Legal Representation in Disability Claims

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Abstract

Legal representatives play a large and growing role in the Social Security Disability Insurance adjudication process, earning fees totaling $1.2 billion in 2019. Long ubiquitous in appellate hearings, disability representatives—including attorneys and non-attorneys—have begun appearing more frequently at the beginning of cases, during the initial review. This development has raised questions about the motives of disability law firms, who are sometimes perceived to prioritize their own interests in response to incentives in the fee structure set by the Social Security Administration. At the same time, these concerns have revealed just how little is understood about the value of legal representation for claimants in disability cases. We comprehensively investigate the impact of legal representation on case outcomes when representatives are engaged from the initial stage. Our analysis is made possible by new administrative data identifying representatives appointed to disability claims at the initial and appellate levels. To address selection into representation, we instrument for initial representation using geographic and temporal variation in disability law firm market shares in the closely related but distinct appellate market. Among applicants on the margin of obtaining representation at the initial level, representation improves case outcomes and administrative efficiency across several metrics. Legal representation increases the probability of initial award by 23 percentage points, reduces the probability of appeal by 60 points, and induces no detectable change in the ultimate probability of award (including appeals). This pattern indicates that legal representation in the initial stage leads to earlier disability awards to individuals who would otherwise be awarded benefits only on appeal. Furthermore, by securing earlier awards and discouraging unsupported appeals, representation reduces total case processing time by nearly one year. Our analysis explores several mechanisms.

Keywords: Disability, Social Security Disability Insurance, Legal Representation, Attorneys, Disability Law Firms

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1. Introduction

The right to representation in legal proceedings is a long-standing principle of American jurisprudence, the rationale being that matters of law are complex and consequential, demanding specialized knowledge and skills to present a strong case, ensure fair proceedings, and obtain just outcomes. The right to representation is, however, a right that is granted unequally across areas of the law. In criminal proceedings, the Sixth Amendment to the U.S. Constitution guarantees the right to counsel at state expense[1] to protect low-income individuals from unfair disadvantage by their inability to afford legal fees. But there is no equivalent right to counsel at state expense in civil proceedings,[2] even though these matters are often just as consequential. In 2017, 71 percent of low-income households reported one or more civil legal problems in the prior year, but only 20 percent had legal representation (Legal Services Corporation 2017).[3]

One such high-stakes area of civil law is Social Security Disability Insurance (SSDI), where former workers who have attained insured status through payroll tax contributions must prove to the Social Security Administration (SSA) that they are no longer able to work because of a long-lasting, medically determinable impairment that meets SSA's definition of disability. If they succeed, they receive cash benefits worth on average $1,259 per month from the date of their disability onset through their full retirement age, plus health insurance benefits from Medicare.[4] The process of applying for Social Security disability benefits is complex. The claimant must complete an application documenting their employment history, medical conditions and medical treatments, obtain medical records from all relevant health care

[1] *Gideon v. Wainwright 372 U.S. 335 (1963).*
[2] Some state laws guarantee the right to counsel in areas such as family law, involuntary commitment proceedings, medical treatment, domestic violence, and many others (Abel and Rettig 2006).
[3] Civil legal problems included health care billing and insurance disputes (experienced by 41 percent of low-income households), consumer finance matters (37 percent), rental housing (29 percent), child custody disputes (27 percent), education access (23 percent), income maintenance/government assistance (22 percent) and disability matters (23 percent) (Legal Services Corporation 2017).
[4] Benefits begin after a 5-month waiting period and Medicare coverage begins after an additional 24 months.

providers, understand the relevance of certain administrative rules and requirements, and, for those who are denied disability benefits, navigate an appeals process.[5]

In 2010, Congress passed a law allowing qualified non-lawyers to also be paid as representatives through fee withholding, the process by which SSA pays representatives directly by withholding their fees from the applicants' past-due benefits.[6] As a result, representatives need not be lawyers and the firms that are active in the initial and appellate markets can have lawyers and non-lawyers work on cases. Nevertheless, we use the terms legal representation and law firm throughout this study based on historical precedence and for comparison to research on legal representation in other areas of civil law.

