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Abstract

In this paper, we use administrative data from the Social Security Administration to validate survey responses for the Health and Retirement Study (HRS) regarding the application for disability benefits from Social Security Disability Insurance (DI) or Supplemental Security Income (SSI), focusing on applications that occurred after individuals entered the HRS. In our samples, amongst those that the administrative data identifies as having applied for DI or SSI, over 40% either do not report having applied or inaccurately identify whether or not the application was successful. We find some evidence that the less well educated, those with cognitive limitations, and those experiencing a health limitation on their capacity for work are more likely to misreport applications. We also explore the effect that reporting errors have on parameter estimates in a simple model of the application for DI benefits. Parameter estimates are qualitatively similar regardless of whether we use survey or administrative data to identify the application for DI benefits in our model.

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1. Introduction

Survey data include rich information about those who apply for disability benefits under the Social Security Disability Insurance (DI) or the Supplemental Security Income (SSI) disability program. On the other hand, administrative records are often considered the “gold standard” for accurate data on applications and awards, but otherwise include limited information about individuals who apply or are eligible to do so. Moreover, administrative data are often less freely available to researchers, which encourages researchers to use survey data for initial (and perhaps final) analyses.

We combine these two sets of data, focusing on the disparity between the two and empirical implications of such disparities. Our goal is to answer two research questions. First, are Health and Retirement Study (HRS) self-reports of DI/SSI applications/awards consistent with Social Security Administration (SSA) administrative data? Second, in an empirical setting, would a researcher get different estimates using the SSA administrative records rather than HRS self-reports?

We find that, even for supposedly salient events such as DI/SSI applications and awards, there are significant disparities between self-reports and administrative records. In particular, respondents with limited education (without a high school diploma) and those with some work limitations seem to “over-report” applications and awards in the HRS. However, despite the systematic reporting errors in the HRS, using HRS self-reports and Social Security administrative records to identify DI applications yields qualitatively similar results in our simple empirical model of the application decision.

In Section 2, we outline the application process for DI and SSI. In Section 3, we describe our data sources and sample definitions in detail. We compare the DI/SSI

applications/awards across the two sources of data in Section 4 and, in Section 5, we use a simple discrete-time hazard model to assess the empirical implications of the disparity in DI applications between the two sources of data. Section VI concludes.

2. Social Security Disability Insurance application process for working-aged adults

To understand our analysis, it is important to understand the application process that working age adults go through to qualify for either DI or SSI benefits, which are identical (<https://www.ssa.gov/benefits/disability/>). To qualify for DI, an applicant has to be “disability insured” which, for HRS respondents, amounts to having worked in Social Security covered employment for 20 of the 40 quarters preceding the individual’s application for benefits.¹ SSI does not require a work history, but does limit benefits to households with low income and low assets (<https://www.ssa.gov/benefits/disability/>).

Figure 1 shows the stages in the disability application process (<https://www.ssa.gov/benefits/disability/>). The applicant initiates the process by contacting a Social Security Field Office. The field office screens the application to confirm that the applicant is “technically” eligible for either DI benefits (is disability insured) and/or SSI disability benefits (household income and assets are below eligibility limits). It is possible for an applicant to be dually entitled for both DI and SSI. If the field office determines an applicant is technically eligible for DI and/or SSI, the field office forwards the application to the state Disability Determination Service (DDS). The

¹ More precisely, it is 20 out of the 40 quarters before the date at which an individual is determined to have become disabled.

DDS evaluates the applicant's health limitations to make a determination as to whether an individual's limitations are sufficiently severe to qualify for disability benefits. The health limitation criteria are the same for DI and SSI.

The DDS makes an initial determination of the applicant's claim. If the determination is positive, the applicant is awarded benefits. If the DDS rejects the claim, applicants have 60 days to appeal the DDS's initial decision. On appeal, the application goes through a reconsideration, where a separate set of examiners reevaluate the claim. If the applicant's claim is denied at the reconsideration stage, the applicant has 60 days to request a hearing before an administrative law judge (ALJ). If an applicant's claim is denied by the administrative law judge, the applicant has 60 days to appeal to the Social Security Administration's Appeals Council (<https://www.ssa.gov/apply/appeal-decision-we-made>). If this appeal is denied, the applicant can take his or her claim to federal court, though few applicants do so. The applicant can also simply re-apply.

