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# Overpayments Over Time: A Longitudinal Analysis of Work-Related Overpayments to Social Security Disability Insurance Beneficiaries

## DRC Working Paper

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## Abstract

This study, covering the period from January 2008 to December 2016, is the first to provide longitudinal statistics on the monthly prevalence of work-related overpayments to Social Security Disability Insurance (DI) beneficiaries. Overpayments occur when the Social Security Administration (SSA) issues a benefit to a beneficiary who is not entitled to it because he or she engaged in substantial gainful activity (SGA). Program rules dictate that SSA should withhold benefits when a beneficiary engages in SGA, which is generally defined as monthly earnings of at least \$1,260 per month in 2020 following application of any SSA work incentives. But this does not always happen, because beneficiaries might not report their earnings to SSA in a timely manner and because SSA might be delayed in processing the earnings information when it is available. Although overpayments create financial problems for SSA and beneficiaries alike, relatively little is known about the beneficiary-level prevalence of overpayments. In this study, we found large fluctuations in the prevalence of work-related overpayments that appear to be correlated with broader employment trends. Our findings offer clues to strategies that SSA and policymakers might consider to reduce the rate of work-related overpayments.

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## I. Introduction

The Social Security Disability Insurance (DI) program is the nation’s largest safety net program for workers with disabilities. Program entitlement is based on achieving insured status through covered employment and an inability to engage in substantial gainful activity (SGA) because of a long-lasting physical or mental impairment, but some DI beneficiaries have the capacity and desire for work and choose to engage in SGA. SGA is typically measured as earnings above a certain monthly threshold, which is indexed to the national average wage index to account for changes in living standards. In 2008, SGA was defined as monthly earnings above \$940 for non-blind beneficiaries and in 2020 that amount had increased to \$1,260 a month. In recent years, between 1.0 percent and 1.5 percent of DI beneficiaries have engaged in SGA for a sustained period of time (Levere et al. 2018). Program rules dictate that SSA should ultimately suspend or terminate benefits for prolonged engagement in SGA.

Recent research shows that DI beneficiaries who engage in SGA are often overpaid. Work-related overpayments occur when beneficiaries receive a benefit payment to which they are not entitled because of SGA. Hoffman et al. (2019) found that 2.7 percent of beneficiaries engaged in SGA in one or more months from 2010 to 2012 and, among that group, 71 percent received a work-related overpayment in one or more months in the three-year analysis period, with a median amount of more than \$9,000. Repaying these overpayments could create economic hardship for beneficiaries (O’Day et al. 2016; Hoffman et al. 2017) as well as fiscal and administrative challenges for SSA (SSA 2016).

Longitudinal statistics on overpayments are scarce. The annual Title II Payment Accuracy Report includes the total amount of SGA overpayment “deficiency dollars,” which approximate the total overpayment amounts. However, the annual totals are not designed to provide statistically reliable information on specific types of overpayments for specific years. There are no longitudinal statistics on the beneficiary prevalence of overpayments.

In this study, we add to the available knowledge about SSA overpayments by documenting the prevalence of overpayments in each month from January 2008 to December 2016. Unlike SSA’s estimates of overpayment amounts identified in a year, we identified whether an overpayment occurred based on the timing of work activity. For example, if SSA in 2014 identified an overpayment for an individual that occurred in 2012, we recorded the overpayment in 2012 (rather than 2014). This enabled us to more clearly interpret the changing prevalence of overpayments over time and allowed us to examine the extent to which the prevalence correlates with employment trends.

## II. Background

DI beneficiaries are subject to a complex set of work rules. They can earn an unlimited amount for up to 12 months—made up of a trial work period and a grace period—without an effect on their DI benefits. First, they are allowed to test their ability to work during a trial work period. This period is the first nine months of a rolling five-year period in which a beneficiary earns more than the trial work period threshold, which is \$910 in 2020. The 36-month period immediately after the trial work period is known as the extended period of eligibility. After the start of the extended period of eligibility, SSA counts the first month in which a beneficiary engages in SGA, which is measured as earnings above the SGA threshold (\$1,260 for nonblind beneficiaries in 2020), and the following two months as a grace period. Beneficiaries are entitled to their full benefit check during the grace period. After the grace period, SSA suspends benefits in any month in which a beneficiary engages in SGA during the extended period of eligibility. SSA terminates benefits if a beneficiary engages in SGA after the extended period of eligibility. Work-related overpayments can occur if beneficiaries have completed their grace period and subsequently engage in SGA during or after the extended period of eligibility.

Beneficiaries are required to report changes in their work activity to SSA, but only a minority do so in a timely way (SSA 2011a). Instead, SSA must often wait until they receive earnings information from another source. Until recently, the predominant source of earnings information came from the Internal Revenue Service (IRS). However, SSA does not review these earnings for as long as 18 to 24 months after the earnings occurred because the earnings information is only available after employers and self-employed beneficiaries submit tax information, the information is posted to an individual's record, and SSA matches the earnings information to other SSA administrative data (SSA 2011a). More recently, SSA began to access quarterly earnings data from the National Directory of New Hires as a timelier source of earnings information. Timeliness is important because overpayments may accrue during lags in SSA receiving annual IRS earnings information.

After obtaining earnings information, SSA must conduct a work continuing disability review. This may include attempting to gather other evidence of earnings; verifying when the work occurred (note that SSA can credit earnings in the month they are paid if there are difficulties obtaining earnings information as of September 2016, per Section 825 of the Bipartisan Budget Act of 2015); documenting the use of work incentives, including the trial work period and other allowances; and determining for which months benefits should be suspended or terminated because of SGA. This process can be challenging and time consuming; one review of cases with work-related overpayments discovered in 2009 found a median processing time of 396 days (Government Accountability Office 2011). In more recent years, work CDRs have been processed more quickly: 198 days in 2016 and 126 days in 2017 (SSA 2017, SSA 2019). Delays in processing earnings information can lengthen the duration between beneficiaries' SGA and the suspension or termination of their benefits, which result in the accumulation of overpayments.

Overpayments can be problematic for beneficiaries. Qualitative evidence suggests that overpaid beneficiaries are generally unaware of pending overpayments, which often poses a financial challenge (Kregel 2018). Unless beneficiaries file a successful appeal or waiver for the overpayment—which only occurs in about one-fifth of cases (SSA Office of the Inspector General 2015)—they are obligated to repay this debt. For beneficiaries who were overpaid because of SGA at any point from 2010 to 2012, their median outstanding overpayment balance was \$9,282 (Hoffman et al. 2019). This is high relative to the average monthly DI benefit in 2010 of \$1,068 (SSA 2011b). Beneficiaries often repay their



overpayment debt through partial withholding of a DI benefit after benefit payments have resumed (Government Accountability Office 2011).

Overpayments can also be problematic for SSA. Work-related overpayments account for a substantial sum of money: SSA identified between \$570 million and \$949 million in work-related overpayments each year from 2008 to 2016. Overpayments are not always recovered. Of the overpayments identified in a study in 2003 and 2004, between 53 and 85 percent were recovered in a roughly 10-year period (SSA Office of the Inspector General 2015). In addition, there is an administrative cost of 7 cents for every \$1 in overpayments that are recovered (SSA 2013a, 2018a).

SSA seeks to minimize overpayments as part of its larger strategic goals to preserve the public trust in its programs and ensure good stewardship of taxpayer dollars (SSA 2013b, 2018b), and it has taken several actions toward that end. First, in 2010, SSA dedicated additional resources to work continuing disability reviews, began targeting its oldest cases, and began prioritizing reviews for those with the highest earnings to minimize overpayments (SSA 2011a). Second, in October 2010, SSA began piloting a predictive model to identify and prioritize processing for beneficiaries at risk of the largest overpayment amounts, expanded the pilot in June 2011, and implemented the resulting model nationwide in June 2013. Third, in March 2014, SSA began piloting the Quarterly Earnings Project, which relied on timelier quarterly earnings data from the National Directory of New Hires in addition to the annual earnings information historically used. The pilot initially focused on a subset of beneficiaries participating in the Ticket to Work program in 2014, was expanded in February 2015, and implemented nationwide in April 2017. Fourth, SSA released myWageReport, an online application that facilitates self-reporting by DI beneficiaries in September 2017. In addition, Section 824 of the Bipartisan Budget Act allows SSA to enter into data exchanges with payroll data providers to access timely information on earnings and SSA is working to implement this practice.

