. Because we have assumed that $D > C$, $-(D - C)$ must be negative. The term inside the log function is actually the expression for the application threshold, S^*, as determined by equation (1). If S^* is greater than the mean of S, which is $e^{0.5}$ given our distributional assumption on S, then $\ln\left(\frac{a(1-U)-D+C}{b(1-U)}\right)$ will certainly be positive. Because a is positive by assumption, the final term in parentheses will be negative. Given that SSDI is received by a relatively small share of the population, it is reasonable to believe that for most people S^* will be greater than the mean disability level in the population.

Figure 1. Costs and Benefits of SSDI Receipt by Disability Severity

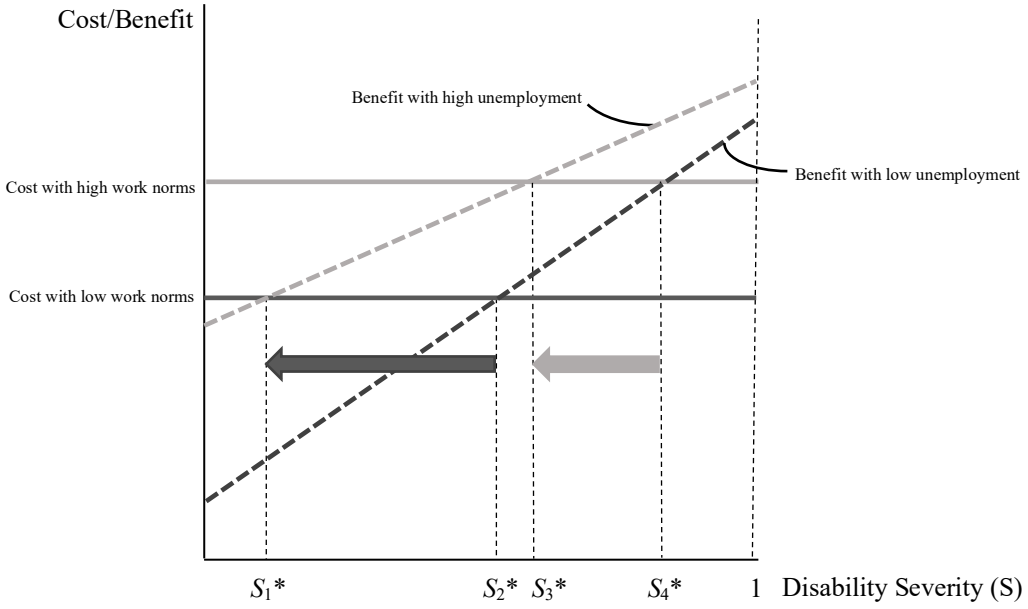
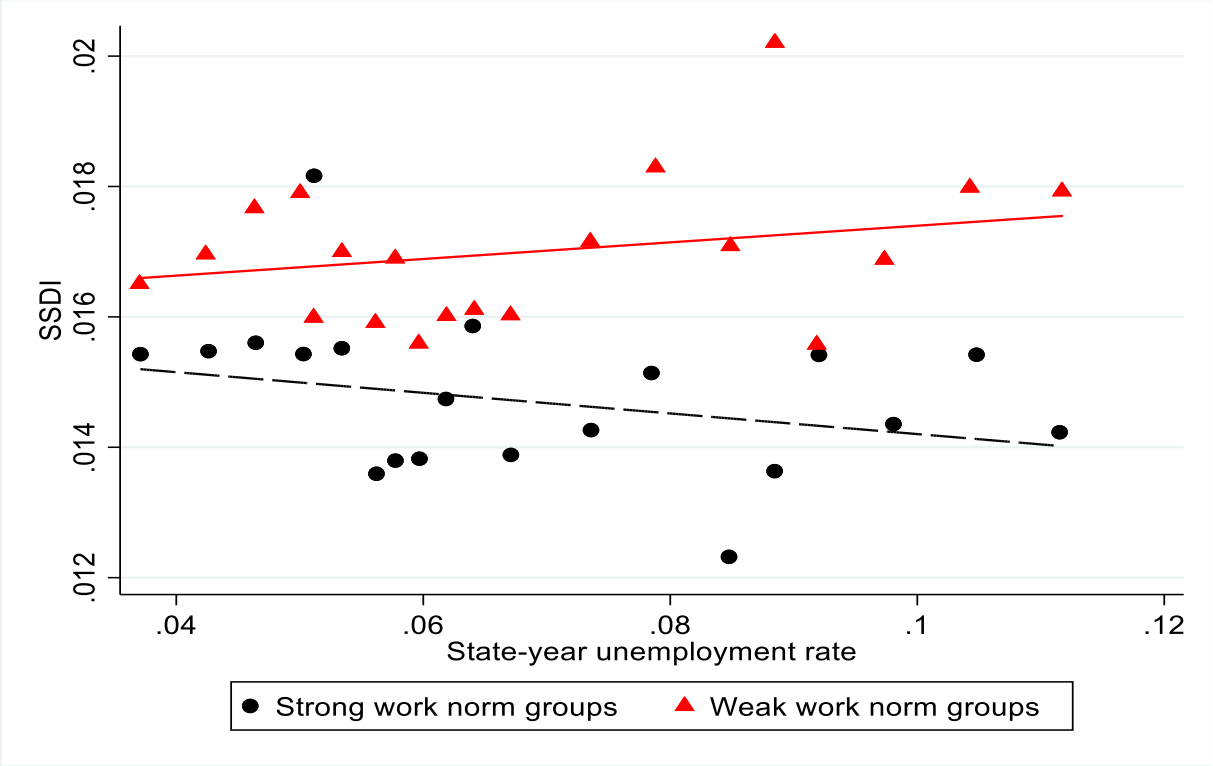