3. Data and sample

HRS contains a nationally representative sample of the U.S. population 51 and older in the contiguous United States (Sonnegga et al., 2014). The study started in 1992 and interviews its respondents every other year. The sample is regularly "replenished" to account for aging; that is, HRS adds a new respondent cohort every six years to keep it nationally representative. Once a respondent enters the HRS, the longitudinal design follows the respondent until death or attrition.

HRS also asks its respondents for consents that allow the linkage of their SSA administrative earnings and benefits records to their survey responses. Among the SSA administrative records is the Form 831, which contains information regarding

applications for and awards of DI and SSI benefits. The Form 831 Disability Record includes information on decisions made by the state DDS office, including the dates of the applicant's initial application for benefits (literally the date when the Social Security Field Office forwards the applicant's file to the DDS), as well as the date of any determinations. The data only records information on an application (which can be either an initial consideration or a reconsideration) after the DDS determination is made and does not include any information on determinations made by ALJs. Another set of administrative records is the Master Beneficiary Record (MBR), which includes information on Social Security Old-age, Survivor, or Disability Insurance benefits (not including SSI) applications, awards, and payment history. Finally, we also use the Summary Earnings Records to determine whether a respondent has matched SSA administrative records. In this study, we focus on the disparity between HRS survey responses and administrative records, and we also explore the implications of such disparity on empirical research.

3.1 HRS self-reports of DI/SSI applications

When respondents are first interviewed by the HRS, those who indicate that they have health conditions limiting their capacity for work are asked about their applications for DI/SSI benefits, and the outcome of these applications.² In the subsequent waves,

² Between 1992 and 2000 waves, HRS asked about DI/SSI together without distinguishing between the two programs. Questions on DI and SSI became separate starting in the 2002 wave. In some cases, we can use post-2002 responses to distinguish between DI and SSI programs in pre-2000 responses. For example, if a respondent reported a pending DI/SSI application in 2000, and then in 2002 reported an approved DI application but no SSI application, we infer that the type of application in 2000 is DI. If we are not able to distinguish DI/SSI in pre-2000 waves, we count such applications as DI and SSI.

follow-up questions include whether previously pending applications have been resolved, whether (and when) previously reported denials were appealed, whether respondents whose applications were approved are still receiving benefits, and whether the respondent made any new applications. Additionally, in subsequent interviews, respondents who report health conditions that limit work (whether or not they have reported having such conditions previously) are also asked about DI/SSI applications.

Using such information, we can assemble a history of respondents' DI/SSI applications and awards, such as whether and when they have applied, whether and when the applications were denied or approved, when the benefits started and stopped, as well as whether and when the denials were appealed and the outcome of the appeals. In this study, we define four mutually-exclusive individual-level outcomes based on this information: a respondent either (a) was never asked about DI/SSI applications, (b) was asked but never applied, (c) applied but was never approved, or (d) has been approved at some point (regardless whether the benefits payment is still ongoing). We combine those who are in the process of appealing a decision with those who have been denied and are not appealing. One reason for combining the two is because, in our administrative data, we cannot distinguish the two. We will often refer to individuals who applied but were never approved for benefits as denied without intending to imply that the application isn't still ongoing.

3.2 SSA administrative records

As noted above, HRS also asks its respondents for consents allowing the linkage of their SSA administrative earnings and benefits records to their survey responses, including Form 831 and the MBR. The Form 831 Disability Records contain information

on decisions made by the state DDS offices, including the dates of the applicant's initial application for benefits as well as the date of any disability-related determinations made by the DDS. There is a Form 831 entry for each adjudication made by the DDS, which can be either an initial consideration or a reconsideration. However, as our description of the application process has indicated, technical denials (applicants who do not meet the quarters of coverage criterion for DI or the income and asset tests for SSI) are made by the Field Office, and are not included in the 831 data. In addition, the 831 file only records information on an application after the determination is made (that is, it does not include information on applications that have been filed but not adjudicated) and does not include any information on determinations made by ALJs.

By construction, only people who have applied for DI or SSI disability benefits and have had their initial DDS determination are included in SSA's Form 831 file. If a HRS respondent is not in the Form 831 file, there are two possibilities: (a) The respondent would have been in the "matched" Form 831 file had s/he applied for DI/SSI benefits, or (b) the respondent was not "matched" by SSA either because the respondent did not give permission for matching or because the respondent did give permission, but no match was found. To distinguish between the HRS respondents who were or were not matched to Social Security administrative data, we use SSA's Summary Earnings Records. Unlike SSA's benefits files (in which people do not show up until they apply for benefits), the Summary Earnings Records have an entry for each person with a valid Social Security Number. If an HRS respondent is in the Summary Earnings Records but not in the Form 831 data, we infer that the respondent can be

found (and hence matched) in SSA's administrative records.³ Table 1 shows the likelihood of match across HRS cohorts, among the HRS respondent who fit the age range and are in the cohorts that we use in this study. Overall, about 60% (descriptive statistics reported in this study are unweighted) of respondents have matched earnings records. There appears no substantial difference in the likelihood of consent across the cohorts, although the most recent cohort is less likely to be matched by the SSA conditional on consent given.

