Social Security

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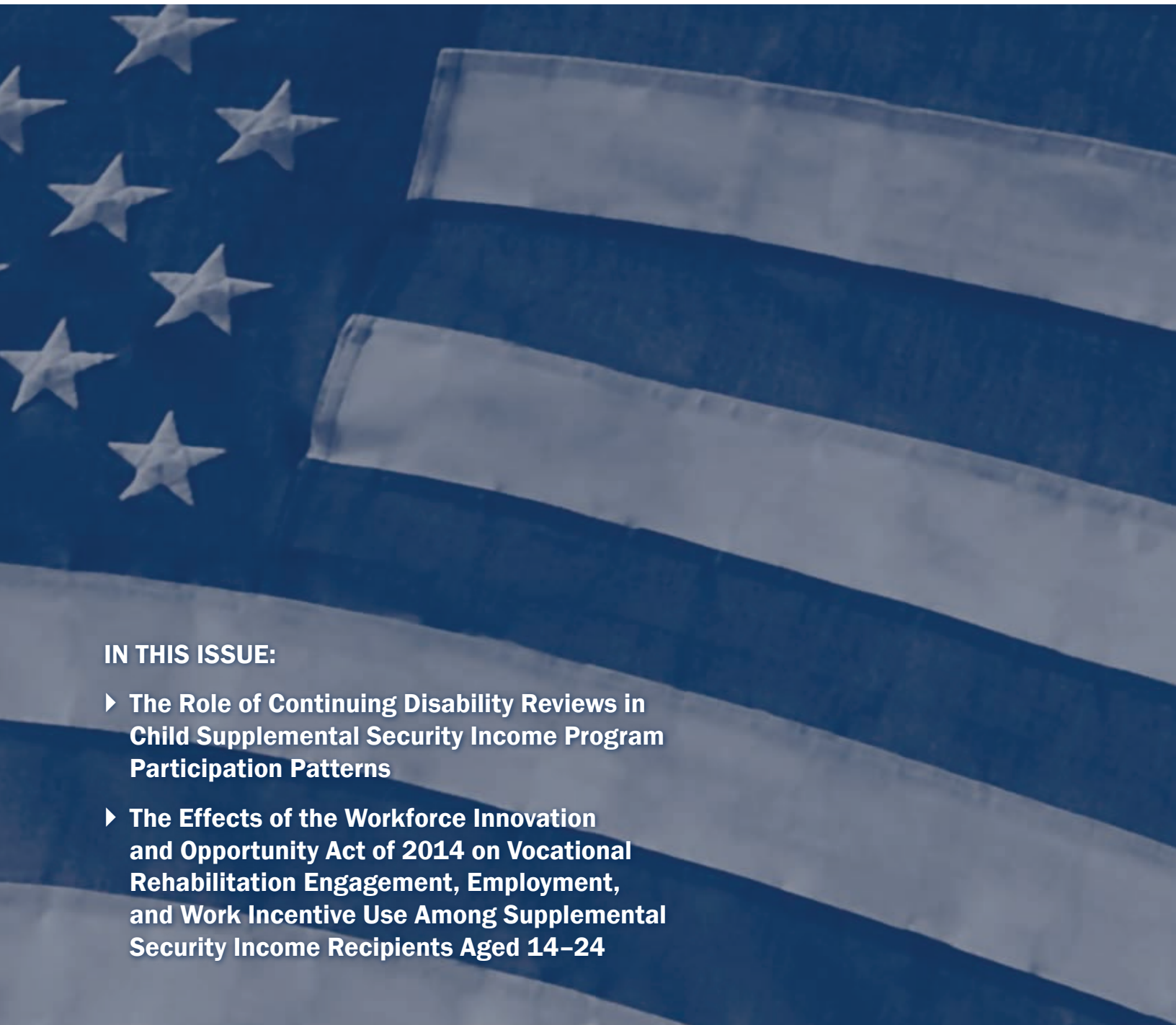

IN THIS ISSUE:

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# Celebrating 50 years of the Supplemental Security Income program

In 1972, President Nixon signed legislation creating the federal Supplemental Security Income (SSI) program, and in January 1974, the Social Security Administration (SSA) issued the first monthly SSI payments. A half century later, approximately 7.4 million people—including nearly 1 million children—receive SSI payments every month to help pay for basic needs like food, rent, clothing, and medicine. To commemorate SSI's 50th anniversary, we have prepared a special issue of the *Social Security Bulletin* with two articles examining the effects of the SSI program on young recipients.

In the first article, researchers from SSA, Colgate University, and Mathematica examine patterns in the frequency of medical continuing disability reviews (and the accompanying SSI payment cessations) and how they might affect child SSI participation rates. In the second article, Mathematica and SSA researchers look at the effects of the Workforce Innovation and Opportunity Act of 2014 on vocational rehabilitation service use among SSI recipients aged 14–24.

I hope you find this issue of the *Bulletin* informative, and I encourage you to learn more about SSI by visiting our website at https://www.ssa.gov/ssi or about Social Security's history at https://www.ssa.gov/history/.

Natalie T. Lu
Associate Commissioner for Research, Evaluation, and Statistics
Social Security Administration

# Social Security Bulletin

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## *Articles*

# The Role of Continuing Disability Reviews in Child Supplemental Security Income Program Participation Patterns

by Jeffrey Hemmeter, Michael Levere, and David C. Wittenburg*

*The Social Security Administration conducts periodic continuing disability reviews (CDRs) to determine ongoing medical eligibility for children receiving Supplemental Security Income (SSI) payments. CDR volumes have varied over time because of funding availability. This article examines longitudinal patterns in the characteristics of and outcomes for child SSI recipients whose payments ceased because of a CDR. It also quantifies the extent to which CDR cessation patterns affect child SSI caseloads over time. We find that CDRs strongly influence child SSI caseloads. CDR cessations can explain three-fifths to two-thirds of changes in the number of SSI recipients, both as the program grew from 2002 through 2013 and as it subsequently declined. Despite variation in CDR cessation frequency, the characteristics of children with payments ceased because of a CDR were mostly stable, with relatively few children returning to SSI. Minimizing CDR volume fluctuations may help families plan for the potential loss of SSI payments.*

## Introduction

The number of child Supplemental Security Income (SSI) recipients has declined since 2013, falling by more than 25 percent through December 2023 (Social Security Administration [SSA] 2024). The agency periodically conducts continuing disability reviews (CDRs) to determine whether SSI recipients remain medically eligible for payments, and the number of CDRs conducted during that period increased substantially—particularly after 2015—perhaps contributing to the decline in child SSI participation.[1] Recent research suggests that the increase in CDR frequency might have reduced duration of payments for affected SSI award cohorts (Hemmeter and others 2021). However, the effects of increased CDR volume on the overall SSI caseload, receipt of payments, and other outcomes are not well understood.

In this article, we analyze the characteristics of and outcomes for children who were removed from the SSI rolls during a recent uptick in the number of CDRs conducted and the role CDRs play in explaining trends in the number of child SSI recipients. Although previous analyses provided insights into outcomes for children and families following a CDR cessation (Deshpande 2016b; Hemmeter and Bailey 2015), they did not consider the substantial increase in CDRs conducted beginning in 2015, when SSA began working through a substantial CDR backlog. In 2002, there was no CDR backlog, but the CDR volume began declining in 2003 because of funding shortfalls and priority shifts. By the end of fiscal year 2014, the CDR backlog had grown to nearly 350,000 cases (SSA 2018).[2]

**Selected Abbreviations**

| | |
|---|---|
| CDR | continuing disability review |
| SSA | Social Security Administration |
| SSI | Supplemental Security Income |

* *Jeffrey Hemmeter is the Acting Deputy Associate Commissioner for the Office of Research, Demonstration, and Employment Support, Office of Retirement and Disability Policy, Social Security Administration. Michael Levere is an assistant professor of economics at Colgate University and a senior researcher at Mathematica. David Wittenburg is the Vice President and Practice Director for Social Policy and Economics Research at Westat.*

This article addresses three research questions:

1. What are the characteristics of children whose SSI payments are ceased because of a CDR?
2. What are the outcomes for children in the years following a CDR cessation?
3. How do CDR cessation patterns affect child SSI caseload trends?

To answer these questions, we relied primarily on descriptive analyses of SSA's administrative data. To answer the first question, we compared the characteristics of children whose payments ceased because of a CDR[3] with those of child SSI recipients overall. To answer the second question, we looked at the rates at which children with ceased payments later return to the SSI rolls and at their earnings patterns in the years following cessation. For both questions, we focused on pattern shifts as the CDR frequencies changed. To answer the third question, we conducted a policy simulation exercise to predict the likelihood that children with specific characteristics would have had CDR cessations if the CDR cessation pattern held constant in a given year. That simulation also enables us to account for whether a child might have returned to the SSI rolls following a CDR cessation. We compare CDR cessation patterns from 2008 and 2017. The 2008 cessation cohort was atypically low because of budget constraints and the resulting shift in administrative priorities away from conducting CDRs, which generated a growing CDR backlog. By contrast, the 2017 cessation cohort typified a stable pattern, reflecting the regular processing volume after the backlog had been reduced. Comparing the distinct CDR cessation patterns of the 2008 and 2017 cohorts enabled us to assess how CDR cessations affect overall caseload dynamics. We then used our policy simulation to compare the trends in predicted child SSI participation over that period with actual trends.

We find that most characteristics of children with ceased payments stayed constant over time (except for age at CDR), irrespective of the frequency of cessations. This suggests that, regardless of the volume of CDRs conducted, the profiles of children most at risk of losing SSI payments stay largely the same, with only the number of affected children fluctuating with the rate at which reviews are completed. Children who are expected to improve medically, who live in areas with high socioeconomic deprivation, and who have certain primary diagnoses (such as developmental or respiratory disorders) were disproportionately likely to experience cessation of payments in all years we examined. One notable shift over time was the age at which CDR cessations were likely to occur. From 2003 through 2008, children aged 1–5 more frequently had a CDR cessation than children aged 11–13, whereas from 2011 through 2017, the reverse was true.

For children whose SSI payments ceased, returns to the SSI rolls were infrequent and earnings potential was limited, indicating the many challenges those children face (both in the short term and when they become adults). About 8 percent of children returned to the SSI program within 5 years of payment cessation. Those patterns differ somewhat by the year of cessation—slightly more than 10 percent of children with ceased payments from 2003 through 2008 returned to the program, compared with about 6 percent of children whose payments ceased because of a CDR from 2011 through 2017. Earnings outcomes were also limited. For example, in the fifth year after payment cessation (the year with the highest earnings outcomes), only about 60 percent of youths aged 16 or older at the time of earnings measurement had any earnings. Additionally, in the fifth year after payment cessation, the average annual earnings among this group aged 16 or older at the time of earnings measurement were less than $7,000. These findings suggest that youths whose payments ceased because of a CDR might have struggled to achieve economic self-sufficiency because they could no longer rely on SSI payments and did not earn much money.[4] That evidence is consistent with findings from Hemmeter, Kauff, and Wittenburg (2009), Deshpande (2016b), and Deshpande and Mueller-Smith (2022).

Finally, our policy simulations indicate that CDR cessation patterns play an important role in the overall child SSI caseload over time. From 2003 through 2013, that caseload grew by about 365,000. By comparing the patterns between the low and stable cessation cohorts, we find that a stable pattern of CDR volume may have led to slightly more than 220,000 additional cessations. Thus, CDR frequency can explain about 60 percent of the child SSI participation growth during that period. Subsequently, from 2014 through 2021, CDRs explain about two-thirds of the observed program decline: the caseload dropped by 283,000, while the cessation differential between years with stable and low volumes was about 194,000.[5] Notably, childhood SSI participation would have been more consistent over time in both the low and stable patterns of cessations, compared with actual patterns of cessations. Given that SSA's annual budgets include dedicated program integrity funding to support medical CDRs, SSI redeterminations, and fraud investigations and prosecutions, those results have potential policy implications.

## Background

This section provides information about SSI eligibility requirements, child SSI participation rates, CDR frequency criteria, and annual CDR volumes.

SSI provides monthly cash payments to children with disabilities and low income and resources. To qualify as having a disability, a child must have "a medically determinable physical or mental impairment or impairments which result in marked and severe functional limitations" (42 U.S.C. §1382c[C][i]). These limitations must come from an impairment that is expected to last at least 12 months or result in death. Children must also meet a means test, which includes the portion of their parents' income and resources that is considered available to them. Resources available to the child cannot exceed $2,000 (after accounting for certain exemptions such as the value of a residential home). SSI payments are offset by $1 for every $2 in earned income available to a child above $65 and by $1 for every $1 in unearned income above $20, with many exclusions. If the amount due is $0, the child does not receive a payment that month. In 2024, the maximum monthly SSI cash payment for an individual is $943.[6]

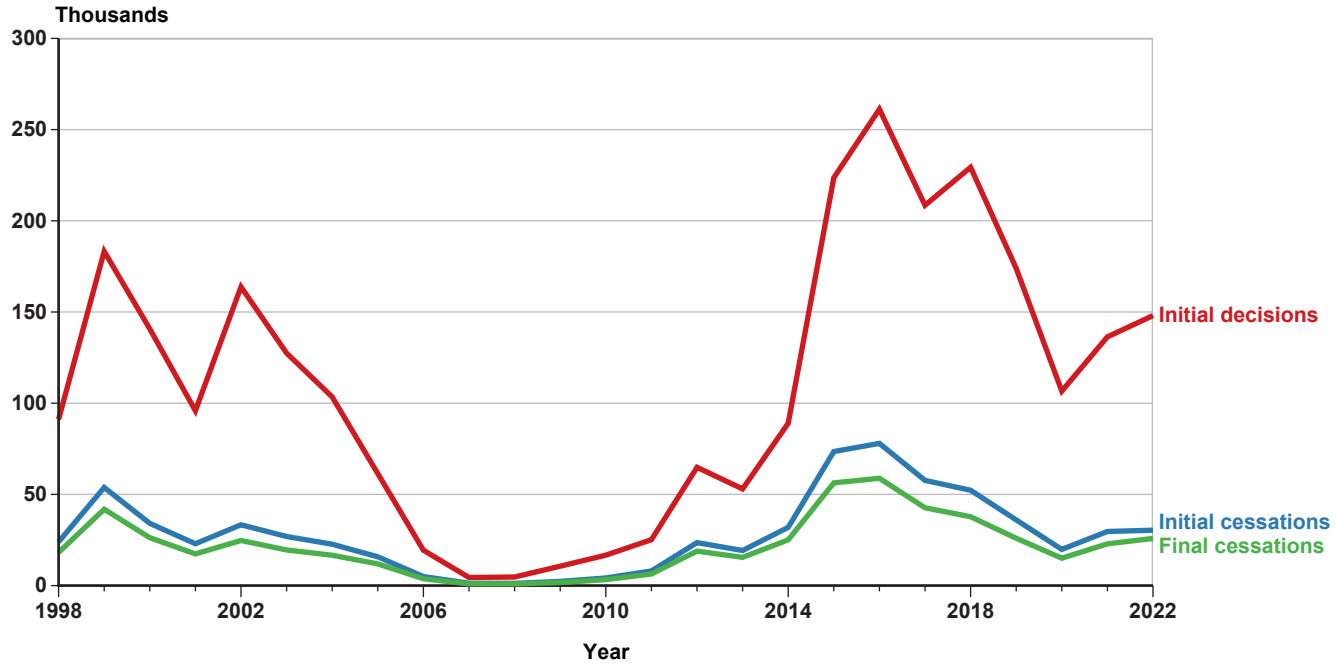
SSI recipients face a CDR every few years to determine whether they meet the disability criteria to remain eligible. If SSA determines that a child no longer has a "marked and severe functional limitation" and has no other impairments that meet the definition of disability, then the child's payments are ceased. If SSA determines that a child's medical condition has not improved to that level (or has stayed the same or worsened), or if the child is determined to have a disability because of other impairments, then the child's payments continue.[7] Families of children whose payments are ceased can appeal the initial CDR decision.

The frequency with which child SSI recipients face CDRs depends on the expectation of their medical improvement, which is assigned when they receive an initial award or undergo a prior CDR.[8] If medical improvement is expected, a CDR typically occurs within 6 to 18 months of award. If medical improvement is deemed possible, a CDR typically occurs every 3 years. If medical improvement is not expected, a CDR typically occurs every 7 years, although SSA typically does not conduct CDRs for children in that group before their age-18 redeterminations. These "medical diaries," or assessments of how likely a child's medical condition is to improve, enable SSA to review millions of recipients' eligibility statuses efficiently. From calendar years 2003 through 2017, the share of child SSI recipients for whom medical improvement was deemed possible was about 70 percent, while roughly 15 percent were expected to experience medical improvement and about 15 percent were not expected to experience medical improvement.

Although the medical diaries generally determine CDR frequency, their volumes have varied over the years along with the availability of program integrity funding.[9] Chart 1 shows that from fiscal year 1998 through fiscal year 2022, the annual number of CDRs conducted varied substantially.[10] From 1998 through 2002, SSA conducted an annual average of 134,934 CDRs. In 2003, SSA began conducting substantially fewer CDRs, which caused a backlog of overdue CDRs to start to accumulate. Then, from 2006 through 2010, SSA conducted only 11,169 CDRs per year on average, fewer than one-tenth as many as were conducted from 1998 through 2002. In 2015, SSA began to reduce the CDR backlog (nearly 350,000 as of 2014) and had eliminated it by the end of 2018 (SSA 2018). CDR decisions resulting in payment cessations followed a similar pattern of a decline after 2003, with particularly low numbers from 2006 through 2010, followed by increases thereafter. In a typical year, the number of initial payment cessations resulting from a CDR is about 35 percent higher than the number of final payment cessations that follow a CDR, indicating that a substantive share of initial cessation decisions are successfully appealed.

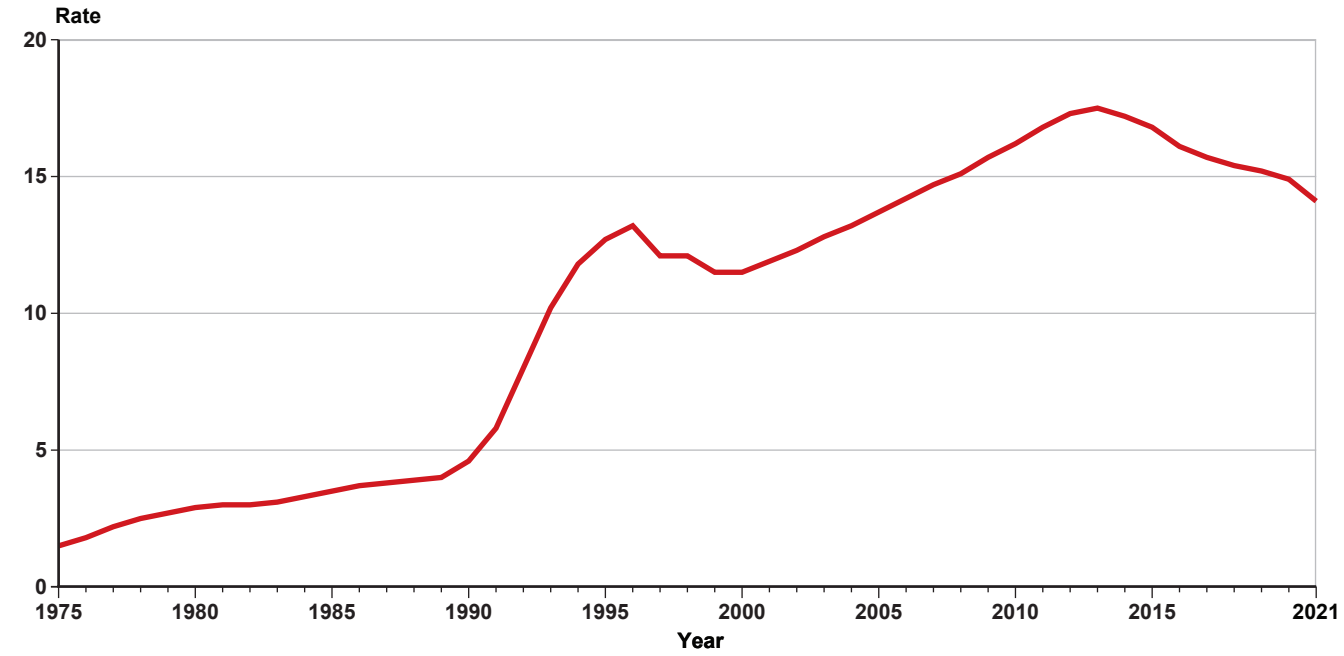
Chart 2 shows that child SSI participation increased from the start of the program in 1974 through 2013 (with a dip in the late 1990s) and has since declined. Over the years, legislative changes, Supreme Court decisions, and the COVID-19 pandemic have contributed to changes in the participation rate. For example, the 1990 *Sullivan v. Zebley* Supreme Court decision loosened the criteria for children—particularly those with mental disorders—to qualify as having a disability (Levere 2021). However, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 reversed some of the changes that followed the *Zebley* decision, resulting in more restrictive disability criteria and CDR rules for children. SSA implemented those rules in 1997 and finalized them in 2000. Then, during the Great Recession, a weakening economy likely contributed to enrollment growth (Schmidt and Sevak 2017). The unanticipated decline in program participation from 2014 through 2019 has not yet been extensively studied. Finally, during the COVID-19 pandemic, the decline in child SSI participation

**Chart 1.**
**CDR volume for child SSI recipients: Initial decisions and initial and final cessations, 1998–2022**




SOURCE: SSA (2023a).

**Chart 2.**
**Child SSI participation rate: Number of recipients in current-payment status per 1,000 children in the total Social Security area population,[a] 1975–2021**




SOURCE: SSA (2023a).

a. Includes residents of the 50 states and the District of Columbia; civilian residents of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands; federal civilian employees and persons in the armed forces abroad and their dependents; and all other U.S. citizens abroad.

was differentially larger than the 2014–2019 decline (Levere, Hemmeter, and Wittenburg 2024a), with school closures potentially explaining a substantial share of the decline (Levere, Hemmeter, and Wittenburg 2024b).

The recent declines in child SSI participation have led to targeted outreach to children and families. Concern that SSI was not reaching all eligible children emerged as the number of child SSI recipients began to decline after 2013 (National Academies of Sciences, Engineering, and Medicine 2015). During the COVID-19 pandemic, SSA increased its SSI outreach efforts and designated certain staff as Vulnerable Population Liaisons in field and regional offices to help potentially eligible people apply for payments.[11] Such efforts might be most effective in narrow geographic areas where sociodemographic or health claims data indicate many eligible children might not be receiving SSI payments (Levere, Wittenburg, and Hemmeter 2022; Levere and Wittenburg 2024).

A key goal of our research is to identify the extent to which patterns in the frequency of CDRs (and accompanying payment cessations) might have contributed to broader changes in child SSI participation. Simple correlational patterns indicate that CDRs might play an important role in changes to child SSI participation. For example, although the number of new child SSI awards declined each year from fiscal year 2004 through fiscal year 2007 (before the Great Recession), the number of child SSI recipients rose by 9 percent from 2004 through 2007 (SSA 2023c). Those years correspond to the years when the CDR backlog started to grow, resulting in fewer child SSI recipients exiting the program. Similarly, as SSA processed the CDR backlog from fiscal year 2015 through fiscal year 2018, the number of child SSI recipients declined by about 10 percent. Hemmeter and others (2021) showed that the prevalence with which certain award year cohorts face CDRs might explain a substantial share of the difference in program participation across those cohorts.

## Data

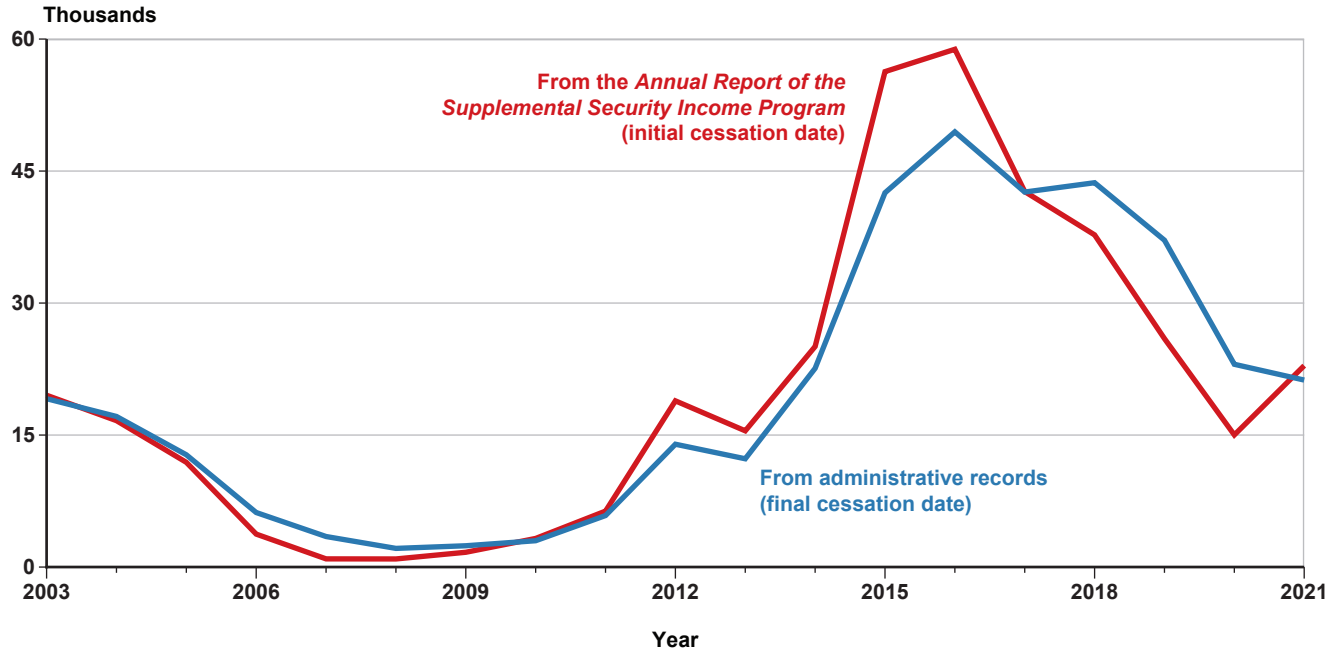
We used program participation and earnings data from various SSA data files to examine the outcomes for children whose SSI payments ceased because of a medical CDR. First, we identified the population of children with ceased payments from 2003 to 2021[12] using the CDR Waterfall file. We then used the Disability Analysis File to obtain information about those children's characteristics, such as age, date of first SSI payment, medical diary category, primary diagnosis, and ZIP Code and county of residence. The Disability Research File provides information on subsequent returns to the SSI rolls in the 5 years after payment cessation, while the Master Earnings File provides data on earnings in the 5 calendar years following cessation. We included earnings observations only for youths who were aged 16 or older; therefore, the earnings analyses do not include anyone whose payments ceased before age 11.

