The Impact of the Great Recession on SSDI Awards:
A Birth-Cohort Analysis

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Introduction

Social Security Disability Insurance (SSDI) awards rapidly increased and then declined in the decade after the Great Recession began (2007 to 2016). These fluctuations have heightened uncertainty about the financial status of the Disability Insurance Trust Fund.

In this study, we sought to better understand the extent to which the business cycle accounted for the spike in awards early in the 10-year period as well as the large decline more recently. We hypothesized that (1) the recession initially accelerated awards to workers who would have worked longer and entered SSDI much later had the economy remained stable and (2) this acceleration led to a reduction in the number of awards during the later recovery. Prior research shows that the Great Recession contributed substantially to awards early in the period we studied. However, our "acceleration hypothesis" provides a mechanism by which the Great Recession may have contributed substantially to the recent, unanticipated decline in awards.

We used a birth-cohort analysis to assess the effect of the business cycle on SSDI awards from 2008 through 2014. Because this approach enabled us to follow single-year birth cohorts of workers, by sex, over the whole period, we avoided confounding the effects of the recession with changes in the demographic composition of the disability-insured population. Another innovation was our use of the entitlement month to date SSDI entry, rather than the award month, which enabled us to avoid the confounding effects of the business cycle on the duration of the disability determination process. Our analysis ended in 2014 because many of the applications filed in 2015 and

2016 were pending final decisions when we extracted the data from SSA administrative records.

Data and Methods

We used the 2016 Disability Analysis File (DAF) for information on SSDI awards in 1996 through 2014. Our primary analysis sample included beneficiaries born in 1941 through 1986; these beneficiaries were ages 20 to 65 at the outset of the analysis period, January 2007.

We characterized the business cycle at the state level from 2007 to 2016 using monthly state-level employment data from the Local Area Unemployment Statistics (LAUS) program of the Bureau of Labor Statistics. We created three state-level variables to characterize the evolution of the business cycle over the 10-year period: (1) the pre-recession employment rate, which we defined as the employment rate in September 2007; (2) the percentage-point decline in the employment rate between September 2007 and December 2009, the latter date being the final month of the initial decline in the national employment rate; and (3) the percentage-point increase in the employment rate from December 2009 to December 2016.

We created series of SSDI awards by state, birth cohort, and sex between 1996 and 2014. For each actual series, we also constructed a counterfactual series from 2007 through 2014 based on the average state-sex-specific rates of growth at each age in 1996 to 2006. We sequentially applied these averages to the 2006 awards for each state and sex to produce the counterfactual award series. As a result, the counterfactual series were an estimate of expected awards for the post-2007 period, holding constant the average effects of the business cycle and other time-varying factors over the

previous 11 years. We aggregated the initial monthly series to the half-year level for analysis purposes.

For each sex and birth cohort, we estimated cross-state regression models for the deviation of actual awards from counterfactual awards, one model for each half year. In each model, the explanatory variables were the three business-cycle characteristics. Consistent with the goal of assessing how much the business cycle accounts for differences in actual versus counterfactual awards over the whole period, we based the business-cycle measures on the full period. We did not intend to model each half-year deviation based on past business-cycle information alone.

Results

Exhibit 1 shows the observed awards and counterfactual awards aggregated across birth cohorts (1941 to 1986), separately by sex. From 2008 to 2010, the number of awards to both sexes was higher than predicted by the corresponding counterfactual series. By 2012, awards for both sexes were below counterfactual awards, and they continued to fall relative to counterfactual awards through 2014.

For males, the cumulative deficit in awards net of counterfactual awards from 2012 through 2014 (218,000) was not much larger than the cumulative excess from 2008 through 2011 (188,000). This could mean that the "accelerated award" hypothesis explains a large part of the decline in awards during the later period. For females, however, the cumulative deficit of awards in the later period (276,000) was markedly larger than the cumulative excess in the earlier period (53,000). This implies that factors other than the increase in awards during and immediately after the recession caused

award growth to slow relative to growth experienced by earlier cohorts in the previous decade.
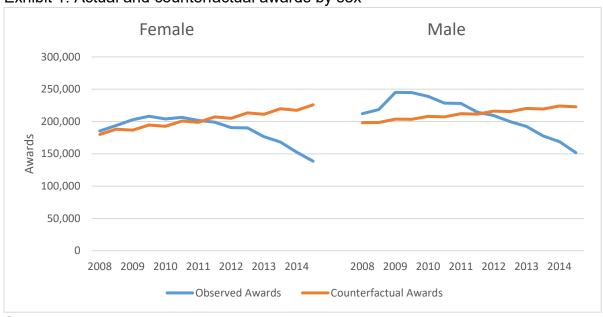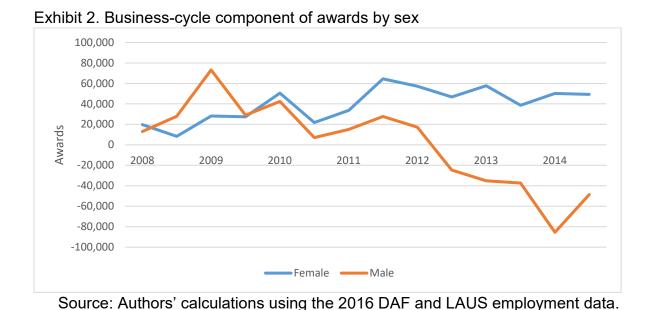
Exhibit 1. Actual and counterfactual awards by sex

Source: Authors' calculations using the 2016 DAF.

Exhibit 2 shows the estimated business-cycle component of awards, based on the cross-state regressions. For males, the business-cycle component accounts for 214,000 of the 218,000 cumulative deficit in awards observed from 2012 through 2014, and it predicts 236,000 excess awards between 2008 and 2012—actually exceeding the observed excess of 188,000. When we disaggregated into cohort groups, we found that the business-cycle findings were mostly attributed to the males in cohorts that were age 48 to 58 at the end of 2007. We also found that the business-cycle model predicts actual-counterfactual differences for the cohort groups less well than for all cohorts combined.

For females, the estimated business-cycle effect peaked later and remained high through the end of 2014. This unexpected finding may be related to the fact that the counterfactual series is based on a decade of relatively rapid growth in awards to

females. The estimates of business-cycle effects also are potentially confounded by the effects of state-level factors that are predictive of cross-state variation in counterfactual award growth, and such confounding may be particularly problematic for females. We therefore have less confidence that these estimates represent business-cycle effects well.

Exhibit 2. Business-cycle component of awards by sex

Source: Authors' calculations using the 2016 DAF and LAUS employment data.

Conclusions

The goal of this analysis was to better understand the extent to which the business cycle accounts for both the rapid growth in awards during and immediately after the Great Recession as well as the later decline in awards. Despite noted anomalies in the findings, they show the value of using a cohort approach to understand how business cycles affect SSDI awards. The findings for males suggest that the business cycle accounts for a large share of the unanticipated decline in awards through 2014. The findings for females are quite different, and for the reasons previously indicated, we are less confident in our interpretation of them.