We use the Form 831 data to identify applicants for DI or SSI disability benefits. The 831 data includes information on the type of benefits a HRS respondent has applied for (DI and/or SSI), whether the application was an initial application or a reconsideration, when the application was submitted, when the adjudication was made, and whether the adjudication was a rejection or an approval. We infer the decisions made at the ALJ level using SSA's MBR, which contains information regarding type of benefits and monthly payment history on those who ever applied for Old-age, Survivor, or Disability Insurance benefits. If a respondent is shown to be receiving DI benefits but has no records of approval in Form 831, we infer that the respondent's application must have been approved at the ALJ level.⁴ The MBR does not contain information regarding

³ HRS respondents consent to earnings and benefits records separately. While in theory it is possible for a respondent to consent to one but not the other type of records, in practice almost all respondents consent to either both or neither. Our inference implicitly assumes that the two consents are interchangeable, and those who have matched earnings records will also be in the matched benefits records as soon as they are included in SSA's file.

⁴ For most individuals applying for DI there is a five-month waiting period between the point in time the individual is determined to have become disabled and is eligible to begin receiving DI benefits. The MBR will show the awards only after benefits begin to be paid. As a result, if a person's determination is made quickly, it is possible for there to be a period after the award is made and when the MBR will show as much.

SSI benefits, with the implication that we cannot use this data to confirm ALJ allowances for those considered for SSI and not DI disability benefits.

Using information available in Form 831 and MBR, we can also categorize HRS respondents into three mutually exclusive categories: (a) never applied, (b) applied but never approved, or (c) approved. For the reason mentioned above, this information should be accurate for those who considered for DI, but will miss ALJ awards for those considered for SSI alone. Since SSI only applicants represent less than 15% of all those who apply for DI/SSI in our samples, these errors should affect only a small fraction of our sample, but represents one reason why, in some of our analyses, we limit the sample to the disability insured. This categorization will also miss technical denials, which should be eliminated by limiting our samples to those who are disability insured (see Section 3.4).

3.3 Other variables in the HRS

We incorporate other variables from the public-use HRS data into our analysis of the decision to apply for disability benefits. These variables are:

- gender: female (coded 1 if yes);
- race: minority (coded 1 if nonwhite);
- education: less than high school, high school or some college, and college or more;
- self-reported health: A 0/1 indicator that equals to 1 if “good, very Good, or excellent health,” 0 otherwise;
- work limitations: A 0/1 indicator for those who report an impairment or health problem limits the kind or amount of paid work they can do; and

- cognitive ability: normal, limited (or “cognitively impaired”), or very limited (or “demented”). The measures are calibrated using the Langa-Weir categorization, available as a public-use HRS data product.

3.4 Sample

For our analysis, we start with respondents who are ages 51 to 61 from the 1992 to 2016 surveys, limiting our analysis to individuals born between 1931 and 1959.⁵ We choose age 61 as the upper limit because those age 62 and older become eligible for early retirement under the regular Old-age benefits. We then impose several restrictions to facilitate our analysis. First, we drop DI/SSI applications initiated before the respondents’ entry to the HRS from both HRS self-reports and Form 831 records.⁶ Respondents potentially have much longer recall periods for pre-entry applications, and longer recall periods might be associated with less accurate reports. Post-entry applications are typically reported in the next interview following the application and hence only have, at most, a two-year recall window. As a result, those who only had pre-entry applications but never applied once they entered the HRS are considered as “never applied” for the purpose of this research. As we explain in the results sections, in some specifications of our models, such respondents are dropped from the analysis

⁵ Included are those in the first four of the Health and Retirement Study cohorts, those born between 1931 to 1941 first interviewed in 1992 (HRS cohort), those born 1942 to 1947 and first interviewed in 1998 (War Baby [WB] cohort), those born 1948 to 1953 first interviewed in 2004 (the Early Baby Boomer [EBB] cohort), and those born 1954 to 1959 and first interviewed in 2010 (the Mid Baby Boomer [MBB] cohort).