We used the date of the final CDR decision, rather than the date of the initial CDR decision, to classify the year a child's SSI payments were ceased.[13] Chart 3 shows that the cessation counts we derive using this methodology differ slightly from those published in the *Annual Report of the Supplemental Security Income Program* (SSA 2023a), which reflect the year of initial decisions. In particular, Chart 3 shows that in recent years, when cessations increased, this approach led to a slight lag in reporting. Classifying cessations by the year in which payments were officially ceased aligns more closely with the actual changes in the caseload, which is important for our simulation exercise.

To identify the overall child SSI recipient population, we used data from the Disability Analysis File. We collected age, date of first SSI payment, medical diary category, primary diagnosis, and ZIP Code and county of residence for all children. We compare the characteristics of children whose payments were ceased with those of current SSI recipients to gauge whether recipients with certain characteristics differentially face payment cessation. Our policy simulations also rely on estimating a probability of SSI payment cessation and a probability of payment continuation using those characteristics.

Finally, we used American Community Survey 5-year estimates for 2015–2019 on all inputs to the Area Deprivation Index and followed the process described in Singh (2003) to estimate a level of deprivation at the ZIP Code and county levels.[14] Deprivation is expressed as a percentile between 1 and 100 that we divided into quartiles; in this context, it represents a single indicator of the various disadvantages a community faced in 2015–2019. This process mirrors our approach in Levere, Wittenburg, and Hemmeter (2022). In addition, we measured the distribution of race and ethnicity for each ZIP Code or county from the same 5-year estimates.

**Chart 3.**
**Number of CDR cessations, by data source, 2003–2021**




SOURCES: SSA (2023a) and authors' calculations using administrative records from SSA.

## *Methodology*

We structured our methodological approach to address our three research questions. The first question addresses the demographic and socioeconomic characteristics of children whose SSI payments were ceased because of a CDR from 2003 through 2021. We divided our study population into annual cohorts based on the calendar year of CDR cessation, enabling us to track trends over the observation period, such as the shares of child SSI recipients with particular primary medical diagnoses who experienced a CDR cessation. Examining longitudinal patterns of children with particular characteristics whose payments ceased allows us to show whether, and how, the characteristics of such children have changed as program funding and CDR frequency have changed. However, the characteristics of child SSI participants overall might have changed over time as well. Therefore, we also benchmarked the characteristics of the study population to the overall child SSI recipient population each year.[15] We divided the share of children with a particular characteristic whose payments ceased by the share of the overall child SSI population with that characteristic. Those descriptive analyses indicate whether certain groups were disproportionately likely to have their SSI payments ceased over time.

To address our second research question on the outcomes for children in the years after a CDR cessation, we investigated the share of children with ceased payments that returned to SSI and examined three earnings outcomes for each annual cessation cohort. The outcomes we examined are average annual earnings amount, the prevalence of having any annual earnings, and the prevalence of having earnings above $16,200, which equals the 2022 level that signifies substantial gainful activity for nonblind recipients. The insights this analysis provides about postcessation well-being and financial stability are pivotal for understanding the economic and social ramifications of cessation for children and their families.

Finally, to answer the question of how CDR patterns affect the child SSI caseload overall, we employed policy simulations to explore the hypothetical effects of applying consistent CDR patterns across the study period. We assessed the influence of different CDR cessation rates on the overall trends in child SSI participation, using 2008 (a year with very few CDR cessations) and 2017 (representing a typical year with "stable" CDR patterns) as our base analysis years. This comparison reveals the potential effects of varying CDR frequencies on SSI caseload fluctuations, offering critical perspectives on the policy and programmatic implications of prioritizing

(or deemphasizing) CDR workloads. From the models, we estimated both the share of children who would have had payments ceased because of a CDR, and the share of children whose payments had been previously ceased who would have returned to the SSI program.

Our modeling procedure estimates cessations and returns in all years from 2003 through 2021 using a model estimated among a specific base year cohort. The stable cessation cohort (2017) most closely approximates what might happen in a year with no CDR backlog and enabled us to observe postcessation outcomes for at least 5 years.[16] The low-cessation cohort (2008) provides a sharp contrast because few CDRs were conducted—only 4,707 initial decisions and 921 final cessations, compared with 208,500 and 42,402, respectively, in 2017.

Chart 4 shows observed and probabilistic year-to-year patterns of the child SSI caseload. The actual SSI caseload evolves each year because of continuations, cessations, and new applicants (Panel A). Children receiving SSI payments at the start of the year could either continue receiving SSI payments at the start of the next year or have their payments ceased during that year. We distinguish CDR cessations from other program exits—including aging out of the program and having excess resources or income. In addition, new awardees could start to receive SSI payments during the year and thus be added to the rolls by the start of the next year. To understand how CDR frequencies affect SSI caseloads, our estimation procedure holds the CDR cessation count fixed by applying the base year CDR cessation patterns.

Rather than using the observed patterns, our simulation models estimated the likelihood of a CDR cessation in each year, assuming the child CDR cessation rate remained consistent over time. We began with the number of child SSI recipients whose payments were not terminated at the start of the base year and estimated a logistic regression to predict the likelihood of cessation in that year by specific demographic characteristics. We then applied those coefficients to all other years to estimate the probability of a child's SSI payments being ceased, holding the cessation trends constant. In equation 1 (the regression equation), the outcome variable is equal to 1 if the child's payments ceased because of a CDR and is equal to 0 otherwise:

$$CDR\,cessation_i = \alpha + \beta X_i + \varepsilon_i . \quad (1)$$

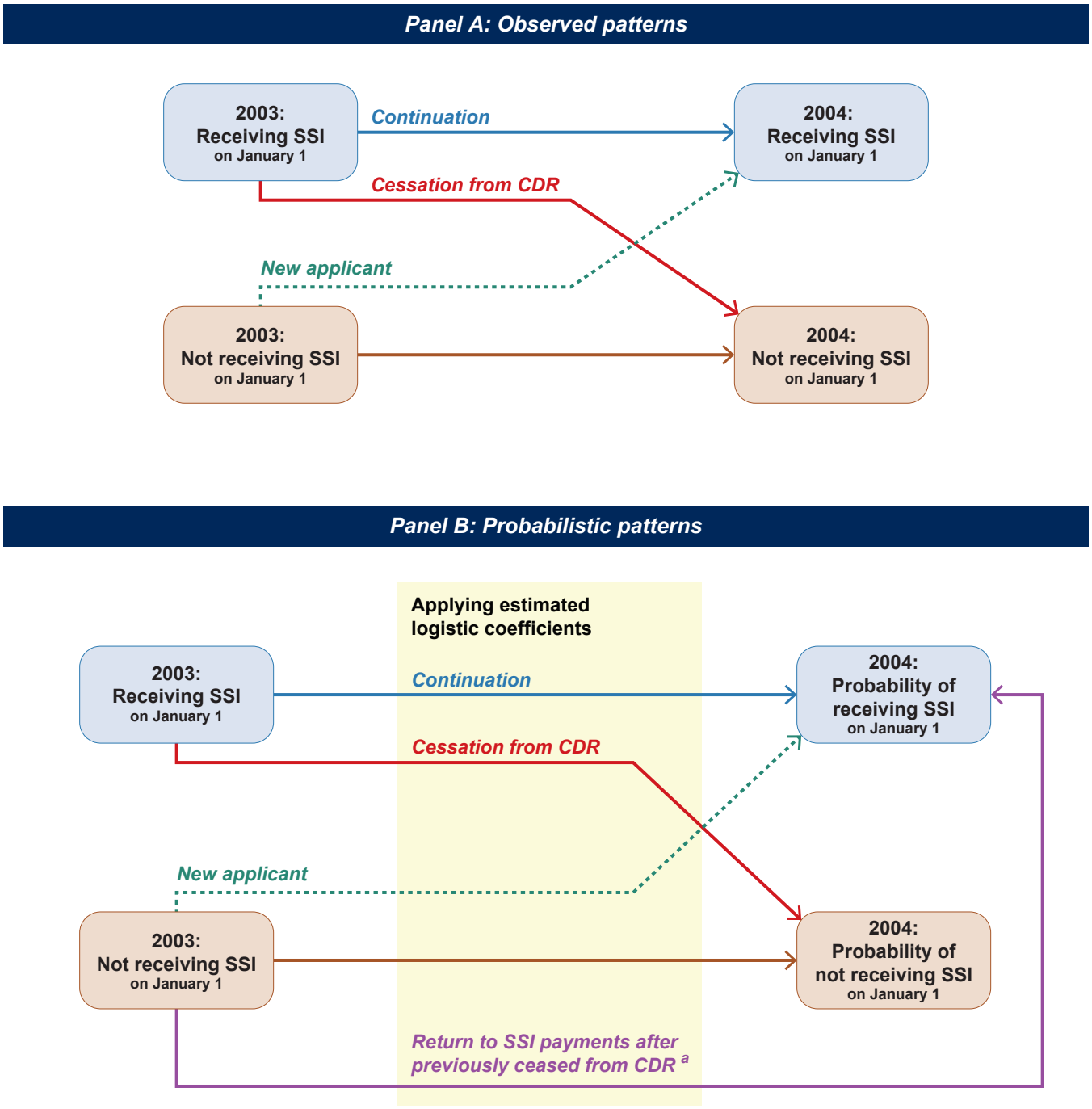
We controlled for sex, age at year end, age at initial SSI entry, duration of SSI payment receipt, medical diary category, and primary disability diagnosis in $X_i$. With a logistic regression, the predicted value of the outcome based on the coefficients—which represents the probability of cessation—is guaranteed to fall between 0 and 1. This offers an important advantage over a linear probability model—with which the predicted value need not fall between 0 and 1—because predicted values within that range are essential to our models.

We used our policy simulation to estimate the probability of a CDR cessation (Panel B). We started with the sample of child SSI recipients on January 1, 2003, and estimated the probability of CDR cessation in 2003 by applying the coefficients from equation 1, estimated among the base year (2008 or 2017) population, to all child SSI recipients in 2003. By applying the same base year coefficients, the analysis assumes constant CDR cessation patterns over time. The total number of estimated cessations is the sum of the probabilities of cessation across all child recipients. For example, if 1,000 children each have a payment cessation probability of 0.03, we would expect 30 cessations among that group. The likelihood of continuation into 2004 is 1 minus the probability of cessation.

Then, to identify the number of child SSI recipients at the start of 2004, we added newly awarded children and subtracted children who stopped receiving SSI payments for non-CDR reasons during 2003. Thus, for every child receiving SSI payments at the beginning of 2003, we now had the probability that they were still on the SSI rolls at the start of 2004.[17]

Finally, we applied the same procedure for all subsequent study years to estimate the number of cessations each year. We applied coefficients from equation 1 estimated in the base year (2008 or 2017) to the children whose payments were not terminated in 2004—increasing their age and payment duration by 1 year relative to those at the start of 2003—to estimate the probability of cessation in 2004 and the probability of continuation into 2005. We then subtracted children whose payments ceased for reasons other than a CDR and added new awardees. The probability of receiving SSI at the start of 2005 is therefore the probability of SSI payment receipt at the start of 2004 multiplied by the probability of continuation into 2005. That procedure, which accounts for the probability of continuation at the beginning of each year, is critical for reliably estimating the number of cessations: The dynamic nature of CDR patterns means that the caseload at the beginning of each year might have shifted had CDR cessation patterns been consistent. For example, if CDR cessations were more frequent, like the 2017 pattern,

**Chart 4.**
**Year-to-year patterns of continuations and cessations**




SOURCE: Authors' illustration.

NOTE: Recipients whose payments were ceased for reasons other than a CDR also were not receiving payments in January 2004. They were treated differently in the policy simulations and are therefore not included in this chart (though they are accounted for in the model).

a. Pattern applies only in years after 2003.

more children would have had payments ceased in earlier years, meaning they would not have faced a potential CDR cessation in later years. Estimating the flow of cessations each year therefore requires knowing how many children could have faced a cessation at the start of the year—that is, the probability of payment receipt. We repeated this procedure for each year to estimate the probability of payment receipt at the start of each year from 2006 through 2022.

Our models also account for the potential return to SSI participation of children who experienced a prior CDR cessation. Specifically, among children with payments ceased in the base year, we estimated a separate logistic regression using equation 2, which differs from equation 1 only in the outcome variable being an indicator for returning to SSI in the 5 years following CDR cessation.

$$SSI\ return_i = \alpha + \beta X_i + \varepsilon_i . \quad (2)$$

The controls include the same demographic characteristics used in equation 1, measured at the time of cessation. We can therefore apply the coefficients to estimate the probability of returning to the SSI program each year, conditional on payments being ceased.[18] We can then sum those probabilities across the population to estimate the total number of child recipients who had experienced a CDR cessation and would have returned to the SSI program each year. Thus, the probability of being a recipient at the start of each year is the sum of (1) the probability of having been a recipient for the entirety of that year and (2) the probability of returning to the SSI program in that year after experiencing a CDR cessation in a prior year.

We then used those estimates to create a counterfactual caseload. First, we calculated the net reduction in the caseload resulting from CDR cessations in each year under a given model, which is the total number of cessations minus the total number of program returns. Next, we calculated the actual net reduction in the caseload from CDR cessations. To estimate the counterfactual caseload under a given model, we modified the year-to-year changes in child SSI participation by replacing the actual net reduction because of CDRs with the model-based net reduction because of CDRs.[19] That process isolates the role of CDRs from all other programmatic factors contributing to changes in the caseload (new applications, other cessations, and other factors) by holding all other year-to-year changes fixed. One limitation of that approach is that our analysis does not control for or otherwise incorporate economic, sociocultural, environmental, medical, or other factors. As a result, we do not predict non-CDR-related changes in SSI program participation, such as those stemming from outreach efforts or the overall decline in childhood poverty in recent years.

In addition, the differential pattern between the low cessation (2008) cohort and the stable cessation (2017) cohort enables us to estimate the share of SSI caseload fluctuations that stem from CDR cessation patterns. The difference in net cessations between those two models represents the change in the number of SSI recipients that can be attributed to the variance in CDR frequencies. Benchmarking that number to the total change in the SSI caseload each year, or over a multiyear period, indicates what share of SSI caseload fluctuations stems from CDR cessations alone.

## Results

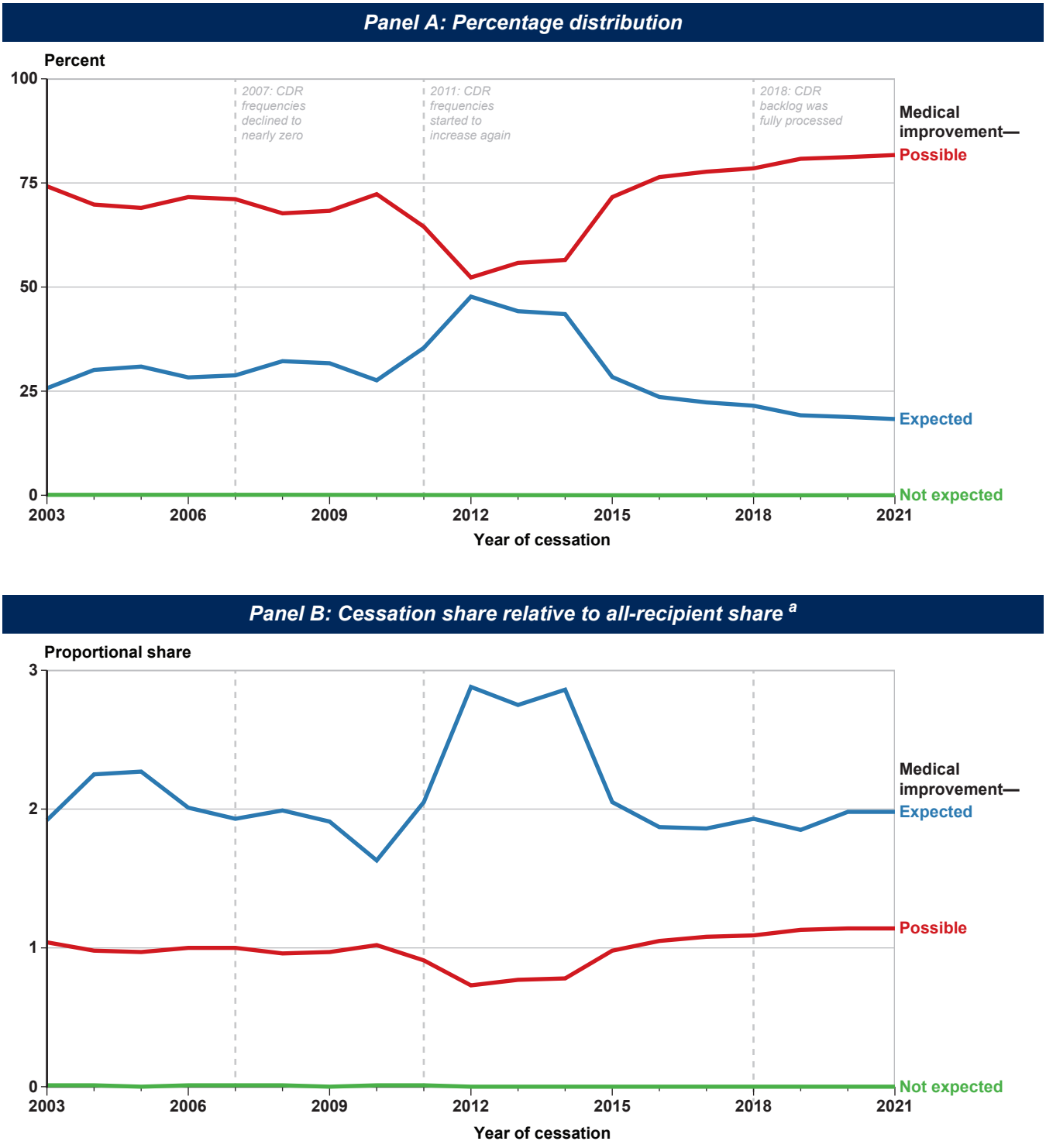
We arrange our findings in the order of our three research questions.

### Research Question 1: What Are the Characteristics of Children Whose SSI Payments Are Ceased Because of a CDR?

A child SSI recipient's medical diary category is an important predictor of CDR cessation. As noted earlier, the three medical diary categories are medical improvement expected, medical improvement possible, and medical improvement not expected. In a typical calendar year from 2003 through 2021, medical improvement was deemed possible for about 70 percent of children with ceased payments, about 30 percent were expected to experience medical improvement, and a negligible share were not expected to experience medical improvement (Chart 5, Panel A). The share of children with ceased payments who were expected to experience medical improvement was elevated from 2012 through 2014, coinciding with the initial increase in CDR frequency shown in Chart 1.

When we benchmark those trends versus the shares of all child SSI recipients in each medical diary category, it becomes evident that those expected to experience medical improvement constitute a disproportionately high share of children with ceased payments each year (Chart 5, Panel B). As noted earlier, about 15 percent of child SSI recipients are expected to experience medical improvement. With those children making up about 30 percent of the annual cessation (Chart 5, Panel A), they are twice as likely to have their payments ceased as the average child SSI recipient. By contrast, the share of child SSI recipients with medical improvement possible who had their payments ceased aligns closely with their representation

**Chart 5.**
**Child CDR cessations by medical diary category, 2003–2021**




SOURCE: Authors' calculations using administrative records from SSA.

a. The share of child SSI recipients with a given medical diary category who experience a CDR cessation divided by the share of all child SSI recipients in that medical diary category.

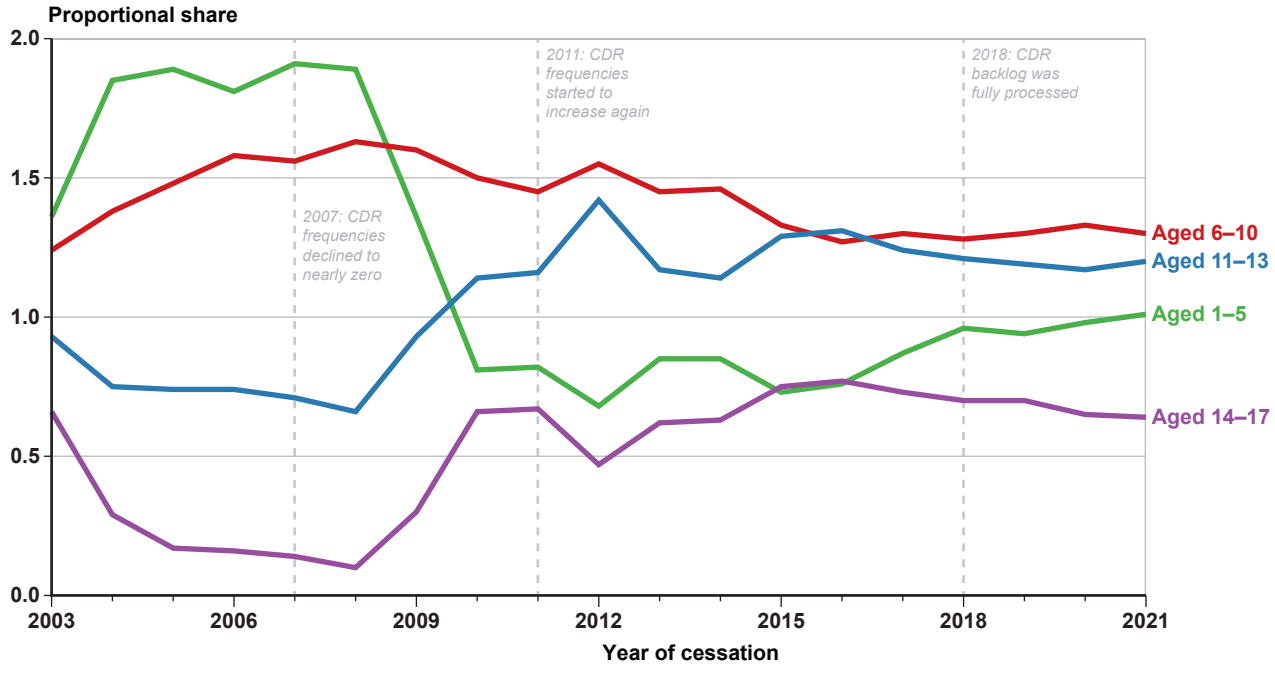
in the overall child SSI recipient population. Given an expectation of medical improvement, which causes more frequent CDRs, it is predictable that the rates of CDR cessation are differentially higher among this group. Charts 6–8 and the accompanying discussion use the benchmarked trends as shown in Chart 5, Panel B. That is, the results are expressed as the share of children with a given characteristic whose payments ceased (such as 30 percent who are expected to experience medical improvement in the example above) divided by the share of all child SSI recipients with that characteristic (15 percent in the example above; thus, 30 divided by 15 equals the benchmarked proportion of 2).[20]

Chart 6 shows that age patterns of children with ceased payments have been mostly stable since 2010, despite the large increase in CDR frequency during the later part of the period. In the early part of the period, children aged 1–5 were disproportionately more likely than those in other age groups to have their payments ceased. However, this pattern began changing in 2009. In all years after 2010, the youngest (1–5) and oldest (14–17) age groups were least likely to have SSI payments ceased, while children aged 6–10 and 11–13 faced differentially higher cessation rates.

Chart 7 shows that children with certain primary medical diagnoses were much more likely to face payment cessation than children with selected other diagnoses.[21] Among children with mental disorders (Panel A), those with developmental disorders were consistently more likely to have payments ceased prior to 2021. Those with intellectual disorders and autism spectrum disorders were less likely to have a CDR cessation. In the later years, the pattern slightly shifted, as children with other mental disorders[22] became slightly more likely than children with developmental disorders[23] to have a CDR cessation. Among nonmental diagnoses (Panel B), children with respiratory system diseases were more likely to have SSI payments ceased while children with nervous system and sense organ diseases were less likely to have SSI payments ceased.