### III. Method

#### A. Data

This analysis is based on monthly extracts from SSA's Master Beneficiary Record (MBR), known as the Disabled Benefits and Dependents (DBAD) files. The MBR is the primary data source used to administer the DI program and includes information on entitlement, benefits, and use of SSA work incentives. The MBR data are continually updated to reflect a beneficiary's status in the DI program, overwriting previous updates in the process. To preserve historical information on DI beneficiaries for research and statistical purposes, SSA stores DBAD files, which are monthly snapshots of the MBR.

The DBAD files preserve the most recent update to the MBR at the time they are created and up to 34 previous MBR updates. MBR updates occur only when there are updates to a beneficiary's record, such as a cost of living adjustment to benefits (which occur annually) or benefit suspense (which is dependent on a change in a beneficiary's personal circumstances or actions). To understand the structure of these files, consider a beneficiary record that reflects three SSA actions: entitlement in January 2016, a cost-of-living increase in January 2017, and a suspension for work in May 2017. The December 2018 DBAD file would include three sets of historical information. The first would be dated January 2016 and would apply from January 2016 to December 2016, the second would be dated January 2017 and would apply from January 2017 to April 2017, and the third would be dated May 2017 and would apply from May 2017 until the end of the extract in December 2018. In this example, the December 2018 DBAD file covers the beneficiary's entire DI history with just three sets of records.

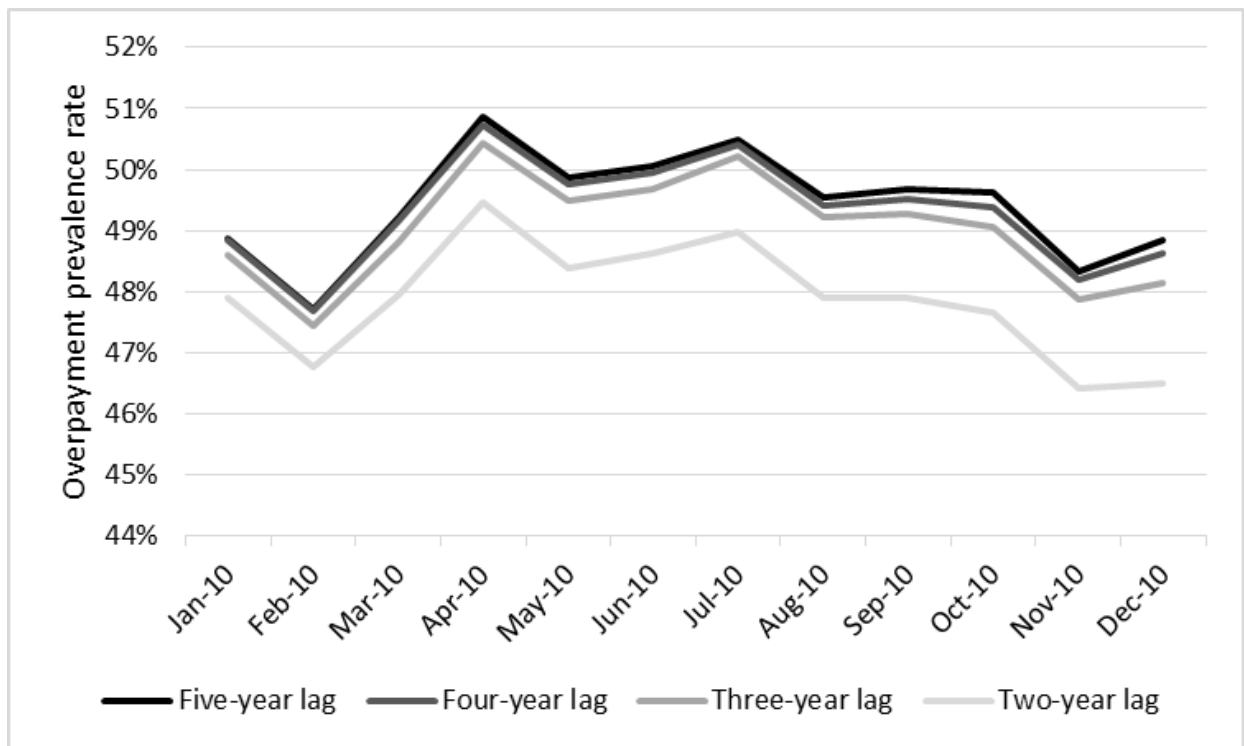
We focus our analysis period—and the data—on the period from January 2008 to December 2016. We began the analysis in January 2008, which is about when we might expect to see the effects of SSA's focus on minimizing overpayments. The first of SSA's recent initiatives began in 2010, which is about the time when SSA was likely to process overpayments that accrued in 2008 because of unreported earnings and the subsequent delay in SSA receiving earnings data (which could take up to 18-24 months), as well as SSA processing delays, which averaged 124 days in fiscal year 2010 (SSA 2011a). We ended our analysis in December 2016 to allow for a sufficient lag to identify overpayments, as we describe here.

To select our analysis sample and identify work-related overpayments, we relied on two DBAD files for each analysis year from 2008 to 2016. We used the January DBAD files for sample selection because these files reflect the most recent information known to SSA in January of each analysis year. We used a later DBAD file to identify overpayments. It was necessary to allow for a lag between the analysis year and the DBAD file used to identify overpayment because, by definition, SSA identifies overpayments with a lag. For 2008 to 2014, there was at least a four-year lag between the analysis year and the DBAD file used to identify overpayments. That is, we identified overpayments in 2008 using the December 2012 DBAD file, identified overpayments in 2009 using the December 2013 DBAD file, and so on through the 2014 analysis year, for which we used the December 2018 DBAD file. The later DBAD files reflect what SSA knew four or more years after the analysis period.

We used a shorter lag period to identify overpayments in 2015 and 2016. To identify overpayments in 2015, we used the December 2018 DBAD file—the most recent available at the time—which allowed for at least a three-year lag. We also used the December 2018 DBAD file to identify overpayments in 2016, which allowed for at least a two-year lag. To reflect the shorter period in which SSA could identify overpayments for the 2015 and 2016 analysis years, we present these results graphically using dashed rather than solid lines.

We produced estimates for the 2010 analysis year to better understand the effects of the timing of the DBAD file used to identify work-related overpayments. Exhibit 1 shows that, in our sample, using five-year and four-year lags produces virtually identical rates of overpayment prevalence among beneficiaries at risk of an overpayment because of suspension for work (beneficiaries who engage in SGA during the extended period of eligibility after the grace period).<sup>1</sup> This means that overpayments likely reach a steady state of identification four years after the analysis period, and so results based on a four-year lag are a reasonable representation of all overpayments that SSA will eventually identify. The results for 2015 (based on a three-year lag) are a close but slightly lower approximation of the overpayments SSA will ultimately identify, and the results for 2015 (based on a two-year lag) are preliminary and should be considered an undercount of overpayments.