⁶ We consider initial consideration and reconsideration as separate “applications.” If a respondent applied before entering the HRS, took the first HRS interview, then applied for a reconsideration, that reconsideration is counted as an application initiated after the baseline interview.

entirely. An implication that follows this restriction is that we only look at respondents who have had at least two interviews, since a respondent can only possibly report post-entry applications starting from their second HRS interview.

Second, in some cases, we restrict the analysis to those deemed DI eligible according to their SSA earnings records. We use the SSA Summary Earnings Records to determine whether a respondent ever has enough earnings history to be eligible for DI during our sampling period. A respondent is defined as “DI eligible” in this study if s/he was ever eligible for DI between (a) the baseline interview, and (b) the most recent interview or 2016, whichever earlier. By doing so, we should eliminate “technical denials” for such applicants, eliminating this source of discrepancy between the administrative and survey data.

4. Comparing HRS self-reports and Form 831 records

Table 1 cross tabulates our HRS sample with the availability of matched administrative data. In the four HRS cohorts, we consider just over 25% of respondents did not give the HRS permission to link to Social Security data. Of those who gave permission, 18% could not be matched, with the result that just over 60% of our sample ends up matched to Social Security administrative data. This fraction varies somewhat across cohorts. Table 2 shows how matched status varies according to whether HRS respondents were asked if they have ever applied for DI/SSI benefits and the outcomes of their applications. Those asked whether they had ever applied for DI/SSI benefits were somewhat more likely to give HRS permission to obtain data from the SSA and were also more likely to be matched, but again, the differences are not huge. Table 3 reports results from simple descriptive logits. The relative odds of giving permission and

being successfully matched were lower for minorities, those with less education, those with cognitive limitations and those who were never asked whether they applied for disability benefits.

Next we compare the administrative data on applications and awards to survey responses. In Table 4a, we limit ourselves to the matched sample and also eliminate respondents who had applied for disability benefits before entering the HRS. In Table 4b, we further restrict the sample to those who are disability insured and thus technically eligible for DI.

We will maintain the notion that the administrative data is accurate. Even if HRS respondents reported accurately, there are reasons why DI/SSI applications in HRS self-reports and Form 831 records might differ. First, as previously explained, only adjudications made at the DDS level are included in Form 831 file that we have. For those who apply for DI, we have used the MBR to identify those ultimately awarded benefits, but for those who apply for SSI benefits alone, our administrative records will miss awards at the ALJ level.⁷ In addition, the technical denials do not appear in our administrative data. Both of these issues should be minimized when we restrict the sample to the disability insured.

Second, only HRS respondents who state some type of work limitation are asked about DI/SSI applications. Respondents who do not report having a health condition that limits work are not routed through the corresponding section, even though they might have applied for or even received DI/SSI benefits previously.

⁷ In the future, we will include data on the receipt of SSI benefits to our analysis.

Based on Table 4a, we make several observations. There are a substantial number (51%) of HRS respondents who were never asked whether they applied for DI/SSI. However, 831 records show that the vast majority of those not asked whether they had applied had not done so (over 96%). Among those who had applied for but been denied DI/SSI benefits according to the administrative data, and who were asked whether they had applied in the HRS, only 50% report accurately. Thirty-five percent reported they had never applied, and 15% reported actually receiving benefits. Some of this might have to do with the fact that some individuals might have been awarded SSI benefits at the ALJ level, but Table 4b, which restricts our sample to those who are DI insured shows similar patterns. For those where the administrative data shows that the individual had been awarded benefits, a substantial majority report accurately, though even here, 18% of those who, according to the administrative data, were awarded DI/SSI benefits and who were asked the application questions, report not having applied for benefits.

Next, limiting the sample to those who were asked whether they applied for DI or SSI in the HRS, we assess who is more likely to have survey responses that are different from their administrative records. We split our sample into three sets according to their administrative records (never applied, denied, or approved) and estimate multinomial logit regressions of HRS self-reports on the set of right-hand side variables previously explained. Table 5 shows the results. Each of the three sets in Table 5 represents results from a multinomial logit regression. In each set, the omitted category in the multinomial logit model is the HRS self-report consistent with the particular administrative records.

In the first set, among those with no application records in Form 831, those with more education are less likely to report having applied for disability benefits (they are both less likely to report being denied [first column] or approved [second column]) in the HRS. Respondents who report having health conditions that limit work at the baseline, on the other hand, are relatively more likely to report having applied.