Finally, Chart 8 shows that children with ceased payments disproportionately lived in areas of high socioeconomic deprivation. For example, 36.8 percent of children with ceased payments in 2017 lived in ZIP Codes in the fourth quartile of socioeconomic deprivation (indicating worse economic outcomes). Yet only 30.7 percent of all child SSI recipients lived in such ZIP Codes. Thus, the proportional cessation rate was 1.2 for the fourth quartile in 2017. By contrast, 14.1 percent

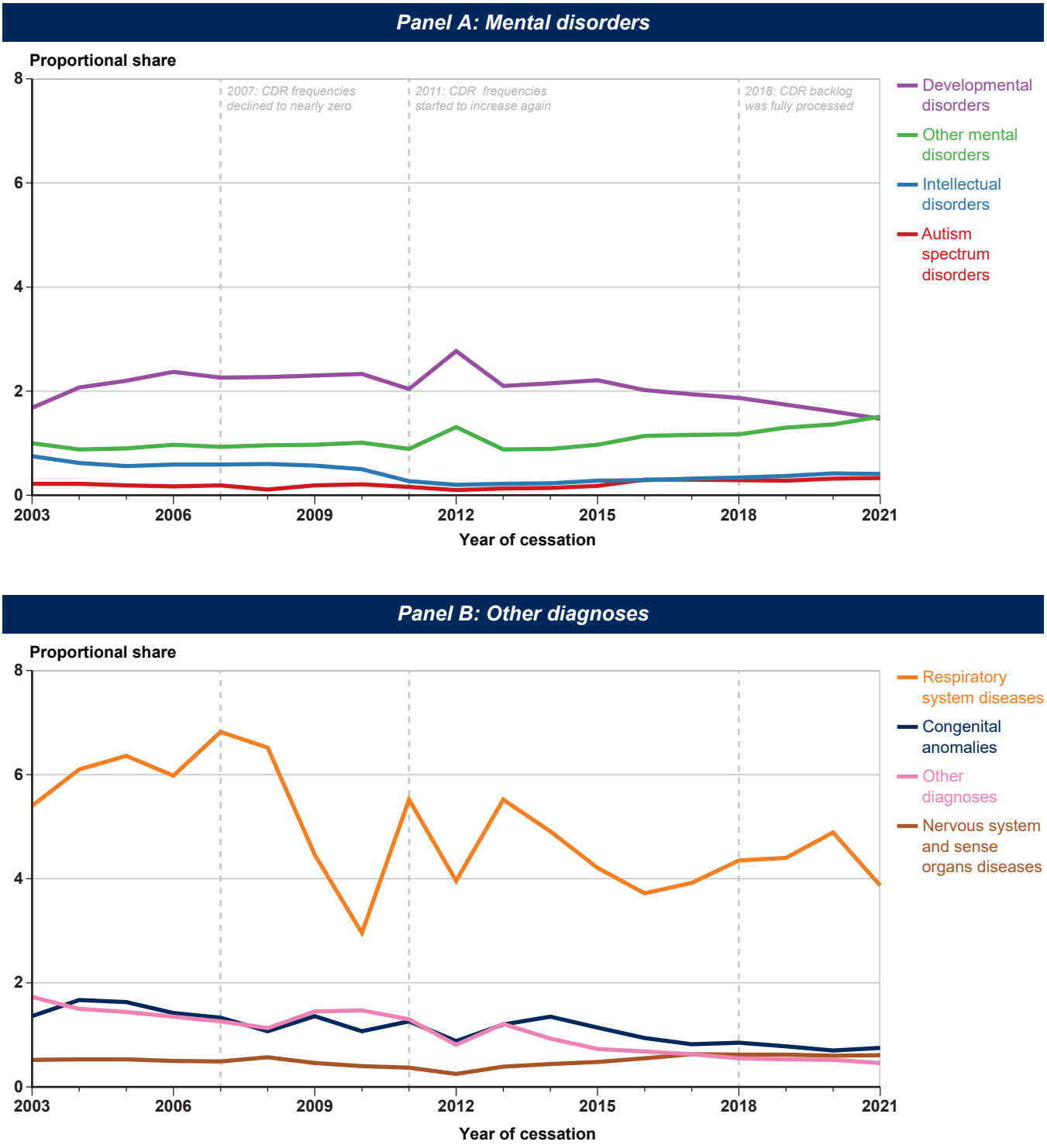
**Chart 6.**
**Child CDR cessations by age at cessation: Cessation share relative to all-recipient share,[a] 2003–2021**




SOURCE: Authors' calculations using administrative records from SSA.

a. The share of child SSI recipients in a given age group who experience a CDR cessation divided by the share of all child SSI recipients in that age group.

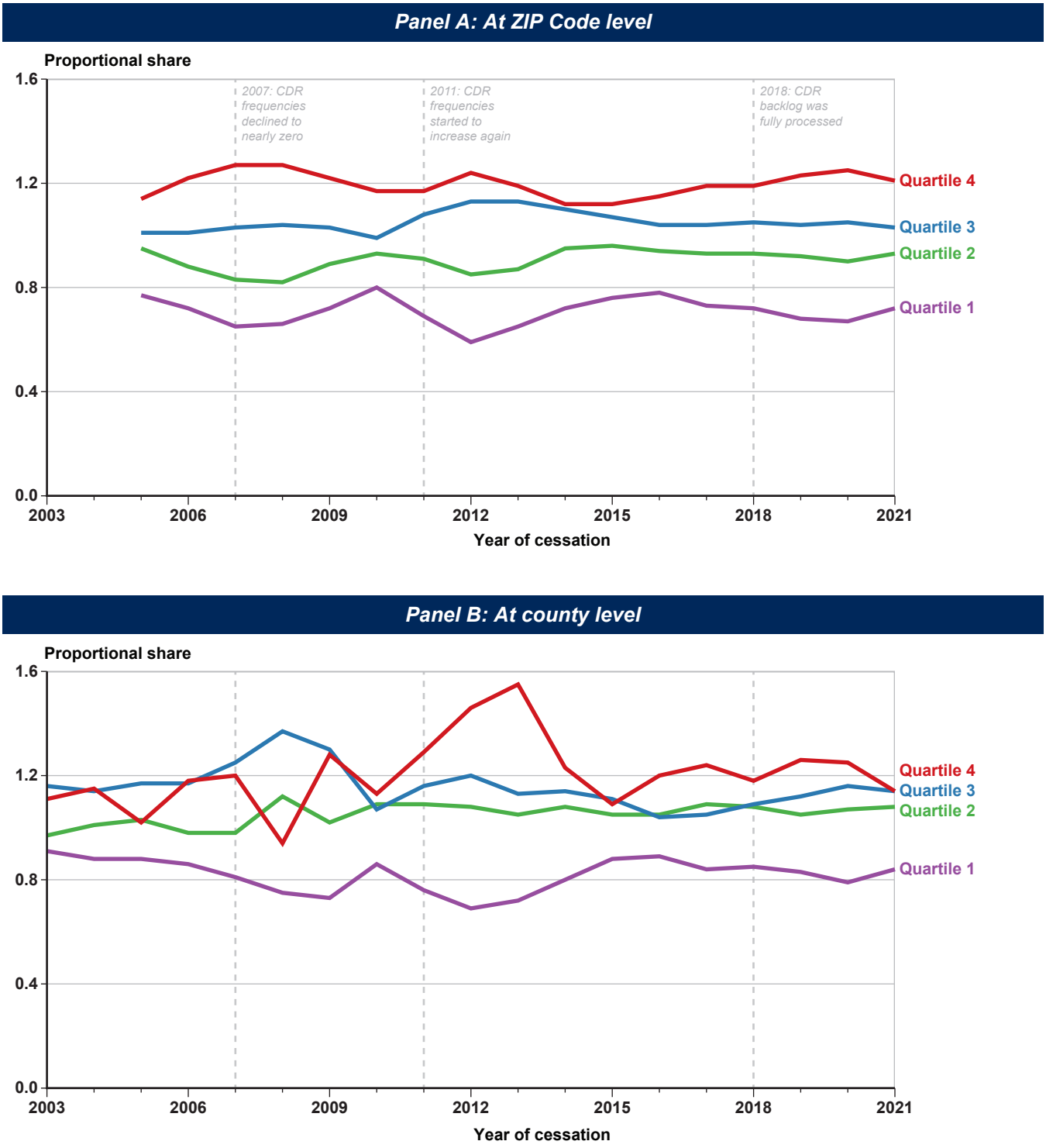
**Chart 7.**
**Child CDR cessations by selected primary diagnosis: Cessation share relative to all-recipient share,[a] 2003–2021**




SOURCE: Author's calculations using administrative records from SSA.

a. The share of child SSI recipients with a given diagnosis who experience a CDR cessation divided by the share of all child SSI recipients with that diagnosis.

**Chart 8.**
**Child CDR cessations by socioeconomic deprivation quartile: Cessation share relative to all-recipient share,[a] 2003–2021**




SOURCE: Authors' calculations using administrative records from SSA and American Community Survey data.

a. The share of child SSI recipients in a given socioeconomic deprivation quartile who experience a CDR cessation divided by the share of all child SSI recipients in that quartile.

of children with ceased payments in 2017 lived in ZIP Codes in the first (or most advantaged) quartile of socioeconomic deprivation, compared with 19.4 percent of all child SSI recipients living in those ZIP Codes (a 0.7 proportional cessation rate). The general patterns hold true whether measuring socioeconomic deprivation at the ZIP Code or county level.[24] We explore whether appeals might play a role in this finding: In theory, one might expect that children in areas with lower socioeconomic deprivation might be more likely to appeal an initial cessation because of greater knowledge of the appeal process or greater resources to go through that process. However, we found that, in each of the four socioeconomic deprivation quartiles, the percentage of children with ceased payments who appealed that cessation was roughly equal to the percentage of the overall child SSI population, indicating no differential patterns in appeals (results available on request).

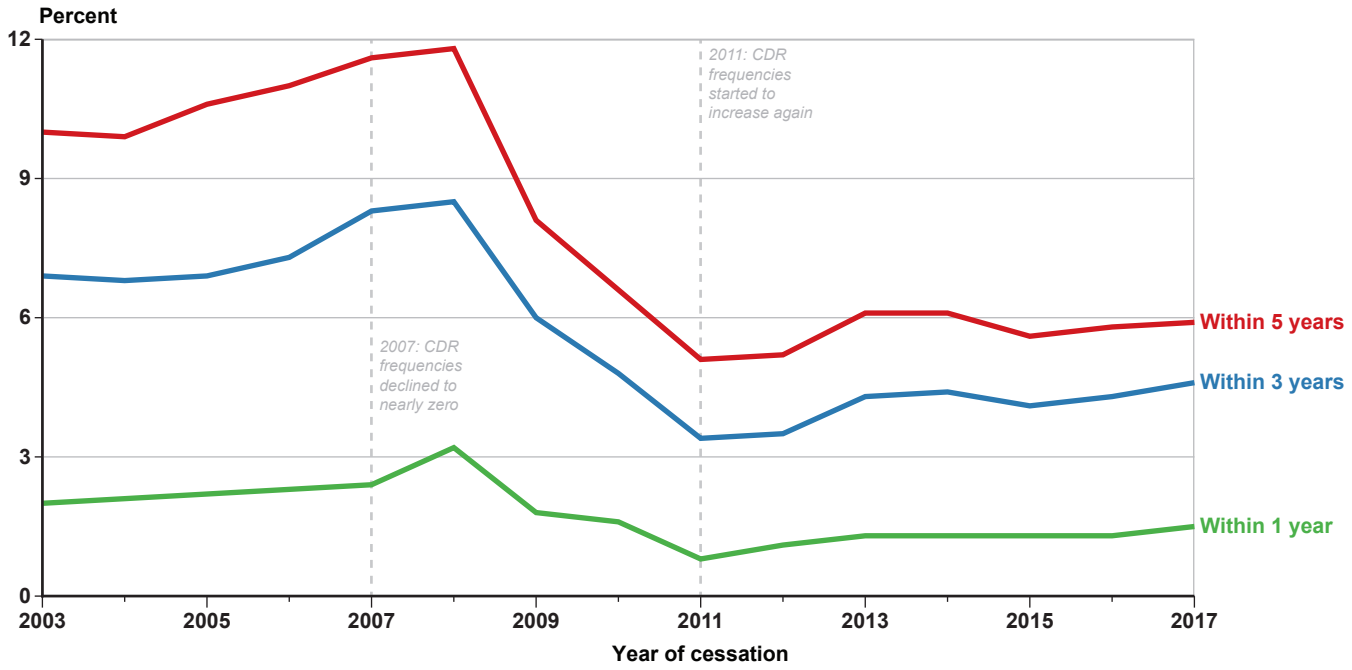
### *Research Question 2: What Are the Outcomes for Children in the Years Following a CDR Cessation?*

Among children whose payments were ceased, a modest share returned to the SSI program within 5 years of the cessation (Chart 9).[25] On average during the study period, 1.7 percent of children returned to SSI in the first year after a cessation, 5.6 percent returned in the first 3 years, and 8.0 percent returned in the first 5 years. The SSI return rates began to drop with the 2009 cessation cohort. For the 2011 and later cessation cohorts, the average annual rates of return were 1.2 percent after 1 year, 4.1 percent after 3 years, and 5.7 percent after 5 years.[26] Interestingly, even as the frequency of CDRs substantially increased starting in 2015, the SSI return rates did not change noticeably.

Our analysis of postcessation earnings focuses exclusively on youths who had reached working age at the time of measurement, specifically those aged 16 or older. This analysis helps us to understand the economic outcomes of former child SSI recipients as they transition into the workforce. Given the typical progression of career development, we anticipate an increase in earnings as those youths age, particularly when comparing earnings 5 years after cessation with earnings in the first year after cessation.

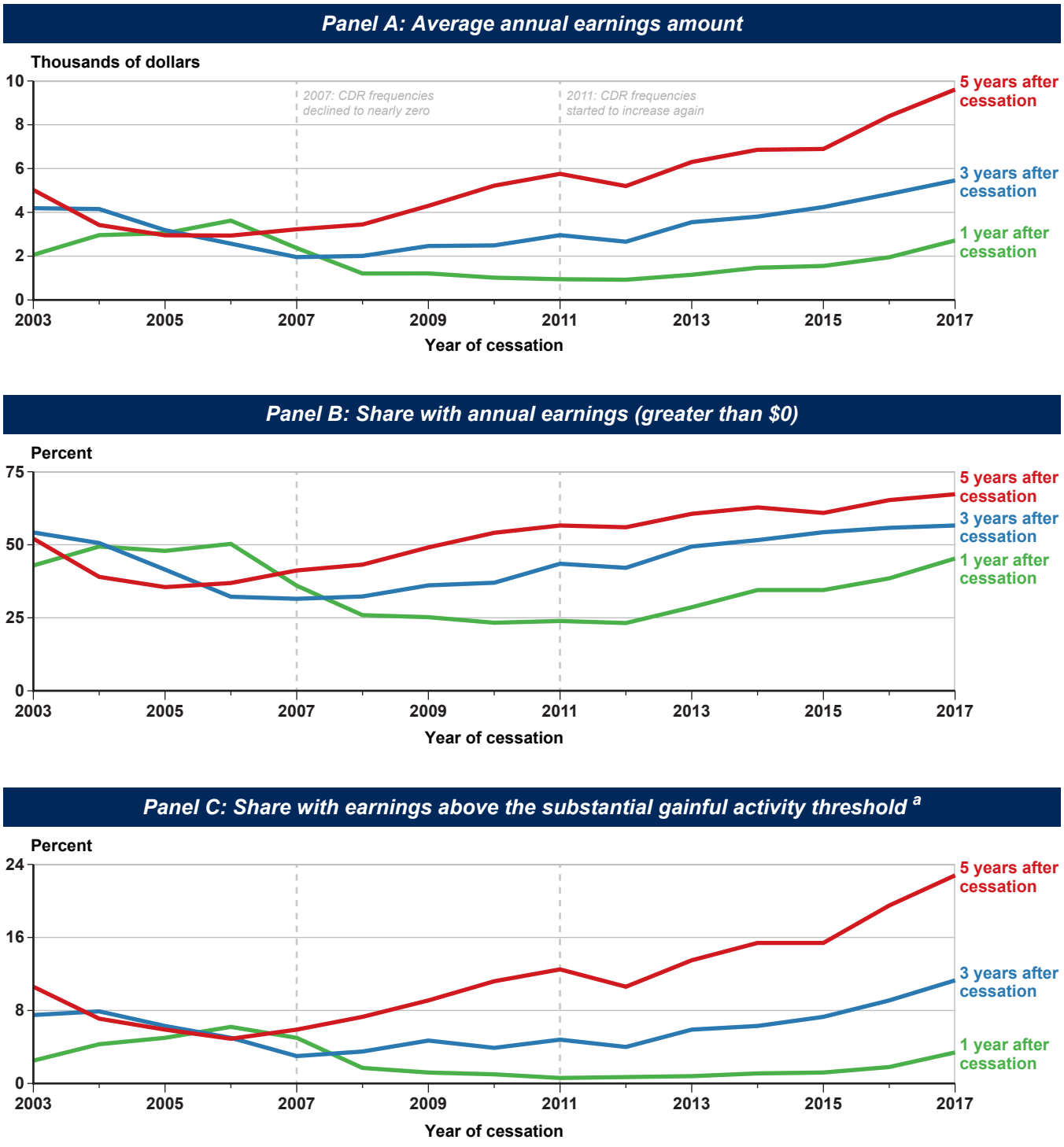
Chart 10 shows that earnings increased in the years following cessation, but it also suggests that the earnings potential for former child SSI recipients was fairly limited. For the 2017 cessation cohort, average annual earnings increased from $2,716 in the first calendar year after cessation to $9,608 5 years after

**Chart 9.**
**Percentage of children with ceased payments who later returned to the SSI rolls, by year of cessation and window of return, 2003–2017**




SOURCE: Authors' calculations using administrative records from SSA.

**Chart 10.**
**Earnings following a CDR cessation, by year of cessation, 2003–2017**




SOURCE: Authors' calculations using administrative records from SSA and American Community Survey data.

NOTES: All earnings are converted to real 2022 dollars.

Earnings are included only for youths in the calendar year in which they are aged 16 or older.

a. For non-blind recipients in 2022, this was $16,200 for the year ($1,350 per month).

cessation (Panel A). Correspondingly, the shares of former recipients with any postcessation annual earnings (Panel B) and with substantive earnings amounts (more than $16,200, the 2022 annualized substantial gainful activity amount; Panel C) wavered in the early cessation cohorts but increased with the passage of time for the later cohorts. The effects of the Great Recession are evident: earnings amounts 3 years after cessation were lowest for the 2007 and 2008 cohorts, while earnings amounts 5 years after cessation were lowest for the 2005 and 2006 cohorts—aligning with earnings accrued in calendar years 2010 and 2011. Interestingly, it seems the COVID-19 pandemic had minimal effects on those cohort-based patterns, as 2020 calendar year earnings aligned closely with adjacent years.

### *Research Question 3: How Do CDR Cessation Patterns Affect Child SSI Caseload Trends?*

As described earlier, we estimated the counterfactual caseload over time based on the likelihood that each child SSI recipient would have payments ceased because of a CDR each year. Then for those with payments ceased, we estimated the likelihood that they would return to the SSI program. By summing those probabilities, we estimated the number of total cessations and program returns that would have occurred in each calendar year if the cessation and return probabilities had followed the patterns of an individual annual cessation cohort over time—namely, if the rate of CDR cessations had been constant (rather than the variation in CDR frequency that occurred over the years). Finally, to obtain the counterfactual child SSI caseload, we replaced the observed net reduction from CDRs in each year (cessations minus returns) with the model-based prediction.

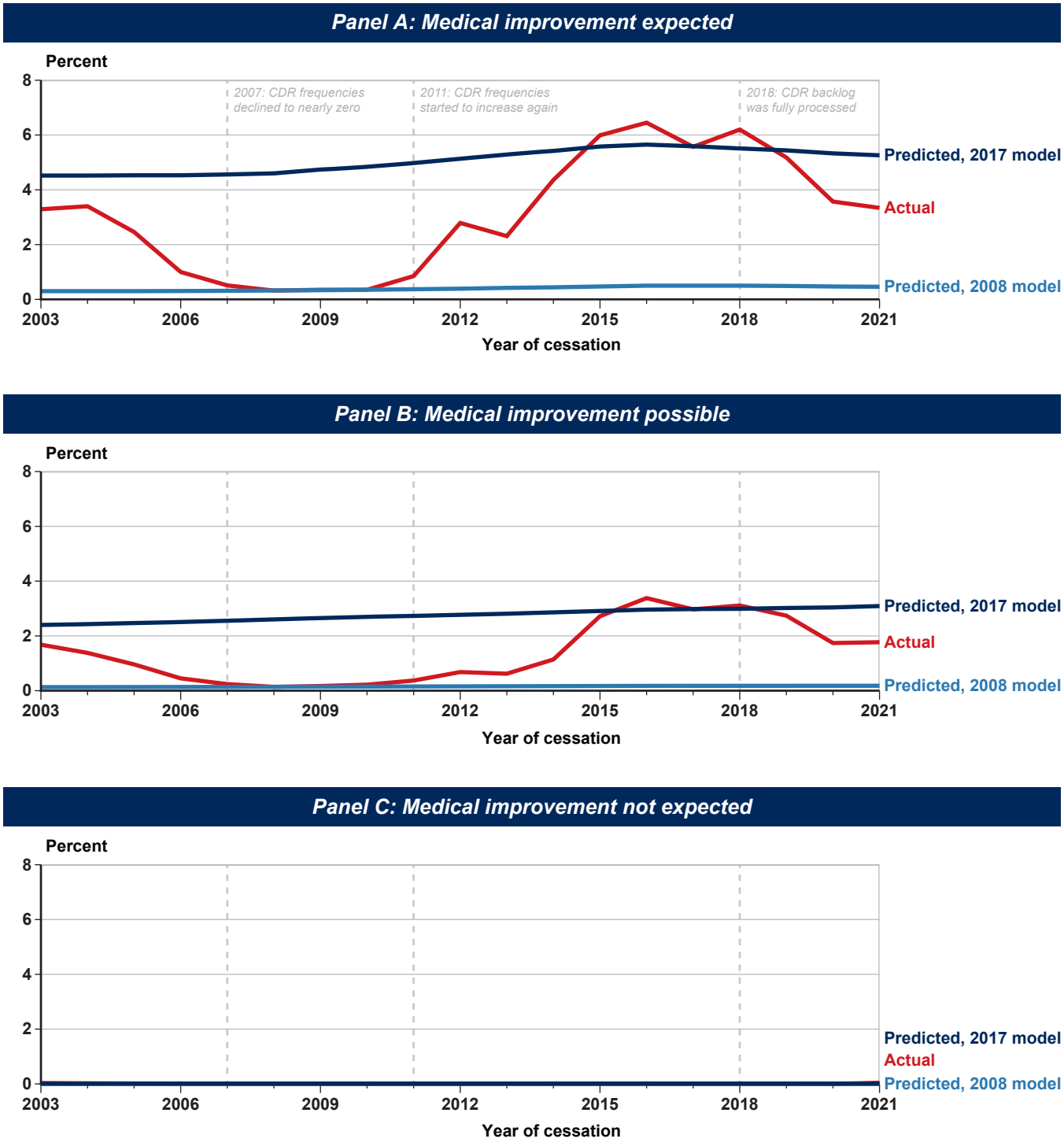
Chart 11 shows that the cessation cohort has substantial implications for the likelihood of a child being removed from the SSI program by a CDR. Each of the three medical diary categories is represented by one of the chart's panels. The red line in each panel shows the actual cessation rate for that category. Children expected to experience medical improvement had the highest cessation rates, followed by children for whom medical improvement was possible. Almost no one who was not expected to experience medical improvement had payments ceased in any year, consistent with SSA practice of generally not conducting CDRs for this population. Patterns over time match the frequency of child CDRs shown in Chart 3, with peaks in the years before and after the Great Recession, and almost no cessations from 2007 through 2010. The dark blue line represents the predicted probability of cessation using the 2017 cohort as the base year (stable cessations) in place of the observed cessation rate. Those probabilities are consistently higher than the light blue line representing the predicted probability of cessation using the 2008 cohort as the base year (low cessations). Both of the predicted probabilities exhibit smoother trends in cessation rates over time.

Chart 12 shows that the cessation cohort does not have as much of an effect on the likelihood of returning to the SSI program after a child CDR cessation. Return rates were slightly higher for children not expected to experience medical improvement. That group also had noisier observed rates of return because of the small sample of children who had payments ceased. However, return rates are more stable than cessation rates—both in the actual rates of return over time and in the difference between the patterns using the 2008 and 2017 cessation cohorts as the base year.