Figure 2. State-Year Unemployment Rate and SSDI Receipt by Strength of Work Norms



Notes: Immigrants in strong work norm groups are those from countries with the share disagreeing that work is a duty to society in the bottom quartile of the distribution. Immigrants in weak work norms groups are those from countries in top quartile. To create the figure, we first regress both SSDI and unemployment rates on a full set of state of residence fixed effects. We then group the residual unemployment rates from this regression into 20 equal sized bins and plot the residual unemployment rates against the corresponding residual SSDI receipt rates in each bin.

Table 1. Summary Statistics

	Mean	Standard deviation	Minimum	Maximum
Disability Insurance Receipt (SSDI)	0.0135	0.1153	0	1
Share disagree work duty	0.0175	0.0111	0.0009	0.1003
State-year unemployment rate	0.0674	0.0222	0.0230	0.1370
Age	41.7999	9.7985	25	61
Male	0.5094	0.4999	0	1
Hispanic	0.5009	0.5000	0	1
White non-Hispanic	0.1827	0.3864	0	1
Black non-Hispanic	0.0226	0.1487	0	1
Asian non-Hispanic	0.2925	0.4549	0	1
Mixed race	0.0120	0.1090	0	1
Children	0.6495	0.4771	0	1
Married (spouse-present)	0.6738	0.4688	0	1
High school dropout	0.2958	0.564	0	1
High school graduate	0.2534	0.4349	0	1
Some college	0.1800	0.3842	0	1
College degree or more	0.2708	0.4444	0	1
Cognitive difficulty	0.0176	0.1316	0	1
Ambulatory difficulty	0.0308	0.1729	0	1
Independent living difficulty	0.0190	0.1365	0	1
Self-care difficulty	0.0095	0.0968	0	1
Hearing/vision difficulty	0.0200	0.1399	0	1
Years in the US	20.0682	10.8717	5	62
Observations		1,899,295		

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 US 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 and those whose origin countries do not have IVS responses to the work duty question. SSDI is a dummy variable that equals one if the person receives Social Security income. The share disagree work duty variable, constructed from the IVS data by country of origin, is the share of respondents who strongly disagree with the statement "Work is a duty towards society". The state-year unemployment variable is obtained from BLS's Local Area Unemployment Statistics program and it is lagged by one year. Estimates are weighted using the appropriate person-level weights provided by the ACS.