In the second and third panels, the estimates are less precise due to smaller sample sizes. However, among those for whom the administrative record shows the respondents having their application denied, respondents with work limitations were less likely to misreport as never having applied in the HRS (second set, first column), but are more likely to report their application approved. Amongst those where the administrative record shows that the respondents' applications were approved, respondents with work limitations are also relatively less likely to mis-report as never having applied for disability benefits in HRS (third set, first column). Overall, the results in Table 5 suggest that respondents with more education (that is, at least a high school degree) are less likely to misreport. Respondents with work limitations are more likely to misreport in the survey as having applied, but are less likely to misreport as having never applied when their administrative records show application.

We have also estimated comparable models using samples that do not condition on being disability insured, as well as replacing the work limitation variable with the poor health variable. These models yield obtain very similar results.

5. A simple empirical model of DI applications

In this section, we consider a very simple discrete time logit hazard model of the application for DI benefits between waves t and $t+1$, given respondent characteristics in

wave t . We exclude respondents who, based on the information we have in either the 831 or HRS data, had previously applied for DI benefits before entering the HRS. We estimate two such models. In one case we use the 831 data to define the application for DI benefits, while in the other we use the respondent's responses in the HRS. Individuals are followed until they either apply for DI benefits, reach the age of 62, attrite, or reach our last sample year (2016) without having applied. Since, as we have seen, there is substantially less than perfect agreement between the applications recorded in the 831 data and HRS responses, we do not expect the results from the two hazards to be identical. Were the reporting errors in the HRS completely random, we would not expect statistically significant or economically meaningful differences between estimates based on the 831 versus those based on the HRS (Bound 1991; Bound et al. 2001). However, we have seen reporting errors appear to be correlated with characteristics of the HRS respondents, systematically varying with education, cognitive capacities, and self-reported work limitation status. Such errors have the potential to bias estimates using the HRS data.

Table 6 reports the results. The pattern of coefficients is quite similar across the two models. Whether we used the 831 data or the HRS to define applications, minorities are more likely to apply, while the better educated are less likely to do so. The estimated effects are large. Thus, for example, based on HRS self-reports (column 1), the odds of someone without a high-school diploma relative to someone with one applies for DI are 1.56 ($\exp(0.446)$). Such differences are consistent with substantial existing evidence that labor market opportunities affect the application for DI benefits (e.g., Black et al. 2002; Autor and Duggan 2003, Bound et al. 2010 and Charles et al.

2018). Also, not surprisingly, those who report work limitations are much more likely to apply for DI benefits than those who do not (again using the HRS results, the odds of apply for someone reporting a limitation are almost 10 times as high as for someone not reporting such a limitation ($\exp(2.253)=9.5$).

Comparing the hazard model estimates using the HRS versus the administrative data to define applications shows some differences. Most notably, the coefficient on the work limitation variable is larger when using the HRS responses to identify applicants. Using the HRS, the relative odds are 9.5. Using the administrative data they are 6.4.⁸ This difference is consistent with the notion that errors in reporting whether or not a person applies to DI are endogenous to whether they report a work limitation. Thus, for example, it is easy to imagine that those who do not report a work limitation at time t or $t+1$, may be reluctant to report having applied for DI between time periods t and $t+1$ even if they did so.

There is a concern that differential measurement error in health variables could not only bias upward in magnitude the estimated effects of health on outcomes, but could also work to suppress the estimated effect of economic of variables (Bound 1991). Comparing the coefficients on education across the specifications shows no sign of this in this context.

To help understand the difference in the two sets of estimates reported in Table 6, starting with the same sample of individuals, we estimated (1) the probability that someone reports having applied for disability benefits in the HRS even though the 831

⁸ While we interpret the difference between 9.5 and 6.4 as economically meaningful, we do not know that the difference is statistically significant at conventional levels. We need to estimate a confidence interval for the difference between 9.5 and 6.4, but have not done so yet.

data does not show evidence of an application and (2) the probability that someone who applied for DI benefits (based on the 831), does not report having applied in the HRS. Estimates are reported in Table 7. Perhaps most notably, respondents who report work limitations were substantially more likely to report having applied for DI benefits even when the 831 shows no evidence they did so and were less likely to misreport not having applied for DI benefits when (based on the 831) they did so. This systematic misreporting of application status by those who report work limitations is exactly what would generate the upward bias on this variable's estimated coefficient observed in Table 6's estimates.