Chart 13 shows the net reduction in the child SSI caseload attributable to CDRs. The red line shows the actual net reduction, and the light blue and dark blue lines respectively show the predicted net reductions using the 2008 (low cessations) and 2017 (stable cessations) models. The net contribution to the caseload from CDRs depends heavily on the selected model, although with consistent CDR volumes, it would follow a stable pattern. Under a low cessation model, there would be few cessations and thus few returns. Under a stable cessation model, there would be many more cessations—roughly 25,000 to 30,000 per year. Both models offer substantially less fluctuation than the actual pattern. One reason the 2017 model leads to a smaller net caseload reduction than the actual net reduction is that many children would have had their payments ceased earlier, leading to a lower caseload by 2017. The negative numbers indicate that CDRs on net contribute to a reduction in the caseload; there are always more children whose payments have ceased than children who returned to SSI following a previous cessation.

Taken together, the policy simulations suggest that CDR cessation patterns play an important role in the overall dynamics of the child SSI caseload over time (Chart 14). The actual caseload in 2021 consisted of around 1.04 million child SSI recipients, which reflects the varying CDR policies during that period. If SSA had consistently applied a stable CDR cessation policy, the 2021 child SSI caseload might have been only 0.92 million. If SSA had consistently applied a low

**Chart 11.**
**Predicted and actual CDR cessation rates, by medical diary category, 2003–2021**




SOURCE: Authors' calculations using administrative records from SSA.

NOTES: Omits cessations with a medical diary category missing, which accounted for 33.9 percent of child SSI recipients in 2003. By 2017 that share had declined to 15.0 percent.

2008 model, representing low cessation pattern, uses the 2008 cessation cohort as the base year; 2017 model, representing stable cessation pattern, uses the 2017 cessation cohort as the base year.

**Chart 12.**
**Predicted and actual postcessation SSI return rates, by medical diary category, 2003–2021**

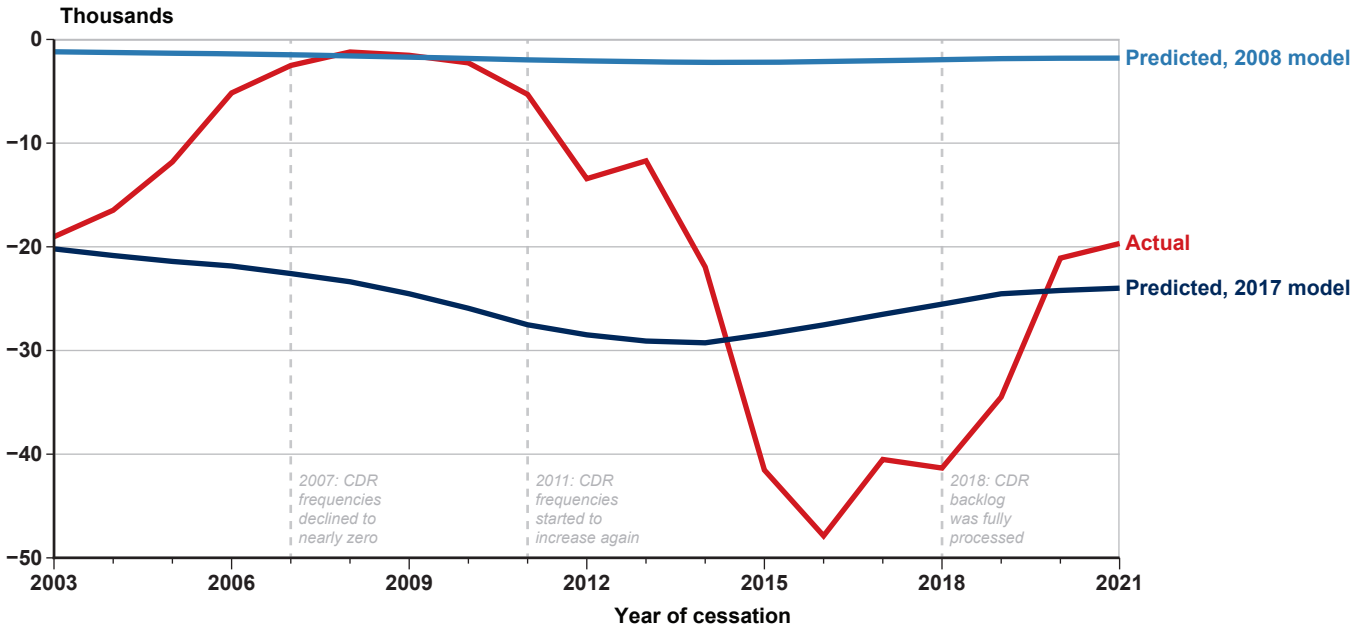

SOURCE: Authors' calculations using administrative records from SSA.

NOTES: Omits cessations with a medical diary category missing, which accounted for 33.9 percent of child SSI recipients in 2003. By 2017 that share had declined to 15.0 percent.

2008 model, representing low cessation pattern, uses the 2008 cessation cohort as the base year; 2017 model, representing stable cessation pattern, uses the 2017 cessation cohort as the base year.

a. The scale for this plot is wider because the number of children from this group with payments ceased is very small (partially because SSA typically does not conduct CDRs in such cases; see Chart 11). This, in turn, leads to noisier estimates for this group.

## Chart 13.
## Predicted and actual net reduction in child SSI caseload attributable to CDR volume, 2003–2021

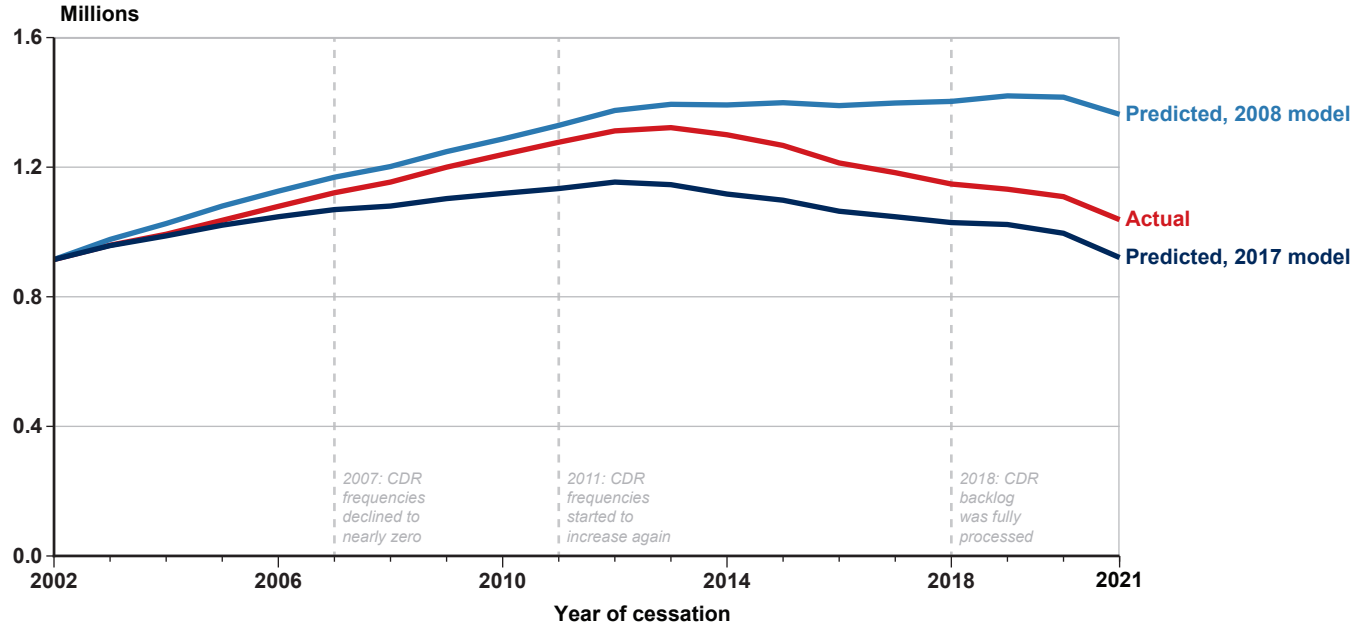



SOURCE: Authors' calculations using administrative records from SSA.

NOTES: Net reduction is measured as the number of CDR cessations minus the number of SSI program returns among children with a previous CDR cessation.

2008 model, representing low cessation pattern, uses the 2008 cessation cohort as the base year; 2017 model, representing stable cessation pattern, uses the 2017 cessation cohort as the base year.

## Chart 14.
## Predicted and actual child SSI caseload, 2002–2021




SOURCE: Authors' calculations using administrative records from SSA.

NOTE: 2008 model, representing low cessation pattern, uses the 2008 cessation cohort as the base year; 2017 model, representing stable cessation pattern, uses the 2017 cessation cohort as the base year.

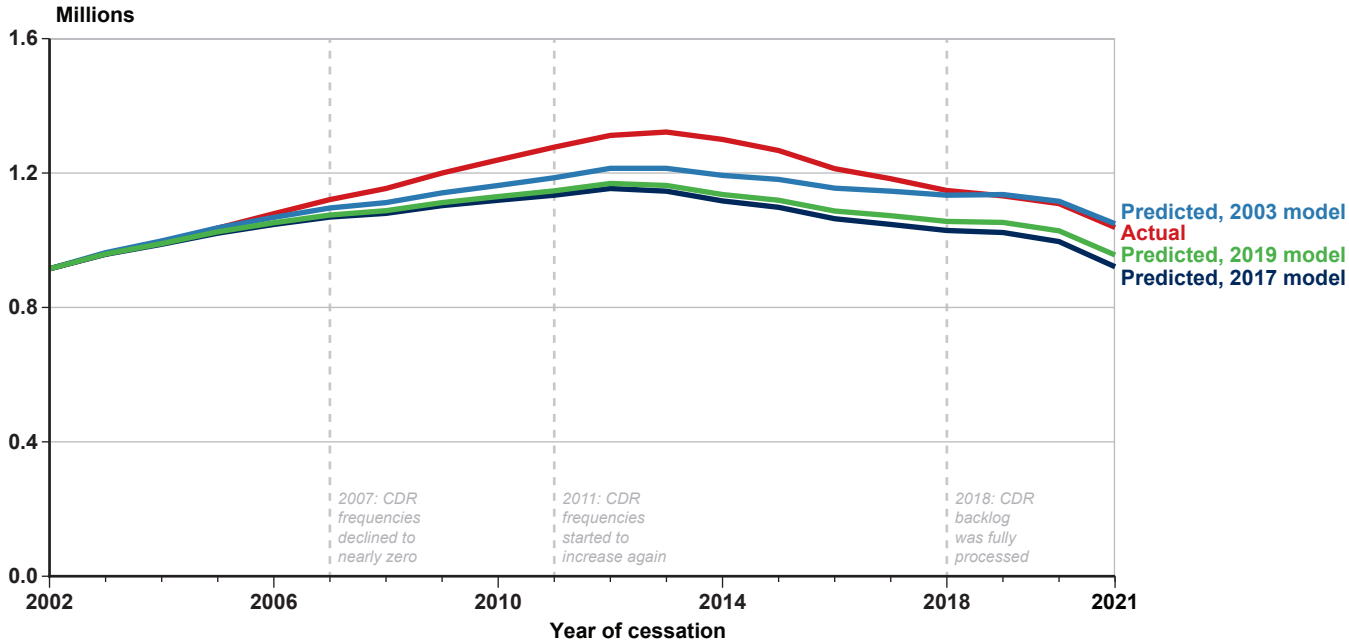
cessation policy, the 2021 child SSI caseload might have been 1.36 million. Thus, the net child SSI caseload difference between a low cessation policy and a stable cessation policy is roughly 400,000.

Although the effect of CDR volume in any single year is relatively minor, when cumulated over an extended period, CDRs can explain an important share of the change in the child SSI caseload. For example, from 2002 through 2013, the number of child SSI recipients increased by about 406,000. Comparing the 2017 (stable cessations) and 2008 (low cessations) models' patterns, we estimate that a stable cessation pattern might have netted nearly 250,000 more cessations. Thus, low CDR volumes can explain about 60 percent of enrollment growth from 2002 through 2013.[27] Increased CDR volume in the subsequent period, 2013 through 2021, may account for two-thirds of that period's program participation decline: The caseload fell by 283,000, while the differential between the stable and low CDR cessation models is about 194,000.

Interestingly, the probability of SSI return plays a minimal role in the simulations. For both base year cohorts, if we had not adjusted for program return probability, the estimated value in the final year (which allows for the greatest number of possible returns over time) would be essentially unchanged. For example, the estimated number of SSI recipients shown in Chart 14 in 2021 from the low cessation model is 1.363 million; if we had not accounted for the probability of return, the estimated number in 2021 would have been 1.382 million. For the stable cessation model, the estimate would have been only 3,000 recipients lower if we did not adjust for program-return probability.

Finally, Chart 15 shows that the results are mostly not sensitive to the year chosen to represent the stable cessation cohort. When we use 2003 or 2019 as the base year instead of the 2017 cessation cohort, we still find that the child SSI caseload would have been substantially smaller, with subsequently smaller declines in the caseload than have been observed. Comparing the estimates with the 2008 low cessation cohort, all three cohorts would still lead us to the conclusion that CDR cessation patterns can explain a substantial share of the changes in child SSI program participation. With the 2017 base year, CDR volume could explain 61 percent of the caseload growth from 2002 through 2013 and 68 percent of the caseload decline from 2014 through 2021. With the 2019 base year, CDR volume could explain 57 percent and 62 percent, respectively, and with the 2003 cessation cohort, CDR volume could explain 44 percent and 47 percent, respectively.

**Chart 15.**
**Predicted and actual child SSI caseloads using alternative base year models to represent stable cessation patterns, 2002–2021**




SOURCE: Authors' calculations using administrative records from SSA.

NOTE: 2003, 2017, and 2019 models use the 2003, 2017, and 2019 cessation cohorts as their base years, respectively.

## Conclusion

We investigated the role that the increase in the frequency of CDRs had on recent changes in the child SSI recipient population. We found that cessation rates by children's primary diagnoses and other demographic characteristics were stable, though the ages of children at the time of their CDR cessations shifted noticeably around 2010. That finding is not unexpected, as children aged 11–13 were presumably more likely to be overdue for a CDR because of a backlog in the earlier period. By contrast, the backlog also would likely contain cases of child SSI recipients that would be more consistent across other characteristics. Children who lived in ZIP Codes with higher levels of socioeconomic deprivation were also more likely to have SSI payments ceased by a CDR.

The rate at which children with payments ceased because of a CDR returned to the SSI program was lower among the post-2008 cessation cohorts. We were not able to isolate a single cause of that decrease, but two factors are consistent with the observed trends. First, childhood CDR volume was not particularly high before 2008. The resulting CDR backlog may have included a substantial number of cases involving children with relatively less severe disabilities, who then experienced post-2008 CDR cessations as SSA emphasized backlog reduction. Having less severe disabling conditions, these children would be less likely to return to the SSI program thereafter.[28] However, returns to the SSI program did not increase as the frequency of CDRs subsequently increased. Second, earnings 5 years after cessation were relatively higher for the cohorts whose payments were ceased after 2008 (the postrecession economic recovery may have contributed). Thus, there might have been less of a perceived need for SSI payments.[29] Those two explanations are not mutually exclusive, and more research is needed to confirm whether either is correct or whether other factors explain the trend.[30]

Our results indicate that CDRs can explain a notably large portion of the SSI caseload dynamics during the study period. The frequency of CDRs can explain about 60 percent of the increase in child SSI participation from 2002 through 2013: If CDR volume had followed a more stable pattern, the number of child SSI recipients would have been substantially lower. In addition, CDR frequency can explain two-thirds of the decline in program enrollment from 2013 through 2021. Without the increase in CDRs that occurred during that period, the caseload would have been roughly unchanged. These findings indicate that CDR policies that would have maintained consistent cessation counts over time would have led to a more stable pattern of child SSI participation. Expectations about when CDRs will be conducted might be especially important for families in planning for the possibility of losing payments. Even though SSA conducted age-18 redeterminations consistently during the study period, few families correctly anticipate the potential payment cessation for their child (Deshpande and Dizon-Ross 2023).

Given the variation in childhood CDR frequency even among the low-volume years, an unanticipated loss in payments would be that much more difficult for families. Deshpande and Dizon-Ross (2023) also showed that families tend not to change their behavior even when they obtain accurate information about the likelihood of payment cessation, which may further complicate matters for them. Still, two large demonstration projects that sought to support young SSI recipients as they transition to adulthood, the Youth Transition Demonstration and Promoting Readiness of Minors in SSI, found that combining program information on redeterminations with vocational rehabilitation or similar services can enhance the recipient's human capital investment; however, the effect seems to be short-lived (Fraker and others 2014; Patnaik and others 2022). SSA already informs all child recipients aged 14-17 about the age-18 redetermination through an annually mailed brochure noting the high likelihood of losing payments.[31] Including additional information about childhood CDRs in the award notification or other program communications could potentially avert any parental expectations that SSI eligibility is permanent.

We found that a substantial fraction of the trends in child SSI participation can be attributed to the increase in program integrity funding for CDRs from 2014 through 2018. Although the volume of CDRs has increased since the early 2000s, the stable rates of cessation across demographic characteristics, even as CDR volume varied, indicates that CDRs are targeted consistently. The main determinant of who faces a CDR is the medical diary category. In its fiscal year 2020 budget request, the agency proposed expanding the number of diary categories from three to four to enable it "to conduct CDRs more frequently for those medical impairments that are expected or likely to improve" (SSA 2019, 35). Our results suggest that such a change likely would have lowered the number of child SSI recipients, extending recent trends in declining program enrollment that continued during

the COVID-19 pandemic (Levere, Hemmeter, and Wittenburg 2024a).

Even with consistent targeting, children with ceased payments are not necessarily receiving the supports they need to be self-sufficient. As noted earlier, we found low earnings levels for children whose SSI payments were ceased as they transitioned to adulthood, which correlates with poor adult economic outcomes (Patnaik and others 2022; Luecking and Leggett 2009; Fraker and others 2014). Although SSA determines that such children's impairments are no longer sufficiently severe to qualify for SSI, most of those children still face substantial barriers to full participation in educational settings or the labor force. Because SSI eligibility is linked with Medicaid eligibility, cessation of the former means loss of the latter for many children. However, state Medicaid offices typically look for ways to retain a child's Medicaid eligibility, perhaps based on limited incomes. Although there is substantial overlap in SSI and Medicaid eligibility (Levere and Wittenburg 2024), additional supports might be necessary for many children to fully participate in society. SSA is currently conducting the Beyond Benefits Study,[32] which examines the supports needed for adults whose SSI payments were ceased by a medical CDR. SSA is also planning a new survey of children that might highlight their potentially unique needs.[33]

Studies of CDR policies and practices should also address potential equity concerns, given that children from high-deprivation areas are more likely than others to have their SSI payments ceased. The role of economic, medical, environmental, or social factors in payment cessations is beyond the scope of this study. Illuminating the childhood SSI experience will help policymakers understand whether children and families are prepared for CDRs, have the necessary resources when undergoing a CDR, and can weather a payment cessation.

## Notes

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[1] We use the term "CDRs" to refer to ongoing assessments of child SSI recipients' medical eligibility, excluding low birth weight CDRs (typically conducted at age 1) and age-18 redeterminations. SSA also conducts work CDRs for Social Security Disability Insurance beneficiaries, which are not relevant to this analysis.

[2] If an SSI recipient's payments are ceased once an overdue CDR is eventually conducted, the payments received while the CDR was overdue are not considered overpayments.

[3] In this article, the term "children with ceased payments" refers to children whose payments ceased after a CDR and not for non-CDR reasons, unless otherwise specified.

[4] Reliable comparisons to a broader population are difficult because so many people at those ages are full-time students. However, among youths who were working 5 years after SSI payments ceased, average annual earnings were about $11,500. By contrast, median weekly earnings for all U.S. workers aged 16–24 were $734 (Bureau of Labor Statistics 2024), which, assuming 48 weeks of work per year, translates to annual earnings of over $35,000, more than triple the average for children whose payments ceased because of a CDR.

[5] We also considered using 2003 or 2019 as stable cessation cohorts to assess the relative sensitivity of the estimates compared with using the 2017 cohort. Under either alternative cessation cohort, the percentage of the changes in the child SSI caseloads explained by changes in CDR volume would decline, but would remain substantial.

[6] Some states supplement SSI payments. In many states, SSI recipients automatically qualify for Medicaid.

[7] For more detail on this process, see https://secure.ssa.gov/apps10/poms.nsf/lnx/0428005030.

[8] The regulations describing CDRs are detailed at https://secure.ssa.gov/poms.NSF/lnx/0428001020. These CDRs differ from mandatory redeterminations conducted at age 18 for all child SSI recipients and at age 1 for low birthweight awardees. Those redeterminations consider SSI eligibility under medical and nonmedical rules that differ from those of the initial allowance. They are required by law and offer much less variation in frequency.

[9] For researchers, these funding variations provide opportunities for comparative analysis. For example, Deshpande (2016a) used the funding changes to estimate the effects of a child's removal from the SSI program on parents' subsequent earnings.

[10] A CDR can begin in one year and result in an initial decision in a later year. In turn, an initial decision does not necessarily occur in the same year as the final decision, which may follow an appeal. We use the year of the initial decision to identify the year in which the CDR was processed.

[11] For more details on those outreach efforts, see https://www.ssa.gov/thirdparty/groups/vulnerable-populations.html.

[12] We base our analyses on calendar year data.

[13] Note that this slightly contrasts with our use of the date of initial decision to identify the year a CDR was conducted in Chart 1.

[14] These characteristics include measures of educational attainment (the percentage of the population with less than 9 years of education and the percentage with a high school diploma or more), employment status (the percentage employed in a white-collar job [management, business, science, and arts occupations] and the percentage unemployed), housing characteristics (the percentage who are homeowners, the percentage with more than one person per room in the household, as well as standardized measures of the median monthly mortgage, median gross rent, and median home value), income and poverty characteristics (a standardized measure of median family income, the ratio of people with income of less than $15,000 to people with income greater than $75,000, the family poverty rate, and the percentage of people with earnings of less than 150 percent of the federal poverty limit), and several other characteristics (the percentage of the population who are single parents with children under age 18, the percentage with no motor vehicle, the percentage with no telephone, and the percentage of occupied housing units without complete plumbing).

[15] For example, the percentage of child SSI recipients with intellectual disabilities decreased from 27 percent in 2003 to 11 percent in 2017, while the percentage of child SSI recipients with autism spectrum disorders increased from 6 percent in 2003 to 16 percent in 2017 (not shown).

[16] Although 14,052 cases from the backlog were processed in 2017, they constituted only 6.7 percent of the 208,500 CDRs conducted that year (SSA 2023b). Because a small backlog remained through 2018, 2019 is the first year that represents a typical year with zero backlog. However, the available data cannot identify any potential SSI program returns that occurred more than 3 years thereafter, so we selected the 2017 cohort.

[17] For children who stopped receiving SSI payments for non-CDR reasons during the year, we set the probability equal to 0.

[18] Because we assumed a uniform probability of return in each year, multiplying the likelihood of return at any point in the 5 subsequent years by one-fifth gave us the likelihood of returning in each year. That assumption did not match the data exactly, and it likely led to an overestimate of the likelihood of children returning to SSI after experiencing a CDR cessation (because we extend the uniform probability to apply in years after the first 5 years, whereas most program returns happen in the first couple of postcessation years). For example, Hemmeter and Bailey (2015) found that nearly 10 percent of children with payments ceased by a CDR return to SSI within 10 years (conditional on not first reaching age 18), with two-thirds of those returns happening within 5 years of CDR cessation. However, the uniform probability of return assumption is necessary to make the math behind the simulation tractable. As a result, our simulation likely *overestimated* returns to the program, meaning we *underestimated* the role CDRs play in caseload dynamics.

[19] For example, from 2003 through 2004, child SSI participation increased by 33,748. The net change from CDRs in 2004 was −16,474: 17,113 children had payments ceased in 2004, while 639 children whose payments had ceased in 2003 or 2004 returned. Our base-year-2017 model predicted that in 2004, the net change from CDRs would have been −20,836. Thus, if we replaced the actual net reduction with the model-based net reduction, we would have seen an additional decline of 4,362 child recipients (−20,836 minus −16,474), or the caseload would have grown by only 29,386 (33,748 minus 4,362). We then calculated a new number for the caseload for 2004 and reiterated the process for each subsequent year.

[20] Nonbenchmarked figures—that is, the simple shares of children whose payments ceased because of a CDR for each characteristic—are available from the authors on request.

[21] Chart 7 shows the four most prevalent diagnosis codes among children with mental disorders and the four most prevalent nonmental diagnoses in 2017. It does not include children with mental disorders that fall into the categories of childhood and adolescent disorders not elsewhere classified; depressive, bipolar, and related disorders; neurocognitive disorders; and schizophrenia spectrum and other psychotic disorders. Statistics for all primary diagnosis codes, age at entry, duration of SSI payment receipt, and adjudication level of initial award (initial allowance, reconsideration, administrative law judge, or other) are available on request.

[22] Other mental disorders include anxiety and obsessive-compulsive disorders, personality disorder, trauma- and stress-related disorders, and attention-deficit hyperactivity disorder.

[23] Developmental disorders include learning disorders, speech and language impairments, and developmental disorders in infants and toddlers. Autism spectrum disorder is treated as a separate category from developmental disorders.