Legal representatives have long played a role in disability cases at the appellate level, since appellate cases must be argued at a hearing before an administrative law judge (ALJ).[7] By our estimates, 82 percent of appellate claimants used a representative in the years 2007 to 2014. In order to be paid through withholding of fees by SSA, disability representatives must be eligible and register with SSA. Within this context, the payment amount is 25 percent of the claimant's past-due benefits up to a maximum of $6,000. If the award results in no past-due benefits ("back pay"), or the claimant is not awarded benefits, the representative receives no compensation. This contingency-fee structure has likely limited the degree of legal representation present during the initial-level review, where award rates are low (reducing the likelihood of receiving compensation) and initial decisions are rendered in a matter of weeks

[5] According to regulations, these administrative procedures are conducted "in an informal, non-adversarial manner" (20 CFR 404.900(b)).
[6] See Public Law 111 - 142 - Social Security Disability Applicants' Access to Professional Representation Act of 2010.
[7] In this study, we use the term "appellate level" to refer to a hearing before an ALJ. Other appellate levels that we do not consider include reconsideration (which occurs before the ALJ hearing level in states that perform reconsideration), and review by the Appeals Council or appeal to Federal Court (both of which follow a denial at the ALJ hearing level). Only a small number of cases proceed beyond the ALJ level (Social Security Administration, 2018).

(reducing the amount of back pay).[8] [9] Unlike the appellate level, initial reviews are performed by disability examiners in state agencies and do not involve a judicial hearing.

But, surprisingly, representation has become more common during the initial review since 2009 (Social Security Advisory Board (SSAB) 2012), by our estimates rising from 8 percent in 2010 to 15 percent in 2014. This development has raised concerns about perverse incentives created by the contingency-fee structure and prompted allegations that certain representatives minimize the effort they devote to cases at the initial level and, thus, make it more likely that the case will go to the appellate level, adding to the total time until the final decision (SSAB 2012). Indeed, much of what is known about disability representatives comes from prominent journalistic investigations that have exposed fraudulent behavior by particular disability attorneys (e.g., Paletta 2011). More generally, large disability law firms have been accused of aggressive marketing practices and of placing their own financial interests ahead of the claimant's interest (SSAB 2012). Most of the media attention has been focused on the appellate process.

What evidence there is certainly points to changing fortunes for disability representatives over the past two decades. Figure 1 shows how annual fees paid to representatives in SSDI cases (across all review levels) nearly tripled between 2001 and 2010 (from $585 million to $1.66 billion in 2019 dollars), then plummeted between 2010 and 2015, after which time they have

[8] Representatives and applicants can also sign a fee petition that sets the terms of representation. Although a fee petition need not follow the payment structure described above, the fees authorized under this process are likely lower on cases determined at the initial level. SSA determines a reasonable fee under the fee petition process based on the services provided; there would potentially be fewer services provided on a claim that did not proceed beyond the initial level of review, lending itself to a lower "reasonable" fee. Over ten times more dollars are paid through the fee agreement process than through fee petitions (Social Security Advisory Board, 2012); thus, we focus on the incentives of fee agreements in this paper.

[9] In examining the different stages of the disability application process, the large gap between the initial and appellate award rates is notable—only one in three initial claimants is awarded benefits compared to over one-half of appellants (authors' calculations). Although new case information can emerge between the initial and appellate reviews and claimants with less severe impairments may choose not to appeal, these factors may not fully account for the difference. One understudied yet potentially important difference between the initial and appellate levels is the presence of legal representatives.

stabilized (around $1.2 billion). Figure 1 also shows that the drop in fee payments follows a pronounced decline in the appellate hearing allowance rate—from 79 percent in 2008 to 55 percent in 2017. Since generally, registered representatives are compensated only if they win, the sharp decline in the hearing allowance rate resulted in substantial lost compensation for representatives, contributing to the largest for-profit disability law firm at the time to declare bankruptcy (Schwartz 2018). The increase in representation at the initial level since 2009 (Figure 2)—coincident with the retrenchment at the appellate level—suggests some disability law firms may have sought a new market—initial disability claims—in order to recoup losses in the market for appellate representation.

Despite concerns about the motives of disability law firms, it is nonetheless possible that the increase in legal representation at the initial level has improved outcomes for claimants. In other civil settings, such as immigration law or housing court, evidence from several studies, including a randomized controlled trial, shows that legal representation results in large improvements in outcomes for indigent clients and gains in efficiency for the courts (Seron et al. 2001; Eagly and Shafer 2015, Greiner et al. 2013). In principle, a disability representative might increase the claimant's odds of award by helping them construct the strongest possible case, by matching medical evidence to specific elements of the regulations, by ensuring that relevant supporting evidence is provided in a timely fashion, and by helping to avoid costly mistakes. Moreover, effective representation might reduce the amount of time it takes to obtain a disability award. Nearly half of disability beneficiaries receive their benefit awards on appeal, having been denied once or twice by their state DDS and waiting an average of two years for an appellate hearing before an ALJ (in our sample). During this time, claimants must forego any substantial work activity, which also increases their risk of being uninsured during a period of health care need (Autor et al., 2015).