6. Conclusions

Our tabulations show a significant disparity between self-reports and administrative records, even for salient experiences like applications. Some of the disparity arises because many HRS respondents never claim limitations on their ability to work. In the samples, we have analyzed over 10% of those receiving DI or SSI disability benefits were never asked whether they had applied for such benefits. Perhaps, not surprisingly, an even higher fraction of those who, according to the administrative records, had applied for but were denied disability benefits were never asked whether they had applied. Even among those who were asked whether they had applied for benefits, a significant share of respondents do not report accurately, with only half of those denied benefits acknowledging as much.

Despite significant discrepancies between self-reports and administrative records, the two produce qualitatively similar estimates of the determinants of the decision to apply for DI benefits. There is evidence that using self-reports to identify the

application behavior tends to exaggerate the effect that work limitations have on the decision to apply for benefits. This pattern is consistent with the evidence we find that those who identify as having health limitations on their capacity to work are more likely to misreport having applied for DI benefits and are less likely to likely to misreport having not done so.

Our results are largely consistent with results reported in a parallel study by Hyde and Harrati (2021). Hyde and Harrati do include in their analysis applications that preceded entry into the HRS, and find some evidence that such retrospective reports are less likely to accurately identify applications for DI or SSI than are reports reflecting applications during the period of time respondents were part of the HRS study. In contrast to this report, Hyde and Harrati did not examine the effect of misreporting on estimates of behavior equations.