[24] Socioeconomic deprivation is estimated for all cessation years using 2015–2019 American Community Survey data. Thus, Chart 8's socioeconomic deprivation values may differ somewhat from actual values, especially in the earlier years.

[25] Because enrollments in the Social Security Disability Insurance program after a child CDR cessation are extremely rare, we omit them from our statistics.

[26] The declining share of children with ceased payments who return to SSI can explain some of the differences between our findings and those in Hemmeter and Bailey (2015). Averaging across the 1998 through 2006 cessation cohorts (the groups that Hemmeter and Bailey observed for at least 5 years), the analogous SSI return rates were

2.6 percent, 6.6 percent, and 9.3 percent, which are similar to our current findings for the earliest cessation cohorts.

[27] The difference between the two models represents our best estimate of the share of caseload change that can be explained by differential cessation patterns. Our study period in fact included periods of somewhat more frequent and somewhat less frequent cessations. By comparing two model-based estimates, we can isolate the differential net reduction in the caseload resulting from CDR volume. From 2002 through 2013, the caseload pattern mimicked the "low cessation" projection, having very few cessations. From 2014 through 2021, the caseload pattern mimicked the "stable cessation" projection, having relatively more cessations.

[28] Anecdotal feedback obtained during two SSI demonstration projects suggest that child recipients and their families had not expected their CDRs and perceived that establishing eligibility was getting harder to do (Fraker and others 2014; Patnaik and others 2022). These factors might have discouraged them from reapplying.

[29] In the late 2010s, SSA began sending annual notices to all SSI recipients aged 14–17 alerting them about the age-18 redetermination, which might have better prepared them for payment cessation.

[30] Another potential factor, external to SSI, is the overall decline in child poverty. From 2013 through 2022, the number of children in poverty dropped by almost 4.5 million children, or from 22 percent to 16 percent of the child population (Annie E. Casey Foundation 2024).

[31] This brochure is available at https://www.ssa.gov/pubs/EN-05-11005.pdf.

[32] For details, see https://www.ssa.gov/disabilityresearch/bbs.htm.

[33] That will be SSA's first survey on young SSI recipients since it conducted the National Survey of SSI Children and Families from July 2001 through July 2002 (Ireys and others 2004).

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# The Effects of the Workforce Innovation and Opportunity Act of 2014 on Vocational Rehabilitation Engagement, Employment, and Work Incentive Use Among Supplemental Security Income Recipients Aged 14–24

by Isabel Musse, Todd Honeycutt, and Jeffrey Hemmeter*

*The Workforce Innovation and Opportunity Act (WIOA) of 2014 requires state vocational rehabilitation (VR) agencies to offer preemployment transition services (pre-ETS) to students with disabilities. Using data for 2010–2021 from the Social Security Administration and the Department of Education's Rehabilitation Services Administration, we show that youths aged 14–24 with disabilities who receive Supplemental Security Income (SSI) payments were more likely to apply for VR services, sign individualized plans for employment (IPEs), and have higher annual earnings after WIOA enactment than before. In states that offered greater pre-ETS access to students, young SSI recipients were more likely to sign IPEs, have any earnings, and use an SSI work incentive (the Section 301 payment continuation) than in states providing less access. The access to pre-ETS that WIOA provided likely contributed to higher youth engagement with VR and may be associated with better employment outcomes.*

## Introduction

The Workforce Innovation and Opportunity Act (WIOA) of 2014 amended the Rehabilitation Act of 1973 and significantly shifted how state vocational rehabilitation (VR) agencies offered services to youths with disabilities, particularly to students. WIOA requires state VR agencies to offer preemployment transition services (pre-ETS) to students with disabilities and to reserve at least 15 percent of their federal program funds for that purpose (Department of Labor 2014). This article explores the extent to which WIOA and pre-ETS access affected employment-related outcomes for youths with disabilities who receive Supplemental Security Income (SSI) payments. Understanding whether pre-ETS help students transition from high school to better postsecondary education and employment opportunities is critical because a successful transition can improve a young person's future employment prospects and earnings, health-related quality of life, and well-being. Moreover, evidence on the effectiveness of transition support programs for this population is limited (Urdapilleta and others 2020).

**Selected Abbreviations**

| | |
|---|---|
| IDEA | Individuals with Disabilities Education Act |
| IEP | individualized education program |
| IPE | individualized plan for employment |
| pre-ETS | preemployment transition services |
| PROMISE | Promoting Readiness of Minors in SSI |
| RSA | Rehabilitation Services Administration |
| SEIE | student earned income exclusion |

* *Isabel Musse is a researcher at Mathematica. Todd Honeycutt is a research professor at the University of Maryland's College of Education; when this article was written, he was a researcher at Mathematica. Jeffrey Hemmeter is the Deputy Associate Commissioner for the Office of Research, Demonstration, and Employment Support, Office of Retirement and Disability Policy, Social Security Administration.*

**Selected Abbreviations—*Continued***

| | |
|---|---|
| SSA | Social Security Administration |
| SSI | Supplemental Security Income |
| VR | vocational rehabilitation |
| WBLE | work-based learning experience |
| WIOA | Workforce Innovation and Opportunity Act |

The influence of WIOA on VR service applicants and participants has been previously documented. When youths approaching the transition to adulthood are exposed to services such as pre-ETS, they are more likely to sign an individualized plan for employment (IPE) and use VR services (Luecking and others 2018). Increased VR engagement may lead to better employment and earnings outcomes (Dean and others 2019; Yin, Siwach, and Lin 2023), including for young SSI recipients (Hoffman, Hemmeter, and Bailey 2018). Although youths constituted a larger proportion of VR service applicants after WIOA than before (Department of Education 2020), we know of no quantitative evidence showing how the employment outcomes of transition-age youths changed after WIOA was implemented and pre-ETS became available.

This article aims to measure how VR engagement, employment, and SSI work incentive use changed for SSI recipients aged 14–24 after the 2014 enactment of WIOA made pre-ETS available. Using rich administrative data from the Social Security Administration (SSA) and the Department of Education's Rehabilitation Services Administration (RSA), we construct two models and measure how youth outcomes changed from 2010 to 2021. In the first model, we adjust for state and individual characteristics to estimate the extent to which WIOA affected the percentage of young SSI recipients who applied for VR services, the percentage who signed IPEs, the percentage who had any annual earnings, the annual earnings amounts, and the percentage who used either of two SSI work incentives: the student earned income exclusion (SEIE) and a continuation of payment eligibility for recipients who use VR or similar services, named for its authorizing legislation, Section 301 of the Social Security Act Disability Amendments of 1980. In the second model, we explore the effects of different levels of pre-ETS access by state and year.[1] We then estimate the association between state-level pre-ETS access and changes in outcomes for young SSI recipients.

This article documents the influence of WIOA on youths who have disabilities that pose substantive employment barriers. More of these youths applied for VR services, signed an IPE that would allow them to access services beyond pre-ETS, and had higher annual earnings after WIOA than before. Moreover, those in states offering greater pre-ETS access also had higher annual employment rates and earnings amounts, as well as higher rates of SEIE use, after WIOA. For 2017 to 2021, we observe positive correlations between state-level pre-ETS access and the signing of IPEs, employment, earnings, and use of the Section 301 work incentive.

## Background

In this section, we discuss how WIOA affected the provision of employment-support services for youths with disabilities. We then describe the challenges to employment for our study population and summarize the literature on their interactions with services like pre-ETS.

### WIOA and Pre-ETS

WIOA instituted new requirements for state VR agencies that provide services for students with disabilities. For example, it requires state VR agencies to reserve at least 15 percent of their federal program funds to offer pre-ETS to students with disabilities (Department of Labor 2014). A state VR agency must make pre-ETS available to all students with disabilities, regardless of whether they apply for other VR services at the agency. In addition to preparing a student for employment, pre-ETS could lead some students to apply for additional VR services before entering employment.

The Department of Education (2020) defines "student with a disability" as "an individual who is in an educational program, meets certain age requirements, and is eligible for and receiving special education or related services under the Individuals with Disabilities Education Act [IDEA] or is an individual with a disability for purposes of Section 504 of the Rehabilitation Act (Section 7(37) of the Rehabilitation Act and 34 C.F.R. § 361.5(51))." Students can be enrolled in high school, a recognized educational setting, or postsecondary education institutions. They are typically aged 16 to 21, although the specific age range varies with the state's age requirements for IDEA-mandated transition services and the minimum age agreed upon with the state VR agency (Carlson, Thompson, and Monahan 2020).

VR agencies and educators often collaborate to provide pre-ETS at schools (Fabian, Neubert, and Luecking 2018). The school setting is especially

suitable because WIOA allows VR agency staff to work with students in groups rather than individually. WIOA defines five specific services that agencies must offer to students with disabilities: (1) job exploration counseling (such as career counseling or vocational interest inventories), (2) work-based learning experiences (WBLEs; examples include job shadowing or internships), (3) counseling on opportunities for enrollment in comprehensive transition or postsecondary educational programs at institutions of higher education, (4) workplace readiness training (such as life skills and financial literacy), and (5) instruction in self-advocacy (such as self-determination training or peer mentoring).

The successful implementation of pre-ETS depends on factors involving students, their families, VR providers, educators, and local area characteristics. Students and their families may not be adequately informed about the purpose of VR services and the availability of services in their areas (Schutz and others 2022; Awsumb, Balcazar, and Keel 2019). Students may also lack the resources and support required for their VR engagement because of their needs and disabilities (Fabian, Neubert, and Luecking 2018; Bromley and others 2022). VR counselors report challenges related to the increased caseload and paperwork involved with serving eligible and potentially eligible students after WIOA, in addition to insufficient time and financial resources to implement pre-ETS (Fabian, Neubert, and Luecking 2018; Awsumb and others 2020). Despite the overall collaborative relationships between VR counselors and local schools, some educators struggle to connect with students who could benefit from pre-ETS but are unfamiliar with the services (Carter and others 2021). Finally, successfully implementing some services depends on local area characteristics, such as the availability of employers interested in offering community-based WBLEs to students (Bromley and others 2022).

To date, VR agency implementation of pre-ETS has varied, which could lead to differences in the outcomes for students with disabilities across states. For example, in program year 2021 (July 2021–June 2022), the percentage of students with disabilities receiving VR services who used pre-ETS ranged from 100 percent in Illinois to 14 percent in Puerto Rico. Further, in that same year, the percentage of VR participants who were younger than 19 when they signed their IPE ranged from 63 percent in Illinois to 7 percent in Oregon (Department of Education 2022). The student participation patterns also differ: in Illinois, 94 percent of students with disabilities who used pre-ETS had applied for VR services, and the remainder were potentially eligible; in Oregon, the percentage of students with disabilities who used pre-ETS and had applied for VR services was only 1 percent.

### *Young SSI Recipients*

This study focuses on SSI recipients aged 14–24. Most, but not all, in the younger part of that age range are probably students. SSI is a means-tested cash payment for individuals with significant disabilities.[2] Given their income, asset, and health situations, the post-school employment prospects for these youths may benefit from pre-ETS even more than those of other youths with disabilities.

Youths with disabilities, in general, might not be adequately prepared for employment because they lack career development, learning, and training opportunities. Despite the potential availability of public programs that offer these services, youths with disabilities might face challenges in using them because of complex eligibility rules, fragmented transition systems, and other barriers (Livermore and others 2019).

Such challenges in achieving employment are likely to be even more significant for SSI recipients because of their low household resources and limiting health conditions. Based on 2021 Current Population Survey data, the median household income for an SSI recipient aged 17 was $51,600 and for one aged 18 it was $60,500. For comparison, the median household income for youths with disabilities but not receiving SSI was $78,300 at age 17 and $93,300 at age 18 (Flood and others 2023). The employment rates of youths with a disability are 22 percent for those aged 16–19 and 46 percent for those aged 20–24. By contrast, youths in those age groups with no disability have employment rates of 33 percent and 68 percent, respectively (Bureau of Labor Statistics 2024). Moreover, young SSI recipients are less likely to use VR services after applying for them, and their VR cases are less likely to close with employment, than are nonrecipient youths with disabilities (Honeycutt, Martin, and Wittenburg 2017).

For these reasons, pre-ETS and other VR services can help young SSI recipients to transition from high school with better postsecondary education and employment opportunities. A successful transition can lead to upward mobility by improving future employment and earnings prospects, health-related quality of life, and well-being (Hartman and others 2019).

### *Employment-Related Outcomes of Young SSI Recipients*

We are not aware of direct evidence on how pre-ETS affects employment outcomes for transition-age youths, but literature documents outcomes for youths who use services similar to pre-ETS. Although VR services can improve employment outcomes for transition-age youths, the findings are mixed. Correlational evidence shows that youths who use VR services, including SSI recipients, have better long-term employment outcomes than those who do not (Hoffman, Hemmeter, and Bailey 2018). Osmani and others (2022) showed that an immersive experience (Project SEARCH) was correlated with higher probability of successful VR case closure. Yin, Siwach, and Lin (2023) presented causal evidence that VR services increased youth employment rates and earnings for up to 2 years after case closure, with greater effects for those aged 14–18 than for those aged 19–24. Dean and others (2019) found that youths with disabilities participating in a transition program had increased employment and earnings for more than 2 years after the end of the program.

A series of recent studies measured the effect of offering WBLEs to high school students with disabilities in Maine, Maryland, Massachusetts, and Vermont. Despite the successful implementation of these programs, WBLEs were not consistently associated with improved employment outcomes up to 24 months after enrollment, although participants in Massachusetts had higher mean hourly wages (Foley and others 2022; Mann and others 2021; Sevak and others 2021; Siwach and others 2021). Finally, two demonstrations—the Youth Transition Demonstration (YTD) and Promoting Readiness of Minors in SSI (PROMISE)—offered employment and other services to young SSI recipients. In YTD, six independent projects tested a variety of service models, but all generally focused on providing employment services to youths aged 14 to 25. Although the projects had positive short-term effects on service receipt and other outcomes, the employment results were not sustained (Fraker and others 2014). PROMISE offered employment and other services through six school-to-work transition programs to SSI recipients aged 14–16. These programs used different service models, but all focused on state and local partnerships, case management, and employment, and all offered to connect youths with VR agencies. All programs affected service use and employment within 18 months of enrollment, a period that includes youths' direct involvement with the programs (Mamun and others 2019). Only two PROMISE programs had positive employment effects for youths 5 years after enrollment (that is, after they left the programs) (Patnaik and others 2022; Mamun and others 2019).

Improved employment rates associated with the use of pre-ETS and VR services may lead more SSI recipients to use work incentives. Although SSI provides several work incentives, we focus on two that are especially relevant to transition-age youths: the SEIE and Section 301 payment continuations. For students who have an individualized education program (IEP), the SEIE allows SSA to exclude a portion of the SSI recipient's earnings in computing payment eligibility and amounts if the recipient is younger than 22 and regularly attending school, college, university, or a course of vocational or technical training. In 2023, an individual's maximum income exclusion was $2,220 per month, with the total annual amount not to exceed $8,950 (SSA 2023, 2024). Section 301 of the Social Security Act Disability Amendments of 1980 allows SSA to continue making monthly SSI payments to recipients who participate in VR or similar services, even if they no longer meet SSA's medical or work-related definition of having a qualifying disability.

The use of the SEIE and Section 301 payments historically has been low. From 2012 through 2015, less than 1.5 percent of SSI recipients aged 14–17 used an SEIE; and in 2015, about 1,200 recipients aged 18–19 used Section 301 continuations. Use of the SEIE may be low either because youths and their families have not heard of it or they fear that using it could negatively affect their payments. Potential reasons for low use of Section 301 continuations could include the limited number of individuals younger than 18 who used VR services and rules restricting eligibility for those aged 18–21 to those having an IEP (Government Accountability Office 2017, 2021). Additionally, the Section 301 incentive is available only if an individual has not requested continued payments while appealing a negative eligibility determination; because appealing and requesting payments is very common, even those otherwise eligible for Section 301 payments may not receive them.

## *Data and Methods*

We used information from multiple administrative data sources. Our main source, SSA's 2021 Disability Analysis File (DAF), includes information on our study population—youths aged 14–24 who received SSI payments at any time from 2010 through 2021. The DAF combines (and links) extracts of administrative data files from SSA and other agencies. Our

study uses DAF data drawn from SSA's Supplemental Security Record (the primary system for tracking SSI payments) and Master Earnings File; and from RSA's individual-level Case Service Reports (the RSA-911 file). We also used data from the Department of Education's Child Count and Educational Environments file, known as the IDEA Section 618 file after its authorizing legislation. We drew information on use of the Section 301 work incentive directly from a part of the Supplemental Security Record that is not available in the DAF. Similarly, RSA staff provided us with information on pre-ETS availability that is not included in the RSA-911 data in the DAF. We used the variables in these data to identify our analytical sample and define most of the outcomes we analyzed.

We acknowledge several limitations in the data:

- The records from the Master Earnings File include earnings as reported to the Internal Revenue Service, so they exclude informal earnings.
- Although WIOA established pre-ETS in 2014, the earliest RSA-911 data on pre-ETS use are for 2017, when RSA first required state VR agencies to report them.
- Besides having no pre-ETS information for 2014–2016, we cannot enumerate every person who used pre-ETS from 2017 onward. Because VR agencies must offer pre-ETS to youths regardless of their VR application status, a Social Security number is not required to access the services. Therefore, we cannot determine that young SSI recipients used pre-ETS if they did so before they applied for VR services. Moreover, even among youths who applied for VR services then used pre-ETS, not all RSA-911 records contain identifiers that allow a match to SSA data. For example, between 9 percent and 12 percent of nationwide RSA-911 records from program years 2019, 2020, and 2021 could not be matched to SSA data (Mathematica 2023). Further, record matching may vary by state. Our estimates of VR engagement therefore represent a lower bound.

Given the limitations on pre-ETS information in the individual-level RSA-911 and DAF data, we devised a way to estimate state-level pre-ETS use. RSA staff provided us with the number of students who used pre-ETS in each state and program year from 2017 through 2021. We complemented this state-level information with data from the IDEA Section 618 file. The latter file provided the total number of students aged 14–21 who had an IEP to use special education services each year from 2017 to 2021 (Dragoo 2024). When these data were missing for a state for a particular year, we imputed the missing value using data for that state from the previous year adjusted by the average national percentage change in the number of students in that year. Data were missing for three states in 2017 and for one each in 2018, 2019, and 2020; data for Wisconsin were missing for three of these years. Of note, the RSA-911 and IDEA Section 618 data are reported by program year, but DAF data are reported by calendar year.

### Sample

The study sample is the universe of youths aged 14 to 24 who are eligible to receive SSI payments in December of each year. Because a youth may appear repeatedly across years in the sample, we view the sample as annual cross-sections of SSI-eligible youths from 2010 to 2021. The age distribution of the sample remains relatively unchanged over the years, although the total number of SSI recipients aged 14 to 24 in the sample decreased from 929,547 in 2010 to 820,650 in 2021 (Chart 1), reflecting the trend for the SSI program overall.

### Empirical Strategy

We use two individual-level regression models to estimate how the WIOA, and specifically pre-ETS access, affects our outcomes of interest over time, nationally and across states. We estimate the marginal effects using linear models to avoid making assumptions about the true functional form of our models and the distribution of data. In all estimations, we cluster standard errors at the state level.

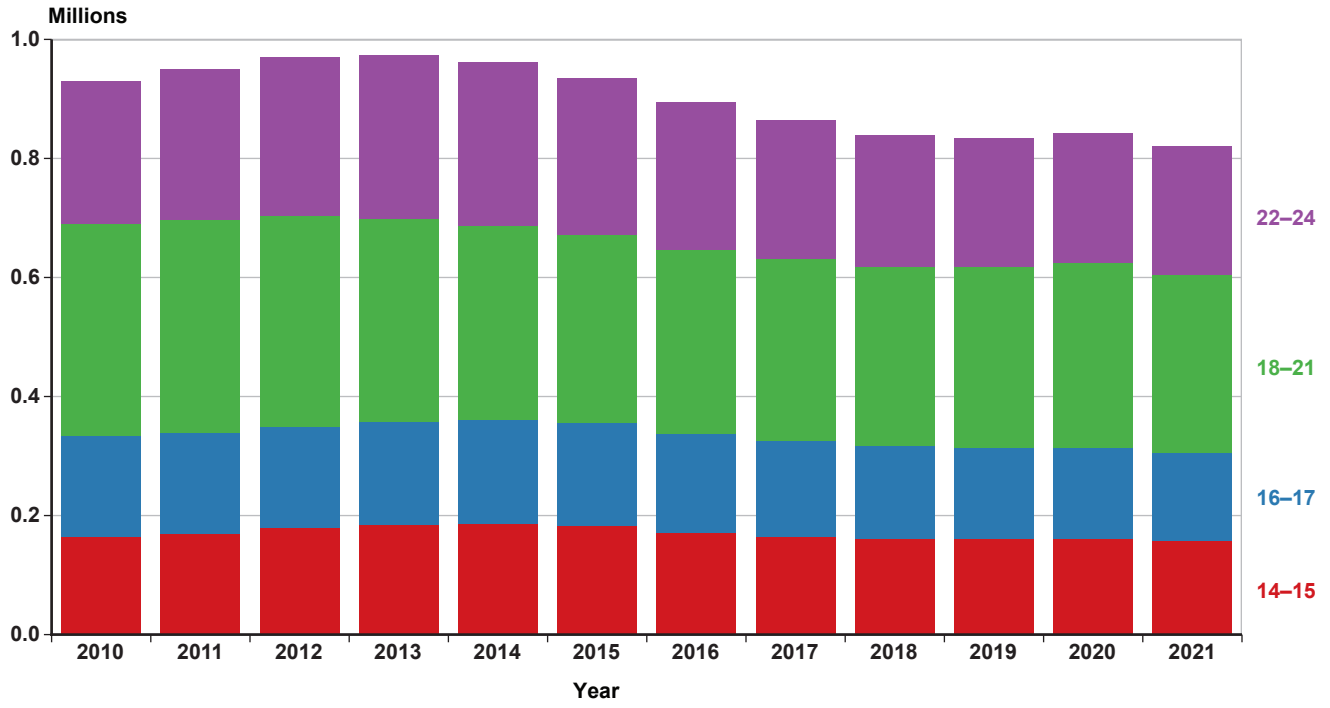
In Model 1, we estimate how outcomes for SSI recipients aged 14 to 24 changed nationally after the WIOA was enacted in 2014:

$$Y_{ist} = \alpha_1 + \beta_1 AfterWIOA_t + S_s + X_i'\gamma + \varepsilon_{ist} . \quad (1)$$

$Y_{ist}$ represents each of the six outcomes for individual $i$ living in state $s$ in year $t$. $AfterWIOA_t$ is a binary variable equal to zero for 2010 to 2013 and equal to one for 2014 to 2021. $S_s$ represents fixed state effects, and $X_i$ includes individual-level covariates (sex, age as of December 31 of each year, age at last SSI application, and impairment).

We extend Model 1 by allowing the estimate of post-WIOA changes to vary by age group, both for the entire study period and for each year after 2014, to

**Chart 1.**
**SSI recipients aged 14–24, by age group, 2010–2021**




SOURCE: Supplemental Security Record.

capture any shifting trends, such as increasing pre-ETS use over time, as WIOA provisions were implemented.

In Model 2, we allow the access to pre-ETS to vary by state and year. Instead of using a binary variable to capture the pre- and post-WIOA periods, we use a state-and-year-specific pre-ETS access ratio. Although we expect that pre-ETS availability began to increase once WIOA was enacted in 2014, there are no data on pre-ETS access before 2017. Therefore, this model estimates how outcomes for young SSI recipients changed with an increase in pre-ETS access from 2017 through 2021:

$$Y_{ist} = \alpha_3 + \beta_1 PreETSRatio_{st} + Z_t + X_i'\gamma + \varepsilon_{ist}, \quad (2)$$

where $PreETSRatio_{st}$ is the number of students using pre-ETS divided by the number of students receiving special education in state $s$ and year $t$. $Z_t$ represents fixed year effects, which capture variations across time common to all states—for example, improvements in data management systems that reflected a more accurate report of the number of students using pre-ETS. The other variables follow the Model 1 definitions. We also extend Model 2 to allow estimates to vary by age group.

To validate the findings, we conduct five sensitivity analyses:

- Excluding states with extremely high or low pre-ETS access ratios in 2017 (the pre-ETS access ratio for Iowa was 53 percent, whereas the next highest ratio was 39 percent; the ratios for California, New Jersey, and New York were all below 1 percent),
- Excluding the period during the COVID-19 pandemic (2020 and 2021) from the sample,
- Adding the state annual unemployment rate—calculated from the monthly rates extracted from the Bureau of Labor Statistics' Local Area Unemployment Statistics—as a control in Models 1 and 2,
- Testing whether the estimates for the states that implemented the PROMISE demonstration (Arkansas, California, Maryland, New York, Wisconsin, and states in the Achieving Success by Promoting Readiness for Education and Employment [ASPIRE] consortium—Arizona, Colorado, Montana, North Dakota, South Dakota, and Utah) differed from those for all other states,[3] and

- Using binary indicators of pre-ETS access ratios instead of the continuous pre-ETS access ratio in Model 2.

