



October 2021

SOCIAL SECURITY DISABILITY

Ticket to Work Helped Some Participants, but Overpayments Increased Program Costs

Accessible Version



A Century of Non-Partisan Fact-Based Work

GAO Highlights

Highlights of [GAO-22-104031](#), a report to congressional committees

Why GAO Did This Study

SSA pays billions of dollars in Disability Insurance and Supplemental Security Income benefits to people with disabilities. To help beneficiaries obtain employment and reduce dependence on disability benefits, Ticket to Work was established in 1999. The Explanatory Statement accompanying the Consolidated Appropriations Act, 2018 contains a provision for GAO to study the effects of the program.

This report examines, among other things, the extent to which Ticket to Work has led to increased earnings and other benefits for participants, and how the costs and savings from Ticket to Work compared over time. GAO conducted statistical analyses of SSA beneficiary data, analysis of Ticket to Work costs, a literature review, and interviews with program officials, service provider representatives, and disability policy experts.

What GAO Recommends

GAO recommends SSA identify the root causes of overpayments to Ticket to Work participants and take appropriate actions to address them. SSA agreed with GAO's recommendation.

View [GAO-22-104031](#). For more information, contact Elizabeth Curda at (202) 512-7215 or curdae@gao.gov.

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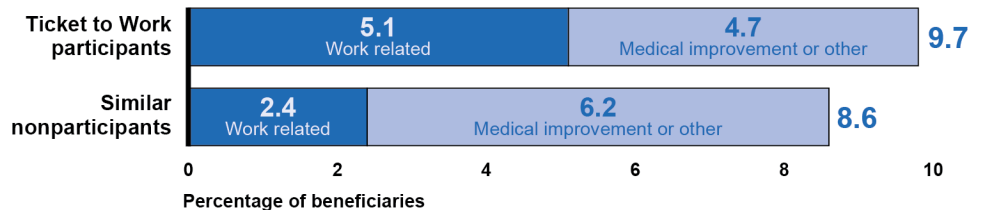
Ticket to Work Helped Some Participants, but Overpayments Increased Program Costs

What GAO Found

Disability beneficiaries participate in the Social Security Administration's (SSA) Ticket to Work and Self-Sufficiency program (Ticket to Work) by assigning a "ticket" to service providers who, in turn, provide help with employment. SSA compensates the service providers when Ticket to Work participants achieve designated levels of work and earnings. Using SSA data from 2002, when the program began, through 2018, the most recent year available, GAO estimated that 5 years after starting Ticket to Work, participants' average earnings were \$2,451 more per year than that of similar nonparticipants. However, the majority of participants remained unemployed 5 years after starting Ticket to Work.

Based on GAO's analysis, the costs of Ticket to Work exceeded the savings in disability benefits to SSA by an estimated \$806 million from 2002 through 2015, the most recent year with reliable savings data. Savings accrue when Ticket to Work participants receive lower benefits or leave the disability rolls due to earnings from work. GAO estimates that participants were slightly more likely to leave the rolls (9.7 percent) than nonparticipants who are similar across a range of characteristics such as age, gender, disability type, and education level (8.6 percent). A greater percentage of participants left the disability rolls due to work rather than for other reasons, such as medical improvement (see figure).

Percentage of Beneficiaries Who Left SSA's Disability Rolls 5 Years after Starting Ticket to Work versus Similar Nonparticipants, By Reason, 2002-2015



Ticket to Work = Ticket to Work and Self-Sufficiency program

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Data table for Percentage of Beneficiaries Who Left SSA's Disability Rolls 5 Years after Starting Ticket to Work versus Similar Nonparticipants, By Reason, 2002-2015

	Work related	Medical improvement or other	Total
Ticket to Work participants	5.1	4.7	9.7
Similar nonparticipants	2.4	6.2	8.6

Ticket to Work= Ticket to Work and Self-Sufficiency program

Note: Percentages were computed for Ticket to Work participants who began the program from 2002 through 2010 at 5 years after they started Ticket to Work and for a sample of similar nonparticipants. Parts may not sum to total because of rounding.

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

GAO estimates that SSA incurred an additional \$133 million to \$169 million in costs (above the \$806 million) from disability benefit overpayments to Ticket to Work participants. Overpayments can occur when beneficiaries who work do not report earnings to SSA or SSA delays in adjusting their benefit amounts. SSA incurs costs when it allows a beneficiary to keep overpayments or expends resources to recover them. GAO estimates that Ticket to Work participants were more than twice as likely to receive overpayments 5 years after starting the program than nonparticipants. While SSA is investigating the root causes of overpayments across its benefit programs, it has not focused on overpayments among Ticket to Work participants, who face unique circumstances due to their ties to service providers. For example, participants may mistakenly think that service providers report their earnings to SSA. Addressing the root causes of overpayments among Ticket to Work participants would reduce repayment burdens on affected participants and increase savings for SSA and taxpayers.

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Abbreviations

CDR	continuing disability review
DI	Disability Insurance
EN	employment network
OIG	Office of the Inspector General
SGA	substantial gainful activity
SSA	Social Security Administration
SSI	Supplemental Security Income
Ticket to Work (or Ticket)	Ticket to Work and Self-Sufficiency program
VR	state vocational rehabilitation agency

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October 28, 2021

Congressional Committees

In 2019, over 12 million working-age adults received approximately \$165 billion in disability benefits from the Social Security Administration's (SSA) Disability Insurance (DI) and Supplemental Security Income (SSI) programs—the two largest federal disability programs. While many of these beneficiaries will never be able to work due to their disability, some could become capable and desirous of employment. In part to help those beneficiaries obtain employment and reduce dependence on SSA disability benefits, the Ticket to Work and Self-Sufficiency program (Ticket to Work or Ticket) was established in 1999.¹ Through the program, SSA offers beneficiaries a “ticket” that they may assign to service providers who, in turn, provide employment services such as vocational rehabilitation and job placement. SSA compensates the service providers—private employment networks (EN) or state vocational rehabilitation agencies (VR)—when participants achieve designated levels of work and earnings.² SSA compensated VRs for services prior to Ticket to Work, but the program gives beneficiaries the option of receiving services from an EN or VR. Ticket to Work experienced low participation in its early years and, as a result, SSA revised its regulations in July 2008 to improve the program.

The Explanatory Statement accompanying the Consolidated Appropriations Act, 2018, contains a provision for GAO to study and issue a report on the effects of Ticket to Work to the Committees on Appropriations of the House of Representatives and the Senate, the Committee on Ways and Means of the House of Representatives, and the Committee on Finance of the Senate.³ This report examines (1) how

¹The program was established by the Ticket to Work and Work Incentives Improvement Act of 1999. Pub. L. No. 106-170, § 101(a), 113 Stat. 1860, 1863-1873. SSA started the program in some states in February 2002 and implemented it nationwide in September 2004. In this report, we use the abbreviations “Ticket to Work” and “Ticket” interchangeably.

²An EN may be any public or private entity (non-profit or otherwise) or consortium of organizations that is deemed qualified by SSA to provide or coordinate the provision of services under the program. Although ENs may be part of a state's public workforce system, when we refer to ENs in this report, we are referring to ENs that are not VRs.

³164 Cong. Rec. H2707 (Mar. 22, 2018).

beneficiaries' participation in Ticket and service providers' involvement in the program have changed over time; (2) the extent that Ticket has led to increased earnings and other benefits for participants; and (3) how the costs and savings from Ticket have compared over time.

To answer these questions, we used a variety of methods including statistical analysis, interviews, and literature reviews. Specifically, to describe beneficiary participation and service provider involvement in Ticket, we analyzed beneficiary and program operations data from SSA's Disability Analysis File from 2002, when the program began, through 2018, the most recent year available.⁴

To examine the extent that Ticket led to increased earnings for participants, we analyzed Disability Analysis File data, matched with beneficiary earnings data from SSA's Master Earnings File, and used statistical methods that estimate the effect of Ticket on earnings by comparing program participants to nonparticipants, while controlling for observable characteristics.⁵ More specifically, we constructed a comparison group of similar nonparticipants that closely resembled the Ticket participants on a set of characteristics that could influence the likelihood of participating in Ticket services or the expected benefits received. For each Ticket participant we compared earnings, benefits, and other outcome measures to the same measures for an actual nonparticipant of the same gender, disabling impairment, and state of residence; who had participated in the same SSA disability program; and who was similar on a variety of other attributes such as age at disability entitlement. We used statistical matching methods to construct this comparison group of nonparticipants and adjust for differences between the two groups.⁶ To describe the extent to which the program has led to

⁴SSA maintains the Disability Analysis File for research purposes. It contains administrative data on working-age DI and SSI beneficiaries who received disability benefits in any month since 1996, and draws from multiple sources to compile information such as beneficiaries' education, primary disabling condition, likelihood of medical improvement, and age.

⁵SSA's Master Earnings File contains information from the Internal Revenue Service on the earnings of the U.S. working population.

⁶These matching methods yielded a comparison group that was similar on average to the Ticket participants on characteristics including, but not limited to, the primary disabling condition, expectations of medical recovery, state of residence, age, gender, and education level. Comparison group members received similar amounts of disability benefits before the participants started services, but on average had lower earnings than participants before services started. For further information about our methods, see appendix I.

other benefits for participants, we conducted a literature review of peer-reviewed articles and interviewed representatives from organizations representing or serving people with disabilities.

To examine how the costs and savings of Ticket compared over time, we analyzed Disability Analysis File data and SSA data on administrative costs, and used statistical methods to estimate the effect of Ticket on disability benefits. Similar to the statistical analysis we described above, we used statistical methods to compare the disability benefits that program participants received to those received by similar nonparticipants while controlling for observable characteristics. To estimate the costs of Ticket over time, we analyzed Disability Analysis File data on SSA payments to Ticket service providers as well as SSA's estimates of administrative costs of the program.⁷ In estimating Ticket's operational costs and its savings in disability benefits paid, we limited our analysis to SSA's costs and savings, which could affect our assessment of net savings.⁸ For example, we did not estimate effects of Ticket on other areas of the federal government such as increases in revenue to the U.S. Department of the Treasury from additional payroll taxes, savings in forgone Medicare and Medicaid benefits to the Centers for Medicare & Medicaid Services, and any costs to the U.S. Department of Education.⁹

We assessed the reliability of data we received from SSA by, for example, reviewing relevant documentation and interviewing knowledgeable officials, and found them to be sufficiently reliable for the purposes of our reporting objectives. Specifically, we determined that the data that we used were reliable for estimating program participation, disability benefits, and earnings of Ticket participants.

⁷The administrative costs of Ticket are not a budgeted line item. SSA's estimates draw from historical staffing information and contract costs associated with Ticket.

⁸The effect of including costs and savings outside of SSA could be positive or negative depending on how Ticket increases or decreases use of government services and whether costs are offset by savings. Such an analysis would require combining multiple federal datasets across agencies as well as conducting additional modeling of service utilization and costs. Because of these complexities, we elected to restrict the scope of our analysis to SSA.

⁹The U.S. Department of Education administers Vocational Rehabilitation, the primary federal government program that helps individuals with disabilities prepare for and obtain employment. Through formula grants determined in part by state population and per capita income, the department provides the majority of states' VR funding.

To provide context for each of our reporting objectives, we also reviewed SSA publications, relevant federal laws and regulations, and prior GAO reports; and interviewed SSA officials, service providers, and advocates for individuals with disabilities. See appendix I for more details on our scope and methodology.

We conducted this performance audit from January 2020 to October 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

DI and SSI Eligibility and Employment

To become eligible for DI or SSI benefits, an individual generally must have a medically determined physical or mental impairment that (1) has lasted or is expected to last at least 1 year or result in death, and (2) prevents the individual from engaging in substantial gainful activity (SGA). For 2021, SSA defined SGA as earning above \$1,310 per month for nonblind individuals.¹⁰ Once an individual is receiving benefits, SSA periodically conducts continuing disability reviews (CDR) to evaluate if the individual has medically improved to the point of being able to work and is no longer eligible for benefits.¹¹ Although the DI and SSI programs use the same definition of disability for eligibility purposes, they were designed to serve different populations. DI provides benefits to individuals with disabilities who have a qualifying work history; in contrast, SSI provides benefits to individuals with disabilities, the blind, and the aged,

¹⁰Under the annual threshold set by SSA for 2021, blind individuals are considered engaged in SGA if they had earnings above \$2,190 per month.

¹¹CDRs are generally conducted every 6 to 18 months, 3 years, or 5 to 7 years, depending on the beneficiary's disability.

who have low income and limited resources.¹² Known as concurrent beneficiaries, individuals may receive DI and SSI benefits at the same time.

The DI and SSI programs have different provisions for how earnings from work affect benefits. DI beneficiaries are allowed a 9-month trial work period during which their benefits continue regardless of how much they earn.¹³ They then move into a 36-month re-entitlement period (extended period of eligibility) in which their monthly benefit is suspended except in months in which earnings are less than SGA.¹⁴ Recipients whose earnings are above SGA after they complete the 36-month period, under program rules, stop receiving benefits and are removed from the disability rolls. DI beneficiaries' Medicare coverage generally continues for at least 7 years and 9 months after the trial work period ends. In contrast, SSI benefits are generally reduced by \$1 for every \$2 of earned income exceeding \$65 per month until benefits reach zero.¹⁵ If SSI beneficiaries receive no benefits for 12 consecutive months due to earned income, they are regarded as removed from the rolls.¹⁶ Medicaid can continue if they continue to satisfy SSI asset limits, among other conditions, and need the coverage to work. If a beneficiary loses DI or SSI eligibility due to work earnings, SSA may restart benefits without a new application under expedited reinstatement within 5 years of benefit loss.¹⁷ This

¹²Individuals under age 18 may qualify for SSI but have distinct eligibility requirements from adults. To be considered disabled, individuals under age 18 must have a medically determinable physical or mental impairment that causes marked and severe functional limitations and that has lasted or is expected to last for a continuous period of at least 1 year or result in death.

¹³See 20 C.F.R. § 404.1592. The trial work period is reached when a beneficiary accumulates 9 months of earnings of at least the trial work level amount in a rolling 60-month period. The 9 months do not have to be continuous. In 2021, the trial work level amount was \$940 per month.

¹⁴20 C.F.R. § 404.1592a. During the re-entitlement period, SSA pays benefits for the first month of SGA and the two following months.

¹⁵See 20 C.F.R. § 416.1112(c)(5) and (7).

¹⁶20 C.F.R. § 416.1335.

¹⁷SSA allows requests for expedited reinstatement when individuals meet certain requirements including being unable to work at the SGA level due to a medical condition that is the same as, or related to, their original disabling impairment(s).

provision allows individuals to receive up to 6 months of provisional benefits while SSA conducts a medical review.

When disability beneficiaries return to work and earn income, they must report these earnings to SSA. Benefit overpayments from SSA can occur when beneficiaries do not report their earnings or when SSA does not take timely action on such reports to adjust the amount of benefits. If SSA determines an overpayment occurred, it requests repayment or withholds all or a portion of the monthly benefits paid to the beneficiary. In some instances, SSA forgives the overpayment.¹⁸

Ticket to Work Overview

Ticket was established to assist individuals with disabilities in obtaining and retaining employment, and help reduce dependency on benefits.¹⁹ This voluntary program was also designed to provide beneficiaries with greater choice in public and private providers of employment services such as job preparation and placement and vocational rehabilitation services.²⁰ Prior to the establishment of Ticket, DI and SSI beneficiaries who needed help returning to work generally only received services directly from VRs.²¹

In general, DI and SSI beneficiaries ages 18 through 64 are eligible for Ticket. They may choose whether or not to use their tickets, and with which service providers. Using an online tool, beneficiaries can search for in-person or online service providers that offer specific services, such as resume writing or job placement assistance, or serve particular populations, such as non-English speakers. Beneficiaries who assign their tickets to an EN or VR and demonstrate “timely progress” toward

¹⁸Generally, SSA policy allows personnel to waive recovery of an overpayment if (a) the person is without fault, and (b) recovery would either defeat the purpose of the program or be against good conscience. In addition, SSI overpayment recovery can be waived if the person is without fault and recovery would impede efficient or effective administration of the SSI program due to the small amount involved.

¹⁹See Pub. L. No. 106-170, § 2(b)(4), 113 Stat. 1860, 1863. The law also stated that helping individuals with disabilities return to work might result in savings to the Social Security Disability Insurance Trust Fund.

²⁰Congressional Research Service, *Ticket to Work and Self-Sufficiency Program: Overview and Current Issues*, R41934 (updated Jan. 24, 2014).

²¹H.R. Rep. No. 106-220 (pt. 1) at 10 (1999).

self-supporting employment, such as by fulfilling education requirements or completing the specified goals of work and earnings, are exempted from medical CDRs.²² This is an additional work incentive that only applies to beneficiaries participating in Ticket.

Service Providers and Ticket Administration

A beneficiary's ticket is assigned when an individual and service provider decide to work together and submit an individualized work plan to SSA describing the services to be provided. A beneficiary can unassign the ticket from a service provider at any time, sometimes switching to a different service provider. ENs can decide whether or not to serve an eligible beneficiary. In contrast, VRs cannot decline service to an individual if they have the resources to do so.²³

Service providers choose a payment option for services provided to each individual.²⁴ ENs choose between (1) milestone-outcome payments that begin when the participant has a specified level of earnings and continue for a specified time after the participant's disability benefits cease because of earnings, or (2) outcome-only payments that do not begin until the participant is entirely off benefits. VRs generally choose between (1) a cost-reimbursement system that predates Ticket whereby SSA reimburses the cost of services when the participant has earnings above an established threshold over the course of 9 months, or (2) either EN payment option.

To improve the program, SSA revised Ticket regulations in 2008.²⁵ Among other regulatory changes, the revisions eased participation

²²Under federal law, during any period for which an individual is using, as defined by SSA, a ticket, SSA may not initiate a CDR. 42 U.S.C. § 1320b-19(i). In its program regulations, SSA generally defines "using" a ticket as assigning a ticket to an EN or VR and "making timely progress toward self-supporting employment," and outlines specific requirements an individual must meet in order to demonstrate timely progress and thus obtain or maintain CDR exemption. 20 C.F.R. § 411.166(a) and (b).

²³If VRs lack the financial and staff resources to serve all eligible individuals in the state, they are generally required to prioritize individuals with the most significant disabilities. In cases in which a VR must close certain eligibility categories because it is unable to provide services to all eligible applicants, it is said to be in "order of selection status."

²⁴42 U.S.C. § 1320b-19(h).

²⁵Amendments to the Ticket to Work and Self-Sufficiency Program, 73 Fed. Reg. 29,324 (May 20, 2008).

requirements for some beneficiaries. Specifically, the revisions removed a requirement that beneficiaries who were expected to medically improve go through at least one CDR to participate. The revisions also made it easier for ENs to provide services by enabling them to receive payment for serving participants formerly served by a VR.²⁶ In addition, the revisions increased the payment amounts for service providers and made it easier for ENs to be paid by lowering the participant earnings threshold which triggers payments to ENs.²⁷ Previously, ENs were not eligible for SSA payment until a participant had earnings at or above SGA.

Apart from paying service providers, SSA incurs administrative costs from overseeing Ticket. For example, SSA's Office of Research, Demonstration and Employment Support contracts with a private company (Ticket program manager) for day-to-day operations. The Ticket program manager's responsibilities include conducting outreach to eligible beneficiaries, processing ticket assignments and service provider payments, and performing timely progress reviews of program participants. Staff in SSA's field and regional offices also support Ticket by, for example, serving as work incentive coordinators.

Prior Ticket Evaluations

Researchers and policymakers have studied the costs and savings of Ticket since the program's inception. At that time, policymakers estimated that if an additional one-half of 1 percent of disability beneficiaries went back to work and ceased benefits for the rest of their lives, the savings to the Social Security Trust Funds and Treasury would total \$3.5 billion.²⁸ The Congressional Budget Office also projected Ticket would lead to

²⁶Known as Partnership Plus, the revised regulations allow an EN to accept a ticket after a VR closes its case with the ticket holder. 20 C.F.R. § 411.585. In certain circumstances, an EN who accepts a participant after a VR achieves an employment outcome is only eligible for certain milestone and outcome payments. 20 C.F.R. § 411.535(a)(1)(iii).

²⁷The changes made ENs eligible for milestone payments when a participant has a specified level of gross earnings during the trial work period. In 2021, the threshold for such a payment was a participant earning at least \$940 in a month, which is less than SGA and, in many cases, equates to part-time work.

²⁸Pub. L. No. 106-170, § 2(a)(12), 113 Stat. 1860, 1863.

savings.²⁹ However, in 2008, SSA's Office of the Inspector General (OIG)³⁰ found the percentage of beneficiaries who ceased benefits as a result of employment had remained unchanged from before Ticket³¹ and cost savings had not materialized. The OIG also found the percentage of beneficiaries who had earnings after receiving services steadily decreased over time, and recommended that SSA evaluate the program's continued viability.

In 2013, as part of its contract with SSA for program evaluations, Mathematica Policy Research conducted a study of Ticket but could not determine whether the program was self-financing.³² Mathematica found that participants were more likely than nonparticipants to have months of not receiving disability benefits because of work. According to Mathematica's study, 5.1 percent of Ticket participants experienced at least one month of forgone disability benefits because of work, compared with 2.7 percent of nonparticipants. However, because of limited data at the time and the program's voluntary nature, Mathematica could not determine whether such changes in disability benefits and other outcomes were because of (1) the effect of Ticket, or (2) the greater motivation or better employment prospects of individuals who participated in Ticket compared to those who chose not to participate.

²⁹Congressional Budget Office, *Pay-As-You-Go Estimate: H.R. 1180 Ticket to Work and Work Incentives Improvement Act of 1999* (Washington, D.C.: Dec. 13, 1999). The Congressional Budget Office estimated Ticket would reduce annual outlays by \$7 million, \$27 million, and \$60 million in fiscal years 2004, 2005, and 2006, and \$110 million in fiscal year 2009.

³⁰SSA Office of the Inspector General, *Ticket to Work and Self-Sufficiency Program Cost Effectiveness*, A-02-07-17048 Audit Report (Washington, D.C.: August 2008).

³¹These findings are based on SSA data from calendar years 2002 through 2006.

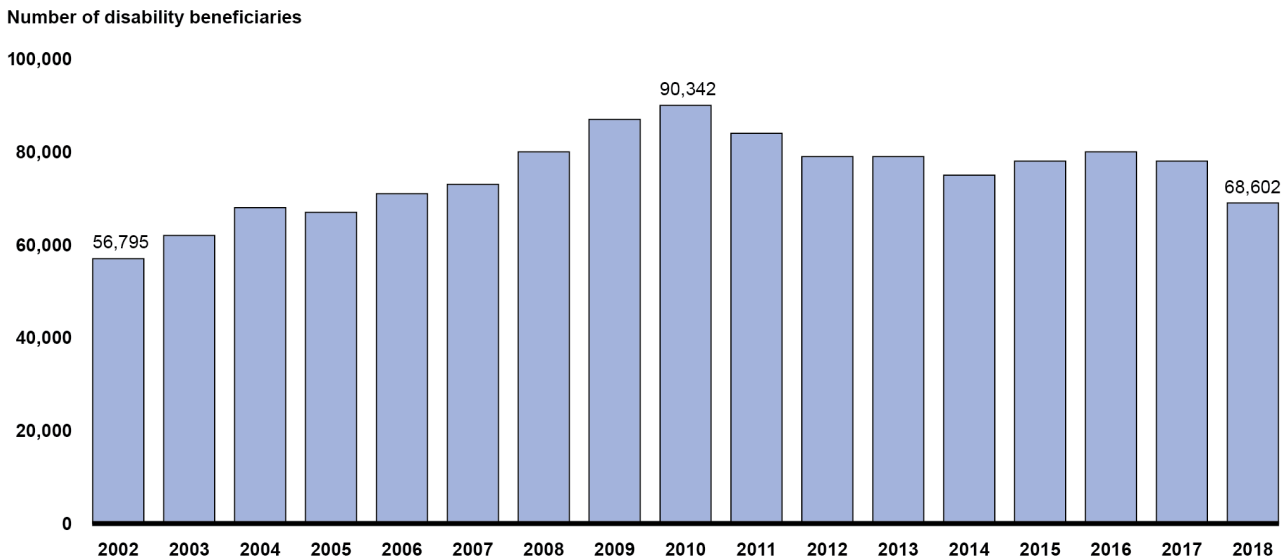
³²Mathematica Policy Research, *Executive Summary of the Seventh Ticket to Work Evaluation Report*, Final Report (Washington, D.C.: July 30, 2013).

Participation in Ticket to Work Varied Over Time and Vocational Rehabilitation Agencies Served Most Beneficiaries

About 5 Percent of Eligible Beneficiaries Participated in Ticket to Work since Its Inception

The number of disability beneficiaries who started Ticket each year varied. Specifically, the number of Ticket participants entering the program increased from approximately 57,000 in 2002, when the program began, to a peak of about 90,000 in 2010, then decreased to about 69,000 in 2018 (see fig. 1). The peak in 2010 occurred after the 2008 Ticket regulatory changes and 2007-2009 recession.