**Exhibit 1. Prevalence of work-related overpayments in 2010 in a sample of DI beneficiaries concurrently or retroactively suspended for work, using varying DBAD lags to identify overpayments**



Source: Authors' analysis of DBAD files from January 2010, December 2012, December 2013, December 2014, and December 2015

## B. Sample selection

The analysis sample consists of a series of representative 10 percent samples that meet our selection criteria for each analysis year. We selected a 10 percent sample because we believed it would represent the full population while reducing computational burden relative to analyzing all DI beneficiaries. For

<sup>1</sup> Estimates for 2010 based on a six-year lag yielded results that were very similar to those based on four- and five-year lags. For example, results for June 2010 indicated 50.0 percent of beneficiaries concurrently or retroactively suspended for work were overpaid based on a four-year lag, 50.1 percent were overpaid based on a five-year lag, and 50.2 percent were overpaid based on a six-year lag.

each analysis year, we used the January DBAD file to randomly select a 10 percent sample based on the eighth and ninth digits of a beneficiary's Social Security number according to a sampling method used by SSA. Because we use the same terminal digits to select the 10 percent sample for each year, beneficiaries will continue to be in our sample in each analysis year unless they fail to meet the other selection criteria. The additional criteria—described in the following paragraphs—are implemented by using the January DBAD file for each year to limit the sample to those (1) in a designated current or suspended payment status, (2) entitled to DI only on the basis of their own earnings histories, (3) younger than age 62 in December of the analysis period, (4) in the lagged DBAD file used to identify overpayments, and (5) not subject to the treatment rules of SSA's Benefit Offset National Demonstration (BOND).

The first three sample selection criteria eliminate the most observations; each excludes about one-quarter to one-third of the 10 percent sample in a given year. We designed the first criterion to capture all eligible or potentially eligible non-terminated beneficiaries in January of each analysis year. We implemented this by including beneficiaries with payment status codes that indicate current payment status, payments deferred because of workers' compensation, and temporary suspension of benefits. We exclude terminated beneficiaries at the start of the calendar year because terminated beneficiaries may remain in the DBAD indefinitely. Although terminated beneficiaries may be overpaid, many terminated beneficiaries are not entitled to a payment and are not paid; DI is no longer relevant for this group and including them would artificially inflate the denominator for our prevalence statistics. It is important to note that, if a beneficiary is in current payment status in January and terminates later in the calendar year, the beneficiary is included in our analysis sample. Hence, we may include up to 11 months of termination in our analysis. Note that, if benefits are subsequently reinstated in the timeframe of our analysis, they are in current pay status and may be included in our sample again.

The second criterion is that beneficiaries be entitled to DI only on the basis of their own earnings histories. We excluded those with auxiliary entitlement on the basis of a spouse's or parent's earnings because it is difficult to use the DBAD files to distinguish between overpayments accrued as a result of the primary beneficiary's earnings from those accrued as a result of the auxiliary beneficiary's earnings. Third, we required that beneficiaries be younger than age 62 in each analysis year. We implemented this criterion because some beneficiaries might claim early retirement starting at age 62 and become subject to different earnings rules.

The fourth and fifth sample selection criteria excluded only a small proportion of observations. Less than 0.03 percent of observations in our sample were excluded because of missing records in the lagged DBAD file used to identify overpayments. Similarly, less than 0.01 percent of observations were excluded because of assignment to the BOND treatment group, which is subject to different rules governing how earnings affect benefits and which changes the calculation of overpayments.

The final analysis sample sizes range from 526,257 beneficiaries in 2008 to 618,406 beneficiaries in 2014. The sample sizes are slightly lower in 2015 and 2016 than in 2014: 611,897 and 599,211 observations, respectively. We can attribute this decline to two sources. First, the number of DI workers peaked in 2014 and subsequently declined, and we see a corresponding decline in the proportion of records in current pay status in 2015 and 2016. Second, the proportion of beneficiaries ages 62 and older also increases over that period, and we drop those beneficiaries from our sample.

### C. Identifying overpayments

The focus of our analysis was work-related overpayments that occur because of SGA. We identified such overpayments using an algorithm originally developed and used in the BOND evaluation (Hoffman et al. 2017) and more recently used to produce statistics exclusively for beneficiaries subject to current law (Hoffman et al. 2019). The approach we used in this analysis involved two steps: (1) identifying the universe of beneficiaries at risk of a work-related overpayment and (2) determining whether the beneficiary was overpaid. We summarize our approach here; details and results of case reviews that help validate our algorithm are available in Hoffman et al. (2017).

Our first step was to use the DBAD files to find beneficiaries who were at risk of a work-related overpayment. These are beneficiaries who engage in SGA after exhausting their grace period months and concurrently or retroactively had their benefits suspended or terminated for work (for ease of discussion, we often refer to this group as those who had benefits suspended or terminated for work). In most cases, we used the December DBAD file four years after the end of the analysis period, as we described previously. For example, for 2008, we used the December 2012 DBAD file to construct a history of suspension or termination statuses in each month from January to December 2008, flagging the months for each beneficiary in which his or her benefits were ultimately suspended or terminated for work. These flagged months include both months in which benefits were suspended or terminated in real time and months in which benefits were incorrectly paid (i.e. benefits were retroactively suspended or terminated). Because the DBAD does not include an indicator, we determined suspension or termination status based on an algorithm developed for the Disability Analysis File, SSA's research-ready database of DI beneficiaries.

Our second step was to identify overpayments among beneficiaries whose benefits were concurrently or retroactively suspended or terminated for work. Within this group, we identified overpayments as months in which beneficiaries retroactively had their benefits suspended or terminated for work and received a benefit payment in that month. We knew that these were overpayments because, by definition, beneficiaries whose benefits are suspended or terminated for work are not entitled to a benefit check.

### D. Analysis

We produced statistics on the monthly prevalence of overpayments from January 2008 to December 2016. The *monthly* prevalence rate measures whether a beneficiary was overpaid or not in a given month, not just the new determinations of overpayments. Overpayments of longer durations contribute to the numerator of the monthly prevalence rate for a longer period of time. To illustrate this, consider three beneficiaries: one who was not overpaid in 2008, a second who was overpaid in March and April 2008, and a third who was overpaid in every month of 2008. In the first six months in 2008, the monthly prevalence for this group is: 33 percent (January), 33 percent (February), 67 percent (March), 67 percent (April), 33 percent (May), and 33 percent (June).

We estimated the monthly overpayment prevalence for two groups: the full analysis sample and an at-risk subgroup (that is, those who concurrently or retroactively had their benefits suspended because of work in a given month). In the latter case, we excluded those whose benefits were terminated for work because, when we included overpayments for terminations, the results fluctuated widely across months in ways that made them difficult to interpret. This was the result of our sample selection criteria, which excluded those whose benefits were terminated in January of each analysis year. In the later months of each year, the number of beneficiaries terminated for work continuously grew and was at least twice as high in

December as it was in February of the same year. This is because benefit termination is typically an absorbing state; when SSA has terminated someone's benefits for work, the beneficiary generally remains terminated. This inflates the denominator for calculating overpayments among those who had benefits concurrently or retroactively suspended or terminated for work later in the year, which in turn leads to low overpayment rates toward the end of the year. This trend restarted each January when we applied new sample selection criteria that excluded terminated beneficiaries. Despite the resulting jumps between each December and January when we include overpayments for terminations, the trend is similar to that of the overpayment rate among those whose benefits were suspended (but not terminated) for work. In addition, those who had benefits suspended for work in a given month make up the majority (roughly 70 percent) of those who had benefits suspended or terminated for work in each month. So, for ease of presentation, we focus on the prevalence of overpayments among those who had benefits suspended for work in each month.

There are many interesting statistics related to overpayments, but this paper is focused on the monthly prevalence of overpayments for several reasons. First, we did not measure the incidence of overpayment because that metric is best suited for an analysis over an extended period (for example, one year or five years); this analysis focused on producing longitudinal monthly statistics to identify trends. Second, we did not measure the average monthly overpayment amount among overpaid beneficiaries. This is because of the nature of work-related overpayments: SSA either paid beneficiaries correctly or overpaid the full benefit amount. This means that the average overpayment amount among those overpaid is simply the average full benefit amount among those who were overpaid. Finally, we did not measure the total overpayment amount per overpaid beneficiary, because this is not a monthly measure. For each beneficiary, the total overpayment amount is the product of the number of overpaid months and the full benefit amount during those months.