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

	(1)	(2)	(3)	(4)
	SSDI	SSDI	SSDI	SSDI
Share disagree work duty × State-year unemployment rate			1.5121**	1.2977**
			(0.491)	(0.419)
Share disagree work duty		0.0081	-0.0914**	
		(0.018)	(0.035)	
State-year unemployment rate	0.0086+	0.0018	-0.0243*	
	(0.005)	(0.006)	(0.011)	
Male/10,000	0.0303	-0.7006	-0.7439	0.2399
	(2.131)	(2.308)	(2.312)	(2.071)
Children	-0.0008**	-0.0012**	-0.0012**	-0.0009**
	(0.000)	(0.000)	(0.000)	(0.000)
Married (spouse present)	-0.0045**	-0.0042**	-0.0042**	-0.0045**
	(0.000)	(0.000)	(0.000)	(0.000)
High school degree	-0.0028**	-0.0018**	-0.0018**	-0.0028**
	(0.000)	(0.000)	(0.000)	(0.000)
Some college	-0.0058**	-0.0044**	-0.0044**	-0.0058**
	(0.001)	(0.000)	(0.000)	(0.001)
College degree or more	-0.0082**	-0.0063**	-0.0063**	-0.0082**
	(0.001)	(0.000)	(0.000)	(0.001)
Cognitive difficulty	0.0623**	0.0624**	0.0624**	0.0621**
	(0.005)	(0.005)	(0.005)	(0.005)
Ambulatory difficulty	0.0835**	0.0835**	0.0835**	0.0835**
	(0.003)	(0.003)	(0.003)	(0.003)
Independent living difficulty	0.0643**	0.0645**	0.0645**	0.0647**
	(0.003)	(0.003)	(0.003)	(0.003)
Self-care difficulty	0.0558**	0.0559**	0.0559**	0.0556**
	(0.006)	(0.006)	(0.006)	(0.006)
Hearing/vision difficulty	0.0131**	0.0129**	0.0129**	0.0130**
	(0.002)	(0.002)	(0.002)	(0.002)
Age fixed effects	Yes	Yes	Yes	Yes
Years in the US fixed effects	Yes	Yes	Yes	Yes
Country of origin fixed effects	Yes	No	No	Yes
Race fixed effects	Yes	No	No	Yes
Year-state fixed effects	No	No	No	Yes
Observations	1,899,295	1,899,295	1,899,295	1,899,295
Adjusted R-squared	0.077	0.076	0.076	0.077
Mean of dependent variable	0.0135	0.0135	0.0135	0.0135

Notes. See Table 1 for information on sample restrictions. Coefficients are estimated using linear probability models. Standard errors are clustered by state and country of origin cells and are reported in parentheses. 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. Robustness Checks (ACS 2001-2016)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI
Share disagree work duty × State-year unemployment rate	1.2977**								
	(0.419)								
Share disagree "turn lazy" × State-year unemployment rate		0.9628**							
		(0.309)							
Share disagree "talent develop" × State-year unemployment rate			0.5512*						
			(0.259)						
Share disagree "humiliating money" × State-year unemployment rate				0.4340**					
				(0.167)					
Share disagree "work should come first" × State-year unemployment rate					0.2790+				
					(0.155)				
PCA work norms × State-year unemployment rate						0.0722**			
						(0.024)			
Share disagree "government benefits" × State-year unemployment rate							-0.0466		
							(0.110)		
Share (more weakly) disagree work duty × State-year unemployment rate								0.2549**	
								(0.083)	
(1 – Share strongly agree work duty) × State-year unemployment rate									0.1265*
									(0.051)
Observations	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295
Adjusted R-squared	0.077	0.077	0.077	0.077	0.077	0.077	0.077	0.078	0.078

Notes. See Table 1 for sample restrictions and Table 2 (column 4) for the control variables and fixed effects included. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. Standard errors are clustered by state and country of origin cells and are reported in parentheses. Levels of significance: ** p<0.01, * p<0.05, + p<0.1. Column 1 replicates column 4 of Table 2. "Turn lazy" refers to the share of home country IVS respondents who strongly disagree that people who do not work turn lazy. "Talent develop" refers to the share of home country IVS respondents who strongly disagree that to develop talents you need to have a job. "Humiliating money" refers to the share of home country IVS respondents who strongly disagree that it is humiliating to receive money without having to work for it. "Work should come first" refers to the share of home country IVS respondents who strongly disagree that work should come first even if it means less spare time. PCA work norms is the first principal component of the above five work norm variables. "Government benefits" refers to the share of home country IVS respondents who say that it is always justifiable to claim government benefits to which one is not entitled. The share (more weakly) disagree work duty is the share of home country IVS respondents who either "strongly disagree" or simply "disagree" that work is a duty towards society. (1 – Share strongly agree work duty) refers to the share of home country IVs respondents who either strongly disagree, disagree, neither agree or disagree, or simply agree that work is a duty towards society. To make samples equivalent across specifications, we assigned an arbitrary value to observations with missing information on the IVS variable. We then created a corresponding dummy variable equal to one if the IVS value was assigned in this way. While the country of origin fixed effects will control for the direct impact of a having a missing value for any IVS variable, we have added to our models an interaction term between the dummy variable for missing data and the state-year unemployment rate.