Figure 1: Number of Disability Beneficiaries Who Started Ticket to Work and Self-Sufficiency (Ticket) Program, by Year, 2002-2018



Source: GAO analysis of Social Security Administration data. | GAO-22-104031

Data table for Figure 1: Number of Disability Beneficiaries Who Started Ticket to Work and Self-Sufficiency (Ticket) Program, by Year, 2002-2018

Year	Number of disability beneficiaries (in thousands)
2002	57
2003	62
2004	68
2005	67
2006	71
2007	73
2008	80
2009	87
2010	90
2011	84
2012	79
2013	79
2014	75
2015	78
2016	80
2017	78
2018	69
2002	57

Source: GAO analysis of Social Security Administration data. | GAO-22-104031

Note: If beneficiaries participated in Ticket over multiple years or had more than one period of participation, we counted them only in the year that they first started services.

About 5 percent of those eligible for the program participated at some point since its inception through 2018.³³ We could not assess whether the

³³To calculate this participation rate for the entire study period, we counted individuals who had an active ticket in any month during the period including individuals who started receiving services before Ticket began, then divided this count by the number of beneficiaries who were eligible for Ticket during the period according to SSA's Disability Analysis File data. We tallied individuals who were indicated as Ticket-eligible in SSA's data and did not assess their eligibility for the program.

overall 5 percent participation rate is low or high because we do not know how many disability beneficiaries were potentially able to work.³⁴

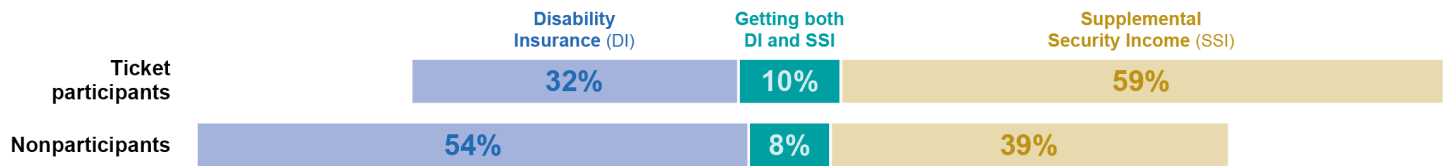
According to SSA officials, the agency has taken steps to raise awareness of Ticket among disability beneficiaries to increase program participation, but these efforts have had limited success. For example, in 2016, it launched an initiative to share limited beneficiary contact information with service providers who in turn contact beneficiaries to market Ticket and offer their employment services. According to SSA officials, this initiative has been used particularly effectively by a few service providers, but has had limited success in increasing overall program participation thus far.

SSI beneficiaries comprised a relatively large share of Ticket participants. Of the participants who started the program in 2002 through 2018, about 59 percent were SSI only beneficiaries, 32 percent were DI only, and 10 percent received both types of benefits.³⁵ In contrast, of nonparticipants who were eligible for Ticket during this time, about 39 percent were SSI only, 54 percent were DI only, and 8 percent received both (see fig. 2). Relative to nonparticipants, Ticket participants were younger. Specifically, on average, participants were about 34 years old whereas nonparticipants were about 49 years old. Participants were more likely than nonparticipants to have become eligible for disability benefits during their youth. According to a researcher we interviewed, age is likely a key factor that affects Ticket participation because younger disability beneficiaries have a longer time horizon to benefit from returning to work. DI beneficiaries must have a work history to receive those benefits and therefore tend to be older than SSI recipients.

³⁴According to SSA officials, calculating annual Ticket participation within the entire analysis period is not possible because SSA retroactively changed the way it counted Ticket participation in 2011, which resulted in the assignment of many beneficiaries' tickets in 2011 and 2012 although they had received services earlier. However, we were able to determine the total number of beneficiaries who participated in Ticket at some point between the program's inception and the end of 2018. We were able to determine the number of beneficiaries who started Ticket each year by combining SSA data with Department of Education data on when an individual began VR services.

³⁵To measure certain characteristics that can change over time, such as the type of disability benefits that individuals receive, we used information from the earliest year that a beneficiary was paid disability benefits.

Figure 2: Percentage of Ticket Participants and Nonparticipants, by Type of Benefits Received, 2002-2018



Source: GAO analysis of Social Security Administration data. | GAO-22-104031

Data table for Figure 2: Percentage of Ticket Participants and Nonparticipants, by Type of Benefits Received, 2002-2018

	Disability Insurance (DI)	Getting both DI and SSI	Supplemental Security Income (SSI)
Ticket to Work participants	32%	10%	59%
Nonparticipants	54%	8%	39%

Source: GAO analysis of Social Security Administration data. | GAO-22-104031

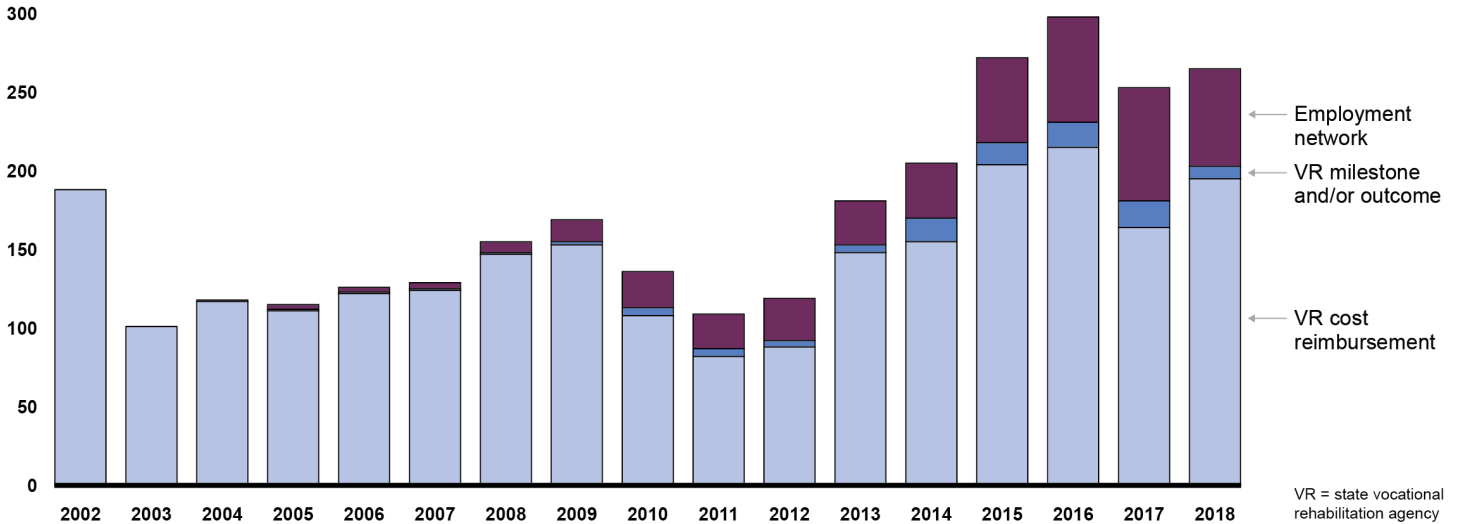
Note: For this analysis, we categorized individuals according to the type of disability benefits that they first received, which could predate participation in the Ticket to Work and Self-Sufficiency program (Ticket). Groups do not sum to 100 percent because of rounding.

State Vocational Rehabilitation Agencies Served Most Ticket Participants, but Employment Networks Increasingly Provided Services

VRs served most Ticket participants since the program’s inception through 2018. During this time, VRs served approximately 88 percent of participants whereas ENs or both types of service providers served about 12 percent of participants. However, ENs increasingly provided Ticket services over time. Prior to the 2008 regulatory changes, almost 98 percent of SSA’s service provider payments went to VRs through cost reimbursement. After the regulatory changes, approximately 76 percent went to VRs through cost reimbursement, about 20 percent went to ENs, and about 4 percent went to VRs through milestone and/or outcome arrangements (see fig. 3).

Figure 3: SSA Payments for Ticket Services, by Service Provider Type and Year, 2002-2018

Payments (in millions of 2020 dollars)



Source: GAO analysis of Social Security Administration data. | GAO-22-104031

Data table for Figure 3: SSA Payments for Ticket Services, by Service Provider Type and Year, 2002-2018

Year	VR cost reimbursement	VR milestone and/or outcome	Employment network
2002	188	0	0
2003	101	0	0
2004	117	0	1
2005	111	1	3
2006	122	1	3
2007	124	1	4
2008	147	1	7
2009	153	2	14
2010	108	5	23
2011	82	5	22
2012	88	4	27
2013	148	5	28
2014	155	15	35
2015	204	14	54
2016	215	16	67
2017	164	17	72
2018	195	8	62

VR = state vocational rehabilitation agency

Source: GAO analysis of Social Security Administration data. | GAO-22-104031

Note: An “employment network” may be part of a state’s public workforce system but excludes VRs in this figure. For payment through the Ticket to Work and Self-Sufficiency program (Ticket), VRs generally choose between (1) a cost-reimbursement system that predated Ticket or (2) a milestone and/or outcome option established through the program.

Many Ticket participants who received services from an EN also received services from a VR. Specifically, of Ticket participants who received services from an EN, more than one-third also received services from a VR at some point. Of participants who received services from both types of providers, approximately 76 percent first received services from a VR then an EN. SSA program officials explained that VR services are generally more time-limited because VRs close cases when individuals obtain stable employment, whereas ENs can provide longer-term services that may help participants stay employed.

Nevertheless, ENs and VRs tended to serve different types of Ticket participants. Compared to VR participants, EN participants were more likely to (1) be DI beneficiaries, (2) be middle-aged, and (3) not have an intellectual disability. According to experts we interviewed, ENs have more flexibility than VRs in selecting which individuals to serve. VRs cannot decline service if they have the resources to provide it. In contrast, ENs may target beneficiaries who seem most ready to work, including those with a work history. In fact, officials from one EN we interviewed said their company only targets DI beneficiaries.

Ticket Participants Benefited from the Program but Face Obstacles to Leaving the Disability Rolls

Ticket Participants Had Higher Earnings than Similar Nonparticipants on Average and Likely Experienced Other Benefits from Working

Many Ticket participants benefited from the program financially and likely experienced non-monetary benefits. We compared changes in Ticket participants’ average earnings over time to that of similar nonparticipants

and found that although the groups were close 1 year before Ticket participants received services, they diverged after participation began.³⁶ Specifically, 5 years after starting Ticket, participants earned an average of approximately \$2,451 more per year than similar nonparticipants.³⁷ On average, 5 years after starting services, DI beneficiaries who participated earned about \$3,285 more per year than similar nonparticipants, while SSI and concurrent beneficiaries who participated earned about \$2,089 and \$2,197 more per year than similar nonparticipants, respectively. In percentage terms, participants' average earnings increased by 110 percent 5 years after services began, whereas that of similar nonparticipants grew by about 50 percent during the same time. Nevertheless, these increases in earnings were relatively modest. Specifically, among the approximately 44 percent of participants who had some earnings 5 years after starting Ticket, the average annual earnings 5 years after starting the program was about \$10,250, which may reflect part-time or intermittent work.³⁸

Based on our analysis of SSA data, Ticket participants were also more likely to be earning above SGA than similar nonparticipants.³⁹ The percentage of Ticket participants earning SGA or above more than tripled from when services began to 5 years later, whereas the percentage of similar nonparticipants earning at least SGA was relatively flat during the same time. Specifically, we estimated that 2.9 percent of Ticket participants earned at SGA or more compared to 2.7 percent of similar

³⁶One year before service started, Ticket participants earned \$512 more per year on average than similar nonparticipants. For further information on this comparison and our methodology, see appendix II.

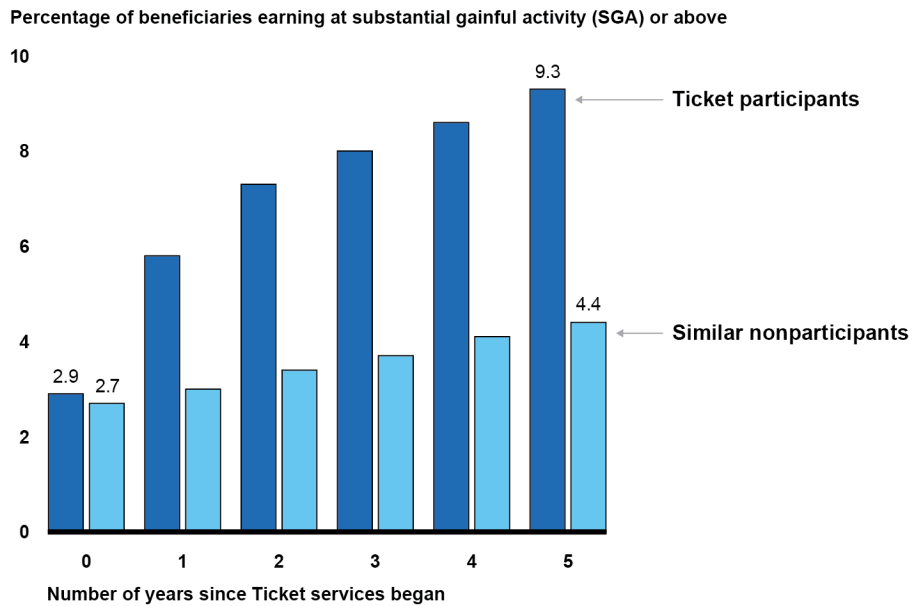
³⁷These averages also include individuals with no earnings. We chose to compare participants at the 5-year mark because, according to SSA officials, it can take several years for individuals to complete their participation in Ticket and experience the benefits of the program. All dollar amounts are inflation adjusted to 2020.

³⁸We used annual earnings data based on information reported to the Internal Revenue Service for this analysis. Because these data do not include information on hours, weeks, or months worked in a given year, we could not determine how individual earnings were distributed over the course of a year or whether individuals were working full-time, part-time, or intermittently.

³⁹Because the data comprised annual, not monthly, earnings, we used the SGA for nonblind individuals in the year being analyzed and multiplied it by 12 to calculate an annualized SGA amount. To compare participants to similar nonparticipants, we matched each Ticket participant to an actual nonparticipant of the same gender, disabling impairment, and state of residence; who had participated in the same SSA disability program; and who was similar on a set of other attributes such as age at disability entitlement. For more information on the methods used to identify similar nonparticipants for each participant, see appendix I.

nonparticipants when Ticket services began. Five years later, 9.3 percent of Ticket participants earned at SGA or more compared to 4.4 percent of similar nonparticipants (see fig. 4).

Figure 4: Percentage of Disability Beneficiaries Earning at SGA or More, by Year since Starting Ticket Services versus Similar Nonparticipants



Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Data table for Figure 4: Percentage of Disability Beneficiaries Earning at SGA or More, by Year since Starting Ticket Services versus Similar Nonparticipants

Number of years since Ticket services began	Ticket participants	Similar nonparticipants
0	2.9	2.7
1	5.8	3
2	7.3	3.4
3	8	3.7
4	8.6	4.1

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Note: Under thresholds set annually by SSA, individuals are considered engaged in substantial gainful activity (SGA) if they had earnings in 2021 above \$1,310 per month for nonblind beneficiaries. Because the data comprised annual, not monthly, earnings, we used the SGA for nonblind individuals in the year being analyzed and multiplied it by 12 to calculate an annualized SGA amount. Estimates of percentages for Ticket to Work and Self-Sufficiency program (Ticket) participants and similar nonparticipants, as well as the differences between the two groups, were statistically significant at the 5 percent level.

In addition to earnings, Ticket participants also likely experienced a variety of non-monetary benefits from working. While we did not attempt to quantify or measure these non-monetary benefits, we reviewed 21 studies that indicated working and participating in employment programs—like the activities provided by Ticket—have important non-monetary benefits for people living with disabilities.⁴⁰ The following themes emerged from our review:

Increased social contact. The most frequently described non-monetary benefits were under the umbrella of increased social contact: 11 of 21 articles we reviewed mentioned better relationships, greater inclusion in society, and/or decreased loneliness and isolation as potential benefits of working for individuals with disabilities. For example, one study that used nationally-representative data to compare the effects of employment on people with and without disabilities noted that employment may be particularly important for members of historically marginalized groups, such as people with disabilities, who are often socially isolated due to their condition.⁴¹

Sense of purpose. Nine of the 21 articles found that working provided individuals with disabilities with an increased sense of purpose, hope, optimism, identity, personal achievement, or structure in their lives. For instance, a 2018 study based on interviews and observations of adults with schizophrenia reported that a sense of purpose and identity were important benefits of working.⁴²

Improvement of symptoms. Eight of the 21 articles mentioned the potentially therapeutic effect of work, particularly for individuals

⁴⁰Many articles mentioned more than one category of benefits associated with working. The themes listed are not mutually exclusive. Some of the nonmonetary benefits, such as improved health, may also come with monetary benefits, such as reduced health care spending, that we also did not quantify. For more information on how we conducted the literature review and a list of the articles, see appendix I.

⁴¹Lisa Schur, "The difference a job makes: The effects of employment among people with disabilities," *Journal of Economic Issues*, vol. XXXVI, no. 2 (2002): 339-347.

⁴²Lydia P. Ogden, "'To fill the emptiness': The importance of work in life history narratives of older adults with schizophrenia-spectrum diagnoses," *Qualitative Social Work* 17, no. 4 (2018): 556-576.

with mental illness. For example, a cost-savings analysis of an employment program for individuals with psychiatric disabilities found that because work improved psychiatric symptoms, savings were largely attributable to a reduction in the use of more costly services, such as inpatient care and therapy.⁴³ Another article stated that staying isolated at home was perceived to exacerbate mental health problems, whereas going into a workplace helped people to minimize their symptoms.⁴⁴ Several studies also showed reduced use of mental health services, implying better clinical as well as functional outcomes. In addition, several controlled trials found that individuals who received individual placement and support used a hospital for fewer days than individuals in the control group.⁴⁵

Improved quality of life. Nine of 21 articles found that work increased quality of life for individuals with disabilities, although some of the findings were qualitative or correlational in nature. For example, one article noted that steady work leads to enhanced self-esteem and higher quality of life. In addition to improved quality of life, other benefits of working mentioned in the articles we reviewed included improved self-esteem and self-image, improved well-being and physical health, and increased autonomy and independence.

Disability Beneficiaries Face Obstacles to Participating in Ticket to Work and Leaving Disability Rolls

Although some Ticket participants have experienced monetary and non-monetary benefits from work, the majority of disability beneficiaries do not work. This is also true of Ticket participants. In fact, the majority of Ticket

⁴³E. Sally Rogers, Kenneth Sciarappa, Kim MacDonald-Wilson, and Karen Danley, "A benefit-cost analysis of a supported employment model for persons with psychiatric disabilities," *Evaluation and Program Planning*, 18, no. 2 (1995): 105-115.

⁴⁴Melanie Boyce, Jenny Secker, Robyn Johnson, Mike Floyd, Bob Grove, Justine Schneider, and Jan Slade. "Mental health service users' experiences of returning to paid employment," *Disability & Society*, 23, no. 1 (2008): 77-88.

⁴⁵Robert E. Drake, Gary R. Bond, Howard H. Goldman, Michael F. Hogan, and Mustafa Karakus, "Individual placement and support services boost employment for people with serious mental illnesses, but funding is lacking," *Health Affairs*, 35, no. 6 (2016): 1098-1105.

participants were unemployed 5 years after starting services. Many disability beneficiaries cannot work regardless of the supports offered through Ticket because of the severity of their disabilities.⁴⁶ Some types of disabilities may allow for part-time or intermittent work, but to get on the disability rolls, all beneficiaries had to demonstrate that they were unable to earn SGA because of their disability.

In addition to their disabling condition, disability beneficiaries face many other obstacles to working. These include the lack of accessible workplaces, lack of job opportunities, and stereotypes about what individuals with disabilities can achieve.⁴⁷ Perceptions held by employers and physicians and the individuals themselves may create unnecessarily low expectations about individuals' abilities to participate in the workforce, and can affect whether an individual finds or retains employment.⁴⁸

The structure of disability benefits and related work incentives may also contribute to disability beneficiaries' reluctance to participate in Ticket despite the potential benefits. In our interviews with disability policy experts and program officials, as well as in our analysis of prior GAO and SSA reports, we consistently found three key disincentives to work that disability beneficiaries faced: (1) loss of cash and medical benefits, (2) overpayments, and (3) complexity of rules surrounding work.

Loss of cash and medical benefits. Based on our interviews with 14 disability experts and SSA officials, and literature we reviewed, one of the key disincentives to working and participating in Ticket is the possibility of losing cash and medical benefits. Specifically, DI beneficiaries earning above SGA in a given month lose all of their cash benefits (known as the earnings "cash cliff"),⁴⁹ while SSI beneficiaries' benefits are generally reduced \$1 for every \$2 of monthly earnings greater than \$65. Further,

⁴⁶Ninety percent of beneficiaries surveyed in 2015 cited their disabling condition as the primary reason they are not working. Social Security Administration, *National beneficiary survey: Disability statistics, 2015* (Washington, D.C.: March 2018).

⁴⁷About a quarter of disability beneficiaries surveyed in 2015 cited inaccessible workplaces as an additional reason for not working. Social Security Administration, *National beneficiary survey: Disability statistics, 2015* (Washington, D.C.: March 2018).

⁴⁸GAO, *Highlights of a Forum, Actions that Could Increase Work Participation for Adults with Disabilities*, [GAO-10-812SP](#) (Washington, D.C.: July 2010).

⁴⁹This loss occurs after a 9-month trial work period during which DI beneficiaries continue receiving benefits regardless of how much beneficiaries earn.

disability beneficiaries who work are also at risk of eventually losing their medical benefits.

Loss of cash benefits

Past SSA research, as well as the Ticket to Work Advisory Panel's final report in 2007, have raised concerns about the cash cliff. The Social Security Advisory Board stated in its 2017 report that both DI and SSI programs effectively impose a high tax on work—100 percent and 50 percent, respectively—exceeding those of other federal assistance programs.⁵⁰ Additionally, GAO work over the past 25 years has reported on the variety of ways that the structure of DI and SSI benefits discourages work. For example, in 2010, we reported that concerns have been raised that SSA program rules for receiving benefits—such as tying the definition of SGA to income thresholds—can create incentives to stay out of the workforce, even when work is possible.⁵¹

SSA officials we spoke with said that while the goal of Ticket is to get people off the rolls and reduce dependency on benefits, some beneficiaries may be better off working part-time (i.e., supplementing their benefits with wages that keep their earnings under SGA). However, SSA officials said part-time job placement is not the intent of Ticket and they investigate ENs that have consistently low rates of placement in full-time employment.

Loss of medical benefits

Fear of potentially losing Medicare or Medicaid coverage can be an impediment to increased work for some beneficiaries, particularly those whose disabilities can periodically worsen. In fact, in 2015, 42 percent of recently-employed beneficiaries who reported working fewer hours or earning less than they were able to said they did this because they wanted to keep Medicare or Medicaid coverage—the most commonly cited reason among

⁵⁰Social Security Advisory Board, *Statement on the Supplemental Security Income Program: Work Incentives and Work Supports in the SSI Program* (July 2017).