### Independent Variables

Three independent variables reflect pre-ETS availability: an indicator for the enactment of WIOA in 2014, an indicator for each year from 2014 to 2021, and a state-and-year-specific ratio that we use as a proxy for pre-ETS access. The pre-ETS access ratio captures young SSI recipients' access to and potential use of pre-ETS from 2017 to 2021.

Chart 2 shows the 5-year average annual ratio for each state. We need to use this proxy of pre-ETS access because, although we can determine pre-ETS use for many young SSI recipients, we cannot identify the use of *any* pre-ETS among young SSI recipients who used pre-ETS as potentially eligible students (that is, before they applied for VR services). The numerator consists of the number of unique students who used pre-ETS in a state and year. In most states, youths must be students aged 16–21 to use these services. The denominator is the number of students aged 14–21 using special education services under the IDEA—this population is more restrictive than the population in the numerator, as students using pre-ETS may also use educational support services under Section 504 of the Rehabilitation Act or be enrolled in postsecondary education. The pre-ETS access ratio varies by state and year. In addition to analyzing the ratios directly, we use them to split the sample into states with consistently low or high ratios, thus identifying states where students with disabilities had broader or more restricted access. The 15 states in the low group (Arizona, California, Colorado, Connecticut, Kansas, Maine, Massachusetts, New Jersey, New Mexico, New York, Ohio, Oklahoma, Rhode Island, Texas, and Washington) had pre-ETS access ratios below the median every year from 2017 to 2021, while the 14 states in the high group (Alabama, Hawaii, Indiana, Iowa, Kentucky, Michigan, Montana, Nebraska, North Dakota, South Carolina, Vermont, West Virginia, Wisconsin, and Wyoming) had ratios above the median for all years.

Each model includes four additional covariates that control for individual characteristics: sex, age (as of December 31 in each year), age at last SSI application, and impairment.

### Outcome Variables

We explore six outcomes of interest, grouped into three domains, which could potentially be affected by WIOA. The first domain consists of two binary variables that indicate engagement with VR: whether the youth applied to a VR agency for services and whether the youth signed an IPE. The former captures a person's initial interest in VR services and the latter indicates that the VR agency found the applicant eligible for services and developed a plan with the person to identify an employment goal along with the services needed to achieve that goal. The second domain comprises two variables measuring employment outcomes—a binary variable indicating whether the youth reported any earnings in that year and a continuous variable indicating total annual earnings. We adjust earnings to 2021 dollars and cap them at the state's 99$^{th}$ percentile. The average 99$^{th}$ percentile state earnings level is $12,849.11 and truncating the top 1 percent of earnings in each state eliminates high values that could be a result of problems in the underlying data.[4] The third domain addresses the use of two SSI work incentives—the SEIE and Section 301 payment continuations—both of which are binary variables. We identify all outcomes by calendar year of occurrence.

## Results

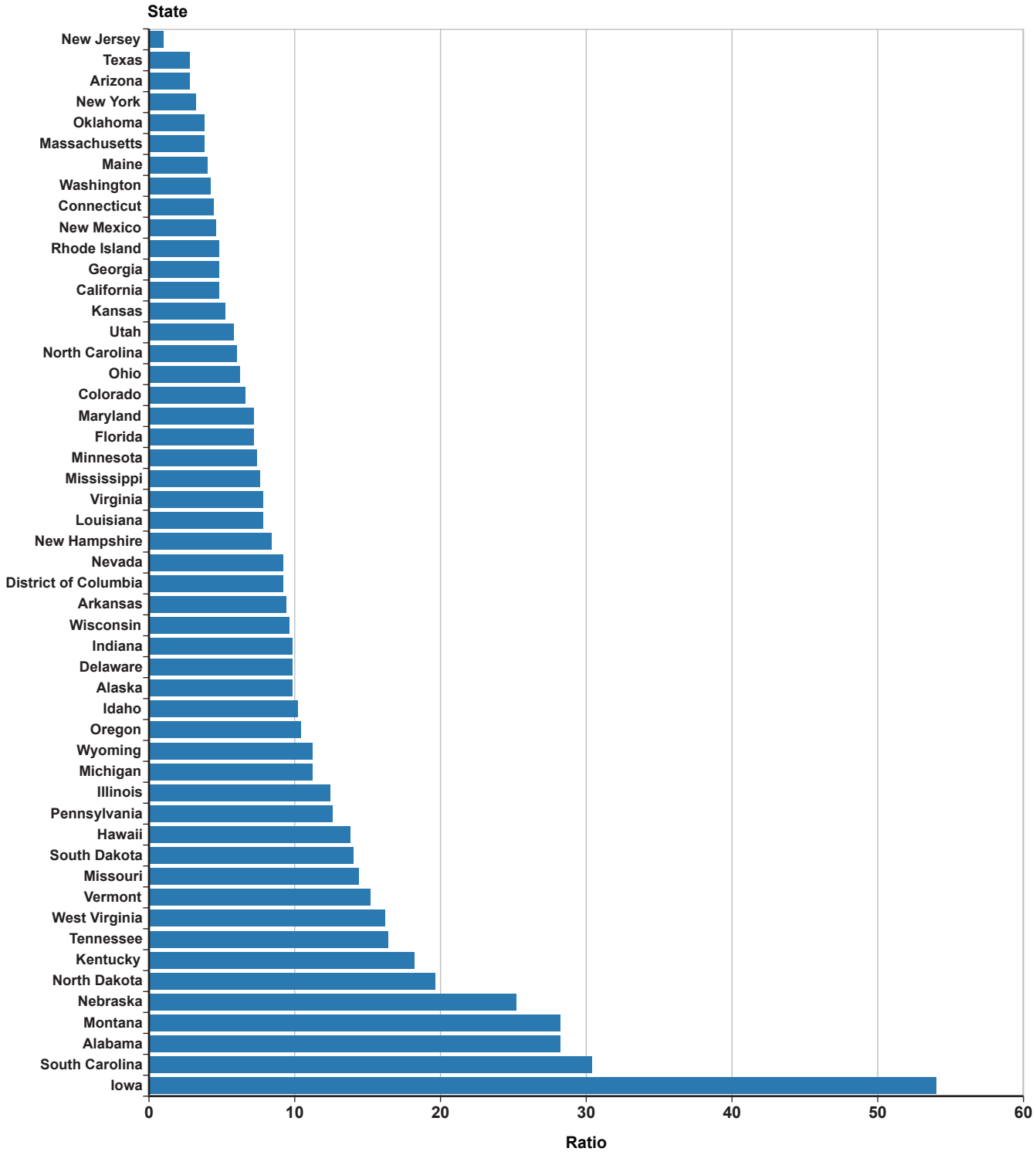
Table 1 presents the descriptive statistics on the outcome averages, with detail by age group, for 2010–2021. In the subsections below, we discuss the results for each outcome domain.

### VR Engagement

The percentage of young SSI recipients engaging in VR services increased rapidly after WIOA was enacted in 2014 (Chart 3). The path of VR engagement across the years is similar for all ages, but those aged 18–21 and 22–24 were most likely to apply for VR services and to sign IPEs.

Table 2 shows the results of Model 1, estimating VR engagement before and after WIOA, and confirms the patterns observed in the descriptive statistics (Table 1). Model 1 estimates the differences in VR service application rates and signed IPE rates before and after 2014, adjusting for individual characteristics and fixed state effects. VR engagement increased after the WIOA was enacted. Among all SSI recipients aged 14–24, 2.79 percent applied for VR services during or after 2014, more than eight times higher than the rate (0.34 percent) for the years before WIOA. The

**Chart 2.**
**Pre-ETS access ratios, by state: Annual average, 2017–2021**




SOURCE: Authors' calculations based on Department of Education administrative data.

NOTE: Median ratio = 9.2 percent.

**Table 1.**
**Indicators of VR engagement, employment, and work incentive use among SSI recipients aged 14–24, by age group, 2010–2021**

| Variable | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ***All ages 14–24*** | | | | | | |
| VR engagement (%) | | | | | | | | | | | | |
| Applied for VR services | 0.13 | 0.19 | 0.27 | 0.42 | 0.73 | 1.37 | 2.55 | 3.58 | 3.69 | 3.67 | 2.26 | 2.51 |
| Signed an IPE | 0.06 | 0.08 | 0.13 | 0.20 | 0.36 | 0.75 | 1.73 | 3.29 | 3.51 | 3.34 | 2.10 | 1.91 |
| Employment | | | | | | | | | | | | |
| Any earnings (%) | 16.58 | 16.15 | 16.50 | 17.03 | 17.89 | 19.14 | 20.08 | 19.95 | 20.05 | 20.30 | 17.89 | 20.09 |
| Mean annual earnings (2021 $) | 443.23 | 428.76 | 452.19 | 481.29 | 528.11 | 607.08 | 655.70 | 660.63 | 680.01 | 716.00 | 664.11 | 847.09 |
| Work incentive use (%) | | | | | | | | | | | | |
| SEIE | 2.15 | 1.91 | 1.85 | 1.78 | 1.81 | 1.97 | 2.21 | 2.31 | 2.32 | 2.29 | 1.69 | 1.16 |
| Section 301 continuation | 0.23 | 0.22 | 0.18 | 0.18 | 0.17 | 0.19 | 0.19 | 0.15 | 0.13 | 0.11 | 0.08 | 0.06 |
| | | | | | | ***Ages 14–16*** | | | | | | |
| VR engagement (%) | | | | | | | | | | | | |
| Applied for VR services | 0.04 | 0.01 | 0.01 | 0.02 | 0.03 | 0.06 | 0.06 | 0.06 | 0.06 | 0.07 | 0.04 | 0.05 |
| Signed an IPE | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 |
| Employment | | | | | | | | | | | | |
| Any earnings (%) | 1.90 | 0.26 | 0.27 | 0.28 | 0.31 | 0.35 | 0.38 | 0.37 | 0.37 | 0.38 | 0.23 | 0.47 |
| Mean annual earnings (2021 $) | 19.86 | 13.21 | 13.39 | 13.54 | 15.77 | 19.12 | 21.97 | 23.30 | 24.15 | 25.92 | 20.08 | 39.98 |
| Work incentive use (%) | | | | | | | | | | | | |
| SEIE | 0.29 | 0.24 | 0.22 | 0.22 | 0.23 | 0.27 | 0.32 | 0.32 | 0.29 | 0.26 | 0.14 | 0.11 |
| Section 301 continuation | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) |
| | | | | | | ***Ages 17–18*** | | | | | | |
| VR engagement (%) | | | | | | | | | | | | |
| Applied for VR services | 0.13 | 0.21 | 0.31 | 0.47 | 0.88 | 1.52 | 2.39 | 2.76 | 2.61 | 2.63 | 1.44 | 1.59 |
| Signed an IPE | 0.04 | 0.05 | 0.07 | 0.11 | 0.24 | 0.53 | 1.12 | 1.63 | 1.59 | 1.70 | 1.17 | 1.02 |
| Employment | | | | | | | | | | | | |
| Any earnings (%) | 9.50 | 8.41 | 8.87 | 9.43 | 10.57 | 12.33 | 13.44 | 13.71 | 14.52 | 14.97 | 12.10 | 16.73 |
| Mean annual earnings (2021 $) | 135.38 | 118.79 | 127.92 | 142.05 | 170.58 | 220.03 | 260.20 | 267.78 | 297.87 | 325.39 | 302.03 | 452.42 |
| Work incentive use (%) | | | | | | | | | | | | |
| SEIE | 2.34 | 2.02 | 2.07 | 2.16 | 2.33 | 2.68 | 2.99 | 3.09 | 3.08 | 2.96 | 1.89 | 0.95 |
| Section 301 continuation | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) | (X) |

(Continued)

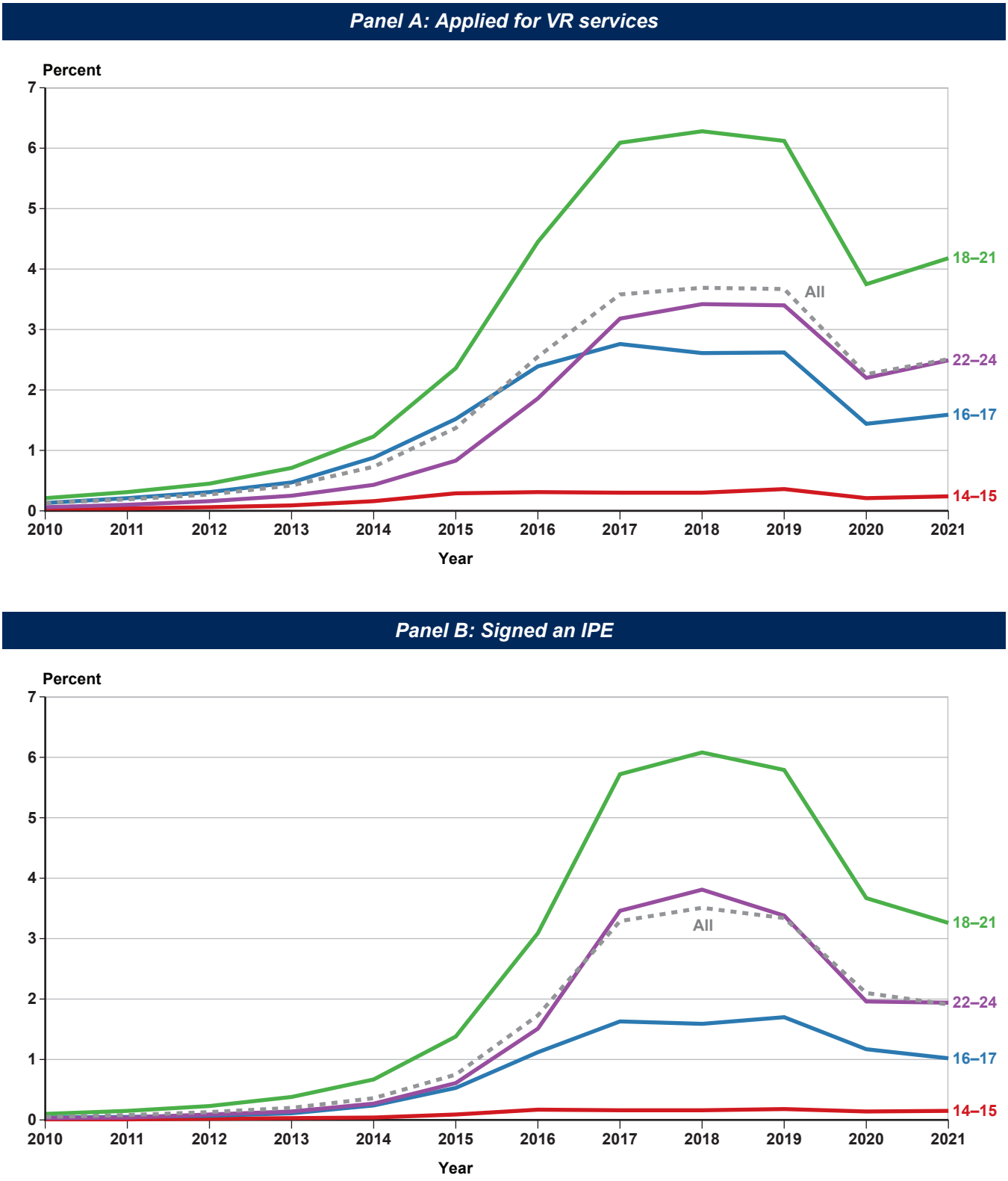
**Table 1.**
**Indicators of VR engagement, employment, and work incentive use among SSI recipients aged 14–24, by age group, 2010–2021—*Continued***

| Variable | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ***Ages 19–21*** | | | | | | |
| VR engagement (%) | | | | | | | | | | | | |
| Applied for VR services | 0.21 | 0.31 | 0.45 | 0.70 | 1.23 | 2.36 | 4.45 | 6.09 | 6.28 | 6.12 | 3.75 | 4.18 |
| Signed an IPE | 0.10 | 0.15 | 0.23 | 0.37 | 0.67 | 1.38 | 3.09 | 5.72 | 6.09 | 5.78 | 3.67 | 3.26 |
| Employment | | | | | | | | | | | | |
| Any earnings (%) | 22.67 | 22.13 | 22.56 | 23.39 | 24.58 | 26.31 | 27.39 | 27.25 | 27.51 | 27.95 | 24.93 | 27.85 |
| Mean annual earnings (2021 $) | 573.46 | 540.09 | 564.48 | 597.07 | 656.81 | 758.26 | 828.57 | 849.84 | 889.37 | 946.65 | 927.19 | 1,192.51 |
| Work incentive use (%) | | | | | | | | | | | | |
| SEIE | 3.94 | 3.59 | 3.50 | 3.39 | 3.46 | 3.73 | 4.11 | 4.22 | 4.26 | 4.16 | 3.14 | 2.33 |
| Section 301 continuation | 0.55 | 0.51 | 0.41 | 0.44 | 0.45 | 0.54 | 0.52 | 0.41 | 0.34 | 0.28 | 0.18 | 0.14 |
| | | | | | | ***Ages 22–24*** | | | | | | |
| VR engagement (%) | | | | | | | | | | | | |
| Applied for VR services | 0.04 | 0.07 | 0.12 | 0.20 | 0.36 | 0.70 | 1.49 | 2.43 | 2.51 | 2.40 | 1.54 | 1.79 |
| Signed an IPE | 0.02 | 0.03 | 0.07 | 0.11 | 0.23 | 0.51 | 1.22 | 2.64 | 2.79 | 2.39 | 1.37 | 1.40 |
| Employment | | | | | | | | | | | | |
| Any earnings (%) | 15.19 | 16.02 | 17.62 | 19.51 | 21.67 | 22.79 | 22.43 | 20.97 | 19.85 | 19.00 | 16.97 | 17.68 |
| Mean annual earnings (2021 $) | 758.94 | 757.80 | 805.37 | 863.06 | 953.05 | 1,090.61 | 1,142.11 | 1,136.32 | 1,145.46 | 1,180.00 | 1,019.30 | 1,230.03 |
| Work incentive use (%) | | | | | | | | | | | | |
| SEIE | 0.63 | 0.59 | 0.60 | 0.57 | 0.58 | 0.57 | 0.62 | 0.66 | 0.64 | 0.67 | 0.63 | 0.47 |
| Section 301 continuation | 0.04 | 0.06 | 0.07 | 0.06 | 0.04 | 0.03 | 0.03 | 0.02 | 0.02 | 0.01 | 0.02 | 0.02 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTE: (X) = omitted because of small sample size.

**Chart 3.**
**SSI recipients aged 14–24 engaging with VR agencies, by age group, 2010–2021 (in percent)**




SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

**Table 2.**
**Regression results for WIOA effects on two measures of VR engagement, by age group, 2010–2021**

| Age group | Mean percentage— Pre-WIOA (2010–2013) | Mean percentage— Post-WIOA (2014–2021) | Difference | Standard error | *p*-value |
|---|---|---|---|---|---|
| | | | ***Applied for VR services*** | | |
| All ages 14–24 | 0.34 | 2.79 | 2.45 | 0.19 | 0.00 |
| 14–15 | 0.26 | 0.48 | 0.22 | 0.05 | 0.00 |
| 16–17 | 0.55 | 2.30 | 1.75 | 0.24 | 0.00 |
| 18–21 | 0.50 | 4.65 | 4.15 | 0.32 | 0.00 |
| 22–24 | 0.09 | 2.27 | 2.18 | 0.15 | 0.00 |
| | | | ***Signed an IPE*** | | |
| All ages 14–24 | 0.15 | 2.36 | 2.21 | 0.18 | 0.00 |
| 14–15 | 0.19 | 0.34 | 0.15 | 0.03 | 0.00 |
| 16–17 | 0.24 | 1.41 | 1.17 | 0.18 | 0.00 |
| 18–21 | 0.23 | 4.05 | 3.82 | 0.31 | 0.00 |
| 22–24 | 0.01 | 2.18 | 2.17 | 0.17 | 0.00 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for 10 separate regressions. All values are regression-adjusted.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 10,811,541.

post-WIOA increase in signed IPE rates was proportionally greater still, from 0.15 percent in 2010–2013 to 2.36 percent in 2014–2021.

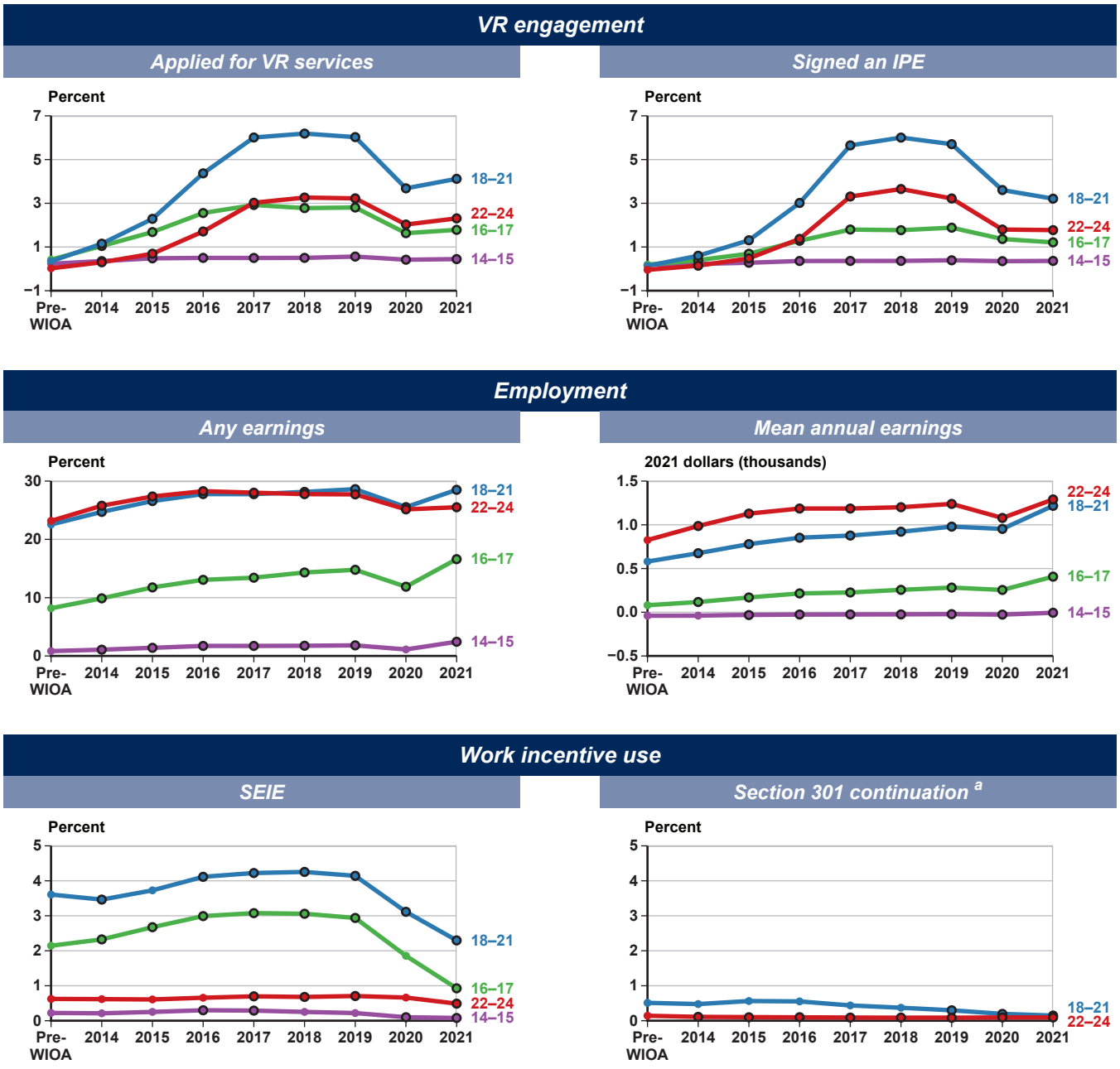
Allowing the estimates to vary by age reveals that the increase in VR applications and signed IPEs was largest for youths aged 18–21, followed in rank order by those aged 22–24, 16–17, and 14–15 (Table 2). Although the population that applied for VR services and signed an IPE in each year is not necessarily the same, the estimates in Table 2 suggest that youths aged 18 or older experienced a larger post-WIOA increase in the likelihood of applying for VR services and signing an IPE than youths in other age groups.

Letting the estimates vary by age for each year 2014–2021 shows that the regression-adjusted differences in VR application rates increased for all age groups relative to the pre-WIOA mean in each year from 2014 through 2018 (Chart 4).[5] The increase in VR application rates was sharpest for ages 18–21, followed by the 22–24 and 16–17 age groups; the rate increased slightly over this period for the youngest age group (14–15). For example, with all else equal, an SSI recipient aged 18–21 in 2019 was far more likely to apply for VR services than an SSI recipient aged 18–21 before 2014 (6.03 percent compared with 0.34 percent). Although changes in other factors may have affected the likelihood of applying for VR services, the increase in 2019 is potentially due to a combination of (1) 5 years of experience for VR agencies in implementing WIOA provisions, offering pre-ETS, and adjusting their service models toward youths with disabilities and (2) 5 years of a young person's potential access to pre-ETS and other changes related to WIOA. We observe similar patterns for the likelihood of signing an IPE.

VR engagement plateaued for all age groups from 2017 to 2019. The stability in the rates of VR applications and signed IPEs starting in 2017 could reflect a 3-year lag to implement WIOA policies or an improvement in their implementation once reporting of pre-ETS activities became mandatory in 2017.