Table 4. Differential Sensitivities to the Business Cycle (ACS 2001-2016)

	(1)	(2)	(3)	(4)	(5)	(6)
	SSDI	SSDI	SSDI	SSDI	Unemployed	Log wage
Share disagree work duty × ACS State-year unemployment rate	1.1693**					
	(0.445)					
Share disagree work duty × ACS State-year unemployment rate		1.4182**				
(in four education cells)		(0.444)				
Share disagree work duty × ACS State-year unemployment rate			0.6661*			
(in ten one-digit occupation cells)			(0.271)			
Share disagree work duty × ACS State-year unemployment rate				1.2205*		
(in ten one-digit industry cells)				(0.587)		
Share disagree work duty × State-year unemployment rate					-0.2148	1.5921
					(1.157)	(3.389)
Year-state fixed effects	Yes	No	No	No	Yes	Yes
Year-state-education fixed effects	No	Yes	No	No	No	No
Year-state-occupation fixed effects	No	No	Yes	No	No	No
Year-state-industry fixed effects	No	No	No	Yes	No	No
Observations	1,899,295	1,899,295	1,899,295	1,899,295	1,502,050	1,129,095
Adjusted R-squared	0.077	0.079	0.091	0.084	0.017	0.371

Notes. See Table 1 for information on sample restrictions and Table 2 (column 4) for information on the control variables and baseline fixed effects. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. Standard errors are clustered by state and country of origin cells and are reported in parentheses. Levels of significance: ** p<0.01, * p<0.05. Column 1 replicates column 4 of Table 2 but replaces the BLS state-year unemployment rate with the state-year unemployment rate constructed using ACS data. Column 2 presents estimates where the unemployment rate is constructed using ACS data within state-year-education (4 categories: less than high school, high school, some college, and college and above) cells. Accordingly, the state-year fixed effects are replaced with state-year-education fixed effects. Column 3 presents estimates where the unemployment rate is constructed using ACS data within state-year-one-digit occupation cells. The state-year fixed effects are replaced with state-year-occupation fixed effects. Column 4 presents estimates where the unemployment rate is constructed using ACS data within state-year-one-digit industry cells, and the state-year fixed effects are replaced with state-year-industry fixed effects. In column 5 the sample is restricted to individuals who participate in the labor market. In column 6 the sample is restricted to individuals who earned positive wages in the previous week. We have also trimmed very low (less than $2 per hour) and very high (more than $60 per hour) wages. Wages have been deflated using the consumer price index (CPI) to base year 2001.

Table 5. Robustness Checks for Omitted Immigrant Group Characteristics (ACS 2001-2016)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI
Share disagree work duty × State-year unemployment rate	1.2951**	1.3030**	1.3258**	1.1670*	1.2878**	1.215**	1.3080**	1.0997**
	(0.416)	(0.415)	(0.433)	(0.475)	(0.434)	(0.594)	(0.440)	(0.3953)
Average years of schooling × State-year unemployment rate	0.0002					-0.001		
	(0.001)					(0.006)		
Average age × State-year unemployment rate		-0.0004				0.004		
		(0.002)				(0.008)		
Average years in the US × State-year unemployment rate			-0.0005			-0.0002		
			(0.002)			(0.004)		
GDP per capita/1,000,000 in the origin country in year 2000 × State-year unemployment rate				0.4605		.0587		
				(0.662)		(.0883)		
Average origin group SSDI in 2000 × State-year unemployment rate					0.2726	0.7318		
					(1.240)	(1.993)		
State-country of birth fixed effects	No	No	No	No	No	No	Yes	No
Age-country of birth fixed effects	No	No	No	No	No	No	No	Yes
Observations	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295
Adjusted R-squared	0.077	0.077	0.077	0.077	0.077	0.079	0.079	0.079

