

Disability Insurance in the Great Recession: Ease of Access, Program Enrollment, and Local Hysteresis[†]

By MELISSA S. KEARNEY, BRENDAN M. PRICE, AND RILEY WILSON*

The US Social Security Disability Insurance (SSDI) program 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 subject to 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 one 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, relatively easier access to the program for marginal applicants during a cyclical downturn might impart a drag to employment recovery thereafter. We investigate the extent to which differential SSDI hassle costs—as experienced through appeal wait times—amplify or dampen the increase in SSDI enrollment and the recovery in employment in the aftermath of the Great Recession.

*Kearney: University of Maryland and NBER (email: kearney@umd.edu); Price: Federal Reserve Board of Governors (email: brendan.m.price@frb.gov); Wilson: Brigham Young University (email: riley_wilson@byu.edu). Hans Ringger provided excellent research assistance. We are grateful to our discussant, Hilary Hoynes, for comments that improved the paper. All errors are ours. The views expressed in this paper are those of the authors and do not necessarily represent the views or policies of the Social Security Administration or those of the Board of Governors of the Federal Reserve System or its staff.

[†]Go to <https://doi.org/10.1257/pandp.20211092> to visit the article page for additional materials and author disclosure statement(s).

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 a large number of papers on the labor market disincentives of the SSDI program, from the seminal work of Bound (1989) through the more recent work of Maestas, Mullen, and Strand (2013) and French and Song (2014). 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 builds on Yagan (2019), which documents a hysteresis effect of the Great Recession, by looking across places that experienced large unemployment shocks to investigate whether differential SSDI costs altered the employment effects.

I. Research Design and Data

A. Empirical Strategy

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. In 2010, there were 150

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

geographically demarcated hearing offices active throughout the United States. These offices cover large geographic areas serving many zip codes. Crucially for our empirical strategy, there is substantial variation across offices in the time it takes to process an appeal—ranging from about 300 to 600 days—from initial filing through eventual resolution.

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. Our estimation sample consists of 1,049 zip codes and 907 zip code pairs, located in 159 counties across the country.² Among all cross-hearing office zip code pairs, the cross-border difference in average appeal processing times varies from 0 to 219 days, with an unweighted median of 46 days and a mean of 57 days.

We estimate the following equation:

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

The outcome variable Y is alternately defined as the SSDI enrollment rate or employment rate for adults ages 30–64. 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 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 average processing time on SSDI enrollment and employment rates to vary with the local severity of the Great Recession. To do so, we follow Yagan (2019) in computing the change in the unemployment rate from 2007 to 2009 in each zip code's commuting zone—a measure we refer to as the “Great Recession shock”—though we use the year-2000 (rather than year-1990) vintage of commuting zones. We then estimate equation (1) separately for zip code pairs that experienced unemployment shocks above or below the sample median of 4.5 percentage points. Since 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 a 2007 SSDI enrollment rate, as a share of the population ages 30–64, above or below the sample median of 4.1 percentage points. 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, 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 Social Security Administration (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 ages 30–64 in the 2010 Decennial Census. We use zip code-level employment data from the US Census Bureau's Longitudinal

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

Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) (US Census Bureau 2002–2018).³

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. Using ArcGIS, we then matched zip codes to neighboring zip codes and identified border pairs assigned to different hearing offices in 2010. We use hearing office processing times publicly reported by SSA for fiscal year 2010, when many recession-induced SSDI applicants would likely be at the appeal stage.⁴

II. Results

A. Effects on SSDI Enrollment

Our first set of results comes from estimating equation (1) with SSDI enrollment on the left-hand side for zip code pairs subject to above-median and below-median Great Recession shocks. Figure 1, panel A, 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 longer processing times experienced a persistent decrease in SSDI enrollment, peaking just shy of 0.05 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, our results suggest that SSDI enrollment rates climb 0.08 percentage points (1.9 percent) higher in zip codes facing shorter processing times relative to their neighbors facing longer processing times.

³More information about data construction is available in the companion working paper, which contains a detailed online data appendix.

⁴In 2011, ALJ reform was undertaken to retrain judges who appeared too strict or too lenient and to promote uniformity within the appeal process. Given this reform, a potential concern is that hearing offices that had long average processing times in 2010 may have been differentially likely to experience changes after 2011. We confirm that changes in hearing office award rates between 2010 and 2012 are uncorrelated with average processing time in 2010 ($\rho = 0.03$).

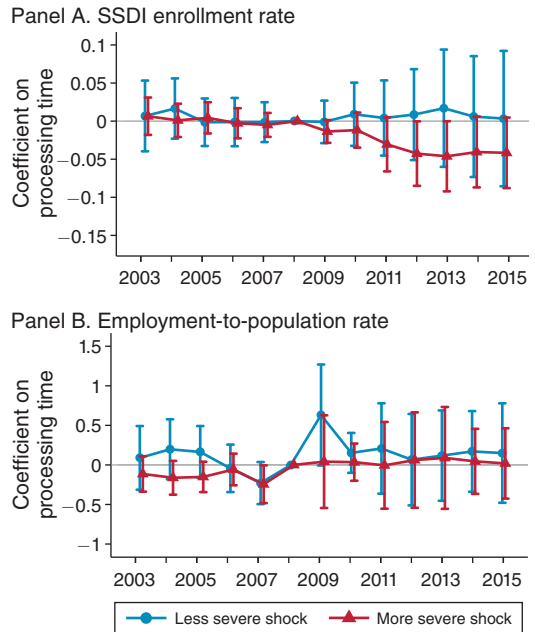


FIGURE 1. IMPACT OF SSDI PROCESSING TIME ON PROGRAM ENROLLMENT AND EMPLOYMENT RATES

Notes: Estimated coefficients β_τ 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.