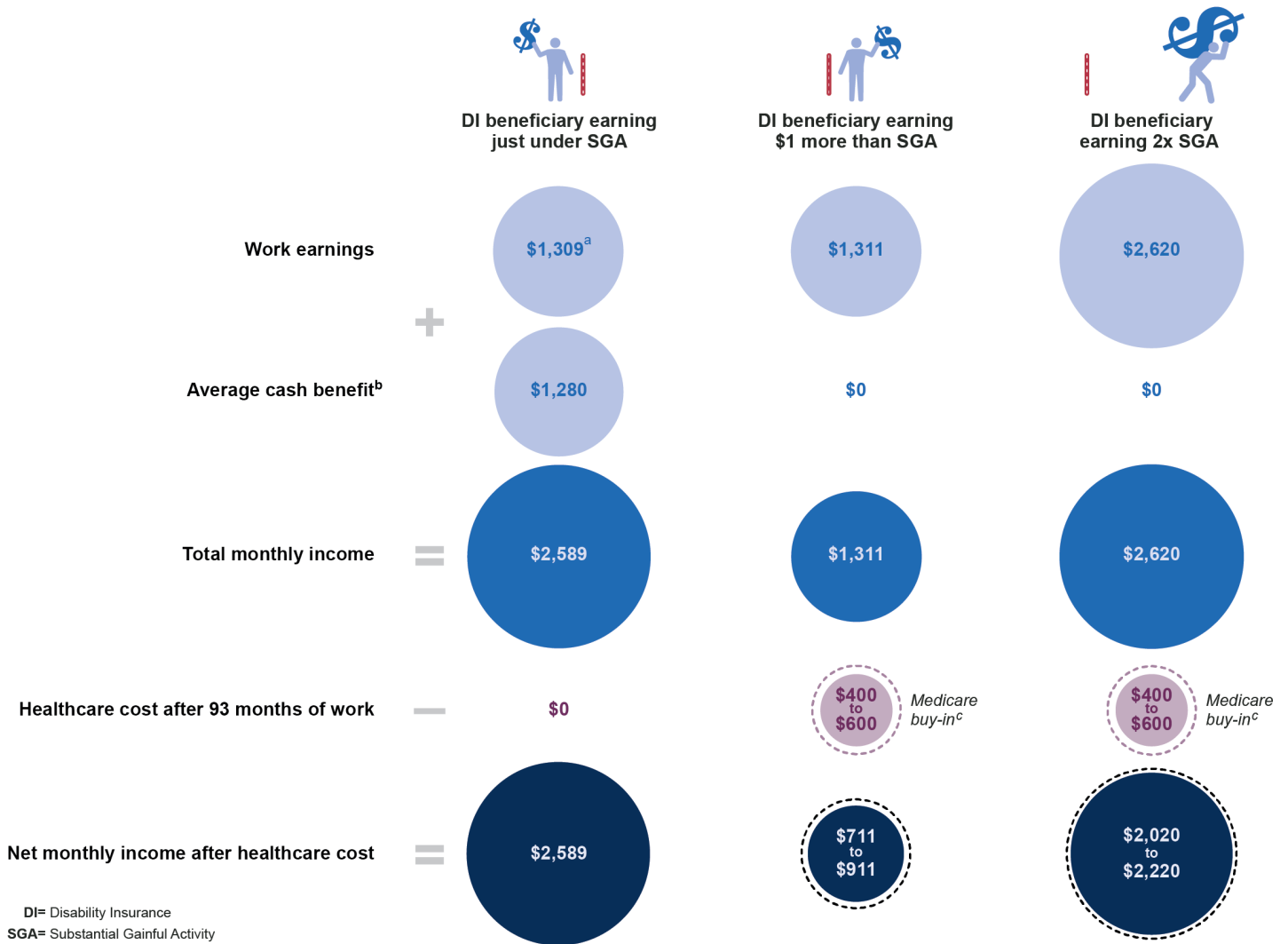
⁵¹[GAO-10-812SP](#).

surveyed beneficiaries.⁵² In addition, an expert panel convened by SSA in 2019 stated that the fear of losing medical benefits poses a strong disincentive to earning above SGA.⁵³ VR officials we spoke with also described beneficiaries' fear of losing medical benefits as a disincentive to working. Participation in Ticket may have been negatively affected because some individuals calculate that the financial upside of working is not worth the risk of losing—and cost of replacing—financial and medical benefits. See figure 5 for a hypothetical example of how keeping earnings below SGA compares favorably to earning twice as much as SGA.

⁵²Social Security Administration, *National beneficiary survey: Disability statistics, 2015* (Washington, D.C.: March 2018).

⁵³Abt Associates, *Post-Entitlement Earnings Simplification Demonstration Technical Experts Panel Meeting Final Report* (Rockville: MD: 2019).

Figure 5: Example of How Staying under SGA Leads to More Total Income for a DI Beneficiary than Earning above SGA



Source: GAO scenario based on Social Security Administration information. | GAO-22-104031

Data table for Figure 5: Example of How Staying under SGA Leads to More Total Income for a DI Beneficiary than Earning above SGA

	DI beneficiary earning just under SGA	DI beneficiary earning \$1 more than SGA	DI beneficiary earning 2x SGA
Work earnings	1309	1311	2620
PLUS Average cash benefit ^b	1280	0	0

	DI beneficiary earning just under SGA	DI beneficiary earning \$1 more than SGA	DI beneficiary earning 2x SGA
EQUALS Total monthly income	2589	1311	2620
MINUS Healthcare cost after 93 months of work	0	400 to 600	400 to 600
EQUALS Net monthly income after healthcare cost	2589	711 to 911	2020 to 2220

DI= Disability Insurance; SGA= Substantial Gainful Activity

Source: GAO scenario based on Social Security Administration and Centers for Medicare & Medicaid Services information. | GAO-22-104031

^aUnder thresholds set annually by SSA, individuals are considered engaged in SGA if they had earnings in 2021 above \$1,310 per month for nonblind beneficiaries and \$2,190 per month for blind beneficiaries.

^bAs of April 2021, the average cash benefit for DI participants was \$1,280.

^cWe assume healthcare costs consist of the Medicare premium buy-in for hospital insurance (Part A) and medical insurance (Part B). The cost of this premium varies according to individuals' work history and income (see <https://www.medicare.gov/your-medicare-costs/medicare-costs-at-a-glance>), and thus we used a range of approximate costs. In addition to monthly premiums, there is also a hospitalization deductible of \$1,484 per benefit period and coinsurance costs for long hospital stays, as well as a deductible and 20 percent co-pay for most medical services.

Overpayments. According to experts and SSA officials we interviewed and what was highlighted during a 2007 beneficiary summit, another key disincentive to participating in Ticket or attempting to return to work is the potential for benefit overpayment, which often results in beneficiaries incurring debt to SSA.⁵⁴ Overpayments can occur when beneficiaries fail to report earnings or SSA delays the processing of reported earnings. In addition, a 2015 GAO report identified a number of weaknesses in SSA processes that could lead to DI overpayments, and issued seven recommendations to reduce the incidence of overpayments.⁵⁵ Overpayments in disability benefits, in turn, can result in demands for

⁵⁴The Ticket to Work and Work Incentives Advisory Panel, "Voices for Change: Beneficiaries Paving the Way to Work, A Roadmap to Program Improvement", Beneficiary Summit (Atlanta, GA: February 6-7, 2007). Ticket to Work and Work Incentives Advisory Panel, "Building on the Ticket: A New Paradigm for Investing in Economic Self-Sufficiency for People with Significant Disabilities", Final Report to the President and Congress, Year Eight of the Panel (December 2007).

⁵⁵GAO, *Disability Insurance: SSA Could Do More to Prevent Overpayments or Incorrect Waivers to Beneficiaries*, GAO-16-34 (Washington, D.C.: Oct. 29, 2015). As of August 2021, SSA took sufficient action to address five of the seven recommendations; however one recommendation—to further help beneficiaries navigate complex work reporting requirements—remains open, and another—to oversee staff efforts to screen work reports—was closed as unimplemented.

repayment sent to beneficiaries. One VR official we spoke with shared the example of a client who had a good initial experience with a service provider and was placed in a paying job, only to be sent a \$28,000 repayment notice from SSA due to earnings above SGA. Officials with SSA's Office of Research, Demonstration, and Employment Support said that beneficiaries' fear of overpayments may constitute a barrier to participating in employment, but they consider addressing overpayments to be a wage reporting systems issue, and therefore outside the scope of Ticket.

Research based on SSA's internal data has estimated that between 70 and 80 percent of DI beneficiaries with earnings sufficient to affect their benefits receive overpayments which often accumulate to thousands of dollars—a significant hardship to repay for individuals with limited income. Specifically, in 2019, an SSA research publication found that of individuals who had at least one month of benefit suspension due to work from 2010 to 2012, 71 percent were overpaid.⁵⁶ It found that overpayments lasted for a median of 9 months and accrued a median amount of \$9,282. In 2018, SSA's OIG reported that, 77 of 97 sampled beneficiaries who earned above SGA (79 percent) were overpaid. Additionally, among overpaid individuals in the sample who reported their earnings in a timely manner, SSA took an average of 155 days (approximately 5 months) to process reported earnings and assess the effect on benefits. In some cases, it took the agency 6-10 months. The OIG concluded that this led to overpayments that could have been avoided.⁵⁷

Complexity of work incentive rules. The complexity of the work incentives may also be a barrier to participation in Ticket. An expert panel convened by SSA in 2019 found that the complexity of work rules constituted a barrier to returning to work for beneficiaries and an administrative challenge to SSA.⁵⁸ SSA's guide to work incentives for DI and SSI beneficiaries is over 50 pages. According to experts we

⁵⁶Denise Hoffman, Benjamin Fischer, John T. Jones, Andrew McGuirk, and Miriam Loewenberg, "Work-Related Overpayments to Social Security Disability Insurance Beneficiaries: Prevalence and Descriptive Statistics," *Social Security Bulletin*, vol. 79, no. 2 (2019): 65.

⁵⁷SSA Office of the Inspector General, *Incorrect Payments to Disabled Beneficiaries Who Return to Work*, Audit Report No. A-07-17-50131 (May 2018).

⁵⁸Abt Associates, *Post-Entitlement Earnings Simplification Demonstration Technical Experts Panel Meeting Final Report* (Rockville: MD: 2019).

interviewed, these work incentives are complex and beneficiaries can get different answers depending on who they talk to. For example, one disability advocate said that the work incentives are so numerous and complex that even within SSA only a small number of specialists understand them. In addition, a VR official said many of those tasked with administering Ticket struggle to accurately and persuasively communicate its benefits to beneficiaries.

SSA has taken various actions to address this complexity. For example, SSA's Work Incentives Planning and Assistance program, which consists of about 74 projects nationwide, provides free benefits counseling and strives to help beneficiaries navigate the agency's complex rules. In addition, in its fiscal year 2021 budget request, SSA submitted a legislative proposal to simplify several provisions for working DI beneficiaries.⁵⁹ The proposal would eliminate several work incentives in favor of a simplified structure and a more gradual reduction of disability benefits as beneficiaries' earnings increase.

Ticket to Work Costs Exceeded Estimated Savings in Disability Benefits, and Benefit Overpayments Further Reduced Savings

Ticket Costs Have Exceeded Savings in Benefits since Program's Inception

According to our analysis of SSA's most recent data, the estimated costs to SSA of Ticket to Work exceeded the estimated savings in disability benefits paid by \$806 million from 2002 through 2015.⁶⁰ The costs of Ticket included service provider payments and administrative costs. The savings were the estimated reduced disability benefits to Ticket

⁵⁹Social Security Administration, *FY 2021 Congressional Justification*, <https://www.ssa.gov/budget/FY21Files/2021BO.pdf>.

⁶⁰The act that established Ticket mentions the potential to bring about significant savings to Social Security Trust Funds by individuals with disabilities reducing or eliminating their disability benefits. However, the program was not specifically designed or required to be self-financing.

participants that exceeded those of similar nonparticipants.⁶¹ After participating in Ticket, participants were entitled to about \$568 million less in benefits than similar nonparticipants from 2002 through 2015.⁶² During this time, SSA spent about \$896 million in payments to Ticket service providers and \$479 million in administrative costs (see table 1).

Table 1: Estimated SSA Savings of Ticket to Work and Self-Sufficiency Program (Ticket), 2002-2015

	2002-2015 savings, in millions of 2020 dollars
Reduced disability benefits to participants	568
Payments to service providers	-896
Administrative costs	-479
Total	-806

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

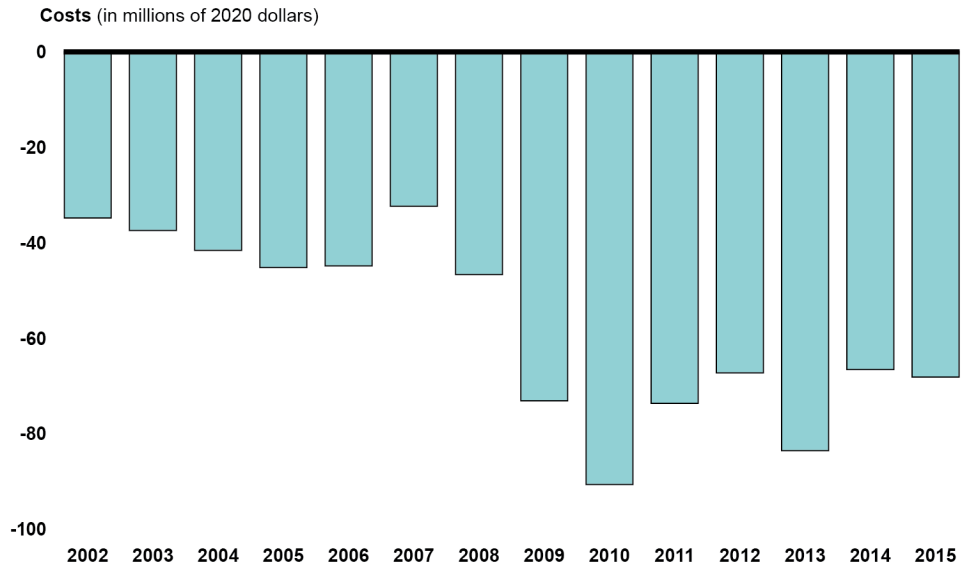
Note: Benefit savings were estimated by comparing benefit entitlements for Ticket participants to benefit entitlements for similar nonparticipants over the same time period. The estimate of savings from reduced disability benefits was statistically significant at the 5 percent level. The margin of error for the estimate of reduced disability benefits to participants was +/- \$77 million. Numbers do not total exactly because of rounding.

Ticket generated net losses for SSA in each year we analyzed. That is, the savings in reduced benefits to Ticket participants did not outweigh the costs of payments to Ticket service providers and administrative costs. On this basis, the program had estimated net losses each year from 2002 through 2015 (see fig. 6).

⁶¹We limited our analysis to the costs and savings incurred by SSA. Additional costs and savings to the federal government (e.g., forgone Medicare benefits) or individuals (e.g., changes in healthcare costs) were outside the scope of our analysis. Our estimates are based on a statistical modeling approach for comparing Ticket participants to nonparticipants. While our model improves upon approaches in other studies that did not control for differing characteristics of participants and nonparticipants, it cannot account for all the factors that may have influenced decisions to participate in Ticket. Within the constraints of our model, results presented in this report were statistically significant at the 5 percent level unless otherwise noted. For more information on the matching methodology we used to construct the group of similar nonparticipants and estimate savings, as well as the limitations of our analysis, see appendix I. We considered alternative approaches to analyzing the savings from Ticket such as using a “benefits forgone for work” variable developed by SSA; however, unlike our approach, this variable ignores changes to benefits associated with non-work reasons such as medical recovery. Appendix III provides savings estimates derived from this and other approaches.

⁶²Despite having data through 2018, we analyzed data through 2015 because, according to SSA officials, key elements such as the benefits due to beneficiaries are generally not reliable for 3 years pending annual, retrospective updates. We provide analysis through 2018 in appendix III.

Figure 6: Estimated Net Loss to SSA from Ticket to Work and Self-Sufficiency Program (Ticket), by Year, 2002-2015



Source: GAO analysis of Social Security Administration data. | GAO-22-104031

Data table for Figure 6: Estimated Net Loss to SSA from Ticket to Work and Self-Sufficiency Program (Ticket), by Year, 2002-2015

Year	Costs (in millions of 2020 dollars)
2002	-34.83
2003	-37.45
2004	-41.61
2005	-45.22
2006	-44.86
2007	-32.38
2008	-46.7
2009	-73.13
2010	-90.7
2011	-73.69
2012	-67.29
2013	-83.61
2014	-66.58
2015	-68.18

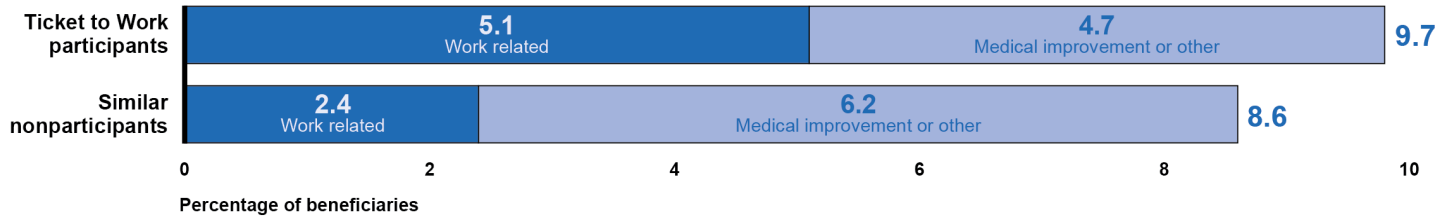
Source: GAO analysis of Social Security Administration data. | GAO-22-104031

Note: Benefit savings were estimated by comparing benefit entitlements for Ticket participants to benefit entitlements for similar nonparticipants over the same time period using Social Security

Administration (SSA) data on monthly disability benefits due to recipients. Savings estimates were all statistically significant at the 5 percent level for each year except 2005 and the margin of error for each year ranged from a minimum of +/- \$1.2 million for 2002 to a maximum of +/- \$12.3 million for 2015.

The percentage of Ticket participants who left the disability rolls was modestly higher than that of similar nonparticipants. However, this positive effect was not large enough to outweigh SSA costs. According to our analysis, 5 years after starting the program, a greater percentage of participants than nonparticipants left the rolls due to work (5.1 versus 2.4 percent). However, the savings from beneficiaries leaving the rolls due to work were partially offset by the decline in beneficiaries leaving the rolls for other reasons. For example, because Ticket participants were generally exempt from receiving medical continuing disability reviews (CDR), and according to an SSA researcher we spoke with, some of them may have left the rolls due to a CDR had they not participated in Ticket. In fact, Ticket participants were 1.5 percentage points less likely to leave the rolls because of medical improvement or other reasons than similar nonparticipants 5 years after starting the program (see fig. 7).⁶³

Figure 7: Percentage of Beneficiaries Who Left SSA’s Disability Rolls 5 Years after Starting Ticket to Work versus Similar Nonparticipants, by Reason, 2002-2015



Ticket to Work = Ticket to Work and Self-Sufficiency program

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Data table for Figure 7: Percentage of Beneficiaries Who Left SSA’s Disability Rolls 5 Years after Starting Ticket to Work versus Similar Nonparticipants, by Reason, 2002-2015

	Work related	Medical improvement or other	Total
Ticket to Work participants	5.1	4.7	9.7
Similar nonparticipants	2.4	6.2	8.6

Ticket to Work= Ticket to Work and Self-Sufficiency program

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

⁶³Examples of other reasons include unknown whereabouts and prison.

Note: Percentages were computed for Ticket to Work participants who began the program from 2002 through 2010 at 5 years after they started Ticket to Work and for a sample of similar nonparticipants. Estimates of percentages for participants and similar nonparticipants, as well as the differences between the two groups, were statistically significant at the 5 percent level. Parts may not sum to total because of rounding.

Among Ticket participants, those who left the disability rolls tended to differ from those who did not in various ways. For example, SSI participants did not experience the same success in Ticket as DI participants did. This difference is likely related to the fact that SSI recipients generally have less employment experience because they do not necessarily have a work history as DI beneficiaries do. Additionally, Ticket participants with certain conditions were more likely to leave the rolls and had lower average benefit amounts than similar nonparticipants. For example, individuals with musculoskeletal disorders left the rolls at a higher rate or collected less in benefits after participating in Ticket than matched nonparticipants, while Ticket participants with intellectual disabilities left the rolls at a lower rate than their matched nonparticipants. Lastly, Ticket cohorts that started services from 2007 through 2009 were less likely to benefit from the program, potentially because their employment was affected by the 2007-2009 recession and its negative effect on the availability of jobs.⁶⁴

Our analysis was retrospective and focused on costs and savings from 2002 through 2015; however, individuals who participated in Ticket during this period may or may not generate additional benefit savings relative to nonparticipants in the future. Whether future benefit savings for these past Ticket participants are greater or less than related costs depends on several factors, and estimates of future net savings are highly sensitive to assumptions about those factors. Factors include, but are not limited to:

- **Employment conditions.** Just as the 2007-2009 recession likely had a negative impact on employment prospects for individuals with disabilities and on Ticket savings, future economic conditions will affect employment opportunities for individuals with disabilities. For example, the long-term work effect of COVID-19 pandemic on individuals with disabilities remains to be seen.

⁶⁴According to data from the Current Population Survey, between October 2008 and June 2010, job losses among workers with disabilities far exceeded those of workers without disabilities, confirming prior research that suggests individuals with disabilities are particularly vulnerable to disruptions in the labor market. See Kaye, H. Stephen, "Impact of the 2007-09 Recession on Workers with Disabilities," *Monthly Lab. Rev.* 133 (2010): 19.

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- **Overpayments.** The extent to which SSA is able to prevent and efficiently recover overpayments in disability benefits will continue to affect future savings realized through Ticket.
 - **Rate of beneficiaries leaving (or returning to) the disability rolls.** Savings for Ticket are based in part on how many Ticket participants cease disability benefits beyond the number that would have done so without the program. Estimating the rates at which individuals leave the disability rolls—whether Ticket participants or nonparticipants—is subject to significant uncertainty due to numerous factors such as the impact of CDRs and behavioral changes as individuals age.⁶⁵

Benefit Overpayments to Ticket Participants Likely Further Reduced Program Savings

The true net savings to SSA from Ticket may be lower than our estimates because our estimates do not include benefit overpayments to working participants and the costs of recovering those overpayments. Ticket participants are more likely to receive overpayments than nonparticipants because of their greater likelihood of earnings reducing their benefit amount.

According to our estimates, in 2002 through 2015, Ticket participants were twice as likely to receive overpayments than similar nonparticipants were.⁶⁶ This is because Ticket participants are more likely to earn above the SGA limit than nonparticipants. Specifically, an estimated 2.7 percent

⁶⁵This uncertainty is compounded when the key variable is not the absolute rates of individuals leaving the rolls, but rather the *differences* in rates between two groups—in this case, between Ticket participants and nonparticipants. Small changes in rates for one group can have a disproportionate effect on the projected *differences* between the two groups, sometimes even changing which group has more beneficiaries on the rolls. For example, the number of CDRs conducted affects the rates at which nonparticipant beneficiaries leave the rolls, but does not affect the rates for participants, who are generally exempt from these reviews.

⁶⁶Our estimates of overpayments were derived from historical SSA benefit data that were not designed to track overpayments to beneficiaries. Nonetheless, they are the best available data on the population of Ticket participants, and provide a reasonable indicator of the extent to which overpayments occur among them. For the purposes of this analysis, we defined an overpayment as a circumstance in which an individual received a benefit payment when they were not entitled to receive benefits. We did not assess whether individuals were entitled to a benefit or how much they were entitled to; rather, we relied on SSA data regarding benefits paid and benefits due.

of all Ticket participants received overpayments 5 years after receiving services compared with 1.2 percent of all similar nonparticipants.⁶⁷ Earning above SGA puts people at risk for an overpayment because individuals may not report their earnings right away, and when they do, SSA may lag in receiving and processing beneficiaries' new earnings information. Based on our analysis of SSA data, among Ticket participants who began the program from 2002 through 2010 and worked enough to temporarily or permanently leave the rolls over a 5-year period after starting the program, we estimate that approximately 96 percent received an overpayment of disability benefits.

Overpayments to Ticket participants cost SSA in administrative expenses to recover overpayments, and some overpayments are not recovered at all. Both represent a cost of Ticket. Based on the data that are available on overpayments and overpayment recovery for disability recipients in general, we estimate that, of the \$768 million in estimated overpayments, approximately \$133 million to \$169 million were unrecoverable costs. We were unable to estimate this precisely because SSA's research data do not explicitly track overpayments to and subsequent repayment by beneficiaries, and no data are available on overpayment waiver rates to Ticket participants specifically.⁶⁸

SSA has had challenges preventing overpayments in the past and GAO has made a number of recommendations related to this issue, but

⁶⁷Five years after receiving Ticket services, Ticket participants received benefits in almost the same proportion as similar nonparticipants: 93.0 percent of Ticket participants received any benefit compared to 92.7 percent of similar nonparticipants. However, only 90.3 percent of Ticket participants were actually entitled to benefits according to SSA data, meaning that approximately 2.7 percent of Ticket participants likely received overpayments. In comparison, 91.5 percent of similar nonparticipants were entitled to benefits over the same period, with 1.2 percent likely receiving overpayments.

⁶⁸We derived the estimates of overpayments from the Disability Analysis File—which does not explicitly track overpayments—and other sources in the absence of data on overpayments to Ticket participants. For example, in 2015, GAO found that SSA waives about 12 percent of non-work related overpayments, on average, and for work-related overpayments in the DI program, SSA waives about 17 percent. According to published SSA sources, the cost of overpayment recovery is about 6 cents for every \$1 recovered. We estimated the \$133 million to \$169 million cost of overpayments by applying published rates of waived overpayments and the cost of overpayment recovery to the estimated \$768 million in overpayments. For more information on our analysis of overpayments, see appendix I.

challenges remain.⁶⁹ For example, in April 2020, we recommended that SSA develop and implement a process to measure the effectiveness of the agency's corrective actions for improper payments in DI and SSI. The agency agreed with this recommendation and, as of April 2021, is identifying and measuring the root causes of improper payments including overpayments, but noted challenges in isolating the impact of a single corrective action. Additionally, despite some progress in recent years in addressing overpayments, for example, by identifying working DI beneficiaries at risk of being overpaid, SSA management has not resolved lags in updating its information when beneficiaries self-report income or when SSA receives employer-reported data on earnings.⁷⁰ In its annual performance plan for fiscal year 2021, SSA called for improving program integrity as a focus area and planned to address the root causes of improper payments by improving wage reporting.⁷¹ Its efforts to enhance wage reporting capabilities are ongoing.⁷²

Despite these efforts, overpayments continue to be an issue for Ticket participants. Officials at one EN we spoke with stated that they spend a lot of time dealing with overpayments and that, despite their experience in helping Ticket participants prevent and resolve overpayments, there are still challenges. They stated that overpayments can go on for months after individuals have reported their income. Moreover, according to SSA's Ticket to Work blog, individuals participating in Ticket may have misconceptions about wage reporting that are specific to the program. For example, the blog stated that Ticket participants may falsely believe that SSA is aware of their earnings by virtue of their being in the program or

⁶⁹See, for example, GAO's current list of open priority recommendations for SSA, which includes three related to overpayments. GAO, *Priority Open Recommendations: Social Security Administration*, [GAO-21-430PR](#) (Washington, D.C.: June 3, 2021).