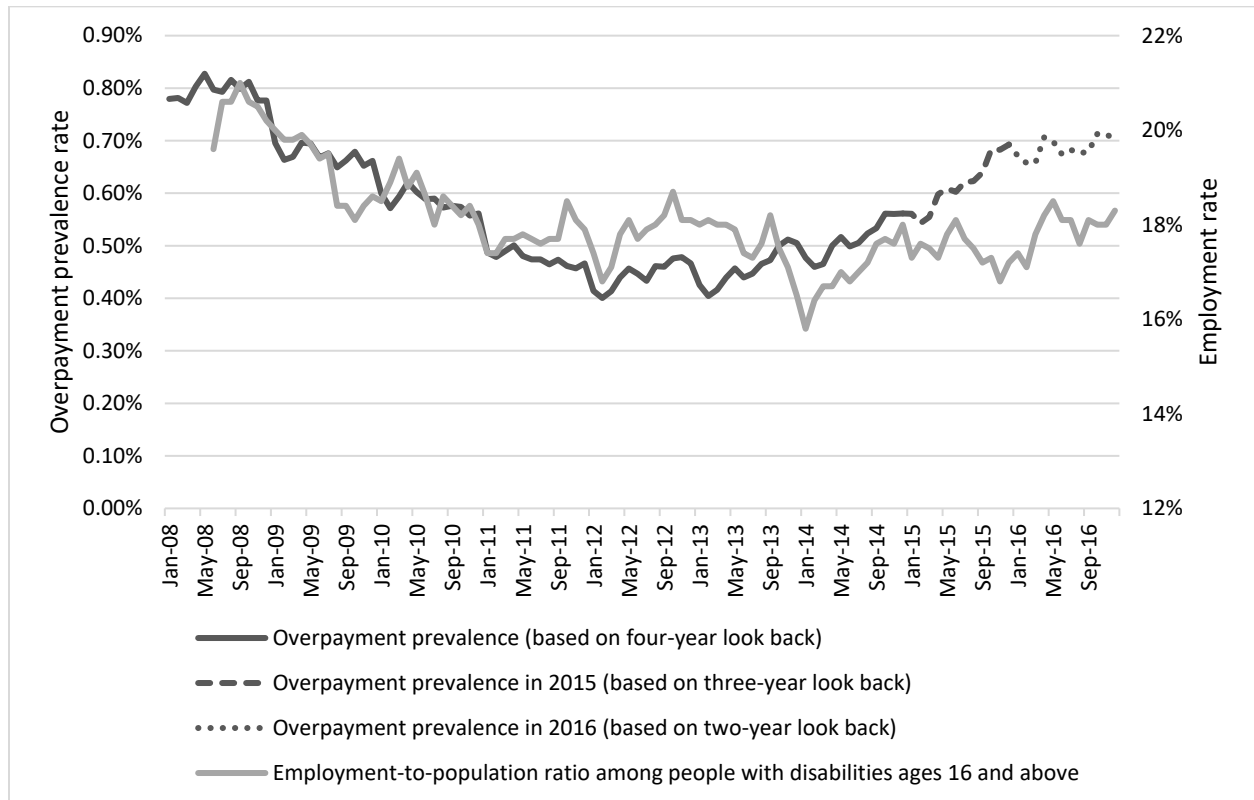
When interpreting the results, it is helpful to note that the monthly overpayment prevalence rate is related to the aggregate monthly overpayment amount. Specifically, the monthly overpayment amount is the number of overpaid beneficiaries in each month times the average overpayment amount among those overpaid. The monthly prevalence rate can be high due to a high incidence of overpayment, a high duration of overpayments among those overpaid, or both. Hence, holding all else constant, the higher the monthly prevalence, the higher the total overpayment amount. Of course, the total overpayment amount is also related to the average overpayment amount among those overpaid. This equals the full benefit amount paid to those overpaid, and reflects the composition of overpaid beneficiaries.

## IV. Results

### A. Prevalence of work-related overpayments in the full analysis sample

The prevalence of work-related overpayments among beneficiaries in the full analysis sample varied considerably from January 2008 to December 2016. As Exhibit 2 shows, at the start of the analysis period, roughly 0.8 percent of DI beneficiaries in our sample were overpaid because of work activity in a given month in 2008. The overpayment rate gradually fell over the next several years, reaching a low of about 0.45 percent in 2012, and then grew to just over 0.7 percent by the end of 2016. Because the results for 2016 are preliminary, we might expect the overpayment rate to be even higher after SSA identifies all overpayments for that year.

**Exhibit 2. Comparison of the prevalence of work-related overpayments in the full analysis sample to the employment-to-population ratio among people with disabilities**



Sources: Overpayment prevalence based on authors' calculations using the January 2008, January 2009, January 2010, January 2011, January 2012, December 2012, January 2013, December 2013, January 2014, December 2014, January 2015, December 2015, January 2016, December 2016, December 2017, and December 2018 DBAD files. The employment-to-population ratio comes from the U.S. Bureau of Labor Statistics, series ID LNU02374597.

Note: The employment-to-population ratio is calculated for people with disabilities ages 16 and older. Our analysis sample includes DI beneficiaries ages 18 to 61.

Exhibit 2 also shows the association between the prevalence of work-related overpayments among the full analysis sample and the employment-to-population ratio among people with disabilities ages 16 and older (the number of employed people with disabilities ages 16 and older divided by the total number of people

with disabilities ages 16 and older). Both measures fell from 2008 to 2011, were roughly constant in 2012 and 2013, and then increased from 2013 to 2016. Based on the results of a univariate regression model of overpayment prevalence as a function of the employment-to-population ratio, a 1 percentage-point increase in the employment-to-population ratio is associated with a 0.07 percentage-point increase in the prevalence of work-related overpayments.

We compared the overpayment rate with several available data series from the Bureau of Labor Statistics (BLS). We focused on readily available series from the BLS so that policymakers and administrators can easily use these series to monitor future trends. The overpayment rate trended with the employment-to-population ratio among men with disabilities ages 16 to 64 (BLS series ID LNU02376955) and among women with disabilities ages 16 to 64 (BLS series ID LNU02376960). For both groups, a 1 percentage-point increase in the employment-to-population ratio among people with disabilities ages 16-64 is associated with a 0.04 percentage-point increase in the prevalence of work-related overpayments. The employment-to-population ratio among the general population ages 25-54 (BLS series ID LNU02300060) appears to be a leading indicator: it fell from 2008 to 2009 while the overpayment rate fell from 2008 through 2012, it was roughly constant in 2010, and it began to increase in 2011 while the overpayment rate started to increase in 2013.