The post-WIOA changes in VR engagement were similar both for the 14 states with consistently high pre-ETS access ratios and the 15 states with consistently low ratios (Table 3). The lack of a statistically significant difference between the states with consistently high and low pre-ETS access ratios suggests that VR engagement for young SSI recipients increased across all states after WIOA, regardless of ease of pre-ETS access.

**Chart 4.**
**Regression-adjusted mean employment-related indicators, by age group: Pre-WIOA (annual average 2010–2013) and post-WIOA (annually 2014–2021)**




SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for six separate regressions.

Estimates based on very low underlying values may be negative after regression adjustment.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Data points highlighted by a black circle are significantly different from zero at the 0.10 level, two-tailed test.

Observations = 10,811,541.

a. Ages 14–15 and 16–17 omitted because of small sample sizes.

**Table 3.**
**Regression results for WIOA effects on two measures of VR engagement, for states with low and high pre-ETS access ratios, 2010–2021**

| Measure | Pre-WIOA (2010–2013): mean across all states | Post-WIOA (2014–2021) difference in— States with low pre-ETS access ratios | States with high pre-ETS access ratios | *p*-value of the difference across groups |
|---|---|---|---|---|
| Applied for VR services | 0.33 | 2.27 | 2.99 | 0.14 |
| Signed an IPE | 0.15 | 1.99 | 2.70 | 0.17 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for two separate regressions. All values are regression-adjusted.

Both models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 10,811,541.

In Model 2, we further examine the relationship between VR engagement and pre-ETS access by estimating the association between changes in the pre-ETS access ratio and changes in VR engagement from 2017 to 2021. As noted earlier, the ratio is a proxy for potential access to pre-ETS and VR agencies' experience with offering pre-ETS, which varies by state and year.

Pre-ETS access ratios have large, positive associations with VR engagement after controlling for individual characteristics and fixed state effects (Table 4). For each 10 percentage-point increase in the pre-ETS access ratio, the likelihood that a young person signed an IPE increased by 0.34 percentage points (*p*-value = 0.08). This finding implies a 13 percent increase from the baseline (pre-WIOA) scenario of no access to pre-ETS, in which 2.55 percent of youths signed an IPE. We observe a similar large, positive association between pre-ETS access ratios and VR applications, but that association is not statistically significant (*p*-value = 0.10).

The association between pre-ETS access ratios and VR engagement from 2017 to 2021 was statistically significant and positive for the youngest age groups. An increase in pre-ETS access of 10 percentage points correlated with significant increases in VR applications among youths aged 14–15 and 16–17 (0.24 percentage point and 0.87 percentage point, respectively). These changes represent an increase of about 50 percent from the pre-WIOA baseline scenario in which no youths used pre-ETS. Increases in the state's pre-ETS access ratios had no statistically significant associations with any changes in VR service application among youths aged 18–21 and 22–24. Changes in the rate of signed IPEs follow a similar pattern—the main difference is that youths aged 18–21 were also more likely to sign IPEs following increases in access to pre-ETS (*p*-value = 0.09).

### *Employment and Earnings*

In this section, we evaluate how the increased use of pre-ETS and other WIOA effects corresponded with the employment of young SSI recipients. WIOA changes might either increase employment (as youths engage in pre-ETS activities and other VR services that help them transition to the labor force) or decrease employment in the short term (if greater access to pre-ETS leads them to seek further vocational training before pursuing work). The previous subsection showed the associations of WIOA and state-level pre-ETS access ratios with increased use of VR services. The evidence in the literature, as noted, also suggests VR service use improves employment outcomes.

The share of young SSI recipients who had any earnings increased during our analysis period (Chart 5). However, the increases were modest after WIOA was enacted in 2014. The findings of Model 1, which adjusts for individual characteristics and fixed state effects, suggest that employment outcomes improved after WIOA (Table 5). The likelihood that young SSI recipients overall had any paid earnings increased from 16.39 percent per year in the pre-WIOA period 2010–2013 to 19.99 percent after WIOA (2014–2021), a 22 percent increase. Average annual earnings increased more than 50 percent during the study period—from $457 to $696.

**Table 4.**
**Regression results for change from 2017 to 2021 in two measures of VR engagement, with effects of increased pre-ETS access, by age group**

| Age group | Mean among states with no pre-ETS access | Effect of increasing pre-ETS access ratio by 10 percentage points | Standard error | *p*-value |
|---|---|---|---|---|
| | | ***Applied for VR services*** | | |
| All ages 14–24 | 2.94 | 0.24 | 0.14 | 0.10 |
| 14–15 | 0.42 | 0.24 | 0.07 | 0.00 |
| 16–17 | 1.78 | 0.87 | 0.28 | 0.00 |
| 18–21 | 5.02 | 0.18 | 0.21 | 0.39 |
| 22–24 | 2.72 | -0.08 | 0.13 | 0.53 |
| | | ***Signed an IPE*** | | |
| All ages 14–24 | 2.55 | 0.34 | 0.19 | 0.08 |
| 14–15 | 0.41 | 0.17 | 0.08 | 0.03 |
| 16–17 | 1.17 | 0.70 | 0.21 | 0.00 |
| 18–21 | 4.35 | 0.51 | 0.30 | 0.09 |
| 22–24 | 2.59 | 0.00 | 0.21 | 0.99 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for 10 separate regressions. All values are regression-adjusted.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 4,197,947.

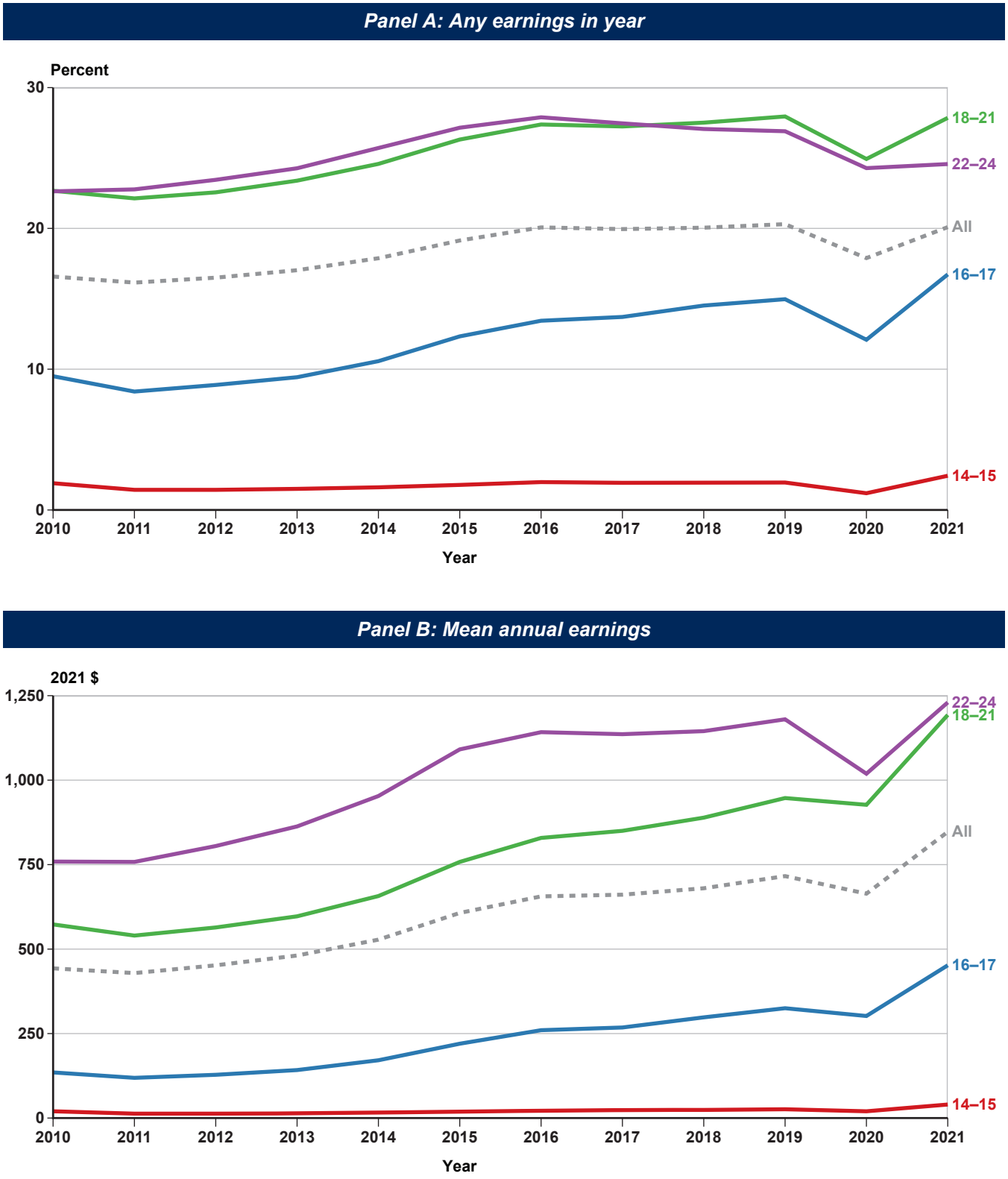
In the Model 1 estimates by age group, the increase in the share of youths with any earnings is lowest for ages 14–15, and the average change in annual earnings increases with age. This pattern is not surprising, as labor force participation tends to be low at ages 14 and 15, and average earnings are expected to increase with age. In splitting the analysis by age group and year after 2014, Chart 4 shows that the any-earnings rate generally rose in relation to the 2010–2013 baseline period in the post-WIOA years before 2019. The likelihood of having any earnings and the mean annual earnings amounts increased each year after 2014 for all age groups until the COVID-19 public health emergency in 2020. Employment outcomes worsened for all age groups when the pandemic emerged in 2020 then started to recover in 2021.

After WIOA, young SSI recipients were more likely to have any earnings and had higher annual earnings amounts. The increases were largest in states with consistently high pre-ETS access ratios (Table 6). However, because we observed no differences in VR outcomes across these states, the difference in employment outcomes might be due to other WIOA features or state policy and economic environments that do not directly affect VR service use.

To examine the role of pre-ETS access in these changes, we use Model 2 to explore how employment outcomes varied across states by pre-ETS access ratios from 2017 to 2021 (Table 7). We find a positive association between pre-ETS access ratios and the likelihood of having any earnings after controlling for individual characteristics and fixed state effects. In a baseline (pre-WIOA) scenario with no access to pre-ETS, 18.89 percent of all-ages youths had any earnings. The model estimates that, for each 10 percentage-point increase in the pre-ETS access ratio, the likelihood that a youth had any earnings increased by 0.92 percentage points ($p$-value = 0.05), or nearly a 5 percent increase from the baseline estimate. We observe a positive and large but not statistically significant association between pre-ETS access ratios and total annual earnings.

The post-WIOA patterns of change in pre-ETS access and in earnings outcomes by age are similar. Table 7 shows that correlations between pre-ETS access and the percentage of youths with earnings were significant for those aged 16–17 and 18–21, but not for the oldest (22–24) and youngest (14–15) groups. The association between mean annual earnings and pre-ETS access ratios was positive and significant only for youths aged 16–17.

**Chart 5.**
**Indicators of employment among SSI recipients aged 14–24, by age group, 2010–2021**




SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

**Table 5.**
**Regression results for WIOA effects on two measures of employment, by age group, 2010–2021**

| Age group | Mean values— Pre-WIOA (2010–2013) | Mean values— Post-WIOA (2014–2021) | Difference | Standard error | *p*-value |
|---|---|---|---|---|---|
| | | ***Percentage with any earnings in year*** | | | |
| All ages 14–24 | 16.39 | 19.99 | 3.59 | 0.40 | 0.00 |
| 14–15 | 0.88 | 1.68 | 0.80 | 0.13 | 0.00 |
| 16–17 | 8.53 | 13.62 | 5.09 | 0.55 | 0.00 |
| 18–21 | 22.96 | 27.54 | 4.58 | 0.52 | 0.00 |
| 22–24 | 23.74 | 27.16 | 3.42 | 0.43 | 0.00 |
| | | ***Mean annual earnings (2021 $)*** | | | |
| All ages 14–24 | 456.80 | 695.87 | 239.07 | 14.90 | 0.00 |
| 14–15 | -41.39 | -27.78 | 13.62 | 2.99 | 0.00 |
| 16–17 | 87.27 | 252.03 | 164.76 | 12.20 | 0.00 |
| 18–21 | 599.78 | 937.64 | 337.86 | 21.12 | 0.00 |
| 22–24 | 862.84 | 1,186.93 | 324.10 | 23.07 | 0.00 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for 10 separate regressions. All values are regression-adjusted.

Estimates based on very low underlying values may be negative after regression adjustment.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 10,811,541.

**Table 6.**
**Regression results for WIOA effects on two measures of employment, for states with low and high pre-ETS access ratios, 2010–2021**

| Measure | Pre-WIOA (2010–2013): mean across all states | Post-WIOA (2014–2021) difference in— States with low pre-ETS access ratios | Post-WIOA (2014–2021) difference in— States with high pre-ETS access ratios | *p*-value of the difference across groups |
|---|---|---|---|---|
| Any earnings in year (%) | 17.16 | 2.41 | 4.69 | 0.01 |
| Mean annual earnings (2021 $) | 457.88 | 209.18 | 272.17 | 0.10 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for two separate regressions. All values are regression-adjusted.

Both models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 10,811,541.

**Table 7.**
**Regression results for change from 2017 to 2021 in two measures of employment, with effects of increased pre-ETS access, by age group**

| Age group | Mean among states with no pre-ETS access | Effect of increasing pre-ETS access ratio by 10 percentage points | Standard error | *p*-value |
|---|---|---|---|---|
| | | ***Percentage with any earnings in year*** | | |
| All ages 14–24 | 18.89 | 0.92 | 0.46 | 0.05 |
| 14–15 | 0.52 | 0.27 | 0.31 | 0.39 |
| 16–17 | 12.14 | 1.21 | 0.46 | 0.01 |
| 18–21 | 26.79 | 1.04 | 0.53 | 0.05 |
| 22–24 | 26.14 | 1.01 | 0.71 | 0.17 |
| | | ***Annual earnings (2021 $)*** | | |
| All ages 14–24 | 691.95 | 24.78 | 20.14 | 0.22 |
| 14–15 | -63.60 | -5.95 | 7.54 | 0.43 |
| 16–17 | 221.11 | 23.91 | 11.11 | 0.04 |
| 18–21 | 962.59 | 39.01 | 25.56 | 0.13 |
| 22–24 | 1,201.44 | 26.36 | 35.35 | 0.46 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for 10 separate regressions. All values are regression-adjusted.

Estimates based on very low underlying values may be negative after regression adjustment.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 4,197,947.

These results partially support the hypothesis of a positive association of WIOA and pre-ETS access with better employment outcomes. The association is stronger in the extensive margin—increasing the likelihood that young SSI recipients had any earnings—than in the intensive margin, where the associations with earnings amounts were less robust.

### *Use of Work Incentives*

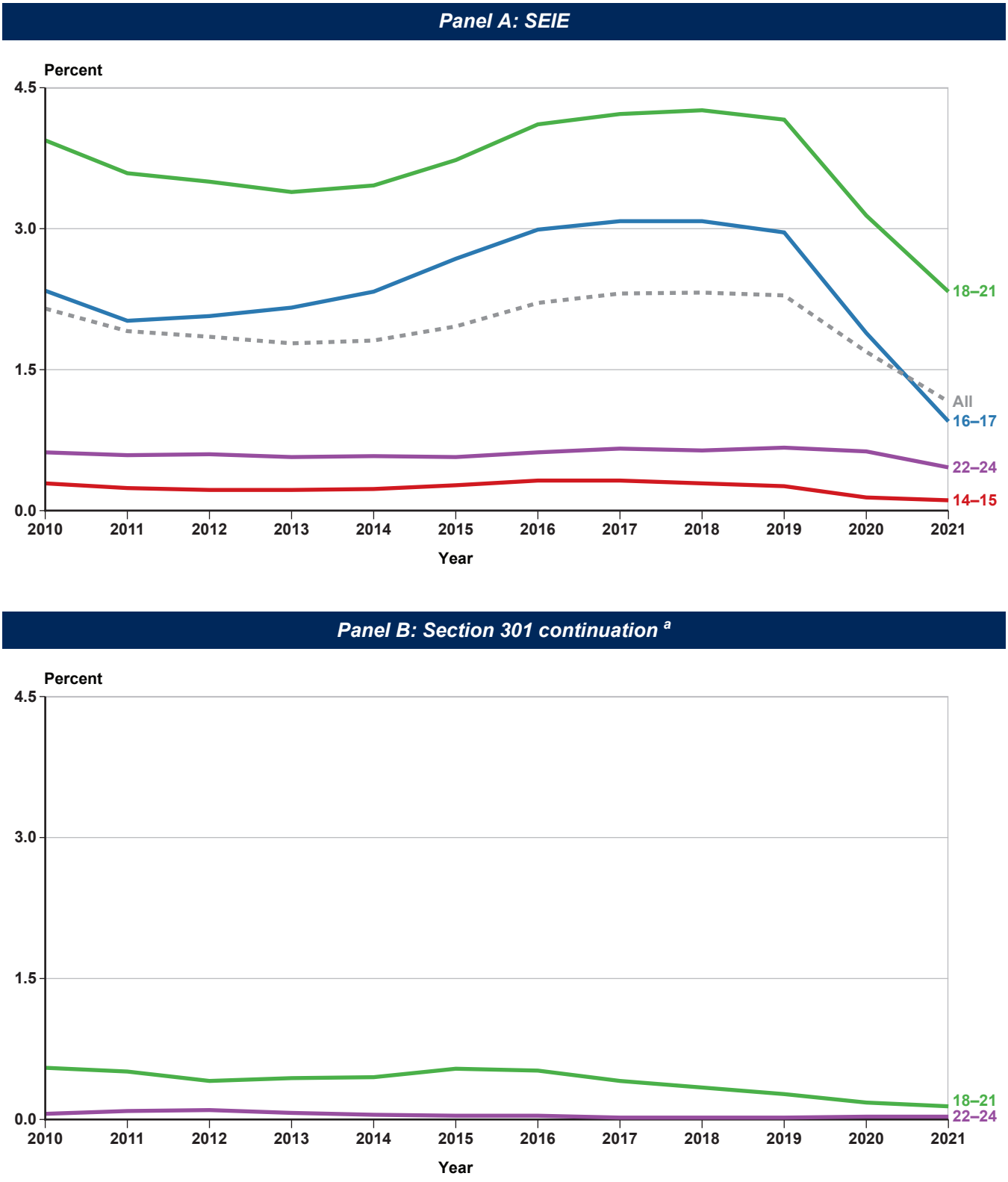
Two potential pathways could lead to a post-WIOA increase in work incentive use. First, greater VR service use (as evidenced by increased IPE signings) could result in more youths meeting the requirements for continued SSI payments through Section 301. Second, the post-WIOA increase in the use of pre-ETS and other VR services may have contributed to increased use of SEIEs if the positive association of post-WIOA earnings outcomes occurred for students.

Our descriptive statistics show that the association between WIOA and work incentive use is weak. The share of young SSI recipients who used the SEIE remained relatively stable from 2010 to 2019 and declined during the pandemic years, whereas the share using Section 301 continuations declined over time (Chart 6).

Adjusting for individual characteristics and fixed state effects, Model 1 shows that the likelihood of using Section 301 continuations decreased from 0.19 percent before WIOA to 0.13 percent afterward (Table 8) and the increase in SEIE use was negligible. However, these are percentages among all young SSI recipients, not among only those who are most likely to use the work incentives.

WIOA's effects on work incentive use differed by age group and incentive type. The decline in the use of Section 301 continuations was driven primarily by individuals aged 18–21—which is the group most likely to use that incentive.[6] The point estimates by age also show that youths aged 16–17 had the largest increase in the likelihood of using the SEIE, from 2.19 percent for the period 2010–2013 to 2.54 percent for the period 2014–2021. Youths aged 22–24 were less than 0.03 percentage point more likely to use the SEIE after WIOA than before. Although the increase and the share of SSI recipients using this work incentive are small, this difference is precisely estimated.

**Chart 6.**
**Use of SSI work incentives by SSI recipients aged 14–24, by age group, 2010–2021 (in percent)**




SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

a. Ages 14–15 and 16–17 omitted because of small sample sizes.

**Table 8.**
**Regression results for WIOA effects on two measures of SSI work incentive use, by age group, 2010–2021**

| Age group | Mean values— Pre-WIOA (2010–2013) | Post-WIOA (2014–2021) | Difference | Standard error | *p*-value |
|---|---|---|---|---|---|
| | | | ***SEIE*** | | |
| All ages 14–24 | 1.88 | 2.01 | 0.12 | 0.08 | 0.11 |
| 14–15 | 0.23 | 0.24 | 0.00 | 0.03 | 0.87 |
| 16–17 | 2.19 | 2.54 | 0.36 | 0.13 | 0.01 |
| 18–21 | 3.57 | 3.70 | 0.13 | 0.13 | 0.33 |
| 22–24 | 0.61 | 0.63 | 0.03 | 0.02 | 0.01 |
| | | | ***Section 301 continuation*** | | |
| All ages 14–24 | 0.19 | 0.13 | -0.06 | 0.03 | 0.04 |
| 14–15 | (X) | (X) | (X) | (X) | (X) |
| 16–17 | (X) | (X) | (X) | (X) | (X) |
| 18–21 | 0.50 | 0.37 | -0.14 | 0.07 | 0.06 |
| 22–24 | 0.13 | 0.09 | -0.04 | 0.02 | 0.04 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for 10 separate regressions. All values are regression-adjusted.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 10,811,541.

(X) = omitted because of small sample size.

Patterns in the use of the two work incentives also differed when we split the analysis in Model 1 by age group and year after 2014. Relative to the 2010–2013 baseline period, the likelihood of using Section 301 continuations fell in each post-WIOA year for the 18–21 and 22–24 age groups, for whom this policy is relevant. The decline continued until the pandemic (Chart 4). However, SEIE use increased for youths aged 16–17 and 18–21 after 2014, until the pandemic years likewise interrupted that trend. The use of both types of work incentives dropped for all age groups in 2020 and 2021. Although SEIE use might be expected to decline because of the decline in employment during the pandemic, the decrease in Section 301 continuation use is unexpected (because that incentive is tied to education and training).

The increase in SEIE use after WIOA was concentrated in states with consistently high pre-ETS access ratios (Table 9). This pattern corresponds with those of young SSI recipients in these states having (1) a higher likelihood of receiving any earnings and (2) higher annual earnings (Table 6).

When we consider access to pre-ETS from 2017 to 2021 in Model 2, we find a large, positive association between pre-ETS access ratios and the likelihood of using a Section 301 continuation but not the SEIE after controlling for individual characteristics and fixed state effects (Table 10). For each 10 percentage-point increase in the pre-ETS access ratio, use of Section 301 continuations increased by 0.05 percentage point ($p$-value = 0.06). This finding implies an increase of more than 80 percent from a baseline scenario of no pre-ETS access, in which 0.06 percent of youths used Section 301 continuations.

Letting the association between pre-ETS access and work incentive use vary by age in Model 2 reveals important heterogeneities, as expected, as work incentives are more relevant for recipients of certain ages than for others. Table 10 shows that higher pre-ETS access ratios were associated with increased Section 301 continuation use for all age groups. The point estimate is largest for ages 18–21, where an increase of 10 percentage points in pre-ETS access was associated with significant increases of 0.12 percentage point in the use of Section 301 continuations—corresponding to a 63 percent increase from a baseline scenario of no pre-ETS access.

**Table 9.**
**Regression results for WIOA effects on two measures of SSI work incentive use, for states with low and high pre-ETS access ratios, 2010–2021**

| Incentive | Pre-WIOA (2010–2013): mean across all states | Post-WIOA (2014–2021) difference in— States with low pre-ETS access ratios | Post-WIOA (2014–2021) difference in— States with high pre-ETS access ratios | *p*-value of the difference across groups |
|---|---|---|---|---|
| SEIE | 2.02 | -0.07 | 0.47 | 0.02 |
| Section 301 continuation | 0.13 | -0.02 | -0.09 | 0.32 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for two separate regressions. All values are regression-adjusted.

Both models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 10,811,541.

**Table 10.**
**Regression results for change from 2017 to 2021 in two measures of SSI work incentive use, with effects of increased pre-ETS access, by age group**

| Age group | Mean among states with no pre-ETS access | Effect of increasing pre-ETS access ratio by 10 percentage points | Standard error | *p*-value |
|---|---|---|---|---|
| | | ***SEIE*** | | |
| All ages 14–24 | 1.88 | 0.10 | 0.14 | 0.49 |
| 14–15 | 0.04 | 0.10 | 0.07 | 0.15 |
| 16–17 | 2.13 | 0.22 | 0.23 | 0.34 |
| 18–21 | 3.59 | 0.08 | 0.24 | 0.73 |
| 22–24 | 0.69 | 0.03 | 0.07 | 0.66 |
| | | ***Section 301 continuation*** | | |
| All ages 14–24 | 0.06 | 0.05 | 0.03 | 0.06 |
| 14–15 | (X) | (X) | (X) | (X) |
| 16–17 | (X) | (X) | (X) | (X) |
| 18–21 | 0.19 | 0.12 | 0.07 | 0.09 |
| 22–24 | 0.06 | 0.02 | 0.01 | 0.03 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for 10 separate regressions. All values are regression-adjusted.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 4,197,947.