⁷⁰The SSA OIG stated in its 2018 report that once beneficiaries report their earnings, SSA's processing of that information is beyond the beneficiaries' control and they are likely to be unaware of the effect on their benefits. They may assume that SSA will stop their benefits when appropriate. SSA Office of the Inspector General, *Incorrect Payments to Disabled Beneficiaries Who Return to Work*, Audit Report No. A-07-17-50131 (Baltimore, MD: 2018).

⁷¹Social Security Administration, *Annual Performance Report Fiscal Years 2019-2021: Annual Performance Plan for Fiscal Year 2021*.

⁷²In 2016, SSA launched a pilot to decrease the time to benefit cessation for those individuals who report earnings online through the Wage Reporting Pilot, which involves gathering more timely data through a wage reporting app. To date, SSA has not reported on the results of this pilot.

that their service provider is reporting their wages for them.⁷³ In this way, Ticket participants face unique circumstances relative to other beneficiaries regarding overpayments.

Federal guidance calls for programs that are susceptible to significant improper payments to ensure that root causes are identified and that effective plans exist to address them.⁷⁴ In addition, SSA's OIG recommended that SSA annually review its existing corrective actions on improper payments to determine whether any action can be intensified or expanded in order to yield a higher return on investment in terms of reduced or prevented improper payments.⁷⁵ However, SSA has not conducted a root cause analysis that identifies the key reasons overpayments occur among Ticket participants, which may be different for other working beneficiaries. According to SSA officials, the agency has not yet conducted an analysis of overpayments specific to Ticket because Ticket participants are not easily identifiable in current overpayment data, and designing a study of improper payments to Ticket participants specifically would take time and resources to develop and execute.

Overpayments negatively affect SSA and Ticket in several ways. SSA loses millions of dollars annually from overpayments to Ticket participants who as a group are more likely to earn at or above SGA than other beneficiaries. However, SSA's plans do not include corrective actions specifically for this group, thus the agency may be inefficiently using its

⁷³Social Security Administration, Ticket to Work Blog, "Money Mondays: Wage Reporting - Myths, Tips and Ticket to Work" (May 15, 2017), accessed August 10, 2021, <https://choosework.ssa.gov/blog/2017-05-15-mm-wage-reporting-myths-tips-and-ticket-to-work>.

⁷⁴Office of Management and Budget, *Appendix C to OMB Circular A-123, Requirements for Payment Integrity Improvement*, OMB Memorandum M-21-19 (Washington, D.C.: Mar. 5, 2021). Overpayments are one type of improper payment, which are defined as any payment that should not have been made or that was made in an incorrect amount (including overpayments and underpayments) under statutory, contractual, administrative, or other legally applicable requirements. Additionally, not all overpayments are improper payments. We did not conduct a complete analysis of improper payments or examine SSA data that specifically track improper payments. Prior GAO work has focused on SSA overpayments (see *Disability Insurance: SSA Could Do More to Prevent Overpayments or Incorrect Waivers to Beneficiaries*, [GAO-16-34](#) (Washington, D.C.: Oct. 29, 2015) and improper payments more broadly (see *Payment Integrity: Selected Agencies Should Improve Efforts to Evaluate Effectiveness of Corrective Actions to Reduce Improper Payments*, [GAO-20-336](#) (Washington, D.C.: Apr. 1, 2020).

⁷⁵SSA Office of the Inspector General, *The Social Security Administration's Compliance with the Improper Payments Elimination and Recovery Improvement Act of 2012 in the Fiscal Year 2016 Agency Financial Report*, A-15-17-50255 (Washington, D.C.: May 2017).

resources to address overpayments. Moreover, Ticket participants are disproportionately burdened by overpayments. Participants who have achieved the stated goals of Ticket and reported their income correctly may nevertheless receive overpayments for many months, which they then have to pay back. Overpayments may be especially burdensome if the recipients were not aware that they were overpaid and spent the money. Ticket service providers also dedicate resources to helping participants manage overpayments. Finally, fear of overpayment debt may deter other beneficiaries from participating in Ticket, which further reduces the program's effectiveness.

Conclusions

Part of the goal of Ticket to Work was to expand employment services and opportunities for disability beneficiaries, and our analysis indicates that Ticket participants overall experienced modest employment gains compared to similar nonparticipants. Although not an explicit goal of the program, Ticket has not yielded net savings for SSA according to our estimates. However, past participants could potentially generate future savings.

Our analysis also demonstrates that benefit overpayments disproportionately affect Ticket participants because they were more likely to have earnings above SGA. Ticket participants receiving overpayments may include those who followed the program rules by appropriately reporting their earnings in a timely manner. Still others may have left the disability rolls because of their earnings, consistent with the vision of the program, but then were burdened by repayment obligations to SSA. Until SSA improves its efforts to prevent overpayments among Ticket participants specifically, it will continue burdening many beneficiaries who succeed in the program, and annually forgo millions of dollars in potential savings for the agency and taxpayers. In addition, the status quo may deter other beneficiaries from participating in Ticket and reaping the monetary and non-monetary benefits of work. Moreover, until SSA targets some of its overpayment prevention efforts in a way that considers the disproportionate receipt of overpayments by Ticket participants versus disability beneficiaries generally, the agency may be combating overpayments inefficiently.

Recommendation for Executive Action

The Commissioner of Social Security should identify the root causes of overpayments to Ticket to Work participants specifically then take appropriate actions to address them. (Recommendation 1)

Agency Comments

We provided a draft of this report to SSA for review and comment. In its comments, reproduced in appendix IV, SSA agreed with our recommendation. SSA also provided technical comments, which we incorporated as appropriate.

In its technical comments, SSA raised concerns about our use of SSA research data to measure overpayments among Ticket participants. While we recognize that these data were not designed to track overpayments, they are the best available data on benefit payments to Ticket participants. Given the concerns raised by experts we interviewed about the effects of overpayments on Ticket participants and prospective participants, we believe that it is important to understand the magnitude of this issue using the best available data. In the report, we state that these data provide reasonable indicators of the extent to which overpayments occur. A detailed explanation of our methods and the steps we took to address some of the limitations in the data can be found in appendix I.

In addition, in its technical comments, SSA agreed that overpayments are a problem for the agency, but added that the problem is separate from Ticket. SSA wrote that overpayments are associated with work, how work is reported, and how long it takes the agency to adjust benefit amounts accordingly. However, we found that Ticket participants are more likely to work than nonparticipants. In addition, participants face unique circumstances due to their ties to service providers. For example, Ticket participants may mistakenly think that service providers report their earnings to SSA. SSA also commented that Ticket should not be judged on how well the agency adjusts benefit payments. However, overpayments to Ticket participants cost the agency disproportionately more than for nonparticipants. Moreover, while the agency views the issue of overpayments as separate from Ticket, participants are not aware of these organizational divisions within SSA; rather their experience with Ticket is affected by the potential to receive an

overpayment. Ultimately, the agency is responsible for administering Ticket and providing accurate benefit payments.

We are sending copies of this report to the appropriate congressional committees, the Acting Commissioner of Social Security, and other interested parties. In addition, the report will be available at no charge on the GAO website at <https://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-7215 or curdae@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

A handwritten signature in black ink, reading "Elizabeth H. Curda". The signature is written in a cursive style with a large, stylized initial "E".

Elizabeth H. Curda
Director, Education, Workforce, and Income Security Issues

List of Committees

The Honorable Ron Wyden
Chairman
The Honorable Mike Crapo
Ranking Member
Committee on Finance
United States Senate

The Honorable Patty Murray
Chair
The Honorable Roy Blunt
Ranking Member
Subcommittee on Labor, Health and Human Services, Education, and
Related Agencies
Committee on Appropriations
United States Senate

The Honorable Richard E. Neal
Chairman
The Honorable Kevin Brady
Ranking Member
Committee on Ways and Means
House of Representatives

The Honorable Rosa DeLauro
Chairwoman
The Honorable Tom Cole
Ranking Member
Subcommittee on Labor, Health and Human Services, Education, and
Related Agencies
Committee on Appropriations
House of Representatives

Appendix I: Scope and Methodology

In this review of the Ticket to Work and Self-Sufficiency program (Ticket or Ticket to Work), we addressed three key research objectives: (1) how participation in the Social Security Administration’s (SSA) Ticket changed over time, (2) to what extent Ticket led to increased earnings and other benefits for participants, and (3) how the costs and savings of Ticket compared over time. This appendix provides a detailed account of the data and methods we used to answer these questions. Section 1 describes the key data sources. Sections 2, 3, and 4 describe methods we used to answer the research questions, respectively.

We conducted this performance audit from January 2020 to October 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Section 1: Data Sources and Data Reliability

To answer our research objectives, we used SSA beneficiary and program operations data from the Disability Analysis File (DAF), which SSA maintains for research purposes. The DAF is a longitudinal dataset that includes information on Disability Insurance (DI) and Supplemental Security Income (SSI) beneficiaries who were younger than full retirement age and who received disability benefits in any month since 1996. The DAF contains data on the disability determination process, program participation, and use of services provided by employment networks (EN) through Ticket and state vocational rehabilitation agencies (VR). The DAF is updated annually, and we used the most recent year available, the DAF18. The DAF18 contains data on these variables from January 1994 through December 2018, although some variables are only available for a portion of the time range.

In addition to the SSA administrative data in the DAF, we also made use of two files linked to the DAF—the Rehabilitation Services Administration Case Services Report (RSA-911) files and the Master Earnings File

(MEF). Both files are comprised of non-SSA data but are matched to SSA data, and we acquired these files from SSA. To analyze use of services provided by VRs, we used a DAF-linkable version of the RSA-911 file maintained by the Department of Education. These data are based on RSA-911 files on VR cases from 1997 through December 2018. To analyze earnings outcomes of Ticket participants and similar nonparticipants, we used a DAF-linkable version of the MEF. The MEF contains annual earnings data based on tax records collected by the Internal Revenue Service. The DAF-linkable MEF extract contains data on DAF beneficiaries from 1987 through 2018. Table 2 provides an overview of each of these data files.

Table 2: Data Files Used in Analysis of Ticket to Work and Self-Sufficiency Program (Ticket)

Data file	Federal agency responsible for collecting data	Population covered	Type of information in file	Years covered	Review objectives for which data used
Disability Analysis Files from 2018 (DAF18)	Social Security Administration	Disability beneficiaries, including SSI and DI recipients ^a	Beneficiary-level demographic, benefits, Ticket, and payment information	1994-2018	1,2,3
Rehabilitation Services Administration Case Services Report (RSA-911)	Department of Education	Individuals served by state vocational rehabilitation agencies	Vocational rehabilitation case data	1997-2018	1,2,3
Master Earnings File (MEF) ^b	Social Security Administration	Disability beneficiaries, including SSI and DI recipients ^a	Detailed annual earnings data based on W-2 information	1987-2018	2

Source: GAO analysis of Social Security Administration (SSA) and Department of Education data. | GAO-22-104031

^aSSI refers to Supplemental Security Income; DI refers to Disability Insurance.

^bEach year employers and the Internal Revenue Service send information to the SSA on the earnings of the U.S. working population. SSA stores this earnings information as the MEF.

For each of the datasets described above, we conducted a data reliability assessment of selected variables by conducting electronic data tests for completeness and accuracy, reviewing documentation on the dataset, and interviewing knowledgeable officials about how the data were collected and maintained and their appropriate uses. Specifically:

- We tested the completeness, consistency, and logic of the variables we used to measure Ticket eligibility and participation, and other characteristics of Ticket participants and nonparticipants. Our analysis of Ticket participation generally included all individuals who received SSA disability benefits and were eligible, based on SSA’s determination, for Ticket in any month from 2002 through 2018. We excluded a small percentage of beneficiaries in the Ticket files who

did not have demographic data, or who had missing or invalid date of birth or gender information. We also excluded those who had reached full retirement age or died before January 2002. These exclusions accounted for less than 0.5 percent of all Ticket participants, and less than 3 percent of all other beneficiaries in the DAF Ticket files.

- We performed a variety of electronic checks to assess the reliability of the MEF earnings data and took several steps to clean the data. We also adjusted a small fraction of records that reported annual earnings that were very extreme in value under the assumption that these were data errors. We replaced negative dollar amounts with zeros. We also top-coded dollar amounts at \$1 million in 1987 dollars (\$2.2 million in 2020 dollars) by replacing values that were greater than \$1 million with the respective nominal amount that year (based on the Consumer Price Index for Urban Wage Earners and Clerical Workers, or CPI-W). In total, we adjusted one or more earnings records of less than 1 percent of the Ticket participants and of the similar nonparticipants in our analysis.
- We adjusted all dollar amounts to 2020 using the CPI-W, the most recent year that an annual Consumer Price Index adjustment factor was available.
- Although the version of the DAF that we analyzed contains monthly data on disability benefits due through 2018, we restricted our savings analysis from 2002 through 2015 because data for 2016 through 2018 are subject to ongoing revision. According to SSA officials, more recent years of DAF data may be revised as SSA acquires information that may affect beneficiary eligibility and payments, a process known as retrospective updating. According to SSA officials, updates after 3 years are uncommon. However, data less than 3 years old in the DAF may underreport suspensions and terminations, while benefits due may be revised downward after earnings data are updated. The additional results for 2016 through 2018 are provided in appendix III.

We determined that the variables that we used from the data we reviewed were reliable for estimating program participation, disability benefits, and earnings of Ticket participants.

Section 2: Analysis of Participation and Provider Payments

To address our first research objective on how participation and service provider involvement in Ticket changed over time, we analyzed

beneficiary and program operations data from the DAF. We based total Ticket participation on the number of beneficiaries in the DAF who had ever had a Ticket assignment recorded from 2002, when Ticket began, through 2018, the most recent year available at the time of our analysis.

Determining Year Services begin for a Ticket Participant

We measured annual participation in Ticket by the number of beneficiaries who started Ticket each year. To determine the year an individual began Ticket services, we used the earlier of two dates: the Ticket assignment date or the earliest date in the RSA-911 file that the Ticket participant signed a VR Individualized Plan for Employment. Ticket participants with multiple Ticket assignments or whose assignment lasted longer than a year were counted only in the year that they first started services. This differs from some previous analyses that have relied on Ticket assignments and did not use RSA-911 data to examine participation.¹ We used RSA-911 data to determine when Ticket participants started their services to account for a change in how SSA recorded Ticket participation. According to SSA officials, prior to 2010, VRs underreported Ticket assignments. When SSA automated the process through which it records VR-based Ticket participation, many delinquent Ticket assignments were incorrectly recorded as occurring in 2011 and 2012.

Using the RSA-911 enabled us to identify when individuals actually began services with a state VR agency and calculate correct participation for the earlier years of Ticket. However, in some cases, such as when individuals started VR services prior to entitlement for disability benefits, they may be recorded as starting Ticket services prior to receiving benefits. In these cases, for the purposes of counting annual participation in Ticket, we counted the beneficiary as a Ticket participant in the year that the individual was first paid disability benefits (based on monthly benefit data from 1997 through 2018); however, for describing changes in participation over time from 2002 through 2018, we do not report anyone who started VR prior to 2002.

¹Two examples are the SSA Office of the Inspector General 2018 report, *The Social Security Administration's Programs and Projects that Assist Beneficiaries in Returning to Work*, and the Mathematica Policy Research 2011 report (updated in 2013), *Provider Experiences Under the Revised Ticket to Work Regulations*.

Definition of Ticket Nonparticipants

Nonparticipants, as we define them, are beneficiaries in the DAF who were eligible to participate in Ticket according to SSA data, but who never assigned a ticket, or received VR services outside Ticket, from 2002 through 2018 based on our examination of the DAF and DAF-linkable RSA-911 files. To compare Ticket participants to other eligible nonparticipants, we examined the characteristics in the DAF of both groups of these beneficiaries. For characteristics that can change over time, such as the type of disability benefits that individuals receive, we used information from the earliest year that the beneficiary was paid disability benefits—which may predate when the beneficiary started Ticket services—based on monthly data from 1997 through 2018.²

SSA Payments to Service Providers

To analyze SSA payments to service providers we used data in the DAF on payments to ENs and VRs associated with Ticket and SSA's traditional cost-reimbursement programs. To report on changes in the amount of these payments over time, we used information on the provider type associated with the payment (either VR or EN) and the date when the payment was processed.

Limitations

We acknowledge the following limitations with this methodology for reporting on Ticket participation:

- Our analysis of Ticket participation examines beneficiary use of VR and EN employment services only among those who have assigned a ticket. Our approach for counting Ticket participants is consistent with how SSA defines Ticket participation, but it does not capture use of employment services outside Ticket, including those provided by VRs to beneficiaries who never assigned a ticket.
- Some Ticket participants who assigned tickets to ENs also signed an Individualized Plan for Employment with a VR. Since we used the date that the Individualized Plan for Employment was signed to record when Ticket services started, our methodology characterizes any Ticket participant's use of VR services as Ticket participation, including the relatively small number of cases when a ticket was never

²See section 3 for additional information on the variables that we examined.

assigned to a VR but was assigned to an EN. This methodology is appropriate for reporting on Ticket participants' use of employment services by VRs and ENs, but may capture use of services that neither the VR nor the individual considered Ticket participation at the time.³

Section 3: Analysis of Ticket Participants' Earnings

To address our second research objective related to participant earnings, we analyzed data from the DAF and the DAF-linked Master Earnings File (MEF) and used statistical matching methods to estimate Ticket's effect on earnings. To describe the extent to which the program has led to non-quantifiable benefits for participants, we conducted a literature review of 21 peer-reviewed articles as well as interviewed 14 representatives from organizations representing or serving people with disabilities. To provide related context, we reviewed SSA publications, relevant federal laws and regulations, and prior GAO reports; and interviewed SSA officials, service providers, and disability policy experts, including advocates for individuals with disabilities.

Earnings Analysis

To estimate changes in beneficiary earnings attributable to participation in Ticket, we compared the earnings trajectories of Ticket participants before and after starting services to what we expected they would have earned in the absence of participating in the program. To do this, we compared (1) the earnings of Ticket participants to (2) earnings of a group of similar nonparticipants that closely resembled the Ticket participants on a set of characteristics that could be associated with either the likelihood of participating in Ticket services or the expected disability benefits received in subsequent months. We used statistical matching methods to

³About 1.5 percent of Ticket participants from 2002 through 2018 in our analysis signed a VR Individualized Plan for Employment during this period but did not assign a Ticket to a VR. These beneficiaries participated in Ticket by assigning a ticket to an EN, but in most cases we used the date the Individualized Plan for Employment was signed to determine when Ticket services started. This methodology for determining when Ticket services began may also have implications for our analysis of Ticket participants' earnings and program savings and costs. Nevertheless, the relatively small number of Ticket participants who signed a VR Individualized Plan for Employment but did not assign a Ticket to a VR suggests that an alternative methodology in these cases would have little effect on our findings.

construct this comparison group of nonparticipants and adjust for differences between the two groups.

Using these matching methods, we estimated, for each Ticket participant in our analysis the amount of annual earnings in the absence of Ticket services, based on the amount earned by an actual similar nonparticipant. We chose the nonparticipant to have the same gender, disabling impairment, SSA disability program enrollments, and state of residence as the Ticket participant (i.e., we made exact matches between Ticket participants and nonparticipants on these characteristics). We also ensured that similar nonparticipants had similar values on other attributes such as age, primary insurance amount, and prior entitlement for disability benefits. These characteristics did not have to match exactly; however, we ensured that the distribution of these characteristics was similar for participants and nonparticipants (see table 3 for a complete list). We selected the beneficiary characteristics that we used in our matching analysis based on a review of select prior evaluations of Ticket and Vocational Rehabilitation. Appendix II describes our matching methods in more detail.

Table 3: Characteristics Used to Identify and Match Ticket to Work and Self-Sufficiency Program (Ticket) Participants with Similar Nonparticipants

<i>Panel A: Beneficiary characteristics matched exactly between participants and nonparticipants:</i>
Gender
Primary disabling impairment, during the first year paid disability benefits ^{a, b} (8 categories)
SSA program, during month first paid disability benefits ^a (DI, SSI, concurrent)
State of residence, during first year paid disability benefits ^a
Whether entitled to disability benefits as a child
Whether eligible to participate in Ticket by the end of service start year ^c
Whether eligibility for Ticket was established in August 2008 or later by the end of service start year ^c
Whether ever considered expected to medically improve by end of service start year ^c
<i>Panel B: Beneficiary characteristics matched for similar distributions between participants and nonparticipants:</i>
<i>Characteristics recorded during first year paid disability benefits^a</i>
• Adjudicative level of disability decision
• Education level (6 categories)
• Living arrangement for SSI benefits ^d
• Medical improvement code (expected, possible, not expected, or not available)
• Member of SSI coupled
• Number of dependents for DI benefits ^e
• Primary disabling impairment (23 categories)

Appendix I: Scope and Methodology

-
-
- Whether statutorily blind

Characteristics recorded at the end of the year Ticket services started^c

-
- Age
 - Number of years since the earliest entitlement for disability benefits
 - Number of years since first eligible to participate in Ticket
 - Number of years since first paid benefits^a
 - Number of years since onset of disability

Characteristics recorded before the year Ticket services started^c

-
- Whether the individual was in current pay status for disability benefits during the prior year
 - Whether the individual was in current pay status for disability benefits during the year before the prior year
 - Whether the individual was paid disability benefits during the prior year
 - Whether the individual was paid disability benefits during the year before the prior year

Characteristics recorded on earliest disability determination record

-
- Regulatory basis for disability determination
 - SSA program associated with the record (DI or SSI)
 - Whether disability is permanent
 - Whether record source is an 831 form, or 832/833 form

Other characteristics

-
- Age when the individual was first entitled to disability benefits
 - Earliest recorded primary insurance amount, adjusted for changes in the national average wage index over time^e
 - Whether individual was a DI adult child
 - Whether individual was a DI widow^e
 - Whether individual was born outside the United States
-

Source: GAO analysis of Social Security Administration data. | GAO-22-104031

Note: SSA refers to the Social Security Administration; SSI refers to Supplemental Security Income; DI refers to Disability Insurance. We did not estimate or impute data regarding program eligibility, entitlement, or legal disability determinations; any such characteristics were determined by SSA and recorded in the Disability Analysis File (DAF).

^aWe measured when individuals were paid disability benefits using monthly payment data from 1997 through 2018.

^bWe measured each individual's primary disabling impairment during the year that they were first paid disability benefits (based on monthly data from 1997 through 2018) using a variable in the DAF that SSA constructed from various administrative source files. In consultation with the DAF documentation, we recoded the raw impairment information into 23 categories, including unknown or missing, used by SSA in development of the SSI Annual Statistical Supplement. We required exact matches on a version of this variable that we further aggregated into 8 categories based on a grouping in the 2015 DAF Public Use Files. We also matched the distribution of the 23-category version of the variable.

^cFor Ticket participants who started services after they were first paid benefits, we derived characteristics relative to when they started services using either the Ticket assignment date, or the earliest date they signed a Vocational Rehabilitation Individualized Plan for Employment, whichever came first. For those who started services prior to when they were first paid benefits, we instead derived these variables using the year they were first paid benefits.

^dUsed only for individuals who were paid SSI benefits (including concurrent beneficiaries).

^eUsed only for individuals who were paid DI benefits (including concurrent beneficiaries).

We measured Ticket participants' and nonparticipants' annual earnings using data in the DAF-linkable MEF, which contains information from tax records. This file includes all workers with earnings subject to federal tax. The variables from this file that we used to measure annual earnings combines total earnings from each employer and self-employment in a given year.

We measured the percentage of Ticket participants and similar nonparticipants who were employed at substantial gainful activity (SGA) or above using historical information from SSA on monthly SGA amounts for nonblind individuals.⁴ For example, to compute the number of Ticket participants employed at SGA or above in a given year, we annualized the respective monthly SGA amount and compared it to the participants' annual earnings.

