zDisability Insurance in the Great Recession: Ease of Access, Program Enrollment, and Local Hysteresis

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The Social Security Disability Insurance (SSDI) program run by the Social Security Administration (SSA) provides roughly $125 billion annually in program benefits to 8.4 million disabled workers. Previous research has documented that SSDI applications and awards increase during economic downturns and that expanded access to SSDI leads to a reduction in employment. We build on these insights and show that localities with larger hassle costs in accessing SSDI during the Great Recession exhibited lower relative SSDI enrollment growth and, in some cases, faster relative employment growth after the recession. This paper is about how economic and policy conditions interact to affect labor market outcomes.

Maestas, Mullen, and Strand (2018) estimate that the Great Recession induced nearly 1 million applicants to apply to the program. Given that SSDI is generally an absorbing state, with almost all recipients who enter the program staying permanently out of the workforce, the question emerges as to whether relatively easier access to the program for marginal applicants during a cyclical downturn imparts a drag to employment recovery thereafter. We investigate the extent to which SSDI accessibility—as experienced through appeal wait times—amplifies or dampens the increase in SSDI enrollment and the subsequent recovery in employment in the aftermath of the Great Recession.

This paper contributes to an understanding of how safety net access interacts with economic shocks. We build on four existing strands of economic evidence. First, our paper is related to prior research about the link between economic downturns and SSDI enrollment (Autor and Duggan, 2003; Maestas, Mullen, and Strand, 2018). Second, our paper is related to prior research on the labor market disincentives of the SSDI program (Bound, 1989; Chen and van der Klaauw, 2008; Von Wachter, Song, and Manchester, 2011; Maestas, Mullen, and Strand, 2013; French and

Song, 2014; and Gelber, Moore, and Strand, 2017). Third, our paper is related to recent work by Deshpande and Li (2019) showing that stifled SSDI access in the wake of office closures results in disproportionate screening out of potential claimants with moderately severe disabilities and low levels of education. Fourth, our paper is related to the recent work of Yagan (2019) that documents a hysteresis effect of the Great Recession. We build on Yagan (2019) by looking across places that experienced large unemployment shocks to investigate whether differential SSDI hassle costs (a crude measure of access) muted or amplified the employment effects.

I. Research Design and Data

A. Empirical Strategy

To identify causal effects of SSDI accessibility on program enrollment and employment, we exploit plausibly exogenous local variation in a particular element of SSDI application hassle: appeal processing times.[1] SSDI applicants who are initially rejected have the option of appealing the decision to an administrative law judge (ALJ). In 2010, 28 percent of SSDI applicants appealed their initial rejection to an ALJ (Zayatz, 2015). These judges hear appeals from an assigned hearing office, and applicants are assigned to a hearing office based on their ZIP code of residence. There were 154 geographically demarcated hearing offices across the United States in 2010. These offices cover large geographic areas serving many ZIP codes. Crucial to our empirical strategy, there is substantial variation across offices in the time it takes to process appeal applications from filing to disposition. Some hearing offices take an average of about 600 days to process an application, while others take fewer than 300 days.

We compare the evolution of SSDI enrollment and employment rates in neighboring ZIP codes located within the same county but on opposite sides of the border between different hearing offices. These same-county border pairs are spread throughout the country, but are concentrated in more densely populated areas, where counties typically contain larger numbers of ZIP codes and thus more neighboring pairs that are candidates for our analysis sample.[2] Our estimation sample consists of 1,256 ZIP codes and 1,099 ZIP code pairs located in 183 counties across the

[1] In a companion NBER working paper, we review the relevant institutional features of the SSDI program and appeals process in some detail (Kearney, Price, Wilson, forthcoming working paper).

[2] In the companion working paper, we illustrate the identifying variation in a map of the United States and provide a couple of specific examples.

country. Among all cross-hearing office ZIP code pairs, the difference in average appeal processing times between the assigned hearing offices varies from 0 to 219 days with an unweighted median of 41 days and a mean of 55 days.