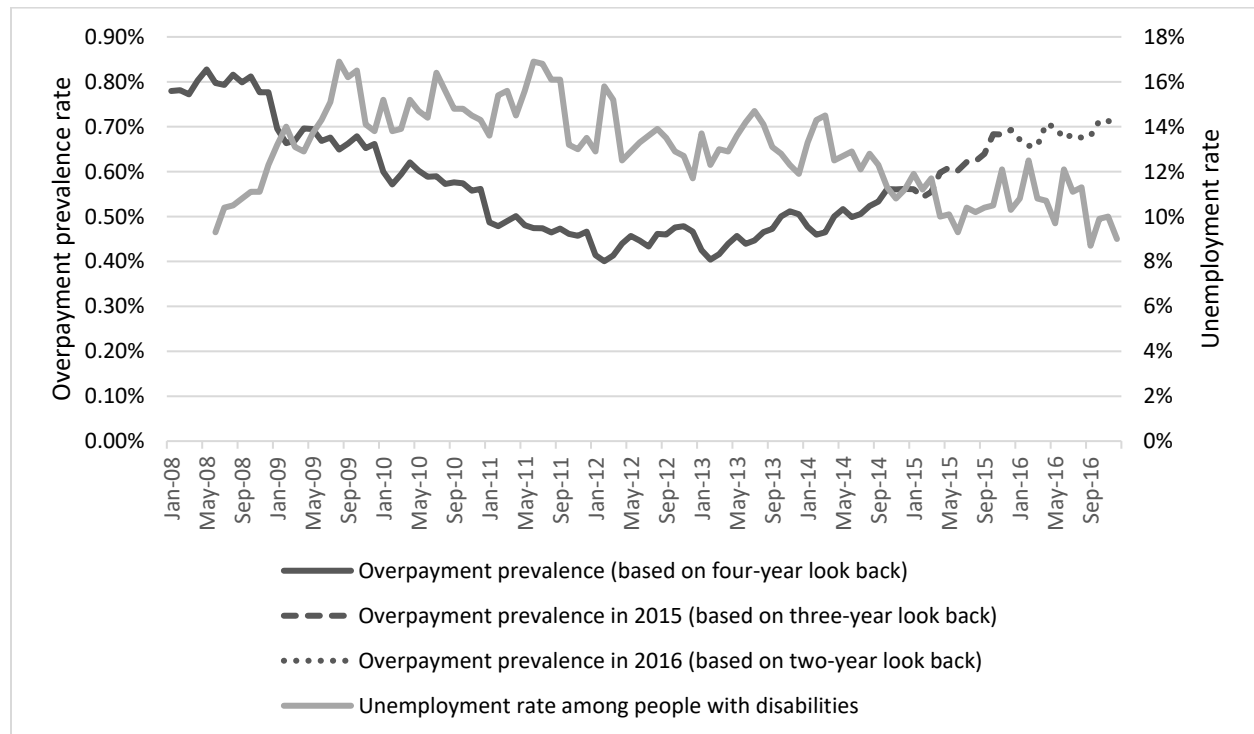
Exhibit 3 shows that the overpayment prevalence rate among the full analysis sample moves countercyclical to the unemployment rate among people with disabilities. For example, the unemployment rate grew from 2008 to 2011 and the prevalence of overpayments declined. As the unemployment rate fell from 2013 to 2016, the prevalence of overpayments increased. Based on the results of a univariate regression model of overpayment prevalence as a function of the unemployment rate, a 1 percentage-point increase in the unemployment rate is associated with a 0.025 percentage-point decrease in the prevalence of work-related overpayments.

Collectively, Exhibits 2 and 3 represent evidence of a correlation between national employment indicators and overpayments. The results are not intended to show the specific timing or magnitude of national economic or employment events or trends relative to the overpayment rate. Rather, they convey the general notion that employment trends may help signal the need to adjust the SSA resources available to process beneficiaries' earnings information.

The link between employment indicators and the overpayment rate presumably stems from the strong association between these employment indicators and the share of beneficiaries whose benefits were concurrently or retroactively suspended or terminated for work in each month (Lever et al. 2018). The proportion of beneficiaries who ultimately had benefits suspended or terminated for work has a strong bearing on the prevalence of overpayments because this group represents the universe of beneficiaries who could receive a work-related overpayment. Only a small proportion (less than 2 percent) of beneficiaries ultimately have their benefits suspended or terminated for work in a given month—hence, the prevalence of overpayments among all beneficiaries is closely tied to the proportion with benefits concurrently or retroactively suspended or terminated for work.



**Exhibit 3. Comparison of the prevalence of work-related overpayments in the full analysis sample to the unemployment rate among people with disabilities**



Sources: Overpayment prevalence based on authors' calculations using the January 2008, January 2009, January 2010, January 2011, January 2012, December 2012, January 2013, December 2013, January 2014, December 2014, January 2015, December 2015, January 2016, December 2016, December 2017, and December 2018 DBAD files. The unemployment rate among people with disabilities comes from the U.S. Bureau of Labor Statistics, series ID LNU04074597.

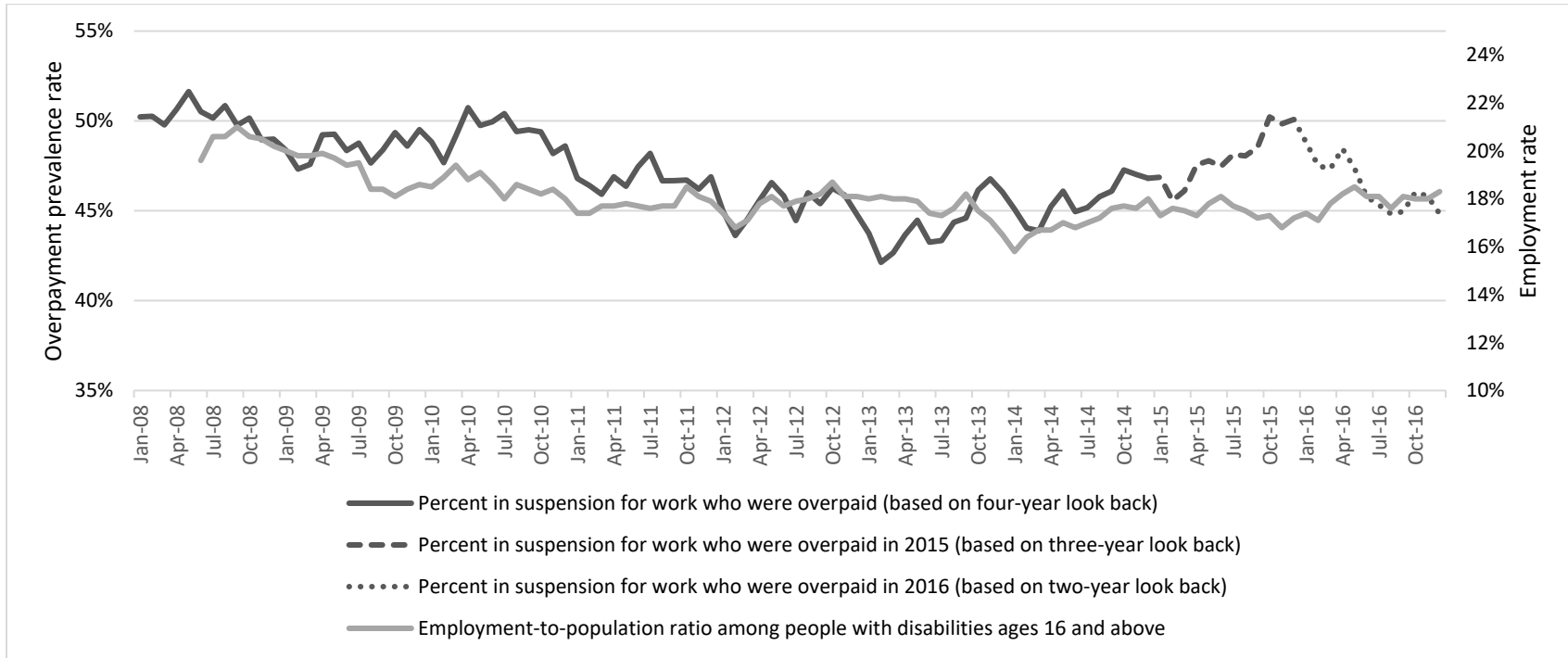
Note: The employment-to-population ratio is calculated for people with disabilities ages 16 and older. Our analysis sample includes DI beneficiaries ages 18 to 61.

### B. Prevalence of work-related overpayments among those concurrently or retroactively suspended for work

This section presents the prevalence of overpayments for a subgroup of beneficiaries at risk of receiving an overpayment. Exhibit 4 shows a decline in the prevalence of overpayments from 2008 to 2012 for people who might be overpaid because of suspension for work, followed by an increase in overpayments from 2013 to 2016. There is a notable range between the highest and the lowest overpayment prevalence among those concurrently or retroactively suspended for work: a 9.5 percentage-point difference between the May 2008 rate (51.6 percent) and the February 2013 rate (41.1 percent).