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Figures and tables

Figure 1: DI application process

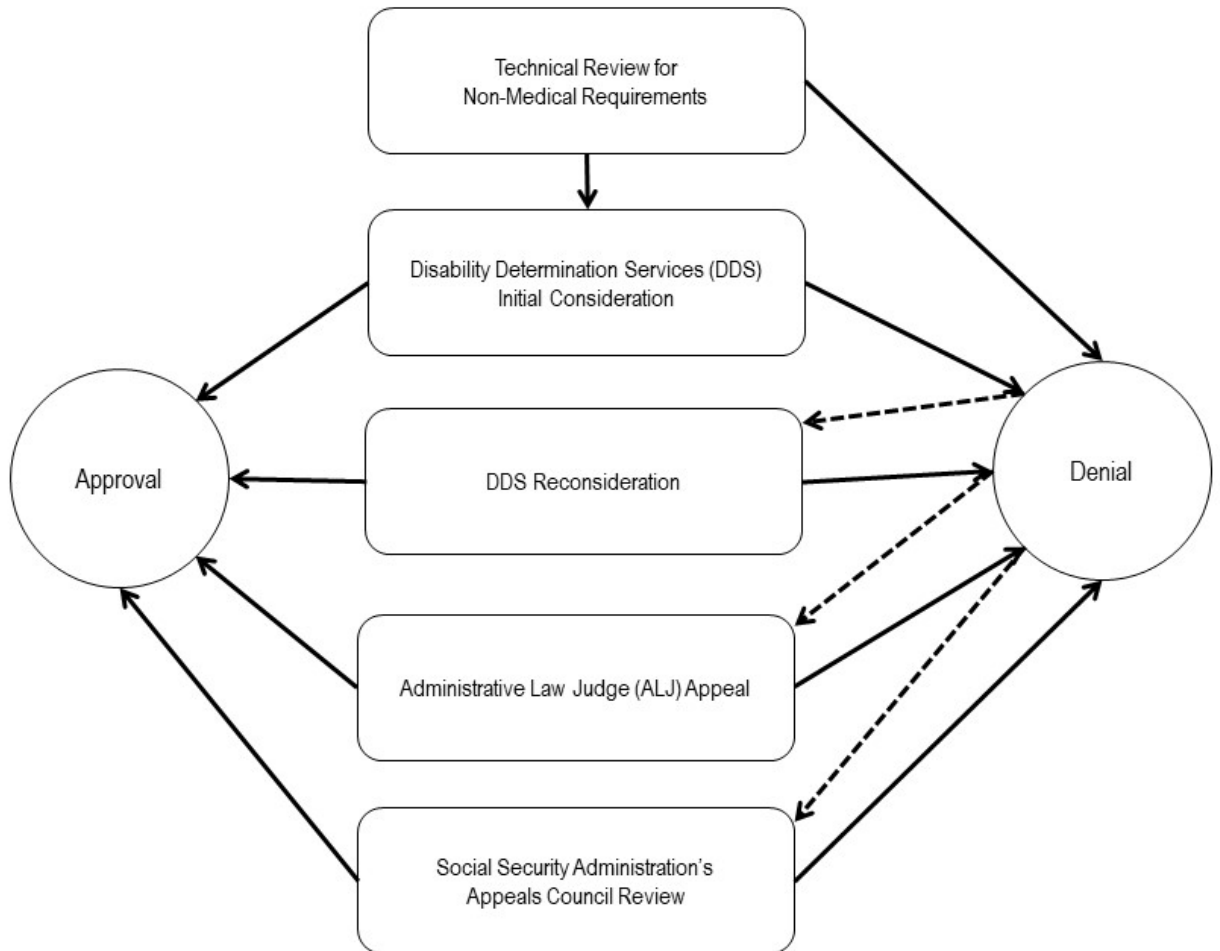


Table 1: Likelihood of match, by HRS cohorts

	No Consent	Consent, Not Matched	Matched	Total
HRS (1992)	2,264 (22.61%)	956 (11.24%)	5,287 (62.15%)	8,507 (100%)
WB (1998)	533 (23.21%)	183 (7.97%)	1,580 (68.82%)	2,296 (100%)
EBB (2004)	1,180 (25.82%)	596 (13.04%)	2,794 (61.14%)	4,570 (100%)
MBB (2010)	1,323 (25.65%)	1,045 (20.26%)	2,789 (54.08%)	5,157 (100%)
Total	5,300 (25.82%)	2,780 (13.54%)	12,450 (60.64%)	20,530 (100%)

Table 2: Likelihood of match, by self-reported /SSI application status

	No Consent	Consent, Not Matched	Matched	Total
Never Asked	2,894 (27.26%)	1,623 (15.29%)	6,099 (57.45%)	10,616 (100%)
Never Applied	2,068 (25.05%)	980 (11.87%)	5,208 (63.08%)	8,256 (100%)
Denied	83 (19.08%)	45 (10.34%)	307 (70.57%)	435 (100%)
Approved	255 (20.85%)	132 (10.79%)	836 (68.36%)	1,223 (100%)
Total	5,300 (25.82%)	2,780 (13.54%)	12,450 (60.64%)	20,530 (100%)

Table 3: Logit regression of match status

	Model 1	Model 2
Female	-0.047 (0.029)	-0.048 (0.029)
Minority	-0.321** (0.033)	-0.323** (0.033)
HS or Some College	0.090** (0.040)	0.092** (0.040)
College or More	0.203** (0.049)	0.202** (0.050)
Work Limitation at Baseline	0.084** (0.035)	
Good Health at Baseline		-0.024 (0.035)
Cognitively Limited at Baseline	-0.109** (0.042)	-0.105** (0.043)
Severely Limited at Baseline	-0.701** (0.078)	-0.688** (0.078)
Never Applied	0.312** (0.044)	0.337** (0.042)
Denied	0.663** (0.111)	0.694** (0.110)
Approved	0.526** (0.070)	0.561** (0.069)
Cohort Dummy Variables	Yes	Yes
Chi-Squared	529.90	524.70
Number of Observations	20,530	20,530

** : $p < 0.05$

Table 4a: Comparison of HRS self-reports and Form 831

	Never Applied in Form 831	Denied in Form 831	Approved in Form 831	Approved by ALJ
HRS Self-Report:				
Never Asked	4,924 (56.17%)	74 (25.69%)	87 (11.85%)	16 (8.29%)
Never Applied	3,718 (42.41%)	74 (25.69%)	128 (17.44%)	36 (18.65%)
Denied	65 (0.74%)	107 (37.16%)	42 (5.72%)	22 (11.40%)
Approved	60 (0.68%)	33 (11.46%)	477 (64.99%)	119 (61.66%)
	8,767 (100%)	288 (100%)	734 (100%)	193 (100%)

Note: Matched subsample, subtracting respondents who had DI/SSI applications before entering to the HRS.

Table 4b: Comparison of HRS self-reports and Form 831, DI eligible subsample

	Never Applied in Form 831	Denied in Form 831	Approved in Form 831	Approved by ALJ
HRS Self-Report:				
Never Asked	4,285 (57.87%)	59 (23.98%)	76 (12.18%)	16 (8.25%)
Never Applied	2,978 (40.22%)	75 (30.49%)	111 (17.79%)	41 (21.13%)
Denied	49 (0.66%)	89 (36.17%)	27 (4.32%)	19 (9.79%)
Approved	92 (1.24%)	23 (9.35%)	410 (65.71%)	118 (60.83%)
	7,404 (100%)	246 (100%)	624 (100%)	194 (100%)

Note: Matched subsample, restricting to respondents deemed to be eligible for DI, then subtracting respondents who had DI applications before entering to the HRS.