To investigate how average processing time at the appeal stage affects SSDI enrollment and employment rates after the Great Recession, we estimate the following equation:

$$(1)\ Y_{zpt} = \sum_{\tau=2003}^{2015} \beta_\tau (AveProcessMonths)_{o,2010} \times 1(t=\tau) + \delta_{pt} + \phi_z + \varepsilon_{zpt}$$

The outcome variable Y is alternately defined as the SSDI enrollment rate or employment rate for adults age 30 to 64. The level of observation is a ZIP code (z) by border pair (p) by year (t), reflecting the fact that a given ZIP code may be matched with multiple neighbors. The coefficients of interest are the vector β_τ, which trace out the impact of hearing office level (o) average processing time, as measured in 2010, over the years preceding and following the Great Recession. The year 2008 is excluded from these interactions to serve as the reference year. The inclusion of ZIP code border pair by year fixed effects (δ_{pt}) controls for common time shocks to a ZIP code pair; partialling out these fixed effects means that the estimated β coefficients capture differences in SSDI enrollment between two neighboring paired ZIP codes in the same year. The inclusion of ZIP code fixed effects (ϕ_z) controls for any time-invariant characteristics of a ZIP code. The identifying assumption is that without the difference in SSDI hassle costs, and conditional on fixed effects, SSDI enrollment and subsequent employment rates in bordering ZIP codes would have responded to the Great Recession in the same way. We adjust standard errors for potential two-way clustering at the hearing office level and the ZIP code border pair by year level, and we weight our estimates by the ZIP code's 2010 population.

We allow the effect of SSDI hassle costs (as measured by average processing time) on SSDI enrollment and employment rates to vary by the severity of the Great Recession unemployment shock. To do this, we follow Yagan (2019) in computing the change in the unemployment rate from 2007 to 2009 in each ZIP's commuting zone—a measure we refer to as the "Great Recession shock". We then estimate equation (1) separately for ZIP code pairs that experienced unemployment shocks above or below the sample median.[3] Since

[3] We depart slightly from Yagan in using the year-2000 (rather than year-1990) vintage of commuting zones, which we regard as better delineating local labor markets in the period we analyze. Using 1990 commuting zone codes yields similar results.

counties are nested within commuting zones, both ZIP codes in each same-county pair are necessarily assigned the same Great Recession shock.

Finally, we estimate specifications that further partition ZIP code pairs based on whether their (shared) county had above-median or below-median SSDI enrollment (as a share of the population ages 30–64) in 2007, on the eve of the Great Recession. We conjecture that marginal differences in the ease of accessing SSDI might have larger effects in localities with higher baseline receipt of SSDI, since whatever local characteristics resulted in high baseline caseloads—for example, the incidence of physical impairment, greater knowledge or awareness of the SSDI program, or the presence of lawyers specializing in SSDI cases—are likely to amplify the responsiveness of local SSDI enrollment and employment to a shock like the Great Recession.

B. Data

We use publicly available SSA data on ZIP code and county level SSDI caseloads for the years 2003–2015. To construct SSDI enrollment rates, we divide the number of SSDI disabled worker recipients in a given year by the ZIP code's population of adults age 30 to 64 in the 2010 Decennial Census. We use ZIP code level employment data from the US Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) (US Census Bureau, 2020).[4]

We obtain SSA hearing office catchment areas from the SSA website. Through the Hearing Office Locator tool, field offices (and in turn ZIP codes) can be linked to their assigned hearing office at a given point in time. Using the Internet Archive's Wayback Machine, we pulled archived copies of the website and created a crosswalk from each field office to its assigned hearing office.[5] Because the ZIP code level SSDI award data include the assigned field office, we are able to link ZIP codes to field offices and field offices to hearing offices. Using ArcGIS, we then matched ZIP codes to neighboring ZIP codes and identified border pairs assigned to different hearing offices in 2010. Average processing times by hearing office are likewise provided by the SSA. Starting in 2010, SSA began publishing reports with average processing times from the date a hearing was requested to the disposition date of the associated appeal,

[4] More information about data construction is available in the companion working paper.

[5] These linkages were only available between 2007 and 2013, beyond which the Hearing Office Locator tool became interactive and historic data cannot be retrieved.

along with the average wait time from the request date to the hearing date as well as judge-level award rates.[6] We use processing times reported for fiscal year 2010, the earliest available, when many recession-induced SSDI applicants would likely be at the appeal stage.

II. Results

A. Effects on SSDI Enrollment

Our first set of results comes from estimating equation (1) for ZIP code pairs subject to above-median and below-median Great Recession shocks. Figure 1a plots the coefficient on appeals processing time by year, separately for more and less severely shocked places. Among ZIP codes in harder-hit areas, those assigned to hearing offices with one month shorter processing times experienced a persistent relative increase in SSDI enrollment peaking at 0.09 percentage points relative to their paired neighbors. If we scale this estimate by the typical 1.8 month disparity in processing times between cross-border ZIP codes, these estimates suggest that SSDI enrollment rates climb 0.16 percentage points (3.5 percent) higher in the ZIP code that faced longer processing times. By contrast, ZIP code pairs in counties where the recession was less severe exhibit no significant change in their relative SSDI enrollment trends. Put together, these results suggest that countercyclical increases in SSDI program enrollment depend on an interaction between ease of program access and the local severity of the labor market downturn.