One factor that could help explain the observed changes in overpayment prevalence among beneficiaries who should have had benefits suspended for work is national employment trends. In Exhibit 4, we see a strong correlation (0.68) between the employment-to-population ratio among people with disabilities and the overpayment prevalence among those who should have had benefits suspended for work (focusing on results from the period with a four-year look back: June 2008 to December 2014).

**Exhibit 4. Prevalence of work-related overpayments among beneficiaries concurrently or retroactively suspended for work relative to the employment-to-population ratio among people with disabilities**



Sources: Overpayment prevalence based on authors' calculations using the January 2008, January 2009, January 2010, January 2011, January 2012, December 2012, January 2013, December 2013, January 2014, December 2014, January 2015, December 2015, January 2016, December 2016, December 2017, and December 2018 DBAD files. The employment-to-population ratio comes from the U.S. Bureau of Labor Statistics, series ID LNU02374597.

Note: The employment-to-population ratio is calculated for people with disabilities ages 16 and older. Our analysis sample includes DI beneficiaries ages 18 to 61.

This result is consistent with the hypothesis that employment trends affect the overpayment rate among beneficiaries at risk of an overpayment. One reason this potential exists is because an increase in the number of beneficiaries engaging in SGA and at risk of an overpayment leads to an increase in the number of beneficiaries who require a work continuing disability review. Unless there is an increase in resources to conduct those reviews or in the efficiency of the reviews, they will be delayed, and they could increase the likelihood of an overpayment. SSA does not account for labor market trends or changes in overpayments when requesting resources for work continuing disability reviews. Hence, it is plausible that strains on available resources to conduct work continuing disability reviews in periods of high economic activity contribute to overpayments.

## V. Discussion

This analysis is the first to provide evidence on the monthly beneficiary-level prevalence of work-related overpayments over time. This research establishes that the overpayment prevalence correlates with national employment trends. This is true of both the overall overpayment prevalence in the full analysis sample and for the prevalence rate among beneficiaries who concurrently or retroactively had benefits suspended for work. This is presumably because periods of high employment correlate with relatively high rates of SGA, which in turn leads to a greater need for SSA to conduct work continuing disability reviews. If SSA is caught unaware of the greater need or unable to reallocate resources quickly, it might delay its work continuing disability reviews, which could result in the accumulation of overpayments.

The extent to which SSA policies and operations effect overpayments is an open question. This research does not attempt to document the relationship between the overpayment rate and SSA initiatives to reduce overpayments. This is in part because there is a lag in the timing of when overpayment accrue and when SSA identifies overpayments. This lag exists because, by definition, SSA identifies overpayment after the work activity has occurred. Overpayments accrued in 2010, for example, are often not identified by SSA until 2011 or 2012. Hence, SSA initiatives implemented in 2012 might influence the overpayment rate as early as 2009.

Another reason that we do not attempt to assess the relationship with SSA initiatives is that comparing trends in overpayments to the timing of SSA initiatives may show correlations, but would not establish causality. Although the results we present in Exhibit 4 do not provide obvious evidence of an enduring downward trend in the prevalence of overpayments that might suggest operational improvements, it is possible that SSA initiatives decreased the prevalence of overpayments, but confounding factors add too much noise to make a reliable inference.

In addition, it is possible that SSA initiatives reduced the total overpayment amount. Aggregate overpayment amounts are a product of the number of overpayment months (which is captured by the monthly prevalence of overpayments) times the average overpayment amount (which is the full benefit amount among those overpaid). It is possible that, even without a decline in the monthly prevalence rate, the initiatives caused the composition of beneficiaries to change, leading to those with lower full benefit amounts to be overpaid and reducing aggregate overpayment amounts.

Separate from this analysis, reports from SSA and the Government Accountability Office suggest that some recent SSA initiatives improved processes known to affect overpayment or were associated with overpayment reductions. Aggregate overpayment amounts can be reduced in three ways: lower incidence, lower duration among those overpaid, or different composition of overpaid beneficiaries (i.e. shift towards beneficiaries with lower full benefit amounts being overpaid); the monthly prevalence rate reflects the incidence and duration. One report indicated that overpayment amounts reduced after the predictive model pilot, but this appears to be based on a comparison of pre- and post-pilot statistics and does not account for existing trends across the two periods (SSA 2015). Another report documented the early identification of unreported earnings as a result of the Quarterly Earnings Project (Government Accountability Office 2016). Although promising, this does not provide evidence of the association between quarterly earnings data and overpayments. Further research is necessary to provide evidence of the effects of SSA initiatives on overpayments.

## A. Limitations

The results in this analysis might not be representative of the full DI caseload. This is because our analysis includes only those who meet certain sample selection criteria, including being in current payment status, with payments suspended because of workers' compensation, or temporary suspension of benefits; entitlement to DI benefits only on the basis of one's own earnings history; being younger than age 62; among other criteria. To better understand the extent to which our results might be representative, we compared the counts of beneficiaries who concurrently or retroactively had benefits suspended or terminated in our sample with counts for all DI beneficiaries—including beneficiaries of all ages and auxiliary beneficiaries—in Levere et al. (2018). Our analysis accounts for about 78 percent of all beneficiaries who concurrently or retroactively had benefits suspended or terminated for work from 2008 to 2014; the reference paper did not include statistics for 2015 and 2016. At a minimum, our results account for the bulk of beneficiaries at risk for an overpayment.

We exclude beneficiaries who were terminated for work by January of each calendar year. That is, beneficiaries terminated for work are in our sample for at most 11 months post-termination. Although this approach may omit some termination months in which beneficiaries were overpaid for SGA, we believe it is more appropriate than the alternative. Specifically, including beneficiaries for an extended period after termination would include months in which DI is no longer relevant to the bulk of them, inflate the sample size, and artificially dilute the overpayment prevalence rate. Another potential limitation is that SSA might continue to identify overpayments after the point when we analyzed overpayments. We used 2010 as a sample year to understand the effects of different lag periods on identifying overpayments. Those results, shown in Exhibit 1, suggest that identification of new overpayments levels off four years after the analysis period. Because we used a four-year lag to identify overpayments in 2008 to 2014, we do not expect this limitation to be of concern for those analysis years. We used shorter lags of three and two years to analyze overpayments in 2015 and 2016, respectively, and do expect those results to change; our graphs use dashed lines to indicate that the results for these years are preliminary.

## B. Conclusion

Work-related overpayments are problematic for beneficiaries, SSA, and taxpayers. This analysis shows that overpayments are correlated with employment trends, which are, of course, beyond the control of SSA, policymakers, and stakeholders. But policymakers might consider allocating more resources to conducting work continuing disability reviews during periods of employment growth, which could help SSA keep pace with demand and prevent a rise in overpayments. The extent to which SSA can affect the overpayment rate through additional resources or other means remains an open question. Causal analysis is necessary to understand the effectiveness of SSA's policies in reducing overpayments. Such research might provide more concrete insights into the types of reforms that would be most valuable.