Notes. See Table 1 for information on sample restrictions and Table 2 (column 4) for information on the control variables and fixed effects included. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. Standard errors are clustered by state and country of origin cells and are reported in parentheses. Levels of significance: ** p<0.01, * p<0.05. Column 1 adds as an extra control the interaction between average years of schooling within country of origin cells and the state-year unemployment rate. Column 2 includes an interaction between average age within country of origin cells and the state-year unemployment rate. Column 3 adds the interaction between average years in the US within country of origin cells and the state-year unemployment rate. Column 4 includes an interaction term between the GDP per capita/10,000 in the origin country in year 2000 and the state-year unemployment rate. Column 5 includes an interaction between the average SSDI receipt within country of origin cells in the U.S. in the year 2000 constructed from the 5% US Census sample and the state-year unemployment rate. Column 6 includes all of the interaction terms in columns 1 to 5 simultaneously. Column 7 adds country of origin-state fixed effects to the baseline specification shown in Table 2 (column 4). Column 8 adds country of origin-age fixed effects to the baseline specification shown in Table 2 (column 4). To make samples equivalent across specifications, in columns 4-6 we have assigned an arbitrary value to observations with missing information. We then created a corresponding dummy variable equal to one if the value was assigned in this way. While the country of origin fixed effects control for the direct impact of a having a missing value for any country of origin specific variable, we have added to our models an interaction term between the dummy variable for missing data and the state-year unemployment rate.

Table 6. Heterogeneity (ACS 2001-2016)

	(1)	(2)	(3)	(4)	(5)	(6)
	Fluent in English	Not fluent in English	Men	Women	<=Median age	> Median age
	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI
Share disagree work duty × State-year unemployment rate	0.9622*	1.6533*	1.7056**	0.8820+	0.8457*	1.4852*
	(0.479)	(0.824)	(0.620)	(0.532)	(0.368)	(0.685)
Observations	919,161	980,134	926,271	973,024	941,950	896,335
Adjusted R-squared	0.089	0.074	0.092	0.066	0.029	0.093
Mean of dependent variable	0.0122	0.0146	0.0131	0.0139	0.00549	0.0230

Notes. See Table 1 for information on sample restrictions and Table 2 (column 4) 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 men and column 4 to women. Column 5 is restricted to individuals who are younger than the median age in our sample (41) whereas column 6 is restricted to those who are older than the median. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. Standard errors are clustered by state and country of origin cells and are reported in parentheses. Levels of significance: ** p<0.01, * p<0.05, + p<0.1. The difference of the coefficients between columns 1 and 2 is not statistically significant [chi2(1)=0.48, Prob>chi2=0.4867]. The difference of the coefficients between columns 3 and 4 is not statistically significant [chi2(1)=1.06, Prob>chi2=0.3042]. The difference of the coefficients between columns 5 and 6 is not statistically significant [chi2(1)=0.80, Prob>chi2=0.3711].

Table 7. Business Cycles and SSDI Benefit Receipt (CPS 2001-2017)

	First generation	First generation	Previous non-recipients	Undocumented	Documented	Second generation	Second generation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI
Share disagree work duty × State-year unemployment rate	3.394**	2.769*	9.292*	1.039	3.372*		
	(1.570)	(1.552)	(4.699)	(0.915)	(2.011)		
Share disagree work duty in father's home county × State-year unemployment rate						10.886**	
						(5.581)	
Share disagree work duty in mother's home county × State-year unemployment rate							2.581
							(2.963)
Health status controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	85,898	85,898	36,313	33,420	52,454	28,648	29,539
Adjusted R-squared	0.034	0.072	0.047	0.003	0.074	0.136	0.122
Mean of dependent variable	0.0102	0.0102	0.0066	0.0012	0.0158	0.0223	0.0199

Notes. All columns include dummies for gender, having a child, married, high school, some college, college, Hispanic, white non-Hispanic, black non-Hispanic, and Asian non-Hispanic, as well as age fixed effects, years in the US fixed effects, country of birth fixed effects and state/year fixed effects. The health status controls include health excellent, very good, good, and fair dummies. Sampling weights (normalized to sum to the same value each year) are used. Households that are in their second year in the sample are dropped in columns 1-2 and 4-5. In column 3, the sample is restricted to those who reported that they did not receive SSDI in the previous March wave of the CPS. Standard errors are clustered by state and country of origin cells and are reported in parentheses. Levels of significance: ** $p<0.01$, * $p<0.05$.