Earnings: Study Population and Exclusions

We conducted our earnings analysis on the same samples of Ticket participants and similar nonparticipants that we used in our analysis of reduced disability benefits (see section 4), but excluded some individuals to facilitate comparisons before and after starting Ticket services. We excluded from our earnings analysis Ticket participants who started services before they were first paid disability benefits (based on monthly data from 1997 through 2018) to isolate Ticket impacts from other changes to individuals' earnings before they got on the rolls. We also restricted our analysis to Ticket participants who started services from 2002 through 2013—excluding those who started in 2014 or later—so that each participant in our analysis would have at least 5 years of data after starting services for us to examine. For this reason, we also excluded participants who reached full retirement age within 5 years of starting services. We applied these restrictions to the sample of similar nonparticipants, and excluded those who were matched to one of the excluded Ticket participants, to maintain comparability between the two samples. As a result of one of these restrictions, we excluded 34 percent of the Ticket participants, and 33 percent of the similar nonparticipants that we had included in our benefits analysis.

⁴For 2021, SSA defined SGA as earning above \$1,310 per month for nonblind individuals.

Review of Non-monetary Benefits

To collect information on potential non-monetary benefits Ticket participants may experience, we conducted a literature review of academic studies. We identified the majority of the studies we reviewed through systematic searches of databases such as ProQuest, Scopus, and EBSCO using search terms such as “ticket to work,” “disability,” “work,” “employment,” “non-monetary,” “non-pecuniary,” and “psychological,” among others. We searched for scholarly and peer-reviewed publications, government reports, and think tank reports. We also reviewed studies recommended during expert interviews as well as some included in the bibliographies of key studies on the topic of the nonmonetary benefits of work for individuals with disabilities.

We used three criteria to target our literature search. To be included, studies had to:

1. define or identify non-monetary benefits of employment for individuals with disabilities using sufficiently reliable qualitative or quantitative methods;
2. be peer-reviewed papers or government reports; and
3. be published domestically or internationally.

This search yielded a total of 44 potential sources of information. Each article was reviewed by at least two analysts for the sufficiency and reliability of its methods for the purposes of providing information regarding the non-monetary benefits of employment or employment related programs to individuals with disabilities. This process yielded 21 articles that we determined to be sufficiently reliable for these purposes (see table 4).

Table 4: Studies Reviewed on Non-monetary Benefits of Work for Individuals with Disabilities

Year	Title	Authors	Source
1993	Cost-effectiveness of supported employment	McCaughrin, W. B.; Ellis, W. K.; Rusch, F. R.; Heal, L. W.	Mental Retardation ^a
1995	A Benefit-Cost Analysis of a Supported Employment Model for Persons with Psychiatric Disabilities	Rogers, E. Sally; Sciarappa, Kenneth; MacDonald-Wilson, Kim; Danley, Karen	Evaluation and program planning
1999	Rehabilitation programmes and quality of life in severe mental illness	Browne, S.	International Journal of Social Psychiatry

Appendix I: Scope and Methodology

Year	Title	Authors	Source
2000	The Net Effects of the Project NetWork Return-to-Work Case Management Experiment on Participant Earnings, Benefit Receipt, and Other Outcomes.	Kornfeld, R., & Rupp, K.	Social Security Bulletin
2001	Does Competitive Employment Improve Nonvocational Outcomes for People With Severe Mental Illness?	Bond, Gary R.; Resnick, Sandra G.; Bebout, Richard R.; Drake, Robert E.; Xie, Haiyi; McHugo, Gregory J.	Journal of Consulting and Clinical Psychology
2002	The difference a job makes: The effects of employment among people with disabilities	Schur, Lisa	Journal of Economic Issues
2003	Work and employment for people with psychiatric disabilities	Boardman, Jed; Grove, Bob; Perkins, Rachel; Shepherd, Geoff	The British Journal of Psychiatry
2008	Mental health service users' experiences of returning to paid employment	Boyce, Melanie; Secker, Jenny; Johnson, Robyn; Floyd, Mike; Grove, Bob; Schneider, Justine; Slade, Jan	Disability & Society
2008	Feelings about work: A review of the socio-emotional impact of supported employment on people with intellectual disabilities	Jahoda, Andrew; Kemp, Jeremy; Riddell, Sheila; and Banks, Pauline.	Journal of Applied Research in Intellectual Disabilities
2009	SESAMI study of employment support for people with severe mental health problems: 12-month outcomes	Schneider, Justine; Slade, Jan; Secker, Jenny; Rinaldi, Miles; Boyce, Melanie; Johnson, Robyn; Floyd, Mike; Grove, Bob	Health & Social Care in the Community
2010	Supported Employment for People with Intellectual Disability: The Effects of Job Breakdown on Psychological Well-Being	Banks, Pauline; Jahoda, Andrew; Dagnan, Dave; Kemp, John; Williams, Victoria	Journal of Applied Research in Intellectual Disabilities
2012	Cost-benefit analysis for sheltered employment service programs for people with disabilities in Taiwan - A preliminary study	Wang, Yun-Tung; Lin, Yi-Jiun; Shu, Ching-Hsien	Disability and Rehabilitation
2014	What makes workers with disabilities happy? The importance of non-pecuniary characteristics	Pagan, R.	Health Economics
2015	Psychosocial adjustment of Israeli veterans with disabilities: Does employment status matter?	Araten-Bergman, Tal; Tal-Katz, Patricia; Stein, Michael Ashley	Work
2015	Does disability status modify the association between psychosocial job quality and mental health? A longitudinal fixed-effects analysis	Milner, A.; Krnjacki, L.; Butterworth, P.; Kavanagh, A.; LaMontagne, A. D.	Social Science and Medicine
2016	Individual placement and support services boost employment for people with serious mental illnesses, but funding is lacking.	Drake, Robert E.; Bond, Gary R.; Goldman, Howard H.; Hogan, Michael F.; Karakus, Mustafa.	Health Affairs
2017	The Relationship Between Hope, Social Inclusion, and Mental Wellbeing in Supported Employment	Dunstan, Debra A.; Falconer, Amanda K.; Price, Ian R.	The Australian Journal of Rehabilitation Counselling
2018	"To fill the emptiness": The importance of work in life history narratives of older adults with schizophrenia-spectrum diagnoses	Ogden, Lydia P.	Qualitative Social Work
2018	Cost-effectiveness of supported employment adapted for people with affective disorders	Sanjib Saha, Ulrika Bejerholm, Ulf-G Gerdtham & Johan Jarl	Nordic Journal of Psychiatry

Year	Title	Authors	Source
2019	Inclusive Management Research: Persons with Disabilities and Self-Employment Activity as an Exemplar	Martin, Bruce C.; Honig, Benson	Journal of Business Ethics
2020	Individual placement and support for young adults at risk of early work disability (the SEED trial). A randomized controlled trial	Sveinsdottir, Vigdis, MSc; Lie, Stein Atle, PhD; Bond, Gary R., PhD; Eriksen, Hege R., PhD; Tveito, Torill H., PhD; Grasdal, Astrid L., DrPol; Reme, Silje E., PhD	Scandinavian Journal of Work, Environment & Health

Source: GAO review of studies on individuals with disabilities and benefits of work. | GAO-22-104031

Note: Each of the studies met the criteria for inclusion in our review: (1) defined or identified non-monetary benefits of employment for individuals with disabilities using sufficiently-reliable qualitative or quantitative methods; (2) were peer-reviewed papers or government reports; and (3) were published domestically or internationally. Additionally, two GAO analysts reviewed each study and determined they were of sufficient methodological quality to provide information on the non-monetary benefits of working for people with disabilities.

^aThe journal *Mental Retardation* was renamed *Intellectual and Developmental Disabilities* in 2007.

Limitations

- Although the statistical matching methods that we used in our analysis of Ticket participant earnings sought to improve on simple comparisons of participants and nonparticipants, our analysis of Ticket participant earnings did not seek to conduct a definitive evaluation of the causal effects of participating in the program. The matching analysis we employed is a quasi-experimental technique that is used to identify a control group of nonparticipants that are similar to participants. However, this technique has limitations. Specifically, these methods cannot account for all factors that may have influenced the voluntary decisions of beneficiaries and some service providers to participate in Ticket, only those that we controlled for in our matching analysis. According to SSA officials, these factors may yield differences between participants and similar nonparticipants that do not coincide with the true causal effects of participating in the program in ways that are difficult to predict. For example, to the extent that Ticket participants may be more motivated to seek employment than other beneficiaries, our analysis may overstate the earnings impacts of the program. On the other hand, if Ticket participants have a greater need for employment services to reach their goals than other beneficiaries, our analysis may understate the true earnings impacts.
- We conducted multiple validation checks to assess the appropriateness of our matching methods and we found our method met acceptable standards. However, as in any analysis, we acknowledge that matching using a different set of characteristics would yield different results. For more information on the matching

technique, including the validation and robustness checks that we used, see appendix II.

- To facilitate comparisons of earnings before and after starting services, we excluded from our earnings analysis certain Ticket participants who started services from 2002 through 2013. Specifically, we excluded those who started services before they were first paid disability benefits and older beneficiaries who would have reached full retirement age within 5 years of starting services. We also excluded those who died between 2002 and 2018 before reaching full retirement age. As a result of these exclusions, any differences that we reported between Ticket participants and similar nonparticipants may not be representative of all Ticket participants during our period of analysis.
- The annual earnings data in the MEF report an individual's total earnings, but the MEF does not contain information on the number of weeks or hours that individuals worked during that year. As a result, we cannot evaluate the extent to which any earnings differences between Ticket participants and similar nonparticipants can be attributed to differences in, for example, their work schedules (i.e., some working full time vs. part time) or wage levels.

Section 4: Analysis of Ticket Savings and Costs to SSA

This section presents the methods we used to address the third research objective related to how the costs and savings of Ticket have compared over time. To examine the savings to SSA from Ticket, we used statistical matching methods to estimate the effect of Ticket on disability benefits by comparing program participants to similar nonparticipants while controlling for observable characteristics. To estimate the costs, we used DAF data on payments to Ticket service providers and SSA's estimates of administrative costs for Ticket. In estimating costs and savings attributable to the program, we limited our analysis to those related to SSA.⁵

⁵Examples of potential savings to the federal government that we scoped out of our analysis include increased payroll tax revenues from Ticket participants who became employed and savings in Medicare or Medicaid costs for those who exited the rolls permanently as a result of Ticket. We also excluded costs to the Department of Education, which administers Vocational Rehabilitation, the primary federal government program that helps individuals with disabilities prepare for and obtain employment.

Savings Associated with Reduced Cash Benefits

Ticket generates savings for SSA when beneficiaries who participate in Ticket earn more than SGA such that they receive a lower disability benefit payment than they would have received had they not participated in the program. Using this definition of savings, the amount of reduced benefits attributable to Ticket is computed by comparing the amount of benefits a participating beneficiary received subsequent to starting services with the amount that they would have received under a counterfactual in which they did not receive these services. A key empirical challenge when estimating these reduced disability benefits is that one cannot directly observe a Ticket participant's cash benefits in the absence of the services. Instead, we compared (1) the amount of benefits that Ticket participants were due, to (2) the amount of benefits that were due to a group of similar nonparticipants that closely resembled the Ticket participants on a set of characteristics that could influence either the likelihood of participating in Ticket services or the expected cash benefits received in subsequent months. To construct this counterfactual comparison group, we used the same statistical matching methods that we relied on in our analysis of earnings (described in section 3).

To estimate the savings that were attributable to reduced cash benefits for a given Ticket participant, we subtracted (1) the total amount they were due beginning the month they started Ticket services through December 2015, from (2) the amount that we estimated that individual was due in the absence of the program during this period based on our analysis of similar nonparticipants.⁶ When estimating these amounts, we included disability benefits that were due from both the DI and SSI programs—regardless of which disability benefits program the individual had participated in before starting services—to account for transitions between these programs that may have occurred during this period. We ignored benefits that were due after the individual reached full retirement age. We computed the total savings of Ticket that were attributable to

⁶We measured the amount of disability benefits that individuals were due by combining monthly data on the amounts of DI and SSI benefits due with additional information on entitlement for these benefits based on guidance from the DAF documentation. Although the version of the DAF that we analyzed contains monthly data on disability benefits due through 2018, we restricted our savings analysis from 2002 through 2015, because, according to SSA officials, later years may underreport suspensions and terminations. The data are subject to revision in later versions of the DAF as SSA acquires information that may affect beneficiary eligibility and payments, although after 3 years these updates are uncommon, according to SSA officials.

reduced cash benefits by summing up these per-participant savings over all Ticket participants that we included in our analysis.

Our methodology for estimating reduced benefits attributable to Ticket differs from previous analyses that have relied on estimates in the DAF of “disability benefits forgone for work”—the amount of benefits that an individual has forgone in a month because they worked at a level that caused a reduction of benefits. This narrower definition does not include other ways Ticket impacts disability benefits, and therefore might overstate savings attributable to Ticket. For example, under program rules, SSA exempts Ticket participants who make timely progress toward self-supporting employment from medical continuing disability reviews. These exemptions may offset any savings attributable to work to the extent that they reduce the likelihood of getting off the rolls for medical recovery. Our methodology for estimating benefit reductions/forgone benefits attributable to Ticket includes benefit reductions that result from work as well as the benefits that were not reduced due, for example, to the exemption from continuing disability reviews.

Reduced Cash Benefits: Study Population and Exclusions

Our analysis of savings attributable to reduced disability cash benefits generally included Ticket participants who started Ticket services from 2002 through 2015, but we excluded some participants for various reasons. As a result, the savings that we estimated may not be representative of these excluded groups. We excluded participants who received VR services before 2002, because any savings and costs these participants generated may be attributable to employment services received before SSA administered Ticket. In addition to the sample restrictions we applied in our analysis of Ticket participation, we also excluded participants who were not residing in a U.S. state or the District of Columbia when they were first paid disability benefits because state of residence is one of the characteristics we match on and because the number of non-residents is so small it makes constructing non-resident matches difficult. Among U.S. residents, we excluded beneficiaries who died before the end of 2018 in cases when the death occurred before the individual reached full retirement age, which amounted to 8 percent of Ticket participants. We also excluded participants who either had not yet reached 18 at the end of the year they started Ticket services, or, if services started before benefits were paid, who were younger than 18 at the end of the year in which they were first paid disability benefits, which amounted to 2 percent of participants. We also applied these restrictions when we selected similar nonparticipants to maintain comparability

between the Ticket participant and nonparticipant samples. See section 2 of this appendix for additional information on how we defined our comparison group of similar nonparticipants and section 3 for information on how we constructed the comparison group of similar nonparticipants.

We included in our savings analysis Ticket participants who signed an Individualized Plan for Employment and started VR services before they became eligible to participate in Ticket (25 percent of our study population), more than half of whom started services before receiving SSA disability benefits.⁷ Our savings analysis assumed this earlier VR experience did not influence the process through which individuals get on the disability rolls and ignored any related benefit savings (or costs) for this period.⁸

Payments to Service Providers and Administrative Costs

To calculate the total costs attributable to SSA's payments for services that were provided to the participants in our savings analysis, we used the same DAF data on payments to service providers that we analyzed in our first objective. We measured the total costs that SSA paid by summing the payments made for each Ticket participant that we included in our savings analysis from the month that they started services through 2015. These payments included both those made under SSA's traditional cost-reimbursement program and those under the Ticket milestone-outcome and outcome-only payment systems. Additionally, SSA provided us with data on the administrative costs of Ticket over time, based on prior SSA studies.

Comparison of Savings and Costs over Time

To report on how savings attributable to reduced cash disability benefits and costs attributable to provider payments have changed over time, we estimated these amounts separately by calendar year. We also examined how these estimates compared based on the year in which the participant

⁷To measure when beneficiaries first received disability benefits, we examined monthly payment amounts from 1997 through 2018.

⁸One SSA official conjectured that some VRs may encourage individuals with disabilities to apply for federal benefits. Such practices could increase the amount of disability benefits received by individuals, generating additional costs to SSA. In these cases, our methodology for estimating savings attributable to reduced benefits may overstate the true savings attributable to Ticket, because it does not account for any program effects on when participants initially applied for or were first paid benefits.

started Ticket services to understand how these sources of savings and costs may relate to factors that could be associated with characteristics such as national employment conditions and SSA’s 2008 reforms to Ticket.

Overpayments and Associated Costs

In our analysis of DAF data, we observed a considerable gap between benefits due to beneficiaries and benefits paid to beneficiaries. Specifically, we estimated this gap to be \$768 million in total from 2002 through 2015 (see table 5). The benefits paid to the beneficiary and the benefits actually due to the beneficiary are recorded by two different variables in the DAF; the benefits due variable is subject to retroactive updating. The paid and due variables do not always match because after benefits are paid to a disability beneficiary, SSA may determine at a later date that the individual was entitled to (due) more or less than the amount received (paid). Such a mismatch can occur because of overpayments, underpayments, back pay for past underpayments, or recovery of past overpayments. Similarly, it is possible for beneficiaries to have received payments in a month when no benefit payment was due, such as when an underpayment for prior months was retroactively determined and paid in a month in which there was no current-month eligibility.

Table 5: Estimated SSA Savings of Ticket to Work and Self-Sufficiency Program (Ticket) Using Benefits Due versus Paid, 2002-2015

	2002-2015 savings, based on benefits due, in millions of 2020 dollars	2002-2015 savings based on actual benefit payments, in millions of 2020 dollars ^a
Reduced cash benefits to participants ^b	568	-199
Payments to service providers	-896	-896
Administrative costs	-479	-479
Total	-806	-1,574
Difference in totals representing potential overpayments		768

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Note: Benefits due and benefits paid may differ if, for example, SSA identifies an overpayment or underpayment after paying a beneficiary. Estimates of savings from reduced cash benefits were statistically significant at the 5 percent level. The margins of error for reduced cash benefits when computed with benefits due and benefits paid were \$77 million and \$73 million, respectively.

^aThe estimates based on actual benefit payments do not incorporate waived overpayments, recovered overpayments, or the cost of recovery.

^bTicket may cause overall cash benefits to increase during a period because of Ticket rules (e.g., the deferment of continuing disability reviews) which may reduce the number of beneficiaries who leave the disability rolls. Benefit savings attributable to Ticket may not be enough to offset the effects of such rules, resulting in a negative amount.

Although the data in the DAF did not allow us to make a precise estimate of overpayments and overpayment waivers to Ticket participants, we attempted to approximate the costs to SSA of recovering and, in some cases, forgiving overpayments to Ticket participants. We applied published rates of waivers and costs of recovery to the \$765 million gap between paid and due that we estimated through 2015. Specifically, in 2015, GAO found that SSA waives about 12 percent of non-work related overpayments, on average, and for work-related overpayments in the DI program, SSA waives about 17 percent.⁹ An analysis by the SSA Office of the Inspector General has found that waiver rates vary by year—for example, 2008 had a higher waiver rate at 27 percent. SSA also works to recover overpayments by collecting repayments from beneficiaries; the cost of recovering these overpayments is about 6 cents for every \$1 recovered. We multiplied these rates by the \$768 million in estimated overpayments to Ticket recipients to calculate an approximate range of total costs. For example, assuming a waiver rate of 12 percent leads to a total cost of \$132,710,400 (\$92,160,000 in waived payments, and a cost of \$40,550,400 to recover the remaining \$675,840,000). Carrying out the same calculation with the higher waiver rate of 17 percent leads to a cost of overpayments of \$168,806,400.

To analyze the prevalence of overpayments among Ticket participants using the DAF, we created two proxy indicators of overpayment. One indicator was defined for situations in which a beneficiary received a payment that was at least \$100 greater than the amount they were due for the month ($PAY > (\$100 + DUE)$). A second indicator was when a beneficiary received a payment greater than zero when they were due zero benefits ($PAY > 0 \ \& \ DUE = 0$). In both cases, we excluded all payments made in the first year after a person became eligible for benefits because newly eligible beneficiaries are often entitled to benefit back pay dating to the onset of their disability, and it is usually paid within the first 6 months of receiving benefits. For each of these indicators, we calculated an overpayment rate (i.e., the percentage of Ticket participants who had these proxy overpayment indicators). We also calculated overpayment rates based on these proxies for individuals who had at

⁹GAO, *Disability Insurance: SSA Could Do More to Prevent Overpayments or Incorrect Waivers to Beneficiaries*, [GAO-16-34](#) (Washington, D.C.: Oct. 29, 2015).

least 1 month of work-related benefit suspension or termination, as well as for those who never had a month of benefit suspension or termination.

Other Outcome Comparisons

To understand the channels through which Ticket generated benefit savings, we also examined the percent of Ticket participants and similar nonparticipants who left the disability rolls for work-related reasons versus medical improvement and other reasons. We measured the percent who left the disability rolls using monthly data on suspensions and terminations. SSA developed variables to take into account these outcomes for both the DI and SSI programs. They contained information on whether or not the suspension or termination was due to work, or another reason. In our use of these variables, an individual is off the rolls for a work-related reason when either: (a) the individual's DI or SSI benefits are suspended or terminated for work, and the individual is not in current pay status for benefits in either program; or (b) the individual's DI or SSI benefits had been suspended or terminated for work in an earlier month, those benefits were never reinstated, and the individual is not in current pay for either program. An individual can also be off the rolls for a reason other than work, for example, medical improvement, and the individual's DI or SSI benefits are suspended or terminated and they are not in current pay status for either program.

Limitations

- We sought to improve on simple comparisons of outcomes between Ticket participants and nonparticipants by constructing a comparison group of nonparticipants that were similar to participants on characteristics that could influence either the likelihood of participating in Ticket services or the expected cash benefits received in subsequent months. These methods cannot account for all factors that may have influenced the voluntary decisions of beneficiaries and some service providers to participate in Ticket, only those that we controlled for in our matching analysis. According to SSA officials, these factors may bias our estimates in ways that are difficult to predict. For example, to the extent that Ticket participants may be more motivated to seek employment than other beneficiaries, our analysis may overstate the true savings attributable to reduced benefits, because some participants may have been more likely to leave the rolls for work related reasons in the absence of the services than we estimated using similar nonparticipants. On the other hand, if Ticket participants have a greater need for employment services to

reach their goals than other beneficiaries, our analysis may understate the true savings.

- While we attempted to analyze differences in net savings between those who received services from VRs and those who received services from ENs, we discovered a number of challenges that prevented a comparison. The primary obstacle in comparing savings attributable to ENs versus VRs is the substantial overlap between the EN and VR participant populations. According to SSA data, over a third of EN participants also received VR services during our period of analysis. These data likely understate the true overlap of these services, because VRs also occasionally subcontract services with ENs, and these arrangements may not yield a formal ticket assignment to the EN. According to SSA officials, this overlap makes it difficult to isolate the effectiveness of the different types of Ticket service providers.
- To estimate savings from reduced cash benefits, we used data on DI and SSI benefits that were due to individuals. These data are updated as SSA acquires information that may affect beneficiary eligibility and payments, and therefore do not capture overpayments made to individuals when it is retroactively determined that they were not entitled to the payment. As a result, our analysis may overstate the true savings attributable to reduced benefits to the extent that Ticket participation increases the likelihood of overpayments.
- While our savings analysis estimates the benefit savings attributable to Ticket participation, it does not directly inform what savings would be lost if SSA were to stop operating Ticket. Our analysis assumes that in the absence of participating, individuals would not have received any VR services. (This assumption is implicit in how we constructed our comparison group of similar nonparticipants, which excluded beneficiaries who received VR services.) This assumption is consistent with how SSA counts all payments to VRs under its cost-reimbursement program as costs of Ticket regardless whether tickets were ever assigned. It is also consistent with SSA's practice during our period of analysis of automatically assigning tickets to VRs based on its inspection of VR caseloads for services provided to Ticket-eligible beneficiaries. Nevertheless, this assumption is not appropriate for estimating the savings that would be lost if SSA were to stop operating the program, because under this counterfactual some beneficiaries may continue to receive VR services.
- Our savings analysis is restricted to beneficiaries who participated in Ticket, and our findings may not generalize to other beneficiaries who received VR services during our study period but who never assigned

a ticket. According to our analysis of the DAF, over 785,000 Ticket-eligible beneficiaries received VR services but never assigned a ticket from 2002 through 2018, compared with 1.36 million Ticket participants during the same time period. These beneficiaries generally started their services prior to becoming eligible for Ticket. According to one SSA official, including these beneficiaries as participants in our analysis would likely yield lower estimated per-participant savings. In addition, our estimates may not be representative of the Ticket experiences of other groups we excluded, such as nonresidents or those who died from 2002 through 2015.