(X) = omitted because of small sample size.

### Sensitivity Analyses

Our main results remained largely unaffected under alternative specifications. First, because 2017 is the first year for which states reported pre-ETS statistics, we removed states with extremely high (Iowa) or low (California, New Jersey, and New York) pre-ETS access ratios in 2017. Although these states could be legitimate outliers in pre-ETS offered and provided, they also could have experienced data quality issues as they initiated reporting the numbers to RSA. To avoid capturing spurious correlations or hiding important patterns in the data caused by measurement errors, we reestimated our regressions dropping outlier states from the sample. Second, to test the sensitivity of the estimates to the COVID-19 pandemic years, we used the main models for the study period omitting 2020 and 2021. In these two tests, all estimates of WIOA effects on outcomes and the associations with pre-ETS access ratios still pointed in the same direction. Several estimates lost some statistical significance, which is not surprising given the reduced sample size. As expected, the association of pre-ETS access ratios with outcomes was attenuated for all outcomes when we removed the pre-ETS access outlier states from the sample. Third, to control for fluctuations in economic conditions, we added the state annual unemployment rate as a covariate in both models. The point estimates varied, but the coefficients pointed in the same direction and their significance remained largely unchanged from our main analyses. This result strengthens the confidence that our findings are not driven exclusively by the stronger economic environment after 2010.

We also tested how our estimates varied in the 11 states that participated in the PROMISE demonstration, which connected young SSI recipients with VR agencies, among other services. Because the PROMISE implementation period (2016 to 2019) overlaps our analysis period, the demonstration may have affected the dynamics of WIOA and pre-ETS in these states. After WIOA, changes to outcomes in PROMISE states were similar to those in other states. The only difference was that the post-WIOA increase in the rate of recipients with earnings was smaller in PROMISE states. The similarity in outcomes is not surprising, given that most young SSI recipients in PROMISE states were not PROMISE participants. However, the associations between pre-ETS access and VR engagement and employment were statistically larger in PROMISE states. These differences suggest that investments in pre-ETS by VR agencies may have had a cumulative effect in these states. Because PROMISE enrollment began in 2014 and services began in 2016, the period of our analysis—2017 to 2021—likely captures the additional experience these states had offering services connected to pre-ETS.

Our final sensitivity analysis uses alternative versions of Model 2 with binary indicators of pre-ETS access ratios to indicate states that exceed the median and the 75$^{th}$ percentile ratios (instead of the continuous pre-ETS access ratio). The estimates have the same sign as those of our main model but are mostly not statistically significant. This finding supports the notion that associations between pre-ETS access and changes in outcomes were proportional to increases in pre-ETS access, as opposed to the availability of these services above a certain threshold.[7]

## Conclusion

WIOA's enactment in 2014 represented a significant shift in how VR agencies offered services to youths with disabilities. RSA has previously documented how WIOA affected the characteristics of VR service applicants and participants, who trended considerably younger after WIOA than before (Department of Education 2020). This study is the first to measure quantitative patterns in the VR engagement, employment, and work incentive use outcomes for a population of youths with disabilities before and after WIOA. Using administrative data from SSA and RSA to track the experiences of young SSI recipients during this period offers a unique opportunity to describe WIOA effects.

After WIOA was enacted, young SSI recipients applied for VR services and signed IPEs at higher rates than before WIOA. The average VR application rate increased from 0.34 percent before WIOA to 2.79 percent afterward. Although the post-WIOA rate may seem small, it is not insubstantial: the number of VR applicants in 2010 was 1,181; in 2019, that number was 30,569. For added context, the number of young SSI recipients who applied for VR services in 2019 represents almost 7 percent of the 446,919 people of all ages who applied for VR services that year (Department of Education 2020). This number underscores the scope of the opportunity for VR agencies to offset these participants' service costs, as they can be reimbursed for those costs by SSA when adult SSI recipients have substantial earnings in 9 consecutive months (SSA n.d.). When we examine state-level service use rates, the story is similarly striking. In 2010, the highest state VR application rate for young SSI recipients was 0.4 percent. In 2019, the lowest such rate was 0.5 percent, or higher than the state with the

best rate 9 years earlier. In the state with the highest rate in 2019, 7.9 percent (or about 1 of every 13 young SSI recipients) applied for VR services.

Changes brought by WIOA, including offering pre-ETS to students with disabilities, were associated with increased applications for VR services. Although this finding is not unexpected, it does quantitatively document the potential associations that correspond to a specific federal policy change. VR agencies offer pre-ETS to all students with a disability, without requiring them to apply for further services, and agencies must spend 15 percent of their federal funding on these services. Between 2017 and 2021, higher state-level pre-ETS access ratios were associated with larger increases in signed IPEs (but not VR service application rates) among young SSI recipients. The associations we observe during the later years could be due to a combination of two levers. First, by 2021, VR agencies had up to 7 years of experience in responding to WIOA requirements, offering pre-ETS to students with disabilities, and developing partnerships with state and local education agencies and other workforce partners. Hence, they could provide better-quality pre-ETS in later years than in the years just after WIOA enactment. Second, in those later years, youths with disabilities could have benefited from increased pre-ETS access and other changes brought by WIOA. For instance, a 21-year-old in 2021 (who was 14 in 2014) could have used pre-ETS for up to 5 years. Potentially, this long-term access could better prepare youths for educational and employment opportunities.

Notably, we find that VR engagement, employment, and use of SSI work incentives before 2017 (as well as before WIOA) were higher among young SSI recipients in states with the highest pre-ETS access ratios in the 2017–2021 period than among those in the states with the lowest pre-ETS access ratios. Thus, pre-WIOA state policy environments oriented toward the success of youths with disabilities in general and to young SSI recipients specifically may have influenced both WIOA implementation and other youth services and outcomes.

Although earnings for young SSI recipients increased after WIOA, and though it would be consistent with a view that increased pre-ETS access could encourage youths with disabilities to enter the labor market directly, the observed change may relate not exclusively to WIOA but also to the stronger postrecession economic environment after 2010. Earnings for young SSI recipients in most age groups increased after WIOA, but the change was strongest for ages 16–17, and the association with pre-ETS access ratios was positive for the presence of any earnings (though not statistically significant for annual earnings amounts) among all youths in the sample from 2017 to 2021, suggesting potential WIOA influence on employment.

We expected increased use of SSI work incentives among young SSI recipients, given increased VR engagement and earnings, but the evidence is mixed. About 20 percent of this population had any earnings in a given post-WIOA year; however, annual SEIE use rates were around 2 percent. Only students can use SEIE; and although not all young SSI recipients were students, we can assume that a good portion were. We have noted the lack of association between the pre-ETS access ratios and SEIE use for the broader population of young SSI recipients. In 2019, almost 23,000 16- and 17-year-old SSI recipients had earnings; comparatively few, just over 4,500 of them, used the SEIE work incentive. Similarly, despite the rise in VR applications, use of Section 301 continuations among youths aged 18–21 (the age group most likely to use them) declined after WIOA in aggregate, although youths in states with higher pre-ETS access ratios during 2017–2021 were more likely to use them. Youths can use Section 301 continuations to restore SSI eligibility after payments cease because of an age-18 redetermination, as long as they use VR or similar services.[8] VR agency staff could direct young clients with SSI payment cessations to work-incentives counseling to increase use of Section 301 continuations.

A final point to consider is that states varied widely toward the latter part of our observation period in their pre-ETS access ratios and their VR application, SEIE use, and employment rates. Applications for VR services among young SSI recipients in 2019, for example, ranged across states from 0.5 percent (New Hampshire) to 7.9 percent (North Dakota). In 2019, if all states had VR application rates similar to the state at the 90$^{th}$ percentile, an additional 22,000 young SSI recipients would have applied for VR services. In other words, VR agencies would have received 72 percent more applications from this group (and additional potential SSA reimbursement for their associated costs).

Although access to pre-ETS emerged and VR service use increased after WIOA, did they lead to better employment outcomes? Our descriptive findings cannot answer that question, but hint at a positive relationship. First, increases in pre-ETS access ratios (that is, more access to pre-ETS) were associated

with higher percentages of recipients with any earnings (but not with higher average annual earnings). Second, increases in the rate of recipients with any earnings, along with the amount of annual earnings, were greater for youths aged 16–17 than for other age groups. Third, after WIOA, the increases in employment rates, annual earnings amounts, and SEIE use were larger among states with high pre-ETS access ratios than in states with low pre-ETS access ratios.

Our findings should be interpreted in light of three limitations. First, our analyses are descriptive. We cannot attribute a causal connection between WIOA or pre-ETS access ratios and the outcomes for the study population.

Second, we cannot directly observe student use of pre-ETS. The RSA-911 Case Service Reports include data on pre-ETS use beginning in 2017, with linkable records only for those who applied for VR services. Our pre-ETS access ratio, which compares the number of students using pre-ETS with the number of high school students receiving special education services, approximates a young person's access to services. Both numbers have potential biases. VR agencies may have underreported the number of students using pre-ETS, particularly in the first reporting years (2017 and 2018) as they adjusted their data management systems to accommodate changes in their reporting to RSA; during this time, reporting bias may have been more prominent for some agencies than others. High school students receiving special education services represent a subset of the population affected by WIOA, excluding college students with disabilities as well as students with disabilities who do not use special education services or who have Rehabilitation Act Section 504 special education plans. The latter group is important for this study, as around one-quarter of young SSI recipients do not use special education services (Rupp and others 2005/2006; Wittenburg and Loprest 2007).

Third, the COVID-19 pandemic confounded the final 2 years of our observation period. In addition to its broad effects on public health and economic outcomes, the pandemic suppressed VR use, earnings, and SSI work incentive use for our sample in 2020 and 2021.

This study is the first to document the potential influence of WIOA on a group of youths with disabilities who have substantial employment barriers. After WIOA, more of these youths applied for VR services, signed an IPE that would allow broader access to services beyond pre-ETS, and had earnings. Greater pre-ETS availability in a state (as evidenced by its pre-ETS access ratio) was associated with higher rates of signed IPEs, employment, and use of Section 301 continuations. These outcomes are expected, as they are the law's intended effects. Two research avenues using these data could explore other aspects of WIOA's influence. First, the data could be used to identify the specific connections between young SSI recipients, pre-ETS and VR service use, and employment outcomes, to understand the effectiveness of pre-ETS and whether its use results in decreased reliance on SSI. Second, analyses could consider differential access to VR services and outcomes by young people's characteristics, particularly their disability type and race and ethnicity, and the influence of social determinants of health on these relationships.

## *Appendix A*

**Table A-1.**
**Differences in VR engagement, employment, and SSI work incentive use among young SSI recipients after WIOA enactment, by age group, 2014–2017**

| Indicator and age | Pre-WIOA: 2010–2013 annual average | 2014 | | | 2015 | | | 2016 | | | 2017 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value |
| | | | | | | ***VR engagement (%)*** | | | | | | | |
| Applied for VR services | | | | | | | | | | | | | |
| 14–15 | 0.23 | 0.12 | 0.05 | 0.03 | 0.25 | 0.14 | 0.09 | 0.27 | 0.08 | 0.00 | 0.27 | 0.04 | 0.00 |
| 16–17 | 0.42 | 0.62 | 0.12 | 0.00 | 1.26 | 0.21 | 0.00 | 2.13 | 0.30 | 0.00 | 2.50 | 0.35 | 0.00 |
| 18–21 | 0.34 | 0.81 | 0.09 | 0.00 | 1.94 | 0.20 | 0.00 | 4.03 | 0.36 | 0.00 | 5.67 | 0.41 | 0.00 |
| 22–24 | 0.03 | 0.28 | 0.04 | 0.00 | 0.67 | 0.07 | 0.00 | 1.68 | 0.14 | 0.00 | 3.00 | 0.23 | 0.00 |
| Signed an IPE | | | | | | | | | | | | | |
| 14–15 | 0.18 | 0.05 | 0.01 | 0.00 | 0.10 | 0.04 | 0.01 | 0.18 | 0.06 | 0.00 | 0.18 | 0.03 | 0.00 |
| 16–17 | 0.19 | 0.21 | 0.04 | 0.00 | 0.50 | 0.09 | 0.00 | 1.09 | 0.17 | 0.00 | 1.61 | 0.28 | 0.00 |
| 18–21 | 0.14 | 0.46 | 0.06 | 0.00 | 1.17 | 0.13 | 0.00 | 2.88 | 0.27 | 0.00 | 5.51 | 0.46 | 0.00 |
| 22–24 | -0.05 | 0.19 | 0.03 | 0.00 | 0.53 | 0.07 | 0.00 | 1.42 | 0.13 | 0.00 | 3.36 | 0.31 | 0.00 |
| | | | | | | ***Employment*** | | | | | | | |
| Percentage with any earnings | | | | | | | | | | | | | |
| 14–15 | 0.84 | 0.24 | 0.05 | 0.00 | 0.56 | 0.10 | 0.00 | 0.89 | 0.10 | 0.00 | 0.89 | 0.14 | 0.00 |
| 16–17 | 8.18 | 1.70 | 0.29 | 0.00 | 3.58 | 0.41 | 0.00 | 4.88 | 0.42 | 0.00 | 5.24 | 0.45 | 0.00 |
| 18–21 | 22.55 | 2.17 | 0.24 | 0.00 | 4.02 | 0.32 | 0.00 | 5.22 | 0.37 | 0.00 | 5.21 | 0.43 | 0.00 |
| 22–24 | 23.17 | 2.60 | 0.21 | 0.00 | 4.19 | 0.27 | 0.00 | 5.10 | 0.36 | 0.00 | 4.83 | 0.43 | 0.00 |
| Mean annual earnings (2021 $) | | | | | | | | | | | | | |
| 14–15 | -39.75 | 0.58 | 1.38 | 0.68 | 7.37 | 2.68 | 0.01 | 13.92 | 3.24 | 0.00 | 15.17 | 3.32 | 0.00 |
| 16–17 | 80.24 | 37.09 | 5.98 | 0.00 | 88.46 | 8.66 | 0.00 | 134.87 | 11.02 | 0.00 | 145.45 | 11.99 | 0.00 |
| 18–21 | 580.19 | 94.49 | 11.14 | 0.00 | 198.57 | 16.69 | 0.00 | 271.77 | 17.25 | 0.00 | 296.94 | 19.15 | 0.00 |
| 22–24 | 825.34 | 160.23 | 13.23 | 0.00 | 302.79 | 17.14 | 0.00 | 360.52 | 21.91 | 0.00 | 360.75 | 25.89 | 0.00 |

(Continued)

**Table A-1.**
**Differences in VR engagement, employment, and SSI work incentive use among young SSI recipients after WIOA enactment, by age group, 2014–2017—*Continued***

| Indicator and age | Pre-WIOA: 2010–2013 annual average | 2014 | | | 2015 | | | 2016 | | | 2017 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value |
| | | | | | | ***Work incentive use (%)*** | | | | | | | |
| SEIE | | | | | | | | | | | | | |
| 14–15 | 0.22 | -0.01 | 0.02 | 0.48 | 0.03 | 0.03 | 0.28 | 0.08 | 0.04 | 0.05 | 0.07 | 0.04 | 0.07 |
| 16–17 | 2.14 | 0.18 | 0.09 | 0.04 | 0.53 | 0.13 | 0.00 | 0.85 | 0.16 | 0.00 | 0.93 | 0.17 | 0.00 |
| 18–21 | 3.61 | -0.14 | 0.06 | 0.02 | 0.12 | 0.09 | 0.21 | 0.51 | 0.14 | 0.00 | 0.62 | 0.14 | 0.00 |
| 22–24 | 0.62 | -0.01 | 0.02 | 0.68 | -0.02 | 0.02 | 0.49 | 0.03 | 0.02 | 0.10 | 0.07 | 0.03 | 0.01 |
| Section 301 continuation | | | | | | | | | | | | | |
| 14–15 | -0.07 | -0.01 | 0.00 | 0.03 | 0.00 | 0.00 | 0.69 | 0.00 | 0.00 | 0.92 | -0.01 | 0.01 | 0.14 |
| 16–17 | -0.05 | -0.01 | 0.00 | 0.04 | 0.00 | 0.00 | 0.99 | 0.01 | 0.01 | 0.13 | 0.01 | 0.01 | 0.16 |
| 18–21 | 0.51 | -0.04 | 0.06 | 0.53 | 0.05 | 0.06 | 0.40 | 0.04 | 0.05 | 0.40 | -0.07 | 0.06 | 0.22 |
| 22–24 | 0.14 | -0.03 | 0.02 | 0.06 | -0.04 | 0.02 | 0.05 | -0.04 | 0.02 | 0.06 | -0.05 | 0.02 | 0.02 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for six separate regressions. All values are regression-adjusted.

Estimates based on very low underlying values may be negative after regression adjustment.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 10,811,541.

**Table A-2.**
**Differences in VR engagement, employment, and SSI work incentive use among young SSI recipients after WIOA enactment, by age group, 2018–2021**

| Indicator and age | Pre-WIOA: 2010–2013 annual average | 2018 | | | 2019 | | | 2020 | | | 2021 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value |
| | | | | | | ***VR engagement (%)*** | | | | | | | |
| Applied for VR services | | | | | | | | | | | | | |
| 14–15 | 0.23 | 0.27 | 0.07 | 0.00 | 0.33 | 0.09 | 0.00 | 0.19 | 0.05 | 0.00 | 0.21 | 0.05 | 0.00 |
| 16–17 | 0.42 | 2.36 | 0.35 | 0.00 | 2.39 | 0.40 | 0.00 | 1.21 | 0.22 | 0.00 | 1.36 | 0.21 | 0.00 |
| 18–21 | 0.34 | 5.85 | 0.46 | 0.00 | 5.68 | 0.45 | 0.00 | 3.34 | 0.31 | 0.00 | 3.78 | 0.32 | 0.00 |
| 22–24 | 0.03 | 3.24 | 0.21 | 0.00 | 3.20 | 0.21 | 0.00 | 2.00 | 0.16 | 0.00 | 2.28 | 0.18 | 0.00 |
| Signed an IPE | | | | | | | | | | | | | |
| 14–15 | 0.18 | 0.19 | 0.04 | 0.00 | 0.21 | 0.05 | 0.00 | 0.17 | 0.04 | 0.00 | 0.18 | 0.04 | 0.00 |
| 16–17 | 0.19 | 1.58 | 0.26 | 0.00 | 1.69 | 0.31 | 0.00 | 1.17 | 0.24 | 0.00 | 1.02 | 0.17 | 0.00 |
| 18–21 | 0.14 | 5.87 | 0.54 | 0.00 | 5.57 | 0.49 | 0.00 | 3.47 | 0.34 | 0.00 | 3.07 | 0.27 | 0.00 |
| 22–24 | -0.05 | 3.70 | 0.33 | 0.00 | 3.27 | 0.24 | 0.00 | 1.84 | 0.15 | 0.00 | 1.82 | 0.14 | 0.00 |
| | | | | | | ***Employment*** | | | | | | | |
| Percentage with any earnings | | | | | | | | | | | | | |
| 14–15 | 0.84 | 0.91 | 0.13 | 0.00 | 0.98 | 0.24 | 0.00 | 0.28 | 0.25 | 0.27 | 1.60 | 0.29 | 0.00 |
| 16–17 | 8.18 | 6.14 | 0.58 | 0.00 | 6.60 | 0.68 | 0.00 | 3.69 | 0.96 | 0.00 | 8.42 | 1.06 | 0.00 |
| 18–21 | 22.55 | 5.60 | 0.46 | 0.00 | 6.07 | 0.52 | 0.00 | 2.98 | 0.86 | 0.00 | 5.95 | 1.26 | 0.00 |
| 22–24 | 23.17 | 4.59 | 0.50 | 0.00 | 4.55 | 0.51 | 0.00 | 1.97 | 0.60 | 0.00 | 2.34 | 0.95 | 0.02 |
| Mean annual earnings (2021 $) | | | | | | | | | | | | | |
| 14–15 | -39.75 | 14.87 | 3.79 | 0.00 | 17.65 | 4.50 | 0.00 | 12.98 | 4.14 | 0.00 | 33.76 | 4.57 | 0.00 |
| 16–17 | 80.24 | 175.88 | 13.10 | 0.00 | 201.50 | 15.57 | 0.00 | 174.66 | 18.02 | 0.00 | 326.95 | 23.27 | 0.00 |
| 18–21 | 580.19 | 340.77 | 22.31 | 0.00 | 398.62 | 23.04 | 0.00 | 372.45 | 29.46 | 0.00 | 636.50 | 44.68 | 0.00 |
| 22–24 | 825.34 | 375.74 | 27.51 | 0.00 | 413.59 | 28.89 | 0.00 | 252.34 | 29.41 | 0.00 | 464.72 | 40.98 | 0.00 |

(Continued)

**Table A-2.**
**Differences in VR engagement, employment, and SSI work incentive use among young SSI recipients after WIOA enactment, by age group, 2018–2021—*Continued***

| Indicator and age | Pre-WIOA: 2010–2013 annual average | 2018 | | | 2019 | | | 2020 | | | 2021 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value | Adjusted difference | Standard error | *p*-value |
| | | | | | | ***Work incentive use (%)*** | | | | | | | |
| SEIE | | | | | | | | | | | | | |
| 14–15 | 0.22 | 0.03 | 0.04 | 0.49 | 0.00 | 0.04 | 0.92 | -0.12 | 0.05 | 0.02 | -0.14 | 0.05 | 0.01 |
| 16–17 | 2.14 | 0.91 | 0.20 | 0.00 | 0.79 | 0.20 | 0.00 | -0.29 | 0.19 | 0.13 | -1.22 | 0.21 | 0.00 |
| 18–21 | 3.61 | 0.65 | 0.17 | 0.00 | 0.54 | 0.16 | 0.00 | -0.49 | 0.20 | 0.02 | -1.31 | 0.24 | 0.00 |
| 22–24 | 0.62 | 0.06 | 0.02 | 0.02 | 0.08 | 0.03 | 0.01 | 0.04 | 0.03 | 0.19 | -0.14 | 0.05 | 0.01 |
| Section 301 continuation | | | | | | | | | | | | | |
| 14–15 | -0.07 | -0.02 | 0.01 | 0.02 | -0.02 | 0.01 | 0.02 | -0.02 | 0.01 | 0.01 | -0.03 | 0.01 | 0.01 |
| 16–17 | -0.05 | 0.00 | 0.01 | 0.65 | -0.01 | 0.01 | 0.04 | -0.02 | 0.01 | 0.01 | -0.03 | 0.01 | 0.01 |
| 18–21 | 0.51 | -0.14 | 0.09 | 0.11 | -0.21 | 0.10 | 0.04 | -0.32 | 0.12 | 0.01 | -0.36 | 0.13 | 0.01 |
| 22–24 | 0.14 | -0.05 | 0.02 | 0.03 | -0.06 | 0.03 | 0.03 | -0.05 | 0.03 | 0.06 | -0.05 | 0.03 | 0.05 |

SOURCE: Authors' calculations based on SSA and Department of Education administrative data.

NOTES: Results are for six separate regressions. All values are regression-adjusted.

Estimates based on very low underlying values may be negative after regression adjustment.

All models control for fixed state effects and individual characteristics.

Standard errors are clustered at the state level.

Observations = 10,811,541.

## Notes

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[1] Investments in pre-ETS for students varied at the state level and changed over the years after WIOA enactment.

[2] For youths younger than 18, the SSI program has specific disability-related eligibility criteria related to marked and severe functional limitations. On reaching age 18, a recipient's SSI eligibility is redetermined using adult disability-related eligibility criteria, which are based on the person's ability to perform substantial gainful activity (Hemmeter, Kauff, and Wittenburg 2009; SSA 2022). The rules for parental income deeming (to establish resource eligibility) also change at age 18; as a result, youths with severe disabilities who were not eligible for SSI payments before age 18 because of income and asset restrictions may become eligible at age 18 (Hemmeter 2015).

[3] The PROMISE demonstration may have enabled VR agencies in the participating states to enhance their pre-ETS offerings. Because the PROMISE operation period partially overlaps our study period, we test for this hypothesis by comparing states that participated in PROMISE or ASPIRE with all other states.

[4] Our results and conclusions remain unchanged when we consider the original earnings values, although point estimates vary. This robustness check confirms that our results are not driven by the top 1 percent of earnings values in the sample.

[5] The appendix tables present the regression estimates for the values shown in Chart 4.

[6] We did not exclude youths younger than 18 from the study sample when using linear probability models to estimate the use of work incentives. We obtained negative estimates of the adjusted means of Section 301 continuation use for youths younger than 18. Because the policy focuses on youths aged 18 or older, the number of younger people using Section 301 continuations is small and these estimates do not support meaningful interpretation.

[7] The results of the sensitivity analyses are available upon request (IMusse@mathematica-mpr.com).

[8] It may be that the number of cessations resulting from age-18 redeterminations has decreased or that youths whose payments ceased are appealing their redetermination decisions. In the latter case, youths would use alternative avenues of payment continuation during the appeal.

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