Appendix Tables

Table A1. Choosing Unemployment Rate Lag Structure (ACS 2001-2016)

	(1)	(2)	(3)	(4)
	SSDI	SSDI	SSDI	SSDI
Share disagree work duty × Current year state-year unemployment rate	0.8768*			
	(0.409)			
Share disagree work duty × State-year unemployment rate (in prior year)		1.2977**		
		(0.419)		
Share disagree work duty × State-year unemployment rate two years prior to survey			1.1113**	
			(0.427)	
Share disagree work duty × State-year unemployment rate three years prior to survey				1.1059*
				(0.431)
Observations	1,899,295	1,899,295	1,857,407	1,818,083
Adjusted R-squared	0.077	0.077	0.078	0.080
Mean of dependent variable	0.0135	0.0135	0.0134	0.0134

Notes. For information on the sample see Table 1. We include the same control variables and fixed effects as in column 4 of Table 2. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. Standard errors are clustered by state and country of origin cells and are reported in parentheses. Column 2 replicates column 4 of Table 2. Levels of significance: ** p<0.01, * p<0.05.

Table A2. Share Disagree Work Duty Response Per Country of Origin, Ranked from Largest to Smallest, IVS data

	Share disagree work duty	Observations
France	0.1003	9,897
Belgium	0.0662	2,044
Belarus	0.0564	3,364
Slovakia	0.0553	1,402
Montenegro	0.0533	416
Serbia	0.0469	972
Ukraine	0.0460	18,687
Austria	0.0428	2,526
Estonia	0.0416	250
Germany	0.0410	34,650
Indonesia	0.0405	6,396
Moldavia	0.0399	2,017
Romania	0.0397	11,544
Croatia	0.0392	2,752
Israel/Palestine	0.0390	9,780
Macedonia	0.0379	1,761
Czech Republic	0.0377	2,978
Greece	0.0364	8,515
Zambia	0.0348	351
Sweden	0.0341	3,021
South Korea	0.0337	71,899
Switzerland	0.0317	2,522
Bosnia	0.0314	8,060
Australia	0.0313	5,106
Spain	0.0313	5,261
Iceland	0.0310	316
Albania	0.0308	4,044
Finland	0.0305	1,222
Hungary	0.0285	3,910
Poland	0.0285	31,691
United Kingdom	0.0281	28,584
Norway	0.0274	1,292
Chile	0.0271	6,050
Canada	0.0268	56,638
Netherlands	0.0242	5,531
Lithuania	0.0240	1,840
Armenia	0.0240	5,578
Latvia	0.0238	964
Denmark	0.0238	1,709
Bulgaria	0.0228	4,304
Uruguay	0.0209	3,026
Yugoslavia	0.0190	5,046
Republic of Georgia	0.0184	861
India	0.0182	124,353
Mexico	0.0182	765,509
Cyprus	0.0176	326
Italy	0.0152	19,778
Uganda	0.0151	1,297
Argentina	0.0143	11,817
South Africa	0.0130	6,862
Japan	0.0125	20,885
Ireland	0.0125	8,400
Guatemala	0.0113	47,714
Morocco	0.0110	4,260
Brazil	0.0106	21,787
Turkey	0.0085	7,231
Trinidad and Tobago	0.0083	16,606
Ethiopia	0.0081	8,996

Continued

Continued

	Share disagree work duty	Observations
Thailand	0.0059	14,006
Singapore	0.0057	1,999
Philippines	0.0057	134,317
Bangladesh	0.0054	11,121
Peru	0.0048	26,795
China	0.0047	99,660
Tanzania	0.0044	1,266
Portugal	0.0034	15,824
Ghana	0.0033	7,629
Zimbabwe	0.0033	1,262
Hong Kong	0.0032	22,082
Vietnam	0.0029	99,681
Malaysia	0.0025	5,005
Jordan	0.0013	4,590
Egypt	0.0009	9,460

Notes. The work duty variable is constructed from the IVS data. It takes a value of one if the respondent strongly disagrees with the following statement "Work is a duty towards society" and zero if the respondent strongly agrees, agrees, neither agrees nor disagrees, or disagrees with the statement. Means are weighted using the appropriate person-level weights provided by the ACS.