- If receiving VR services prior to getting on the disability rolls influences the process of applying for and receiving benefits (contrary to our assumption), our estimates of savings attributable to Ticket may be biased. For instance, if receipt of VR services causes more people to apply for disability and ultimately assign their ticket to the VR where they signed an Individualized Plan for Employment, our estimates may overstate the savings attributable to Ticket.
- The DAF does not contain specific data on overpayments, nor was it designed to track overpayments to beneficiaries. Nonetheless, the DAF data are the best available data on the population of Ticket participants, and provide a reasonable indicator of the extent to which overpayments occur among them. Although we use the gap between benefit paid and benefit due as a proxy indicator of overpayment, it is not a perfect proxy and there are situations in which individuals may receive payments that are more than they are technically “due” without it being an overpayment. For example, if individuals received an underpayment in the past and that amount is made up in a future month, the paid amount could be greater than the due amount for that month. Additionally, the rates of forgiveness and the per dollar cost of recovery were calculated at different times using different data sets. Multiplying them by our estimated overpayment total yields a rough estimate of costs. Further data collection and study on overpayments to Ticket participants specifically would be required to arrive at a more precise cost estimate.
- Our analysis does not attempt to forecast future savings from Ticket participants who received services from 2002 through 2015. These participants could continue to generate savings for SSA beyond the period we analyzed. However, in examining the data, we observed historical trends that made it difficult to make reliable assumptions about future attrition from the disability rolls, among other future trends, and we determined that small changes in the assumed attrition rates can have a significant effect on estimates of future savings. Of

note, the net rate of SSI participant attrition started increasing after 2010 and diverged from historical averages. These observations indicated underlying complexities that required much deeper investigation to develop reasonable ranges of assumptions about future attrition. As a result, we elected not to attempt to project future savings as part of this analysis.

Appendix II: Additional Information on Matching Analysis

This section provides additional details on the statistical matching methods that we used to compare outcomes between Ticket to Work and Self-Sufficiency program (Ticket) participants and a comparison group of similar nonparticipants. We used these comparisons to evaluate the extent to which Ticket led to increased earnings for participants and estimate the savings attributable to reduced disability benefits.

Section 1: Additional Details on Matching Methodology

Each Ticket participant in our analysis was matched to one nonparticipant with similar characteristics. The similar nonparticipant served as a counterfactual indicator of what the Ticket participant might have done in the absence of Ticket. We matched one nonparticipant to each Ticket participant using a combination of exact and Mahalanobis distance matching methods.¹ Nonparticipants could be matched multiple times in order to maximize the degree of similarity between participants and nonparticipants. (That is, we used one-to-one matching with replacement.) See table 3 of appendix I for a complete list of the beneficiary characteristics that we used to perform the match.

Our matches are based on participant cohorts as defined by the year in which participants started receiving Ticket services. We performed these matches separately based on the year in which the participant started Ticket services in order to include matching variables that we based on this start year and control for differences in entitlement and payment of disability benefits in prior years. For each of these start years, we generally restricted the set of nonparticipants that could be selected by our matching algorithm to only those who were paid disability benefits

¹For more information on the Mahalanobis method, see Guido W. Imbens and Donald B. Rubin, *Causal Inference for Statistics, Social, and Biomedical Sciences: An Introduction* (New York, NY: Cambridge University Press, 2015), Chapter 15, "Matching to Improve Balance in Covariate Distributions."

during that year to ensure that the nonparticipant was still collecting benefits at the time.²

We used the comparison group of similar nonparticipants to estimate, for each Ticket participant, the disability benefit and earnings outcomes we would have expected to have occurred in the absence of receiving any Ticket services. We estimated these counterfactuals by combining data on the outcomes that occurred to the participant's matching nonparticipant with an additional regression-based adjustment to control for remaining differences between the two individuals. We then computed means of these counterfactual estimates to report on outcomes of the similar nonparticipants as well as quantify savings attributable to reduced benefits.

More specifically, let Y_{ir} denote an outcome of interest for participant i who started Ticket services in month r . (For example, Y_{ir} may be the monthly benefits due to i in a certain month or i 's annual earnings in a certain year.) Let $m(i)$ denote the similar nonparticipant that the matching algorithm selected for participant i . Let X_{ir} and $X_{m(i)r}$ denote vectors of beneficiary-level characteristics for participant i and nonparticipant $m(i)$, respectively. (These characteristics include some that we derived based on the month r that i started Ticket services, such as whether they were paid any disability benefits 12 months prior to r .) Let Y_{ir}^c denote i 's outcome under the counterfactual in which they never received any Ticket services. We estimated Y_{ir}^c using the formula:

$$\hat{Y}_{ir}^c = Y_{m(i)r} + (X_{ir} - X_{m(i)r})\hat{\beta}$$

In this formula, Beta is a vector of coefficients from a linear regression of the outcome of interest on the vector of characteristics. We estimated Beta using the sample of similar nonparticipants, estimating separate models for each SSA program group (DI, SSI, or concurrent), and each possible start year from 2002 through 2015. To adjust for residual imbalances after matching, the regression models controlled for generally all the variables we used in the matching algorithm (see appendix I for a

²We modified this approach for Ticket participants who started services before they received disability benefits since these participants were not paid any benefits during the start year. For those participants who started services before they received benefits, we instead matched them to nonparticipants who were paid disability benefits during the participant's earliest payment year.

complete list of variables), as well other variables to account for possible differences in benefit outcomes between the participants and nonparticipants prior to the Ticket start month.

Ticket participants and similar nonparticipants could enter our analysis of reduced disability benefits and other benefit outcomes only from the month they were first paid benefits until they reached full retirement age. (In other words, we dropped monthly benefit outcomes during months outside of this window.) As a result of this restriction, on occasion we

were unable to use the formula above to compute \hat{Y}_{ir}^c , because no matching nonparticipant outcome was available to use. This occurred during months in which a participant entered our analysis, but their matching nonparticipant had either not yet started benefits, or had already reached full retirement age. In these cases, we estimated a participant's counterfactual outcome using only the regression-based prediction:

$$\hat{Y}_{ir}^c = X_{ir}\hat{\beta}.$$

We measured total savings attributable to reduced benefits and drew comparisons between Ticket participants and similar nonparticipants using the counterfactual outcomes that we estimated using this technique. For example, to estimate the total savings attributable to reduced benefits from 2002 through 2015, we used monthly data on the benefits that were due to Ticket participants and similar nonparticipants.

Let due_{irt} denote the monthly amount that was due to participant i who started Ticket services in month r in month t , and let $\{i \in r\}$ denote the subset of Ticket participants in our savings analysis who started Ticket services in month r . We estimated total reduced benefits using the formula:

$$Total\ reduced\ benefits = \sum_{r=1/2002}^{12/2015} \sum_{i \in r} \sum_{t=r}^{12/2015} (\hat{due}_{irt}^c - due_{irt})$$

To estimate the percentage of Ticket participants and similar nonparticipants leaving the disability rolls for any reason 5 years after starting Ticket, we used monthly data on whether or not the individual's benefits were either in suspension or termination at 60 months subsequent to starting services. Let $stany_{irt}$ denote whether participant i 's benefits are in suspension or termination in month t . Let

$\{irt: t - r = 60\}$ denote the subset of participant-month observations such that the calendar month, t , is exactly 60 months later than the starting month, r . Also, let N^{60} denote the number of participants in $\{irt: t - r = 60\}$. (N^{60} is less than the overall number of Ticket participants in our savings analysis, because not all participants have data 5 years after starting services during our analysis period, 2002-2015.)

We estimated the percentage of Ticket participants leaving the disability rolls for any reason 5 years after starting Ticket using the formula:

$$\frac{1}{N^{60}} \sum_{irt:t-r=60} stany_{irt} \times 100\%$$

We estimated the percentage of similar nonparticipants leaving the disability rolls for any reason 5 years after starting Ticket using the formula:

$$\frac{1}{N^{60}} \sum_{irt:t-r=60} stany_{irt} \times 100\%$$

Although our data are not a probability sample, we calculated the standard error of the difference in mean outcomes to assess uncertainty of our estimates, using standard formulas for differences in means between independent samples. We clustered these standard errors by the nonparticipant match to control for correlations in the data between Ticket participants who were matched to the same nonparticipant. We examined 95 percent confidence intervals to identify statistically significant differences. Our large sample sizes suggested that the estimated variances would have been small, regardless of the particular method used.

Section 2: Validation and Robustness Checks

We conducted several validation and robustness checks of the analyses reported in this report. These included the following:

1. **Balance of beneficiary characteristics after matching:** To ensure that the matched nonparticipants were sufficiently similar to the Ticket

participants, we compared the distributions of the characteristics we used in our matching analysis for the two groups. Although we conducted the matching separately for each year that services were started, we combined the matched samples across years for participants and their matched nonparticipants, respectively, for the purpose of summarizing their similarity across the variables. These comparisons indicated that we obtained a similar matched sample of nonparticipants for each Ticket participant. Table 6 presents descriptive statistics of these characteristics after matching.

Table 6: Means of Beneficiary Characteristics in Matched Ticket to Work and Self-Sufficiency Program (Ticket) Participant and Similar Nonparticipant Samples

	Ticket participants	Similar nonparticipants	Normalized difference
Characteristics recorded during first year paid disability benefits^a			
Adjudicative level of disability decision			
Initial	71.9%	72.8%	-0.02
Reconsideration	17.7%	17.0%	0.02
Administrative Law Judge or higher	1.1%	1.0%	0.01
Other	1.2%	1.1%	0.01
Missing or unknown	8.1%	8.1%	0.00
Census division			
East North Central	14.9%	14.9%	0.00
East South Central	5.3%	5.3%	0.00
Middle Atlantic	12.7%	12.7%	0.00
Mountain	5.3%	5.3%	0.00
New England	6.4%	6.4%	0.00
Pacific	12.4%	12.4%	0.00
South Atlantic	15.7%	15.7%	0.00
West North Central	6.9%	6.9%	0.00
West South Central	9.5%	9.5%	0.00
Missing or unknown	10.8%	10.8%	0.00
Education			
8 years or less	4.9%	4.9%	0.00
9-11 years	13.4%	14.0%	-0.02
12 years	30.4%	31.7%	-0.03
13-15 years	12.7%	11.0%	0.05
16 or more years	6.3%	5.6%	0.03
Missing or unknown	32.3%	32.7%	-0.01
Living arrangement for SSI benefits^b			

**Appendix II: Additional Information on
Matching Analysis**

	Ticket participants	Similar nonparticipants	Normalized difference
Living alone or own household	60.0%	63.1%	-0.06
Living in another's household, including a parent's	38.8%	35.9%	0.06
Living in medical facility	1.0%	0.9%	0.01
Missing or unknown	0.1%	0.1%	0.01
Medical improvement code			
Expected	7.7%	8.0%	-0.01
Possible	51.0%	51.1%	0.00
Not expected	23.1%	23.2%	0.00
Missing or unknown	18.3%	17.8%	0.01
Primary disabling impairment			
Autistic disorders	2.8%	2.8%	0.00
Developmental disorders	1.0%	1.0%	0.00
Childhood and adolescent disorders not elsewhere classified	1.2%	1.2%	0.00
Intellectual disability	14.8%	14.8%	0.00
Mood disorders	14.9%	15.2%	-0.01
Organic mental disorders	3.8%	3.8%	0.00
Schizophrenic and other psychotic disorders	8.1%	7.9%	0.01
Neoplasms	1.0%	1.0%	0.00
Other mental disorders	4.2%	4.1%	0.00
Endocrine, nutritional, and metabolic diseases	1.4%	1.4%	0.00
Circulatory system	2.7%	2.8%	0.00
Digestive system	0.6%	0.6%	0.00
Genitourinary system	1.1%	1.1%	0.00
Nervous system and sense organs	13.1%	13.1%	0.00
Respiratory system	0.8%	0.8%	0.00
Musculoskeletal system and connective tissue	10.1%	10.1%	0.00
Infectious and parasitic diseases	1.0%	1.0%	0.00
Injuries	3.3%	3.3%	0.00
Congenital anomalies	1.0%	1.0%	0.00
Blood and blood-forming organs	0.3%	0.3%	0.00
Skin and subcutaneous tissue	0.1%	0.1%	0.00
Other impairment	0.7%	0.7%	0.00
Missing or unknown	11.9%	11.9%	0.00
Member of SSI couple^b			
Yes	1.0%	0.7%	0.03
Missing or unknown	1.3%	1.1%	0.02

**Appendix II: Additional Information on
Matching Analysis**

	Ticket participants	Similar nonparticipants	Normalized difference
Number of dependents for DI benefits^c			
0	64.5%	68.8%	-0.09
1	11.4%	9.0%	0.08
2 or more	5.4%	4.5%	0.04
Missing or unknown	11.1%	11.3%	-0.01
SSA program			
DI	31.5%	31.5%	0.00
SSI	58.2%	58.2%	0.00
Concurrent	10.3%	10.3%	0.00
Whether statutorily blind	2.8%	2.7%	0.01
Age	37.6	39.8	-0.16
Number of years since earliest entitlement for disability benefits	9.1	9.3	-0.03
Number of years since first eligible to participate in Ticket to Work	2.8	3.0	-0.06
Number of years since first paid benefits ^a	5.9	6.2	-0.05
Number of years since onset of disability	11.0	10.7	0.03
Whether eligible to participate in Ticket to Work	92.5%	92.5%	0.00
Whether eligibility for Ticket to Work was established in August 2008 or later	39.6%	39.6%	0.00
Whether ever considered expected to medically improve	10.0%	10.0%	0.00
Whether the individual was in current pay status for disability benefits during the prior year	88.1%	89.7%	-0.05
Whether the individual was in current pay status for disability benefits during the year before the prior year	73.6%	76.8%	-0.07
Whether the individual was paid disability benefits during the prior year	74.2%	77.4%	-0.07
Whether the individual was paid disability benefits during the year before the prior year	63.6%	67.7%	-0.08
Regulation basis for disability determination			
Step 1 denial: Engaging in substantial gainful activity (SGA)	0.0%	0.0%	0.01
Step 2 denial: Not severe	3.8%	3.3%	0.03
Step 2 denial: Disability lasts <12 months	3.6%	3.2%	0.02
Step 3 allowance: Meets or equals listings	38.4%	40.1%	-0.03
Step 4 denial: Capacity for SGA, past relevant work	8.1%	7.7%	0.01
Step 5/3b/individualized functional assessment (IFA) allowance: Vocational or functional considerations	16.4%	16.7%	-0.01
Step 5/3b/IFA denial: Vocational or functional considerations	17.7%	17.7%	0.00
Other allowance	0.3%	0.2%	0.01
Other denial	4.3%	3.8%	0.02
Unclassified	0.0%	0.0%	0.00

Appendix II: Additional Information on Matching Analysis

	Ticket participants	Similar nonparticipants	Normalized difference
Missing	7.3%	7.2%	0.01
SSA program associated with the determination record			
DI application	27.5%	28.6%	-0.02
SSI application	71.4%	70.3%	0.02
Missing or unknown	1.1%	1.1%	0.00
Whether disability is permanent			
Yes	19.1%	19.9%	-0.02
No (incl. records associated with a cessation or denial)	76.6%	76.2%	0.01
Missing or unknown	4.4%	3.9%	0.02
Whether record source is an 831 form, or 832/833 form	92.7%	92.8%	-0.01
Age when the individual was first entitled to disability benefits	28.0	30.0	-0.12
Earliest recorded primary insurance amount (in hundreds of 2020 dollars) ^{c, e}	14.0	14.7	-0.12
Gender	46.8%	46.8%	0.00
Whether entitled to disability benefits as a child	24.2%	24.2%	0.00
Whether individual was a DI adult child	11.5%	11.0%	0.02
Whether individual was a DI widow ^c	0.2%	0.2%	0.00
Whether individual was born outside the United States	5.9%	4.4%	0.07

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Notes: SSA refers to the Social Security Administration; SSI refers to Supplemental Security Income; DI refers to Disability Insurance. The column “Normalized difference” reports the difference in sample means between Ticket participants and similar nonparticipants, divided by the square root of the average of the groups’ variances. We did not estimate or impute data regarding program eligibility, entitlement, or legal disability determinations; any such characteristics were determined by SSA and recorded in the Disability Analysis File.

^aWe measured when individuals were paid disability benefits using monthly payment data from 1997 through 2018.

^bAnalyzed only on individuals who were paid SSI benefits (including concurrent beneficiaries).

^cAnalyzed only on individuals who were paid DI benefits (including concurrent beneficiaries).

^dFor Ticket participants who started services after they were first paid benefits, we derived characteristics relative to when they started services using either the Ticket assignment date, or the earliest date they signed a Vocational Rehabilitation Individualized Plan for Employment, whichever came first. For those who started services prior to when they were first paid benefits, we instead derived these variables using the year they were first paid benefits.

^eWe adjusted the primary insurance amount for changes in the national average wage index over time to facilitate comparisons between beneficiaries who became entitled to disability benefits in different years. Since the value of this index was not available for 2020 at the time of our analysis, for reporting purposes we assumed 2.9 percent growth from 2019 to 2020, based on recent trends in this index since 2010.

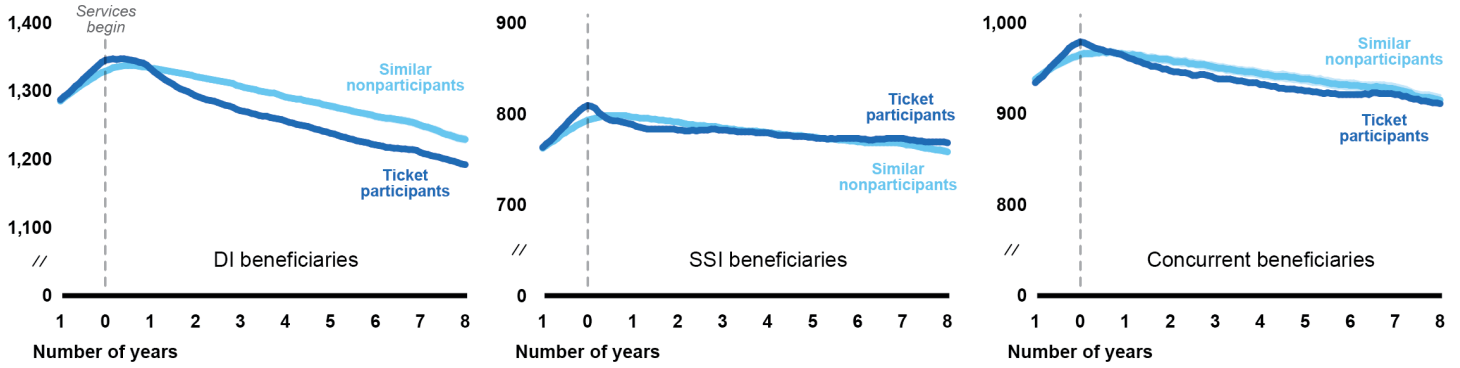
2. Predictive fit of monthly disability benefit outcomes: We did not design our analysis to predict future outcomes but rather to make inferences about the difference in benefit and other outcomes between Ticket participants and similar nonparticipants. However, to identify problems with our matching methodology, we compared the

two groups on certain benefit outcomes before and after Ticket services started. Figure 8 depicts mean amounts of benefits due and paid, and the percentage of participants off the rolls for work and other reasons, from 12 months prior to the month services started through the subsequent 8 years. The estimated amounts for participants and similar nonparticipants are generally close for the first 6 months of this window. After that month, mean outcomes for Ticket participants for some outcomes generally diverge from what we estimated using similar nonparticipants, which may reflect the impact of participating in the program.³ These patterns provided additional evidence our matching methodology was acceptable for comparing participants and similar nonparticipants, including for estimating total reduced benefits.

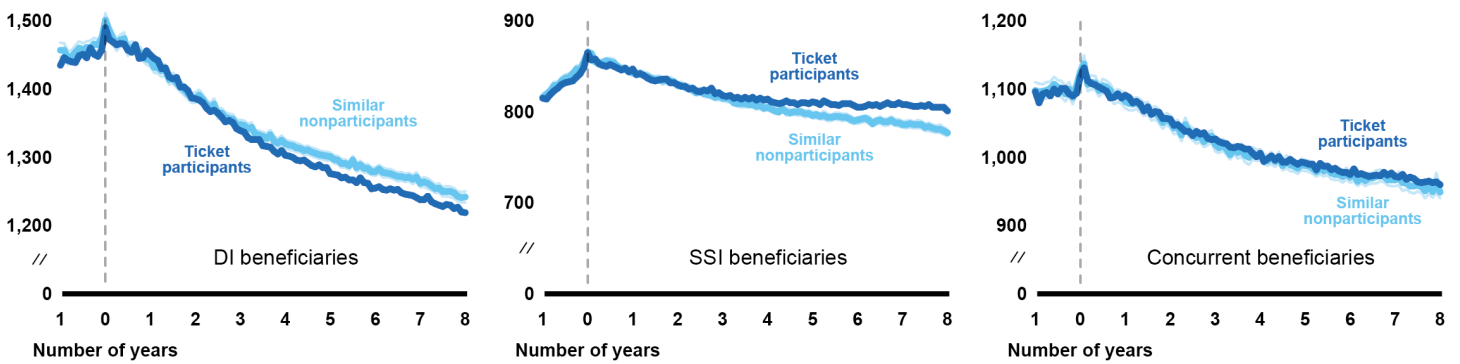
³Outcomes between the two groups may diverge before services formally began, because of earlier contact between beneficiaries and service providers. For example, according to VR officials, it may take up to 3 months for individuals and service providers to develop an Individualized Plan for Employment. Once services begin, providers may help individuals enroll for disability benefits and other sources of support.

Figure 8: Monthly Benefit Outcomes of Ticket to Work and Self-Sufficiency Program (Ticket) Participants and Similar Nonparticipants Before and After Services Began

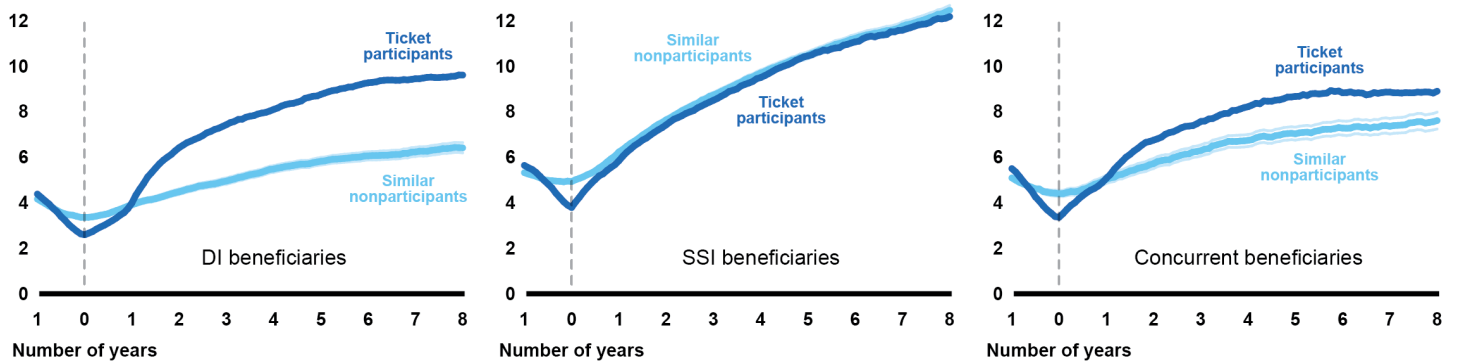
Average monthly benefits due (in 2020 dollars)



Average monthly benefits paid (in 2020 dollars)



Percentage of beneficiaries leaving disability rolls



Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Data table for Figure 8: Monthly Benefit Outcomes of Ticket to Work and Self-Sufficiency Program (Ticket) Participants and Similar Nonparticipants Before and After Services Began

Average monthly benefits due (in 2020 dollars)

DI beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	1287	1285	1287	1283
-11	1292	1290	1292	1288
-10	1296	1294	1296	1292
-9	1301	1298	1300	1296
-8	1307	1302	1304	1300
-7	1311	1306	1308	1304
-6	1317	1310	1312	1308
-5	1322	1313	1315	1312
-4	1327	1317	1319	1315
-3	1332	1320	1322	1318
-2	1337	1324	1326	1322
-1	1342	1327	1329	1325
0	1345	1329	1331	1328
1	1346	1331	1333	1330
2	1347	1334	1336	1332
3	1346	1335	1337	1333
4	1347	1336	1338	1334
5	1347	1337	1339	1335
6	1346	1337	1339	1335
7	1345	1337	1339	1335
8	1344	1337	1339	1335
9	1342	1336	1338	1334
10	1341	1335	1337	1333
11	1338	1335	1337	1332
12	1333	1333	1336	1331
13	1328	1333	1335	1330
14	1324	1332	1334	1329
15	1320	1331	1333	1328
16	1316	1330	1332	1328
17	1313	1329	1331	1326