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## **Appendix**

### **Overpayment Statistics By Month**

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**Table A.1 Overpayment Statistics by Month**

Month	Analysis Sample	Suspended or terminated for work			Suspended or terminated for work & overpaid				Suspended for work & overpaid		
		#	% of analysis sample	#	#	%	% of analysis sample	% of suspended or terminated	#	% of analysis sample	% of suspended
Jan-08	526,257	7,340	1.4%	6,240	1.2%	4,102	0.8%	55.9%	3,134	0.6%	50.2%
Feb-08	526,257	7,476	1.4%	6,271	1.2%	4,112	0.8%	55.0%	3,152	0.6%	50.3%
Mar-08	526,257	7,548	1.4%	6,241	1.2%	4,062	0.8%	53.8%	3,107	0.6%	49.8%
Apr-08	526,257	7,856	1.5%	6,397	1.2%	4,226	0.8%	53.8%	3,240	0.6%	50.6%
May-08	526,257	8,073	1.5%	6,492	1.2%	4,355	0.8%	53.9%	3,352	0.6%	51.6%
Jun-08	526,257	8,051	1.5%	6,362	1.2%	4,196	0.8%	52.1%	3,214	0.6%	50.5%
Jul-08	526,257	8,155	1.5%	6,332	1.2%	4,174	0.8%	51.2%	3,176	0.6%	50.2%
Aug-08	526,257	8,431	1.6%	6,485	1.2%	4,293	0.8%	50.9%	3,298	0.6%	50.9%
Sep-08	526,257	8,484	1.6%	6,456	1.2%	4,203	0.8%	49.5%	3,213	0.6%	49.8%
Oct-08	526,257	8,678	1.6%	6,477	1.2%	4,273	0.8%	49.2%	3,249	0.6%	50.2%
Nov-08	526,257	8,614	1.6%	6,309	1.2%	4,087	0.8%	47.4%	3,088	0.6%	48.9%
Dec-08	526,257	8,694	1.7%	6,281	1.2%	4,087	0.8%	47.0%	3,077	0.6%	49.0%
Jan-09	539,700	6,910	1.3%	5,887	1.1%	3,753	0.7%	54.3%	2,848	0.5%	48.4%
Feb-09	539,700	6,796	1.3%	5,663	1.0%	3,581	0.7%	52.7%	2,680	0.5%	47.3%
Mar-09	539,700	6,941	1.3%	5,693	1.1%	3,613	0.7%	52.1%	2,709	0.5%	47.6%
Apr-09	539,700	7,175	1.3%	5,769	1.1%	3,758	0.7%	52.4%	2,840	0.5%	49.2%
May-09	539,700	7,252	1.3%	5,751	1.1%	3,749	0.7%	51.7%	2,833	0.5%	49.3%
Jun-09	539,700	7,194	1.3%	5,567	1.0%	3,607	0.7%	50.1%	2,692	0.5%	48.4%
Jul-09	539,700	7,299	1.4%	5,555	1.0%	3,648	0.7%	50.0%	2,709	0.5%	48.8%
Aug-09	539,700	7,248	1.3%	5,394	1.0%	3,504	0.6%	48.3%	2,571	0.5%	47.7%
Sep-09	539,700	7,428	1.4%	5,461	1.0%	3,575	0.7%	48.1%	2,643	0.5%	48.4%
Oct-09	539,700	7,582	1.4%	5,434	1.0%	3,664	0.7%	48.3%	2,682	0.5%	49.4%
Nov-09	539,700	7,490	1.4%	5,257	1.0%	3,520	0.7%	47.0%	2,555	0.5%	48.6%

Overpayments Over Time

Month	Analysis Sample	Suspended or terminated for work			Suspended or terminated for work & overpaid			Suspended for work & overpaid			
		#	% of analysis sample	%	#	% of analysis sample	% of suspended or terminated	#	% of analysis sample	% of suspended	
Dec-09	539,700	7,592	1.4%	5,243	1.0%	3,571	0.7%	47.0%	2,596	0.5%	49.5%
Jan-10	561,969	6,193	1.1%	4,952	0.9%	3,369	0.6%	54.4%	2,418	0.4%	48.8%
Feb-10	561,969	6,079	1.1%	4,740	0.8%	3,211	0.6%	52.8%	2,260	0.4%	47.7%
Mar-10	561,969	6,282	1.1%	4,846	0.9%	3,337	0.6%	53.1%	2,383	0.4%	49.2%
Apr-10	561,969	6,524	1.2%	4,949	0.9%	3,488	0.6%	53.5%	2,511	0.4%	50.7%
May-10	561,969	6,528	1.2%	4,846	0.9%	3,384	0.6%	51.8%	2,411	0.4%	49.8%
Jun-10	561,969	6,540	1.2%	4,732	0.8%	3,308	0.6%	50.6%	2,364	0.4%	50.0%
Jul-10	561,969	6,620	1.2%	4,694	0.8%	3,314	0.6%	50.1%	2,366	0.4%	50.4%
Aug-10	561,969	6,591	1.2%	4,554	0.8%	3,218	0.6%	48.8%	2,250	0.4%	49.4%
Sep-10	561,969	6,736	1.2%	4,603	0.8%	3,238	0.6%	48.1%	2,279	0.4%	49.5%
Oct-10	561,969	6,848	1.2%	4,519	0.8%	3,226	0.6%	47.1%	2,232	0.4%	49.4%
Nov-10	561,969	6,869	1.2%	4,435	0.8%	3,133	0.6%	45.6%	2,137	0.4%	48.2%
Dec-10	561,969	6,976	1.2%	4,433	0.8%	3,156	0.6%	45.2%	2,155	0.4%	48.6%
Jan-11	584,992	5,151	0.9%	4,130	0.7%	2,850	0.5%	55.3%	1,933	0.3%	46.8%
Feb-11	584,992	5,219	0.9%	4,100	0.7%	2,799	0.5%	53.6%	1,901	0.3%	46.4%
Mar-11	584,992	5,425	0.9%	4,186	0.7%	2,865	0.5%	52.8%	1,986	0.3%	47.4%
Apr-11	584,992	5,626	1.0%	4,262	0.7%	2,930	0.5%	52.1%	2,054	0.3%	48.2%
May-11	584,992	5,663	1.0%	4,189	0.7%	2,811	0.5%	49.6%	1,955	0.3%	46.7%
Jun-11	584,992	5,735	1.0%	4,150	0.7%	2,774	0.5%	48.4%	1,937	0.3%	46.7%
Jul-11	584,992	5,855	1.0%	4,153	0.7%	2,773	0.5%	47.4%	1,940	0.4%	46.7%
Aug-11	584,992	5,921	1.0%	4,138	0.7%	2,718	0.5%	45.9%	1,912	0.3%	46.2%
Sep-11	584,992	6,115	1.0%	4,218	0.7%	2,769	0.5%	45.3%	1,978	0.3%	46.9%
Oct-11	584,992	6,153	1.1%	4,062	0.7%	2,700	0.5%	43.9%	1,885	0.3%	46.4%
Nov-11	584,992	6,232	1.1%	4,040	0.7%	2,674	0.5%	42.9%	1,855	0.3%	45.9%
Dec-11	584,992	6,411	1.1%	4,092	0.7%	2,729	0.5%	42.6%	1,919	0.3%	46.9%