Effective representation in disability claims might yield federal cost savings. Better developed cases might enable more efficient processing of claims and, by delivering decisive information sooner, may discourage some from pursuing unsupported appeals. According to the Social Security Advisory Board (email communication), claim processing costs are three times as high for a claim that proceeds to an appellate hearing than for one decided at the initial review stage. This raises the question of whether the "right" decision could be reached during the initial review, delivering benefits rapidly to those with meritorious claims, and saving the rest from fruitless appeals and prolonged work inactivity.

In this paper, we investigate the impact of legal representation on SSDI case outcomes, using newly assembled administrative data from the Social Security Administration that links individual case files to detailed information on representation. We study the universe of cases filed between 2010 through 2014, and we follow these cases through 2018 to track the claim through the appellate process and final outcomes. We focus on initial level representation owing to its rising prevalence in SSDI cases and because three-quarters of claims are finally decided at this level (SSA 2020b). Perhaps most importantly, only by focusing on the initial level can we investigate whether efficiency gains could be had if legal representatives were involved in disability cases from the outset, as opposed to only at the appellate level.

Of course, representation is not randomly assigned to disability claimants. We show that applicants with lower allowance rates – for example those with back, musculoskeletal diagnoses – are more likely to use representatives and those with terminal illnesses or compassionate allowances are less likely to use representatives. To isolate the causal effect of early legal representation on initial and subsequent SSDI case outcomes, we leverage an instrumental variables strategy that makes use of geographic and temporal variation in the market share of disability law firms in the closely related, but—crucially—different market: the SSDI *appellate*

market in the month before the claim was filed. This is motivated by the patterns in Figure 1, above, that as the appellate market became less lucrative, representatives moved into the initial claims market. As we show, legal representation by disability law firms in appellate cases varies considerably by hearing office area and across years, and initial claimants are more (less) likely to enlist legal representation from a disability law firm if they live in an area with a high (low) degree of disability firm penetration in the appellate market in the month preceding their application. Importantly, there is no overlap between the initial claims that are the focus of our analysis and the appellate cases we use to construct the instrument (since the appellate cases were decided before the initial claims were filed).

Our analysis yields several key findings. First, we document that the rate of representation in initial disability claims nearly doubled between 2010-2014, rising from 8 to 15 percent nationally, and exhibiting wide geographic variation; in some areas of the country, initial representation rates are as high as 25 percent. This variation in initial representation mimics the pronounced regional variation in the appellate market for legal representation in the month before the initial case filing. Second, disability representatives are highly selective about the cases they accept. While not surprising given the contingency-fee structure, case selection complicates empirical analysis by generating large biases in observational estimates.

Third, instrumental variables estimates that circumvent this bias reveal that legal representation increases the probability of disability award at the initial level of review by 23 percentage points, relative to a mean of 32 percent. Nearly all of the award effect is due to awards for automatically-qualifying medical conditions, and not for awards made on the basis of vocational criteria such as age, education, experience and skills.[10] Strikingly, initial representation results in no increase in the probability of final allowance (accounting for any

[10] For a description of the 5-step determination process, see Wixon & Strand (2013).

appeals), implying that while representation does not increase the total number of disability awards, representatives obtain earlier awards for claimants who would otherwise wait to be allowed on appeal.

Our fourth finding is that initial representation reduces the probability of appeal to the appellate level by 60 percentage points. Our theoretical model suggests this is the combined effect of the negative signal about a claimant's prospects (from the initial denial) and sunk costs that reduce the representative's expected net payoff from continuing the case.

Furthermore, by securing earlier awards and discouraging appeals, initial representation reduces total case processing time by 316 days—nearly one year. This large effect suggests initial representation improves administrative efficiency, an important finding in light of persistent case processing backlogs at the appellate level. Although it is alleged that representatives delay cases to maximize their fee payment, we find no evidence of this. There is no increase in processing time at either the field office or the DDS. Rather, we find representatives allege more favorable disability onset dates, which increases the claimant's back pay (and thus the representative's fee payment) without adding processing time.

Lastly, our investigation of the mechanisms by which representatives improve case outcomes reveals that representatives are particularly effective at obtaining decisive, early decisions for claimants with mental impairments, in large part by demonstrating that their clients' conditions are on the listing of impairments, and thus automatically qualifying. In contrast, there is little benefit to representation for claimants with back pain (which rarely meet the listings), and some benefit for claimants with other musculoskeletal conditions that meet the listings. In addition, representatives file claims electronically at greater rates, creating further administrative efficiencies.

These results identify the local average treatment effect (LATE) of representation on

application outcomes. We provide evidence establishing the strength of the first stage, monotonicity of the instrument(s), and exogeneity of the instrument. We also characterize the distribution of compliers and their characteristics. Together, this shows that conditions for validity of the IV approach and interpretation of the LATE are satisfied.