Table A3. Top and Bottom Response Countries, ACS and IVS data

	Top country	Bottom country
Share who strongly disagree with statement:		
Work is a duty towards society	France 10.03% (n=9,897)	Egypt 0.09% (n=9,460)
To develop talents, you need to have a job	Belgium 10.20% (n=2,044)	Vietnam 0.12% (n=99,681)
People who do not work turn lazy	Iceland 14.18% (n=316)	Turkey 0.45% (n=7,231)
Humiliating to receive money without having to work for it	France 18.94% (n=9,897)	Turkey 1.17% (n=7,231)
Work should come first even if it means less spare time	France 20.87% (n=9,897)	Egypt 0.14% (n=9,460)
Share who say the following are always justifiable:		
Claiming government benefits to which you are not entitled	Mexico 10.49% (n=765,509)	Norway 0.43% (n=1,292)

Notes. Shares are constructed from IVS individual-level data using the appropriate person-level weights provided by the IVS. Sample sizes refer to the number of observations from that origin country in our ACS sample described in the notes under Table 1.

Online Appendix Figures

Table OA-1. Further Robustness Checks

	Ten or more years in the US	Full Sample	Drop Mexicans	Drop 4 weakest work norm countries	Drop 4 strongest work norm countries	Downturn years	Recovery years
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent Variable:	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI
Share disagree work duty × State-year unemployment rate	1.4956***		1.0710**	1.5624**	0.9612*	1.7206***	1.0335**
	(0.470)		(0.410)	(0.492)	(0.426)	(0.568)	(0.414)
Education-specific share disagree work duty × State-year unemployment rate		0.9312***					
		(0.337)					
Observations	1,600,977	1,897,828	1,133,786	1,882,588	1,780,559	700,498	1,232,378
Adjusted R-squared	0.085	0.078	0.075	0.077	0.079	0.079	0.082

Notes. For information on the sample see Table 1. We include the exact same control variables and fixed effects as in column 4 of Table 2 in columns 1 and 3-7. However, in column 2, we replace the country of origin fixed effects with education by country of origin fixed effects. The four education categories are less than high school, high school, some college, and college and above. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. Standard errors are clustered by state and country of origin cells and are reported in parentheses. The four weakest work norm countries referred to in column 4 are France, Belgium, Belarus, and Slovakia, and the four strongest work norm countries (column 5) are Egypt, Jordan, Malaysia, and Vietnam (See Table A2). Downturn years are defined as years when the current year's unemployment rate is higher than the previous year's unemployment rate; recovery years are defined as years when the current year's unemployment rate is lower than the previous year's unemployment rate. Levels of significance: ** p<0.01, * p<0.05.

Table OA-2. Monotonicity

	(1)	(2)
	SSDI	SSDI
Share disagree work duty category 2 × State-year unemployment rate	0.0300***	
	(0.008)	
Share disagree work duty category 3 × State-year unemployment rate	0.0338**	
	(0.014)	
Share disagree work duty category 4 × State-year unemployment rate	0.0623***	
	(0.024)	
Share disagree work duty × State-year unemployment rate category 2		0.0396
		(0.027)
Share disagree work duty × State-year unemployment rate category 3		0.0666**
		(0.029)
Share disagree work duty × State-year unemployment rate category 4		0.0824**
		(0.036)
Observations	1,899,295	1,899,295
Adjusted R-squared	0.078	0.078

Notes. For information on the sample see Table 1. We include the same control variables and fixed effects as in column 4 of Table 2. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. Standard errors are clustered by state and country of origin cells and are reported in parentheses. The share disagree work duty variable was divided into four evenly sized categories between the minimum (0.001) and maximum (0.100) values, excluding France and Belgium, which are significant outliers and which were added to the top bin. Category 1 has the lowest values; category 4 has the highest. The state-year unemployment rate was similarly divided into four categories between its minimum (0.023) and maximum (0.137).

Table OA-3. Robustness Check - Alternative Standard Error Clustering (ACS 2001-2016)

	(1)	(2)	(3)	(4)	(5)	(6)
	SSDI	SSDI	SSDI	SSDI	SSDI	SSDI
Share disagree work duty × State-year unemployment rate	1.2977**	1.2977**	1.2977**	1.2977**	1.2977**	1.2977**
	(0.419)	(0.365)	(0.410)	(0.453)	(0.464)	(0.425)
Observations	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295	1,899,295
Adjusted R-squared	0.077	0.077	0.077	0.077	0.077	0.077
Clustering	State-country of origin	State-year	State-year-country of origin	State	Country of origin	Two-way: state-year and country of origin

Notes. For information on the sample see Table 1. We include the same control variables and fixed effects as in column 4 of Table 2. Coefficients are estimated using linear probability models. Estimates are weighted using the appropriate person-level weights provided by the ACS. Standard clustered in different ways are reported in parentheses. Levels of significance: ** p<0.01.