B. Effects on Employment Recovery

We next examine how SSDI hassle costs—as proxied by hearing office processing time—mediate the effect of the unemployment shock on subsequent ZIP-level employment. We estimate equation (1) for the outcome of employment-to-population ratio of adults age 30 to 64, again splitting the sample by the severity of the Great Recession shock. As shown in Figure 1b, the point estimates are broadly positive for both more and less severely shocked areas during the post-recession years, but provide no clear indication of an effect in either subsample, as the confidence intervals include zero.

A null result for employment rates is consistent with the ambiguous theoretical

[6] One reason these data were compiled was to better understand differences across administrative law judges (ALJ). In 2011, a massive ALJ reform was undertaken to re-train judges who appeared too strict or too lenient and to promote uniformity within the appeal process. As such, the composition of judges and processing times changed in 2011. Given this reform, a potential concern is that hearing offices that had long average processing times in 2010 may have been more (or less) likely to experience changes in 2011 in ways that systematically affect SSDI enrollment and employment. We confirm that changes in hearing office award rates between 2010 and 2012 are uncorrelated with average processing time in 2010.

relationship between appeals processing time and labor supply. Though an increase in the hassle cost of appealing a denied SSDI application should have an unambiguously negative impact on SSDI enrollment, the effect on employment is less clear. Consider a disabled worker who is deciding whether to appeal a denied claim. On the one hand, an increase in expected processing time will raise the opportunity cost of filing an appeal, since claimants may not engage in what SSA terms Substantial Gainful Activity (SGA) while an appeal is pending lest they jeopardize the outcome of that appeal. To the extent that workers are aware of processing time, the SGA constraint should discourage some workers from filing an appeal—a channel we call the *deterrence effect*. On the other hand, if the worker decides to go ahead and file an appeal, longer processing time implies that the worker will experience a longer period of below-SGA earnings before the case is resolved. This is the *decay effect*. We interpret the relatively similar evolution of employment rates in areas with longer versus shorter processing delays as consistent with the deterrence and decay effects roughly offsetting each other, though we caution that the wide confidence intervals in these specifications preclude strong conclusions.

C. Heterogeneous Effects by Baseline SSDI Enrollment Rate

As a final exercise, we investigate whether SSDI accessibility has heterogeneous effects on program enrollment and employment growth in areas with different baseline rates of SSDI receipt. Pre-recession SSDI enrollment rates vary significantly: among ZIP codes in our border panel, county-level SSDI enrollment rates at the 75th percentile of the 2007 distribution are nearly twice those at the 25th percentile: 6.1 versus 3.2 percent.[7] We conjecture that marginal differences in the ease of accessing SSDI (again, as captured through appeals processing time) may have larger effects in localities with higher baseline receipt of SSDI, since such places are likely to have greater SSDI network and information effects and hence be poised for a stronger response to variation in program accessibility.

The data support this conjecture. Figure 2 plots the coefficients from estimating equation (1) in the subsample of severely shocked ZIP code pairs whose (common) county had 2007 SSDI enrollment rates above the sample

[7] Among ZIP code pairs in our analysis sample, there are counties with pre-recession SSDI enrollment rates exceeding 10 percent in Alabama, Arkansas, California, Indiana, Kentucky, Mississippi, Missouri, Tennessee, Virginia, and West Virginia.

median. Within this subsample, we find a statistically significant negative effect of processing time on post-recession SSDI enrollment and a statistically significant positive effect on post-recession employment rates. In such localities, an additional month of processing time is associated with a relative decrease in SSDI enrollment of 0.14 percentage points and a relative increase in the employment rate, starting in 2010, that peaks in 2013 before decreasing in later years. The point estimates for the employment-to-population ratio bounce between 0.45 and 0.85 percentage points after 2010, albeit with wide confidence intervals. In other words, ZIP codes facing longer average processing times saw employment rates (and SSDI enrollment) increase more quickly after the Great Recession, relative to neighboring ZIP codes facing shorter processing times. Our results suggest that, in areas with high baseline SSDI enrollment rates and deep recession shocks, less cumbersome access to SSDI contributed to both faster growth in program rolls and slower employment recoveries after the Great Recession.

III. Conclusion

In this paper, we exploit recession-era differences in appeal processing time across SSA hearing offices, coupled with ZIP code level hearing office assignments, to estimate the impact of SSDI hassle costs on program enrollment and employment in the wake of the Great Recession. We find that among neighboring ZIP codes in severely shocked counties, those assigned to SSA hearing offices with longer appeals processing times experienced relatively lower SSDI enrollment in the wake of the Great Recession. In the full sample of ZIP code pairs, there is no associated discernible effect on employment rates. But, in severely shocked areas with high rates of baseline SSDI enrollment, a longer appeals processing time is associated with both a sizable relative decrease in SSDI enrollment and a relative increase in subsequent employment.