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
18	1310	1328	1330	1326
19	1306	1327	1329	1325
20	1303	1326	1328	1323
21	1301	1325	1327	1323
22	1299	1324	1326	1321
23	1296	1323	1325	1320
24	1293	1321	1324	1319
25	1291	1320	1323	1318
26	1289	1319	1322	1317
27	1287	1318	1321	1315
28	1286	1317	1320	1314
29	1285	1316	1318	1313
30	1283	1315	1317	1312
31	1281	1314	1316	1311
32	1279	1313	1315	1310
33	1278	1312	1314	1309
34	1276	1311	1313	1308
35	1273	1308	1311	1306
36	1271	1307	1309	1304
37	1270	1305	1308	1303
38	1269	1304	1307	1302
39	1267	1303	1305	1300
40	1266	1302	1305	1299
41	1264	1300	1303	1298
42	1263	1299	1302	1296
43	1263	1298	1301	1296
44	1261	1297	1300	1295
45	1260	1297	1299	1294
46	1259	1295	1297	1292
47	1258	1293	1296	1290
48	1256	1291	1294	1289
49	1254	1290	1293	1287
50	1253	1289	1292	1286
51	1251	1288	1291	1285
52	1250	1288	1291	1285
53	1249	1286	1289	1283

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
54	1248	1285	1288	1282
55	1246	1284	1287	1281
56	1244	1283	1286	1280
57	1243	1282	1286	1279
58	1241	1280	1283	1277
59	1240	1279	1282	1276
60	1238	1278	1281	1274
61	1237	1277	1280	1273
62	1235	1275	1279	1272
63	1233	1274	1277	1271
64	1232	1273	1276	1270
65	1230	1272	1275	1268
66	1229	1270	1274	1267
67	1227	1269	1272	1266
68	1226	1268	1271	1265
69	1225	1267	1270	1264
70	1224	1266	1269	1262
71	1222	1265	1268	1261
72	1221	1263	1266	1259
73	1220	1262	1265	1258
74	1219	1261	1264	1257
75	1217	1260	1263	1256
76	1217	1260	1263	1256
77	1216	1259	1262	1255
78	1216	1258	1261	1254
79	1215	1257	1261	1253
80	1215	1256	1260	1253
81	1214	1255	1259	1251
82	1214	1254	1257	1250
83	1213	1252	1256	1248
84	1210	1250	1253	1246
85	1208	1248	1251	1244
86	1207	1247	1250	1243
87	1205	1245	1248	1241
88	1204	1243	1247	1239
89	1203	1241	1245	1237

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
90	1201	1238	1242	1235
91	1200	1236	1240	1233
92	1198	1235	1239	1231
93	1197	1233	1237	1229
94	1195	1231	1235	1227
95	1193	1230	1234	1226
96	1192	1229	1233	1225

SSI beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	763	762	763	761
-11	767	765	766	763
-10	770	768	769	766
-9	774	770	772	769
-8	779	773	775	772
-7	783	777	778	775
-6	787	779	780	778
-5	792	782	783	780
-4	796	784	786	783
-3	800	787	788	786
-2	804	789	791	788
-1	807	791	793	790
0	809	793	794	791
1	808	794	796	793
2	806	795	797	794
3	801	796	798	795
4	798	797	798	795
5	795	798	799	796
6	793	798	800	797
7	792	798	800	797
8	792	798	800	797
9	791	798	800	797
10	790	798	799	796

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
11	789	797	799	796
12	788	796	798	795
13	786	796	797	794
14	785	795	797	794
15	784	795	796	793
16	783	795	796	793
17	783	794	796	793
18	783	794	795	792
19	783	793	795	792
20	783	793	794	791
21	783	792	794	791
22	783	792	793	790
23	783	791	793	789
24	782	791	792	789
25	782	790	792	788
26	781	789	791	787
27	781	788	790	787
28	782	788	790	786
29	781	787	789	786
30	782	787	789	785
31	782	787	788	785
32	782	786	788	785
33	783	786	788	784
34	783	786	787	784
35	782	785	787	783
36	782	784	786	782
37	782	784	786	782
38	781	783	785	782
39	781	783	785	781
40	780	782	784	781
41	780	782	784	780
42	780	781	783	779
43	780	781	783	779
44	780	781	783	779
45	779	781	782	779
46	779	780	782	778

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
47	779	780	782	778
48	779	779	781	777
49	778	779	781	777
50	777	778	780	776
51	776	778	780	776
52	776	777	779	775
53	776	777	779	775
54	776	776	778	774
55	775	776	778	774
56	775	776	778	774
57	775	776	778	773
58	775	775	777	773
59	774	775	777	773
60	774	774	777	772
61	773	774	776	772
62	773	773	775	771
63	773	773	775	771
64	772	772	774	770
65	773	772	774	770
66	772	772	774	770
67	773	771	773	769
68	773	771	773	769
69	773	771	773	768
70	773	770	772	768
71	773	770	772	768
72	773	769	771	767
73	772	769	771	767
74	772	768	771	766
75	771	768	771	766
76	771	768	771	766
77	772	768	771	766
78	772	768	771	766
79	772	768	771	766
80	773	768	770	766
81	773	768	770	766
82	773	768	771	766

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
83	773	768	770	765
84	773	767	769	765
85	772	766	768	763
86	771	766	768	763
87	771	765	767	763
88	770	764	767	762
89	770	763	766	761
90	769	762	765	760
91	769	762	764	759
92	769	761	764	759
93	769	760	763	758
94	769	760	763	757
95	769	759	762	757
96	768	758	761	756

Concurrent beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	934	938	941	935
-11	938	941	944	938
-10	941	944	947	941
-9	946	947	950	944
-8	951	949	952	946
-7	955	952	954	949
-6	959	954	957	951
-5	963	956	959	953
-4	967	958	961	955
-3	972	960	963	957
-2	975	962	965	959
-1	977	963	966	960
0	979	965	968	962
1	978	966	969	963
2	976	966	969	963
3	974	966	969	963

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
4	972	967	970	964
5	971	967	970	964
6	970	968	971	965
7	968	967	970	964
8	968	968	971	965
9	967	967	970	964
10	966	966	969	963
11	965	966	969	963
12	963	965	968	962
13	961	964	968	961
14	960	965	968	962
15	958	964	967	961
16	957	964	967	960
17	955	962	966	959
18	954	961	964	958
19	952	961	965	958
20	952	961	964	957
21	951	960	963	957
22	949	960	963	956
23	949	960	963	956
24	947	959	962	955
25	946	957	961	954
26	946	957	961	954
27	945	957	960	953
28	945	957	961	953
29	944	955	959	952
30	942	955	959	952
31	942	954	958	951
32	943	954	958	950
33	943	954	957	950
34	942	953	956	949
35	941	952	956	948
36	939	951	955	947
37	938	950	954	947
38	938	950	954	947
39	938	949	953	945

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
40	938	949	952	945
41	937	948	952	944
42	936	947	951	944
43	936	947	951	943
44	935	946	950	942
45	934	946	950	942
46	934	946	950	942
47	934	945	949	941
48	932	944	948	940
49	932	943	947	939
50	931	943	947	939
51	930	942	946	938
52	930	941	945	937
53	928	941	945	937
54	928	941	946	937
55	927	941	945	936
56	927	940	944	936
57	927	940	944	935
58	926	939	943	935
59	926	938	942	934
60	925	938	942	934
61	925	938	942	933
62	924	937	941	932
63	924	936	940	932
64	923	936	941	932
65	922	935	939	931
66	923	934	939	930
67	922	933	938	929
68	922	933	937	928
69	921	932	937	928
70	921	932	936	928
71	921	932	936	927
72	921	931	936	927
73	921	931	936	927
74	921	931	935	926
75	921	930	934	925

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
76	922	930	934	925
77	921	929	934	925
78	923	929	934	925
79	923	930	934	925
80	922	929	934	925
81	922	929	934	925
82	922	928	933	924
83	922	928	933	923
84	921	927	932	922
85	921	926	931	921
86	919	925	930	920
87	919	924	929	919
88	917	923	927	918
89	916	920	925	915
90	916	919	924	914
91	914	918	923	913
92	914	918	923	913
93	913	918	923	913
94	912	917	922	912
95	912	916	921	911
96	911	915	920	909

Average monthly benefits paid (in 2020 dollars)

DI beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	1435	1457	1468	1447
-11	1446	1457	1467	1446
-10	1442	1445	1455	1436
-9	1440	1448	1457	1438
-8	1439	1454	1464	1444
-7	1449	1460	1470	1451
-6	1451	1458	1467	1449

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-5	1446	1461	1470	1453
-4	1460	1461	1471	1452
-3	1451	1466	1475	1457
-2	1448	1465	1473	1456
-1	1457	1474	1483	1466
0	1490	1501	1511	1492
1	1473	1486	1496	1477
2	1469	1474	1483	1465
3	1465	1465	1474	1456
4	1467	1472	1480	1463
5	1466	1474	1483	1466
6	1457	1457	1465	1449
7	1454	1461	1470	1453
8	1465	1459	1467	1450
9	1445	1454	1463	1445
10	1446	1449	1457	1441
11	1456	1444	1452	1436
12	1450	1442	1450	1433
13	1445	1432	1440	1424
14	1442	1431	1439	1423
15	1430	1427	1435	1418
16	1431	1428	1436	1419
17	1418	1414	1422	1407
18	1415	1416	1424	1408
19	1417	1409	1417	1402
20	1403	1403	1411	1396
21	1403	1399	1407	1391
22	1398	1393	1400	1385
23	1387	1388	1395	1380
24	1386	1387	1395	1380
25	1384	1391	1399	1384
26	1380	1385	1392	1378
27	1372	1377	1384	1370
28	1367	1373	1380	1365
29	1369	1378	1386	1371
30	1365	1364	1371	1357

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
31	1359	1365	1372	1358
32	1352	1359	1366	1352
33	1354	1357	1364	1350
34	1351	1356	1363	1349
35	1342	1348	1355	1341
36	1339	1348	1355	1342
37	1337	1347	1354	1339
38	1329	1342	1349	1336
39	1326	1344	1351	1337
40	1326	1334	1340	1327
41	1326	1333	1339	1327
42	1317	1331	1337	1324
43	1316	1328	1335	1321
44	1315	1333	1340	1326
45	1309	1324	1331	1318
46	1305	1321	1327	1315
47	1310	1325	1332	1319
48	1303	1320	1326	1313
49	1302	1318	1324	1311
50	1300	1317	1323	1310
51	1296	1314	1321	1308
52	1295	1313	1319	1307
53	1296	1310	1316	1303
54	1292	1311	1317	1305
55	1288	1308	1314	1302
56	1286	1306	1313	1300
57	1289	1304	1310	1298
58	1285	1303	1309	1297
59	1285	1302	1308	1295
60	1276	1301	1307	1296
61	1275	1297	1303	1291
62	1274	1296	1302	1290
63	1270	1291	1297	1285
64	1271	1291	1297	1285
65	1267	1288	1293	1282
66	1267	1296	1302	1289

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
67	1263	1285	1291	1279
68	1270	1289	1295	1282
69	1263	1284	1290	1278
70	1262	1284	1290	1277
71	1254	1279	1285	1274
72	1255	1279	1285	1273
73	1257	1283	1289	1276
74	1253	1278	1285	1271
75	1252	1277	1283	1271
76	1254	1276	1283	1270
77	1252	1274	1280	1268
78	1253	1272	1278	1265
79	1248	1272	1278	1266
80	1246	1270	1276	1264
81	1245	1271	1277	1265
82	1244	1268	1274	1261
83	1241	1271	1278	1264
84	1238	1262	1268	1256
85	1238	1264	1271	1257
86	1243	1262	1269	1254
87	1235	1258	1265	1252
88	1232	1254	1260	1248
89	1230	1255	1262	1248
90	1228	1250	1256	1243
91	1231	1250	1258	1243
92	1230	1250	1257	1242
93	1225	1248	1255	1240
94	1227	1243	1250	1236
95	1220	1241	1249	1234
96	1219	1242	1250	1234

Appendix II: Additional Information on Matching Analysis

SSI beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	815	816	820	813
-11	814	819	823	815
-10	819	823	826	819
-9	823	829	833	825
-8	826	829	833	825
-7	830	834	838	830
-6	832	837	841	833
-5	833	838	842	835
-4	834	842	845	838
-3	838	847	851	843
-2	842	847	850	843
-1	849	855	858	852
0	865	865	869	861
1	857	864	867	860
2	858	855	859	852
3	853	853	856	849
4	851	854	858	850
5	850	856	859	852
6	852	855	859	852
7	850	854	858	851
8	848	850	853	846
9	846	847	851	844
10	848	847	851	844
11	844	844	847	841
12	847	843	847	840
13	841	841	845	838
14	842	842	846	839
15	840	840	844	837
16	837	839	843	836
17	835	837	840	834
18	834	836	839	833
19	835	836	840	833
20	836	834	837	830
21	836	835	839	831
22	832	834	838	830

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
23	832	833	836	829
24	830	829	832	826
25	828	829	833	826
26	828	827	831	824
27	825	826	830	823
28	826	824	828	820
29	823	821	825	818
30	822	823	826	819
31	824	820	823	817
32	823	819	823	816
33	826	818	822	815
34	820	816	820	813
35	821	817	820	813
36	818	815	818	812
37	817	815	818	811
38	818	814	817	810
39	815	810	813	807
40	816	809	813	806
41	814	809	812	805
42	816	809	813	805
43	814	808	811	805
44	816	808	811	805
45	813	806	810	803
46	815	807	810	803
47	813	804	807	801
48	814	805	809	802
49	811	803	806	800
50	810	801	805	798
51	809	800	803	797
52	810	803	807	800
53	812	800	804	796
54	810	799	803	796
55	810	800	803	797
56	808	800	803	796
57	810	800	803	796
58	810	798	801	794

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
59	809	798	802	795
60	811	796	800	793
61	810	797	800	793
62	808	795	798	792
63	812	796	801	792
64	810	794	798	790
65	808	794	797	790
66	808	795	799	792
67	807	795	799	791
68	809	794	798	790
69	809	794	798	791
70	809	792	796	788
71	807	790	793	787
72	805	791	794	787
73	805	792	795	788
74	806	793	796	789
75	808	791	795	787
76	807	787	791	784
77	808	790	793	786
78	806	791	795	787
79	808	789	792	785
80	810	789	793	785
81	808	791	795	787
82	808	788	792	785
83	810	788	792	784
84	808	786	790	783
85	808	786	790	782
86	807	787	791	783
87	806	786	789	782
88	806	786	791	782
89	807	786	790	782
90	806	783	787	779
91	808	784	788	779
92	805	782	786	778
93	805	781	785	777
94	805	781	786	777

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
95	805	779	783	775
96	801	777	781	773

Concurrent beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	1096	1098	1110	1087
-11	1080	1096	1108	1083
-10	1093	1097	1107	1086
-9	1095	1098	1110	1086
-8	1090	1101	1111	1091
-7	1100	1107	1118	1097
-6	1093	1103	1113	1092
-5	1101	1100	1112	1088
-4	1101	1093	1104	1082
-3	1093	1100	1110	1090
-2	1090	1088	1098	1078
-1	1094	1105	1114	1095
0	1118	1125	1135	1115
1	1131	1137	1149	1126
2	1112	1107	1117	1097
3	1108	1110	1120	1100
4	1106	1109	1119	1099
5	1103	1098	1107	1089
6	1100	1105	1115	1094
7	1097	1103	1112	1093
8	1087	1098	1108	1089
9	1088	1088	1097	1078
10	1093	1091	1100	1081
11	1087	1088	1097	1079
12	1091	1082	1091	1072
13	1088	1079	1088	1069
14	1080	1078	1087	1069
15	1082	1080	1088	1071

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
16	1078	1076	1085	1066
17	1068	1070	1080	1061
18	1074	1072	1081	1063
19	1063	1063	1072	1054
20	1067	1066	1075	1056
21	1066	1060	1070	1050
22	1057	1051	1060	1042
23	1057	1057	1065	1048
24	1056	1052	1061	1043
25	1047	1043	1051	1034
26	1048	1045	1055	1035
27	1043	1033	1042	1024
28	1038	1048	1058	1039
29	1038	1038	1047	1030
30	1032	1034	1043	1025
31	1038	1029	1039	1020
32	1034	1031	1039	1023
33	1036	1023	1032	1015
34	1028	1027	1036	1018
35	1026	1031	1040	1022
36	1027	1019	1028	1009
37	1023	1014	1023	1006
38	1021	1019	1027	1010
39	1020	1012	1021	1004
40	1015	1004	1012	997
41	1014	1012	1020	1005
42	1016	1007	1015	998
43	1015	1010	1020	1001
44	1012	1003	1012	993
45	1012	1000	1011	989
46	1006	1006	1015	997
47	1001	1003	1011	995
48	1006	1003	1012	995
49	994	997	1005	990
50	998	995	1003	988
51	1002	999	1008	990

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
52	996	994	1001	986
53	1001	1000	1008	991
54	993	988	996	981
55	993	994	1003	984
56	997	989	998	980
57	993	987	996	979
58	990	984	992	976
59	993	989	998	981
60	992	988	996	980
61	990	987	995	979
62	990	984	993	976
63	982	979	987	972
64	991	984	992	975
65	987	980	988	972
66	987	983	991	974
67	982	977	985	968
68	984	975	984	967
69	980	975	983	967
70	978	972	980	963
71	978	976	985	968
72	975	971	979	963
73	983	975	984	965
74	975	965	973	958
75	976	971	980	963
76	974	966	974	958
77	972	969	977	961
78	973	970	977	962
79	974	972	981	962
80	973	973	982	965
81	978	972	980	964
82	974	967	975	959
83	977	967	976	958
84	972	967	975	958
85	971	969	979	959
86	975	963	974	951
87	968	962	970	953

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
88	971	958	966	949
89	969	958	969	947
90	964	959	969	950
91	963	957	965	948
92	964	951	961	940
93	965	958	969	947
94	963	950	958	941
95	964	963	977	948
96	960	949	957	940

Percentage of beneficiaries leaving disability rolls

DI beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	4.38	4.16	4.20	4.12
-11	4.23	4.06	4.10	4.02
-10	4.08	3.96	4.00	3.92
-9	3.94	3.85	3.89	3.81
-8	3.75	3.77	3.80	3.73
-7	3.60	3.66	3.70	3.62
-6	3.39	3.57	3.62	3.53
-5	3.23	3.51	3.56	3.46
-4	3.04	3.47	3.53	3.42
-3	2.89	3.45	3.51	3.39
-2	2.75	3.40	3.46	3.34
-1	2.63	3.36	3.43	3.30
0	2.59	3.36	3.42	3.29
1	2.66	3.36	3.43	3.29
2	2.73	3.38	3.45	3.31
3	2.84	3.41	3.49	3.34
4	2.93	3.45	3.53	3.37
5	3.01	3.48	3.56	3.40
6	3.11	3.52	3.60	3.43

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
7	3.21	3.59	3.67	3.50
8	3.32	3.65	3.74	3.57
9	3.45	3.71	3.80	3.62
10	3.56	3.78	3.87	3.69
11	3.74	3.85	3.94	3.76
12	3.99	3.91	4.00	3.81
13	4.33	3.97	4.07	3.87
14	4.60	4.03	4.14	3.93
15	4.85	4.08	4.18	3.97
16	5.13	4.12	4.22	4.01
17	5.32	4.14	4.25	4.03
18	5.52	4.18	4.29	4.07
19	5.71	4.23	4.34	4.12
20	5.87	4.28	4.40	4.17
21	6.00	4.34	4.45	4.22
22	6.12	4.39	4.51	4.28
23	6.28	4.44	4.56	4.32
24	6.42	4.48	4.61	4.36
25	6.53	4.53	4.65	4.41
26	6.64	4.59	4.71	4.46
27	6.71	4.62	4.75	4.50
28	6.79	4.67	4.79	4.54
29	6.86	4.73	4.85	4.60
30	6.95	4.75	4.88	4.62
31	7.07	4.78	4.91	4.65
32	7.13	4.81	4.94	4.68
33	7.22	4.83	4.97	4.70
34	7.27	4.87	5.01	4.74
35	7.35	4.92	5.06	4.79
36	7.43	4.95	5.09	4.81
37	7.52	5.00	5.14	4.86
38	7.57	5.04	5.18	4.90
39	7.66	5.10	5.24	4.96
40	7.67	5.13	5.27	4.99
41	7.76	5.18	5.32	5.04
42	7.80	5.23	5.37	5.09

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
43	7.83	5.26	5.40	5.11
44	7.90	5.29	5.44	5.15
45	7.94	5.34	5.48	5.19
46	7.97	5.40	5.55	5.25
47	8.03	5.46	5.60	5.31
48	8.10	5.48	5.63	5.33
49	8.16	5.52	5.67	5.37
50	8.25	5.55	5.71	5.40
51	8.31	5.59	5.74	5.44
52	8.35	5.61	5.77	5.45
53	8.37	5.64	5.79	5.48
54	8.42	5.67	5.83	5.51
55	8.47	5.70	5.86	5.54
56	8.59	5.70	5.86	5.54
57	8.63	5.71	5.87	5.55
58	8.68	5.76	5.92	5.60
59	8.69	5.79	5.96	5.63
60	8.76	5.82	5.99	5.66
61	8.82	5.84	6.01	5.68
62	8.88	5.88	6.04	5.71
63	8.93	5.91	6.08	5.74
64	8.95	5.92	6.09	5.75
65	9.01	5.93	6.11	5.76
66	9.03	5.95	6.13	5.78
67	9.08	5.96	6.14	5.79
68	9.09	5.99	6.17	5.81
69	9.15	6.00	6.18	5.82
70	9.19	6.01	6.19	5.83
71	9.24	6.05	6.23	5.86
72	9.27	6.06	6.24	5.88
73	9.29	6.07	6.25	5.88
74	9.31	6.07	6.25	5.88
75	9.36	6.08	6.27	5.89
76	9.38	6.09	6.28	5.90
77	9.39	6.09	6.28	5.90
78	9.39	6.11	6.30	5.92

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
79	9.38	6.12	6.31	5.92
80	9.38	6.12	6.31	5.93
81	9.41	6.17	6.36	5.97
82	9.40	6.17	6.37	5.97
83	9.42	6.22	6.42	6.02
84	9.45	6.23	6.43	6.03
85	9.45	6.26	6.46	6.06
86	9.48	6.26	6.46	6.05
87	9.51	6.26	6.47	6.06
88	9.52	6.30	6.51	6.09
89	9.50	6.32	6.53	6.11
90	9.50	6.34	6.55	6.13
91	9.52	6.38	6.59	6.17
92	9.52	6.38	6.59	6.17
93	9.55	6.40	6.62	6.19
94	9.56	6.43	6.65	6.21
95	9.61	6.42	6.64	6.21
96	9.61	6.41	6.64	6.19

SSI beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	5.64	5.32	5.36	5.28
-11	5.54	5.26	5.30	5.22
-10	5.46	5.21	5.25	5.16
-9	5.33	5.16	5.20	5.11
-8	5.16	5.09	5.14	5.05
-7	4.98	5.01	5.05	4.97
-6	4.82	4.98	5.03	4.93
-5	4.65	4.97	5.03	4.92
-4	4.42	4.95	5.01	4.88
-3	4.23	4.94	5.01	4.88
-2	4.04	4.92	4.98	4.85
-1	3.89	4.95	5.02	4.88

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
0	3.79	4.93	5.00	4.86
1	4.03	5.01	5.08	4.93
2	4.24	5.07	5.14	4.99
3	4.47	5.14	5.22	5.06
4	4.67	5.23	5.31	5.15
5	4.85	5.30	5.38	5.21
6	5.02	5.40	5.48	5.31
7	5.18	5.53	5.61	5.44
8	5.27	5.64	5.73	5.55
9	5.42	5.79	5.88	5.69
10	5.55	5.93	6.02	5.84
11	5.67	6.05	6.14	5.95
12	5.84	6.23	6.32	6.13
13	6.04	6.34	6.43	6.24
14	6.22	6.48	6.58	6.38
15	6.36	6.61	6.71	6.51
16	6.51	6.71	6.81	6.60
17	6.62	6.83	6.94	6.73
18	6.75	6.97	7.07	6.86
19	6.84	7.08	7.19	6.97
20	6.97	7.19	7.30	7.08
21	7.09	7.33	7.44	7.22
22	7.20	7.44	7.55	7.33
23	7.30	7.52	7.64	7.41
24	7.42	7.64	7.75	7.53
25	7.55	7.72	7.84	7.61
26	7.67	7.83	7.95	7.72
27	7.74	7.93	8.04	7.81
28	7.82	8.04	8.16	7.92
29	7.92	8.12	8.24	8.00
30	7.99	8.21	8.33	8.09
31	8.05	8.30	8.42	8.18
32	8.17	8.37	8.49	8.25
33	8.25	8.50	8.62	8.37
34	8.34	8.56	8.68	8.43
35	8.42	8.67	8.79	8.54