By contrast, zip code pairs in commuting zones where the recession was less severe exhibit no significant change in their relative SSDI enrollment trends. 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 mediate the effect of the unemployment shock on subsequent zip code-level employment. We estimate equation (1) with the age-30–64 employment rate on the left-hand side, with the sample again split by the severity of the Great Recession shock. As shown in Figure 1, panel B, the data provide no clear indication of an effect in either subsample, as the confidence intervals are wide and include zero.

A null result for employment rates is consistent with the ambiguous theoretical 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 file an appeal, a 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*. The relatively similar evolution of employment rates in areas with longer versus shorter processing delays would be consistent with the deterrence and decay effects roughly offsetting each other.

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 seventy-fifth percentile of the 2007 distribution are twice those at the twenty-fifth percentile (6.3 versus 3.1 percent).⁵ Marginal differences in the ease of accessing SSDI might have larger effects in localities with higher baseline receipt of SSDI, since such places are likely to have stronger SSDI network and information effects and are hence poised for a stronger response to variation in program accessibility.

⁵ Among zip code pairs in our analysis sample, there are counties with pre-recession SSDI enrollment rates exceeding 10 percent in Alabama, Arkansas, California, Kentucky, Missouri, Tennessee, Virginia, and West Virginia.

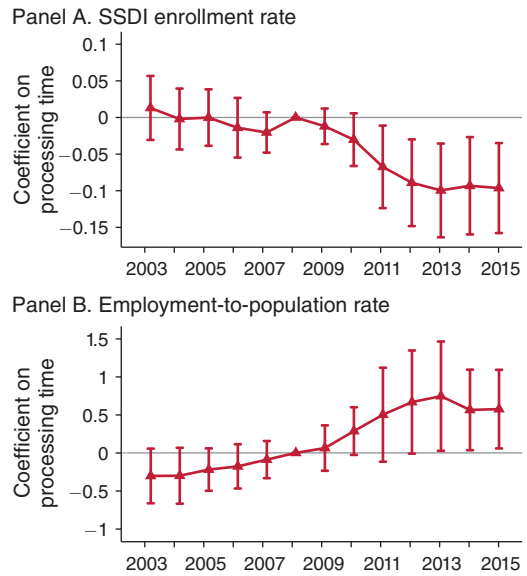


FIGURE 2. IMPACT OF SSDI PROCESSING TIME IN AREAS WITH SEVERE UNEMPLOYMENT SHOCKS AND HIGH BASELINE SSDI ENROLLMENT

Note: Same as for Figure 1 but estimated for zip code pairs in commuting zones with 2007–2009 changes in the unemployment rate above the sample median and in counties with 2007 per capita SSDI enrollment above the sample median.

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 a 2007 SSDI enrollment rate above the sample median. There is 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 these localities, an additional month of processing time is associated with a relative decrease in SSDI enrollment of 0.1 percentage points and a relative increase in the employment rate, starting in 2010, that peaks in 2013 before decreasing slightly in later years. For employment rates, the point estimates range between 0.5 and 0.8 percentage points after 2010, albeit with wide confidence intervals. Although the apparent pretrend in employment warrants caution, these 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

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 commuting zones, those assigned to SSA hearing offices with longer appeals processing times experienced slower growth in per capita SSDI enrollment. 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 relative decrease in SSDI enrollment rates and a relative increase in employment rates.

These results are consistent with the idea that after labor market downturns, easier access to SSDI has persistent effects on SSDI enrollment and, more tentatively, slows the employment recovery in traditional SSDI hot spots. The implied social welfare loss or gain will depend on the social objective function and the relative social weights placed on encouraging work versus supporting out-of-work individuals.

REFERENCES

- Autor, David H., and Mark G. Duggan.** 2003. "The Rise in the Disability Rolls and the Decline in Unemployment." *Quarterly Journal of Economics* 118 (1): 157–205.
- Bound, John.** 1989. "The Health and Earnings of Rejected Disability Insurance Applicants." *American Economic Review* 79 (3): 482–503.
- Deshpande, Manasi, and Yue Li.** 2019. "Who Is Screened Out? Application Costs and the Targeting of Disability Programs." *American Economic Journal: Economic Policy* 11 (4): 213–48.
- French, Eric, and Jae Song.** 2014. "The Effect of Disability Insurance Receipt on Labor Supply." *American Economic Journal: Economic Policy* 6 (2): 291–337.
- Kearney, Melissa S., Brendan M. Price, and Riley Wilson.** Forthcoming. "Disability Insurance in the Great Recession: Ease of Access, Program Enrollment, and Local Hysteresis."
- Maestas, Nicole, Kathleen J. Mullen, and Alexander Strand.** 2013. "Does Disability Insurance Receipt Discourage Work? Using Examiner Assignment to Estimate Causal Effects of SSDI Receipt." *American Economic Review* 103 (5): 1797–1829.
- Maestas, Nicole, Kathleen J. Mullen, and Alexander Strand.** 2018. "The Effect of Economic Conditions on the Disability Insurance Program: Evidence from the Great Recession." NBER Working Paper 25338.
- US Census Bureau.** 2002–2018. "LEHD Origin-Destination Employment Statistics (2002–2018), 7.5." <https://lehd.ces.census.gov/data/lodes/>.
- Yagan, Danny.** 2019. "Employment Hysteresis from the Great Recession." *Journal of Political Economy* 127 (5): 2505–58.
- Zayatz, Tim.** 2015. "Social Security Disability Insurance Program Worker Experience." Social Security Administration Actuarial Study 123.