These results are consistent with the idea that, after labor market downturns, easier access to SSDI has persistent effects on SSDI enrollment and slows the employment recovery in traditional SSDI hotspots. We present these results about the effects of SSDI hassle costs on program enrollment without making any statement about the implied social welfare loss or gain, which will depend on the social objective function and the relative social weights placed on encouraging work versus supporting out-of-work individuals.

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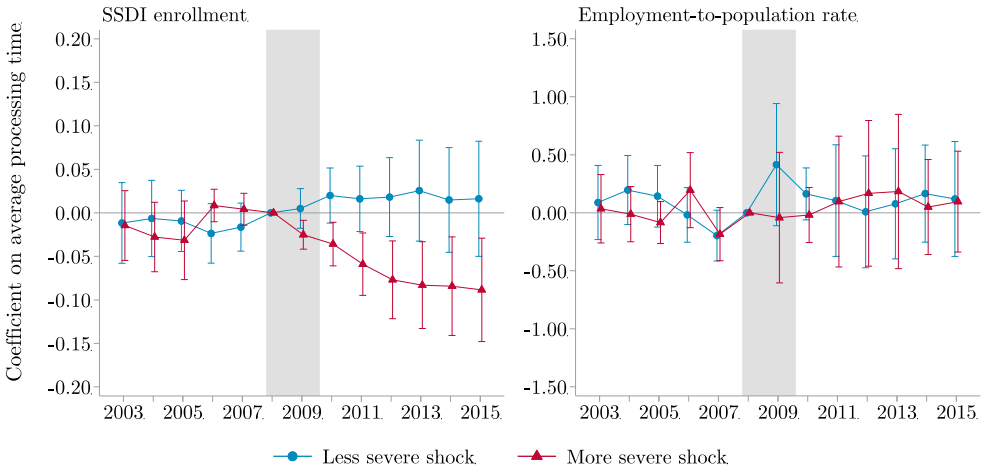

FIGURE 1. IMPACT OF SSDI PROCESSING TIME ON PROGRAM ENROLLMENT AND EMPLOYMENT RATES

Note: Estimated coefficients on interactions between average processing time and annual year indicators from equation (1), estimated separately for ZIP code pairs in commuting zones with 2007–2009 changes in the unemployment rate below or above the sample median. Capped spikes denote 95 percent confidence intervals. Grey bars correspond to NBER recession dates.

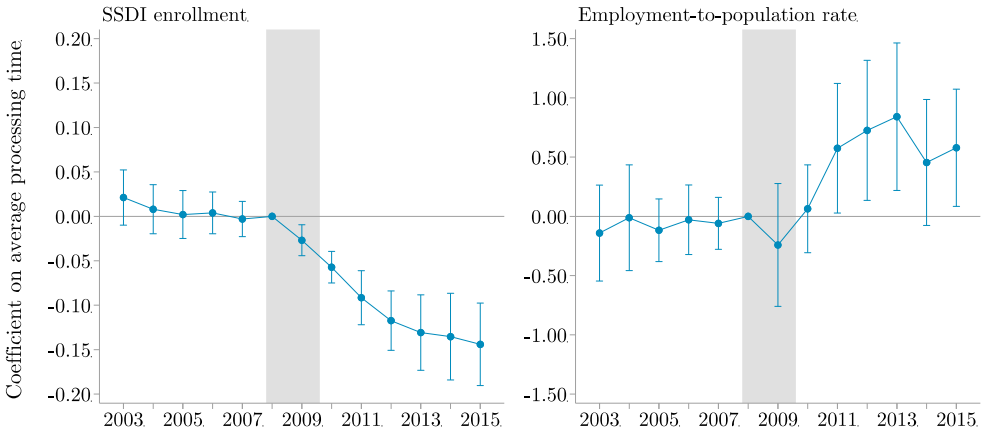

FIGURE 2. IMPACT OF SSDI PROCESSING TIME IN AREAS WITH SEVERE UNEMPLOYMENT SHOCKS AND HIGH BASELINE SSDI ENROLLMENT

Note: Estimated coefficients on interactions between average processing time and annual year indicators from equation (1), estimated using ZIP code pairs located in commuting zones with above-median 2007–2009 changes in the unemployment rate and in counties with above-median 2007 SSDI enrollment rates. Capped spikes denote 95 percent confidence intervals. Grey bars correspond to NBER recession dates.