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
36	8.50	8.73	8.85	8.60
37	8.58	8.80	8.93	8.68
38	8.68	8.89	9.02	8.76
39	8.77	8.97	9.10	8.84
40	8.89	9.05	9.18	8.92
41	8.94	9.13	9.26	9.00
42	9.00	9.22	9.35	9.09
43	9.13	9.29	9.42	9.15
44	9.20	9.40	9.53	9.26
45	9.26	9.48	9.61	9.34
46	9.33	9.53	9.66	9.39
47	9.45	9.62	9.76	9.48
48	9.50	9.70	9.84	9.56
49	9.58	9.76	9.90	9.62
50	9.67	9.85	9.99	9.71
51	9.77	9.92	10.06	9.78
52	9.87	9.97	10.12	9.83
53	9.94	10.05	10.20	9.91
54	10.01	10.11	10.26	9.96
55	10.07	10.18	10.33	10.03
56	10.15	10.26	10.41	10.11
57	10.26	10.30	10.45	10.15
58	10.33	10.38	10.54	10.23
59	10.41	10.43	10.58	10.27
60	10.45	10.48	10.64	10.33
61	10.50	10.56	10.71	10.40
62	10.59	10.62	10.78	10.46
63	10.63	10.70	10.85	10.54
64	10.71	10.74	10.90	10.58
65	10.69	10.82	10.98	10.66
66	10.76	10.88	11.04	10.72
67	10.80	10.96	11.13	10.80
68	10.81	11.00	11.16	10.83
69	10.92	11.05	11.21	10.88
70	10.96	11.11	11.27	10.94
71	11.02	11.18	11.35	11.01

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
72	11.07	11.22	11.39	11.05
73	11.10	11.28	11.45	11.11
74	11.21	11.33	11.50	11.16
75	11.28	11.38	11.56	11.21
76	11.32	11.41	11.59	11.23
77	11.29	11.45	11.62	11.27
78	11.35	11.47	11.65	11.29
79	11.37	11.52	11.70	11.33
80	11.39	11.56	11.75	11.38
81	11.51	11.58	11.76	11.39
82	11.51	11.62	11.81	11.44
83	11.57	11.67	11.86	11.48
84	11.58	11.76	11.95	11.57
85	11.64	11.82	12.01	11.63
86	11.69	11.85	12.04	11.65
87	11.75	11.90	12.10	11.71
88	11.81	11.96	12.16	11.76
89	11.84	12.01	12.21	11.81
90	11.86	12.07	12.27	11.87
91	11.92	12.14	12.34	11.94
92	12.03	12.19	12.39	11.98
93	12.09	12.28	12.48	12.07
94	12.08	12.30	12.51	12.10
95	12.11	12.38	12.59	12.17
96	12.18	12.46	12.67	12.24

Concurrent beneficiaries

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-12	5.50	5.09	5.17	5.00
-11	5.35	4.99	5.08	4.90
-10	5.14	4.89	4.98	4.80
-9	4.92	4.82	4.90	4.73
-8	4.72	4.75	4.83	4.66

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-7	4.52	4.68	4.76	4.60
-6	4.25	4.61	4.71	4.51
-5	4.07	4.60	4.70	4.49
-4	3.86	4.49	4.60	4.38
-3	3.68	4.46	4.58	4.34
-2	3.54	4.43	4.56	4.31
-1	3.39	4.42	4.55	4.29
0	3.36	4.40	4.54	4.27
1	3.52	4.40	4.54	4.27
2	3.71	4.45	4.60	4.31
3	3.88	4.49	4.64	4.34
4	4.00	4.48	4.63	4.33
5	4.17	4.51	4.67	4.36
6	4.31	4.59	4.75	4.43
7	4.44	4.63	4.79	4.46
8	4.55	4.72	4.89	4.56
9	4.63	4.81	4.99	4.64
10	4.74	4.86	5.04	4.69
11	4.89	4.94	5.12	4.76
12	5.07	5.03	5.21	4.85
13	5.24	5.09	5.27	4.90
14	5.47	5.12	5.31	4.93
15	5.65	5.22	5.42	5.03
16	5.82	5.25	5.45	5.05
17	6.00	5.32	5.52	5.12
18	6.12	5.40	5.60	5.19
19	6.27	5.43	5.64	5.23
20	6.39	5.51	5.72	5.30
21	6.53	5.55	5.76	5.34
22	6.65	5.59	5.80	5.37
23	6.69	5.67	5.89	5.45
24	6.75	5.72	5.94	5.50
25	6.81	5.81	6.03	5.59
26	6.88	5.85	6.08	5.63
27	7.01	5.88	6.11	5.66
28	7.08	5.89	6.11	5.66

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
29	7.12	5.98	6.21	5.75
30	7.20	6.03	6.26	5.79
31	7.29	6.09	6.33	5.86
32	7.35	6.13	6.37	5.90
33	7.37	6.15	6.39	5.92
34	7.39	6.23	6.47	5.99
35	7.47	6.25	6.49	6.01
36	7.57	6.29	6.54	6.05
37	7.59	6.36	6.61	6.11
38	7.68	6.38	6.63	6.14
39	7.70	6.50	6.75	6.25
40	7.78	6.54	6.79	6.29
41	7.87	6.59	6.84	6.33
42	7.92	6.63	6.88	6.37
43	7.93	6.70	6.95	6.44
44	8.05	6.69	6.95	6.43
45	8.06	6.69	6.96	6.43
46	8.12	6.71	6.97	6.44
47	8.18	6.72	6.98	6.45
48	8.22	6.74	7.00	6.47
49	8.29	6.77	7.03	6.50
50	8.37	6.85	7.12	6.58
51	8.35	6.90	7.17	6.63
52	8.47	6.93	7.20	6.65
53	8.46	6.89	7.16	6.61
54	8.46	6.88	7.16	6.61
55	8.51	6.95	7.23	6.67
56	8.52	6.97	7.25	6.69
57	8.57	7.02	7.30	6.74
58	8.64	7.04	7.32	6.75
59	8.65	7.05	7.34	6.77
60	8.67	7.03	7.32	6.75
61	8.68	7.07	7.36	6.78
62	8.75	7.09	7.38	6.80
63	8.71	7.10	7.40	6.81
64	8.79	7.07	7.37	6.77

Appendix II: Additional Information on Matching Analysis

Months since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
65	8.80	7.14	7.43	6.84
66	8.78	7.17	7.46	6.87
67	8.80	7.22	7.52	6.91
68	8.82	7.23	7.53	6.93
69	8.93	7.23	7.53	6.92
70	8.89	7.26	7.57	6.95
71	8.91	7.30	7.61	6.99
72	8.83	7.28	7.59	6.97
73	8.84	7.27	7.58	6.95
74	8.87	7.28	7.60	6.97
75	8.82	7.34	7.66	7.03
76	8.83	7.35	7.67	7.03
77	8.82	7.31	7.63	6.99
78	8.74	7.33	7.65	7.01
79	8.77	7.28	7.61	6.96
80	8.84	7.33	7.66	7.00
81	8.81	7.32	7.65	6.99
82	8.84	7.38	7.71	7.05
83	8.86	7.39	7.73	7.06
84	8.86	7.36	7.70	7.02
85	8.83	7.39	7.73	7.05
86	8.83	7.40	7.74	7.06
87	8.82	7.41	7.75	7.07
88	8.84	7.43	7.78	7.08
89	8.83	7.51	7.86	7.16
90	8.83	7.52	7.87	7.17
91	8.86	7.56	7.92	7.21
92	8.85	7.56	7.92	7.20
93	8.87	7.50	7.86	7.14
94	8.86	7.53	7.89	7.17
95	8.82	7.56	7.92	7.20
96	8.90	7.61	7.98	7.24

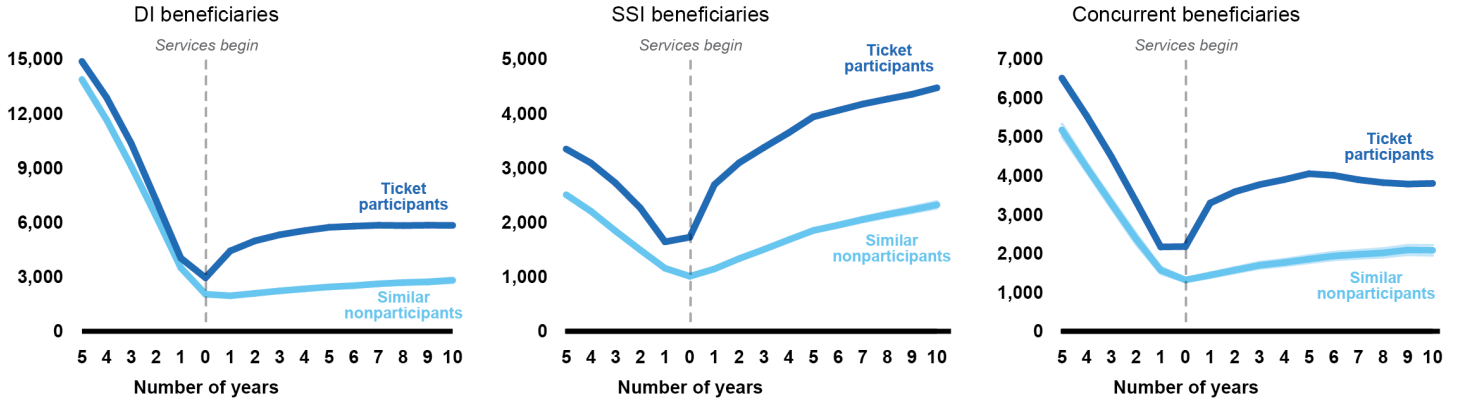
Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Note: DI refers to Disability Insurance, and SSI refers Supplemental Security Income.

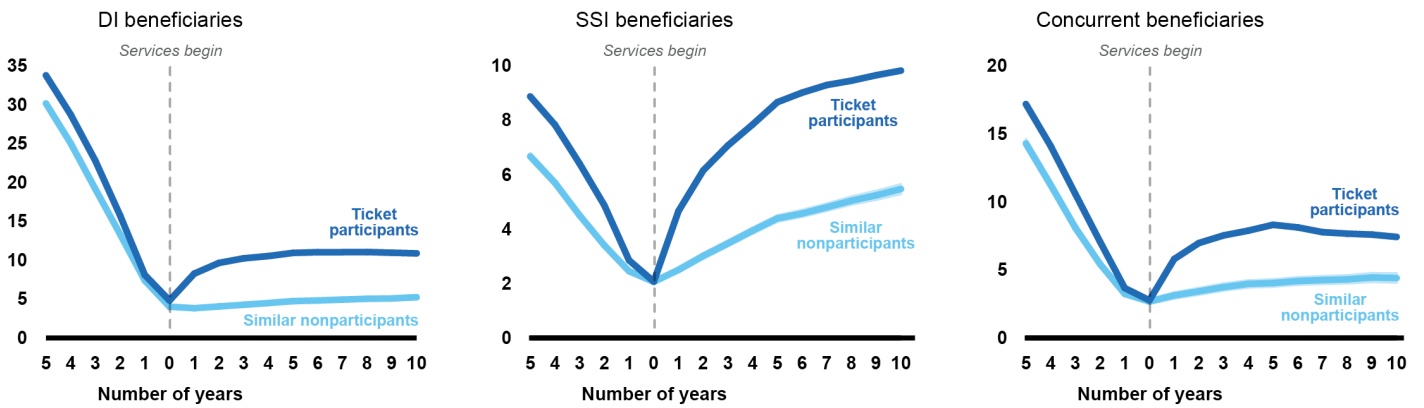
3. **Predictive fit of annual earnings outcomes:** We also compared Ticket participants and similar nonparticipants on their mean annual earnings outcomes, including the percentage of beneficiaries who were employed at SGA or above, before and after Ticket service started. Figure 9 depicts the outcomes that we estimated for the subset of Ticket participants who started services from 2002 through 2013 that we included in our earnings analysis. The figure depicts these outcomes over a 16-year window, starting 5 years before services began. It shows that, before services began, Ticket participants generally had higher earnings than their respective matched nonparticipants, on average, but that these differences were narrowing before services started. Earnings subsequently increased within 2 years of starting services; reflecting earnings growth larger than that experienced by similar nonparticipants, on average, over the corresponding period. These patterns indicated that, before starting services, Ticket participants, on average, may have had higher earnings capacity than one would expect from similar nonparticipants, but that these earlier differences are unlikely to fully account for the growth in earnings experienced by these beneficiaries in subsequent years. Together, this evidence indicated that comparisons of the two groups can inform the extent to which Ticket led to increased earnings for participants, especially when they are either adjusted for prior differences in earnings before starting services, or discussed alongside comparisons based on outcomes from before services began for appropriate context.

Figure 9: Annual Earnings of Ticket to Work and Self-Sufficiency Program (Ticket) Participants and Similar Nonparticipants Before and After Services Began

Average annual earnings (in 2020 dollars)



Percentage of beneficiaries earning at or above substantial gainful activity



Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Data tables for Figure 9: Annual Earnings of Ticket to Work and Self-Sufficiency Program (Ticket) Participants and Similar Nonparticipants Before and After Services Began

Average annual earnings (in 2020 dollars)

DI beneficiaries

Years since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-5	14872	13871	14020	13723
-4	12880	11648	11780	11516
-3	10340	9082	9208	8955
-2	7212	6340	6444	6237
-1	4036	3503	3602	3404
0	2952	2045	2104	1987
1	4430	1960	2023	1896
2	4985	2092	2161	2023
3	5320	2229	2305	2153
4	5548	2342	2421	2264
5	5731	2446	2527	2365
6	5795	2517	2606	2428
7	5845	2619	2716	2521
8	5828	2688	2793	2583
9	5846	2724	2840	2609
10	5838	2812	2937	2687

SSI beneficiaries

Years since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-5	3348	2508	2547	2470
-4	3092	2206	2246	2165
-3	2723	1841	1881	1801
-2	2264	1494	1536	1452
-1	1644	1158	1187	1128
0	1729	1011	1029	993
1	2696	1146	1170	1123
2	3097	1336	1363	1308

Appendix II: Additional Information on Matching Analysis

Years since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
3	3377	1504	1534	1474
4	3647	1681	1715	1647
5	3940	1852	1888	1815
6	4058	1950	1991	1909
7	4175	2054	2100	2009
8	4267	2147	2198	2096
9	4355	2232	2289	2176
10	4473	2324	2388	2260

Concurrent beneficiaries

Years since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-5	6512	5179	5342	5015
-4	5543	4216	4339	4093
-3	4495	3289	3421	3157
-2	3338	2378	2520	2236
-1	2170	1570	1659	1481
0	2180	1321	1368	1273
1	3298	1444	1508	1380
2	3590	1573	1645	1502
3	3773	1698	1779	1616
4	3902	1770	1856	1683
5	4053	1856	1950	1762
6	4011	1937	2037	1837
7	3898	1980	2084	1876
8	3824	2018	2130	1906
9	3788	2093	2216	1971
10	3804	2084	2216	1953

Appendix II: Additional Information on Matching Analysis

Percentage of beneficiaries earning at or above substantial gainful activity

DI beneficiaries

Years since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-5	33.76	30.15	30.37	29.94
-4	28.72	25.03	25.23	24.82
-3	22.77	19.14	19.33	18.95
-2	15.75	13.33	13.50	13.17
-1	8.10	7.38	7.52	7.23
0	4.81	4.01	4.14	3.88
1	8.26	3.82	3.98	3.67
2	9.64	4.04	4.21	3.88
3	10.23	4.26	4.43	4.09
4	10.52	4.48	4.65	4.31
5	10.93	4.73	4.90	4.55
6	11.02	4.81	5.00	4.63
7	11.02	4.92	5.12	4.73
8	11.04	5.03	5.23	4.82
9	10.95	5.07	5.30	4.85
10	10.87	5.23	5.47	4.98

SSI beneficiaries

Years since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-5	8.87	6.67	6.79	6.56
-4	7.83	5.70	5.81	5.59
-3	6.40	4.50	4.60	4.41
-2	4.87	3.40	3.48	3.31
-1	2.85	2.45	2.52	2.38
0	2.07	2.06	2.13	2.00
1	4.66	2.50	2.59	2.41
2	6.15	3.01	3.11	2.91
3	7.07	3.47	3.58	3.37
4	7.84	3.94	4.05	3.83
5	8.66	4.39	4.50	4.27

Appendix II: Additional Information on Matching Analysis

Years since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
6	9.01	4.57	4.70	4.45
7	9.29	4.80	4.93	4.67
8	9.45	5.04	5.19	4.90
9	9.65	5.24	5.40	5.08
10	9.82	5.47	5.64	5.29

Concurrent beneficiaries

Years since Ticket services began	Ticket participants	Similar nonparticipants	95% confidence interval (upper bound)	95% confidence interval (lower bound)
-5	17.18	14.29	14.62	13.96
-4	14.11	11.25	11.56	10.94
-3	10.58	8.10	8.37	7.83
-2	7.07	5.43	5.65	5.20
-1	3.66	3.24	3.41	3.06
0	2.76	2.68	2.85	2.51
1	5.79	3.12	3.34	2.89
2	6.97	3.42	3.66	3.18
3	7.53	3.73	3.99	3.48
4	7.88	3.97	4.22	3.71
5	8.31	4.03	4.29	3.77
6	8.12	4.18	4.45	3.91
7	7.77	4.25	4.53	3.97
8	7.66	4.30	4.59	4.01
9	7.59	4.44	4.75	4.12
10	7.42	4.40	4.74	4.07

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Note: DI refers to Disability Insurance, and SSI refers Supplemental Security Income.

Appendix III: Alternative Estimates of Savings from Ticket to Work

This appendix provides additional results that we conducted in order to test the validity of our results and to replicate methods from past analyses as a basis of comparison. We performed alternative estimates by using different outcome measures and by including some of the data that we dropped in our primary analysis. In the analysis presented in the report, we did not include years 2016 through 2018 due to concerns regarding the reliability of benefit and entitlement data (see section 1 of appendix I for more detail on data limitations).

We also elected to present results using outcome measures derived from other variables in the Social Security Administration's (SSA) Disability Analysis File (DAF) rather than use the variable "benefits forgone for work" (BFW) developed by SSA and used in prior evaluations of the Ticket to Work and Self-Sufficiency program (Ticket or Ticket to Work). BFW is meant to reflect the amount of benefits that an individual has forgone in a month because he or she worked at a level that caused a reduction of benefits. However, when used to estimate reduced disability benefits attributable to Ticket, BFW ignores changes to benefits associated with other reasons, such as medical recovery. We relied instead on comparisons between the amount of monthly benefits due to Ticket participants and similar nonparticipants to allow for program effects on benefits through both work and other channels. These effects may be positive or negative. For example, under program rules, SSA exempts Ticket participants who make timely progress toward self-supporting employment from medical continuing disability reviews. These exemptions may offset any savings attributable to work to the extent that they reduce the likelihood of getting off the disability rolls for medical recovery.

Table 7 provides a comparison of gross and net savings using different measures for 2002 through 2018. Specifically, the column for:

- **Total benefits entitled (due)** presents the same measure of savings that is presented in the body of the report for different time periods. It extends the savings presented in the body of the report by 3 years,

adding savings and costs for 2016 through 2018. Due to the aforementioned limitations in the benefits data for these years, we chose not to present these figures in the main body of our report. When we include these additional years, the estimated net savings are close to what we present in the body (see table 1).

- **Total benefits collected (paid)** presents the measure of savings using the benefits paid variable for the indicated time periods. It shows that the estimated savings are lower using this measure. (For more information on the differences between benefits due and benefits paid, see the subsection on Overpayments and Associated Costs in appendix I).
- **Benefits forgone for work** presents a measure of savings that applies the matching methodology only to savings as measured by the SSA BFW variable from 2002 through 2018. Unlike the measures presented in the first two columns, this measure does not include benefit reductions associated with medical improvement or other reasons. It shows that estimated savings are higher using this measure.
- **No counterfactual comparison, tally of benefits forgone for work** presents a measure of savings that is based on the simple sum of the benefits forgone for work as measured by BFW for all Ticket participants after starting services during the indicated time periods. It is not based on a counterfactual comparison to nonparticipants. This estimate assumes that all reductions in benefits experienced by Ticket participants are attributable to Ticket and, in the absence of the program, participants would have had zero earnings and would not have left the rolls for work or any other reason.

Table 7: Savings Estimates of the Ticket to Work and Self-Sufficiency Program (Ticket) Using Different Benefit Measures

In millions of dollars

Time period	Total benefits entitled to (due) ^a		Total benefits collected (paid)		Benefits forgone for work ^d		No counterfactual comparison, tally of benefits forgone for work ^e	
	Gross savings	Savings net of costs ^b	Gross savings	Savings net of costs	Gross savings	Savings net of costs	Gross savings	Savings net of costs
2002-July 2008	70.74	-280.40	-40.75	-391.89	435.49	84.35	833.68	482.54
August 2008-2015	497.72	-525.85	-158.36	-1,181.93	2,043.06	1,019.50	3,765.99	2,742.43
August 2008-2018	1,141.92	-529.30	117.05	-1,554.17	3,700.65	2,029.43	6,606.74	4,935.52

**Appendix III: Alternative Estimates of Savings
from Ticket to Work**

Time period	Total benefits entitled to (due) ^a		Total benefits collected (paid)		Benefits forgone for work ^d		No counterfactual comparison, tally of benefits forgone for work ^e	
	Gross savings	Savings net of costs ^b	Gross savings	Savings net of costs	Gross savings	Savings net of costs	Gross savings	Savings net of costs
2002-2015	568.46	-806.24	-199.11	-1,573.82	2,478.55	1,103.85	4,599.67	3,224.97
2002-2018	1,212.66	-809.68	76.30 ^c	-1,946.05	4,136.14	2,113.8	7,440.42	5,418.07

Source: GAO analysis of Social Security Administration (SSA) data. | GAO-22-104031

Note: Estimates are in 2020 dollars. Benefits entitled to (due) and benefits collected (paid) are based on SSA variables, not GAO determinations.

^aSavings estimates were calculated by comparing the reduction in benefits achieved by Ticket participants compared to that of nonparticipants with similar characteristics.

^bCosts include payments to Ticket service providers and administrative costs.

^cThis estimate of gross savings is not statistically significant at the 5 percent level; all other estimates in the table are statistically significant at the 5 percent level. The maximum margin of error for any of the gross savings measures is +/- \$103.46 million for the estimate of gross savings based on the comparison of total benefits entitled to from 2002 through 2018.

^dBenefits forgone for work is a variable constructed by SSA. This variable does not consider benefit savings from other sources, such as medical recovery.

^eThe "no counterfactual comparison" estimate does not rely on a comparison of participants and nonparticipants; rather it simply sums up the benefits forgone for work variable in SSA's Disability Analysis File for Ticket participants. This estimate assumes that benefits forgone for work would have been zero without Ticket and assumes no other benefit savings would occur in the absence of the program.

To test whether our findings were sensitive to the inclusion of participants who began Ticket before the program was available nationwide, we also estimated the total savings and costs from Ticket had we excluded participants who started the program during that time. From February 2002 to September 2004, Ticket was not available throughout the country as SSA rolled out the program in stages. Some participants started services with a VR agency during this period and did not have access to all Ticket components such as an employment network. When we excluded all Ticket participants who started services from 2002 through 2004 from our analysis, we found the costs of payments to Ticket service providers associated with the later cohorts outweighed the savings in reduced benefits, consistent with what we found in the body (see table 1). In particular, for participants who started services from 2005 through 2015, we estimated \$496 million in total reduced disability benefits, and \$601 million in payments to service providers during this period.

Appendix IV: Comments from the Social Security Administration



SOCIAL SECURITY
Office of the Commissioner

September 30, 2021

Elizabeth Curda
Director, Education, Workforce, and Income Security Issues
United States Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Director Curda:

Thank you for the opportunity to review the draft report "SOCIAL SECURITY DISABILITY: Ticket to Work Helped Some Participants, but Overpayments Increased Program Cost" (GAO-22-104031). We agree with the recommendation.

If you have any questions, please contact me at (410) 965-2611. Your staff may contact Trae Sommer, Director of the Audit Liaison Staff, at (410) 965-9102.

Sincerely,

A handwritten signature in blue ink that reads "Scott Frey".

Scott Frey
Chief of Staff

SOCIAL SECURITY ADMINISTRATION BALTIMORE, MD 21235-0001

Text of Appendix IV: Comments from the Social Security Administration

September 30, 2021

Elizabeth Curda

Director, Education, Workforce, and Income Security Issues United States
Government Accountability Office

441 G Street, NW Washington, DC 20548

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contact Trae Sommer, Director of the Audit Liaison Staff, at (410) 965-9102.

Sincerely,

Scott Frey Chief of Staff

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

Elizabeth H. Curda, (202) 512-7215 or curdae@gao.gov

Staff Acknowledgments

In addition to the individual named above, Erin Godtland (Assistant Director), Joel Green (Analyst-in-Charge), Carl Nadler, Jessica Rider, Walter Vance, and Paul Wright made key contributions to this report. In addition, key support was provided by Susan Aschoff, James Bennett, Benjamin Bolitzer, William Boutboul, Pin-En Annie Chou, Sara Daleski, Alex Galuten, Michele Grgich, James Healy, Thomas James, Emei Li, Abigail Loxton, Dan Luo, Grant Mallie, Robin Marion, Kevin Metcalfe, Christopher Morehouse, Joseph Silvestri, Almeta Spencer, Jeff Tessin, and Frank Todisco.

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