**Table 5: Multinomial logit regressions of HRS self-reports, stratified
by 831 records**

No applications in Form 831

	Denied in HRS	Approved in HRS
Female	0.017 (0.295)	0.687 (0.238) **
Minority	0.521 (0.340)	0.766 (0.241) **
HS or Some College	-0.427 (0.365)	-1.335 (0.240) **
College or More	-1.844 (0.671) **	-2.259 (0.458) **
Work Limitation at Baseline	2.394 (0.316) **	2.018 (0.229) **
Cognitively Limited at Baseline	0.134 (0.416)	0.572 (0.261) **
Severely Limited at Baseline	0.265 (0.779)	-1.248 (1.033)
Cohort Dummy Variables	Yes	Yes
Chi-Squared		258.12
Number of Observations		7,404

Denied according to Form 831

	No Application in HRS	Approved in HRS
Female	-0.643 (0.301) **	-0.540 (0.516)
Minority	0.859 (0.336) **	0.514 (0.556)
HS or Some College	-0.393 (0.363)	-0.301 (0.566)
College or More	-0.193 (0.575)	-12.86 (502.7)
Work Limitation at Baseline	-0.528 (0.298)	1.019 (0.561)
Cognitively Limited at Baseline	-0.211 (0.405)	1.056 (0.563)
Severely Limited at Baseline	0.283 (0.902)	-12.98 (925.9)
Cohort Dummy Variables	Yes	Yes
Chi-Squared		45.08
Number of Observations		246

Approved According to Form 831

	No Application in HRS	Denied in HRS
Female	-0.127 (0.160)	-0.075 (0.315)
Minority	0.129 (0.175)	0.281 (0.340)
HS or Some College	-0.562 (0.194) **	0.100 (0.416)
College or More	-0.397 (0.299)	0.764 (0.536)
Work Limitation at Baseline	-0.401 (0.174) **	0.056 (0.352)
Cognitively Limited at Baseline	0.200 (0.200)	0.030 (0.401)
Severely Limited at Baseline	0.952 (0.426) **	0.570 (0.804)
Cohort Dummy Variables	Yes	Yes
Chi-Squared		36.94
Number of Observations		818

** : $p < 0.05$

Note: Matched subsample, restricting to respondents deemed to be eligible for DI, then subtracting respondents who had DI applications before entering to the HRS.

Table 6: Logit hazard models, HRS self-reports versus Form 831

	HRS Self-Reports	Form 831
Female	0.050 (0.082)	-0.140 (0.080)
Minority	0.470 (0.095) **	0.551 (0.086) **
HS or Some College	-0.446 (0.102) **	-0.322 (0.102) **
College or More	-1.262 (0.160) **	-1.105 (0.147) **
Work Limitation	2.253 (0.082) **	1.856 (0.077) **
Cognitively Limited	0.363 (0.126) **	0.412 (0.121) **
Severely Limited	0.394 (0.292)	0.346 (0.338)
Chi-Squared	1004.06	864.24
Number of Respondents	8,468	8,468
Number of Respondent-Wave Observations	33,595	33,311

** : $p < 0.05$

Note: Matched subsample, restricting to respondents deemed to be eligible for DI, then subtracting respondents who had DI applications before entering to the HRS.

Table 7: Logit models of HRS application status conditional on 831 records

	P(Applied in HRS No Apps in 831)	P(No Apps in HRS Applied in 831)
Female	0.438** (0.186)	-0.183 (0.133)
Minority	0.685** (0.200)	0.326** (0.144)
HS or Some College	-1.044** (0.200)	-0.437** (0.161)
College or More	-2.155** (0.379)	-0.295 (0.248)
Work Limitation at Baseline	2.151** (0.187)	-0.610** (0.140)
Cognitively Limited at Baseline	0.449** (0.224)	0.036 (0.170)
Severely Limited at Baseline	-0.535 (0.623)	0.761** (0.365)
Cohort Dummy Variables	Yes	Yes
Chi-Squared	242.5	50.31
Number of Respondents	7,404	1,064

** : $p < 0.05$

Note: Matched subsample, restricting to respondents deemed to be eligible for DI, then subtracting respondents who had DI applications before entering to the HRS.