Overpayments Over Time

Month	Analysis Sample	Suspended or terminated for work			Suspended or terminated for work & overpaid			Suspended for work & overpaid		
		#	% of analysis sample	%	#	% of analysis sample	% of suspended or terminated	#	% of analysis sample	% of suspended
Jan-12	604,455	4,699	0.8%	0.6%	3,858	0.4%	53.2%	1,735	0.3%	45.0%
Feb-12	604,455	4,732	0.8%	0.6%	3,812	0.4%	51.2%	1,663	0.3%	43.6%
Mar-12	604,455	4,959	0.8%	0.7%	3,934	0.4%	50.4%	1,752	0.3%	44.5%
Apr-12	604,455	5,272	0.9%	0.7%	4,093	0.4%	50.4%	1,866	0.3%	45.6%
May-12	604,455	5,491	0.9%	0.7%	4,213	0.5%	50.3%	1,962	0.3%	46.6%
Jun-12	604,455	5,567	0.9%	0.7%	4,183	0.4%	48.5%	1,917	0.3%	45.8%
Jul-12	604,455	5,631	0.9%	0.7%	4,143	0.4%	46.5%	1,842	0.3%	44.5%
Aug-12	604,455	5,914	1.0%	0.7%	4,343	0.5%	47.1%	1,998	0.3%	46.0%
Sep-12	604,455	6,036	1.0%	0.7%	4,379	0.5%	46.1%	1,988	0.3%	45.4%
Oct-12	604,455	6,235	1.0%	0.7%	4,421	0.5%	46.1%	2,045	0.3%	46.3%
Nov-12	604,455	6,367	1.1%	0.7%	4,475	0.5%	45.4%	2,053	0.3%	45.9%
Dec-12	604,455	6,437	1.1%	0.7%	4,454	0.5%	43.8%	1,996	0.3%	44.8%
Jan-13	616,610	5,088	0.8%	0.7%	4,306	0.4%	51.5%	1,884	0.3%	43.8%
Feb-13	616,610	5,105	0.8%	0.7%	4,251	0.4%	48.8%	1,791	0.3%	42.1%
Mar-13	616,610	5,359	0.9%	0.7%	4,437	0.4%	47.9%	1,893	0.3%	42.7%
Apr-13	616,610	5,636	0.9%	0.7%	4,598	0.4%	48.1%	2,008	0.3%	43.7%
May-13	616,610	5,878	1.0%	0.8%	4,755	0.5%	47.9%	2,115	0.3%	44.5%
Jun-13	616,610	5,874	1.0%	0.8%	4,661	0.4%	46.1%	2,016	0.3%	43.3%
Jul-13	616,610	6,040	1.0%	0.8%	4,718	0.4%	45.6%	2,045	0.3%	43.3%
Aug-13	616,610	6,244	1.0%	0.8%	4,826	0.5%	46.0%	2,141	0.3%	44.4%
Sep-13	616,610	6,383	1.0%	0.8%	4,879	0.5%	45.6%	2,176	0.4%	44.6%
Oct-13	616,610	6,630	1.1%	0.8%	4,973	0.5%	46.5%	2,295	0.4%	46.1%
Nov-13	616,610	6,792	1.1%	0.8%	5,039	0.5%	46.5%	2,357	0.4%	46.8%
Dec-13	616,610	6,868	1.1%	0.8%	5,013	0.5%	45.4%	2,308	0.4%	46.0%
Jan-14	618,406	5,675	0.9%	0.8%	4,882	0.5%	52.0%	2,201	0.4%	45.1%

Overpayments Over Time

Month	Analysis Sample	Suspended or terminated for work			Suspended or terminated for work & overpaid			Suspended for work & overpaid			
		#	% of analysis sample	%	#	% of analysis sample	% of suspended or terminated	#	% of analysis sample	% of suspended	
Feb-14	618,406	5,656	0.9%	4,782	0.8%	2,842	0.5%	50.2%	2,106	0.3%	44.0%
Mar-14	618,406	5,850	0.9%	4,908	0.8%	2,876	0.5%	49.2%	2,154	0.3%	43.9%
Apr-14	618,406	6,260	1.0%	5,169	0.8%	3,093	0.5%	49.4%	2,338	0.4%	45.2%
May-14	618,406	6,503	1.1%	5,311	0.9%	3,196	0.5%	49.1%	2,448	0.4%	46.1%
Jun-14	618,406	6,540	1.1%	5,230	0.8%	3,084	0.5%	47.2%	2,351	0.4%	45.0%
Jul-14	618,406	6,699	1.1%	5,262	0.9%	3,126	0.5%	46.7%	2,377	0.4%	45.2%
Aug-14	618,406	6,923	1.1%	5,370	0.9%	3,236	0.5%	46.7%	2,459	0.4%	45.8%
Sep-14	618,406	7,099	1.1%	5,446	0.9%	3,299	0.5%	46.5%	2,510	0.4%	46.1%
Oct-14	618,406	7,372	1.2%	5,511	0.9%	3,471	0.6%	47.1%	2,605	0.4%	47.3%
Nov-14	618,406	7,431	1.2%	5,446	0.9%	3,467	0.6%	46.7%	2,561	0.4%	47.0%
Dec-14	618,406	7,548	1.2%	5,458	0.9%	3,473	0.6%	46.0%	2,555	0.4%	46.8%
Jan-15	611,897	6,288	1.0%	5,300	0.9%	3,432	0.6%	54.6%	2,484	0.4%	46.9%
Feb-15	611,897	6,290	1.0%	5,186	0.8%	3,322	0.5%	52.8%	2,363	0.4%	45.6%
Mar-15	611,897	6,522	1.1%	5,308	0.9%	3,395	0.6%	52.1%	2,448	0.4%	46.1%
Apr-15	611,897	6,943	1.1%	5,511	0.9%	3,659	0.6%	52.7%	2,621	0.4%	47.6%
May-15	611,897	7,185	1.2%	5,621	0.9%	3,725	0.6%	51.8%	2,686	0.4%	47.8%
Jun-15	611,897	7,279	1.2%	5,591	0.9%	3,687	0.6%	50.7%	2,654	0.4%	47.5%
Jul-15	611,897	7,529	1.2%	5,685	0.9%	3,801	0.6%	50.5%	2,736	0.4%	48.1%
Aug-15	611,897	7,704	1.3%	5,731	0.9%	3,813	0.6%	49.5%	2,754	0.5%	48.1%
Sep-15	611,897	7,951	1.3%	5,844	1.0%	3,913	0.6%	49.2%	2,836	0.5%	48.5%
Oct-15	611,897	8,346	1.4%	6,003	1.0%	4,182	0.7%	50.1%	3,015	0.5%	50.2%
Nov-15	611,897	8,459	1.4%	5,979	1.0%	4,178	0.7%	49.4%	2,980	0.5%	49.8%
Dec-15	611,897	8,644	1.4%	6,022	1.0%	4,238	0.7%	49.0%	3,016	0.5%	50.1%
Jan-16	599,211	6,950	1.2%	5,618	0.9%	4,022	0.7%	57.9%	2,742	0.5%	48.8%
Feb-16	599,211	7,052	1.2%	5,586	0.9%	3,939	0.7%	55.9%	2,654	0.4%	47.5%

Overpayments Over Time

Month	Analysis Sample	Suspended or terminated for work			Suspended or terminated for work & overpaid				Suspended for work & overpaid	
		#	% of analysis sample	%	#	% of analysis sample	% of suspended or terminated	#	% of analysis sample	% of suspended
Mar-16	599,211	7,229	1.2%	0.9%	5,645	0.7%	54.5%	2,672	0.4%	47.3%
Apr-16	599,211	7,774	1.3%	1.0%	5,928	0.7%	54.5%	2,873	0.5%	48.5%
May-16	599,211	7,976	1.3%	1.0%	5,978	0.7%	52.5%	2,831	0.5%	47.4%
Jun-16	599,211	8,089	1.3%	1.0%	5,920	0.7%	49.9%	2,710	0.5%	45.8%
Jul-16	599,211	8,395	1.4%	1.0%	6,019	0.7%	48.7%	2,728	0.5%	45.3%
Aug-16	599,211	8,573	1.4%	1.0%	6,061	0.7%	47.2%	2,717	0.5%	44.8%
Sep-16	599,211	8,759	1.5%	1.0%	6,115	0.7%	46.5%	2,749	0.5%	45.0%
Oct-16	599,211	9,106	1.5%	1.0%	6,115	0.7%	46.9%	2,815	0.5%	46.0%
Nov-16	599,211	9,277	1.5%	1.0%	6,124	0.7%	46.1%	2,806	0.5%	45.8%
Dec-16	599,211	9,433	1.6%	1.0%	6,113	0.7%	44.5%	2,741	0.5%	44.8%

Sources: Overpayment prevalence based on authors' calculations using the January 2008, January 2009, January 2010, January 2011, January 2012, December 2012, January 2013, December 2013, January 2014, December 2014, January 2015, December 2015, January 2016, December 2016, December 2017, and December 2018 DBAD files.

Note: The column labels represent all cases concurrently or retroactively suspended and/or terminated for work; we refer to them as "suspended or terminated for work" or "suspended for work" for brevity.



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