This paper contributes to three literatures. The first relates to target efficiency. An influential literature argues that transfer programs can improve target efficiency by imposing restrictions on eligibility or application burdens (Nichols and Zeckhauser 1982). If application burdens are large enough, individuals who have less need for income support and greater work ability will be deterred from seeking benefits. In the SSDI setting, this is an often-heard rationale for onerous application requirements, long application processing times during which applicants must forego substantial work activity, the 5-month waiting period for cash benefits and the 24-month waiting period for Medicare. But a growing literature finds burdens can in fact reduce target efficiency, because the incidence of the burdens falls more heavily upon the most disadvantaged individuals (e.g., Deshpande and Li 2019, Bhargava and Manoli 2015, Shafir and Mullainathan 2013)[11]. Our analysis suggests that earlier legal representation in disability claims *reduces* the burdens associated with obtaining benefits, improving productive efficiency (for the claimant and SSA) with no loss in target efficiency, and possibly even gains in target efficiency for individuals who do not know their impairments are automatically qualifying under the listings.

Second, our paper makes a novel contribution to the literature on disability insurance. This literature documents at least two critical issues for the disability insurance system: missing information about true work capacity giving rise to moral hazard and unexplained

[11] This is not a totally settled question. Alatas et al. (2016) and Finkelstein and Notowidigdo (2019) find the opposite, that hassles improve target efficiency.

inconsistencies in decision outcomes across adjudicators and between initial and appellate outcomes (where award rates, and also representation rates, differ enormously (see e.g., Maestas, Mullen and Strand 2013, French and Song 2014, GAO 2017). Our analysis of legal representation in SSDI claims—the first causal analysis of newly assembled administrative data—suggests representatives improve efficiency by enhancing information quality and screening. By improving the information content of disability claims, they enable adjudicators to make better justified disability decisions, at a much earlier point in the process. Representatives also perform a useful screening function: the contingency-fee structure incentivizes representatives to screen out claimants who are less likely to meet SSA's eligibility criteria. We are aware of no prior peer-reviewed literature on this topic.[12]

Finally, our paper contributes to the law literature by providing new, quasi-experimental evidence on the effect of legal representation in an understudied, but consequential area of civil law. Our analysis finds that legal representation in initial disability claims is inefficiently low, possibly owing to the contingency-fee structure, even though initial claimants on the margin of representation would benefit from legal representation.

The paper proceeds as follows. In Section 2, we describe the SSDI application process and the role that representatives play in this process. In Section 3, we present a model that illustrates the potential benefits and costs of representation from the perspectives of both claimants and legal representatives. In Section 4 we describe our administrative data. Sections 5 and 6 present our empirical strategy and main results, respectively. In Section 7, we interpret our

[12] GAO (2003, 2010) first noted that representation in appellate claims was associated with a three-fold increase in the hearing allowance rate. The Social Security Advisory Board (2011) drew attention to the rise in representation at the initial level and allegations that representatives appeared to slow down processing. An early version of this paper (Hoynes, Maestas, Strand 2016) documented the descriptive patterns of representation at the initial level and correlates with case outcomes. Lastly, a new working paper by Tuttle and Wilson (2021) documents a positive reduced form relationship between application processing times and increases in the representative fee cap that occurred in 2002 and 2009, controlling for the effects of co-occurring recessions.

estimates in the context of the model in Section 3 to draw implications about the value of representation for claimants and SSA, and in Section 8 we conclude.

2. Social Security Disability Programs, the Application Process, and the Role of Representatives

The U.S. Social Security Disability Insurance (SSDI) program is a contributory social insurance program that pays monthly cash benefits to individuals who become disabled, provided they are insured for benefits and meet the program's medical and vocational criteria. Supplemental Security Income (SSI) is a Federal welfare program that pays cash benefits to individuals who are disabled (in addition to elderly adults), provided they have low income and assets and meet the same medical and vocational criteria as SSDI. As of December 2018, the SSDI program provided cash benefits to 8.5 million disabled workers and 1.6 million dependent spouses and children, for an annual expenditure of $143.7 billion in 2018 (Social Security Administration 2019b). The SSI program provided support to 4.7 million non-elderly disabled adults and 1.2 million disabled children, for a total annual expenditure of $48.5 billion in 2018 (Social Security Administration, 2019b). Applications for SSDI and SSI benefits are processed by the same administrative review structure and are evaluated concurrently for both programs when the non-medical eligibility criteria are met for both.[13]

Individuals are insured for SSDI benefits if they have earned at least one work credit (and made corresponding payroll tax contribution) for every calendar year elapsing between age 21 and the year they became disabled, and if half of the work credits were earned recently.[14] Because of the recency requirement, people can lose their insured status if too much time lapses

[13] Note caseload figures include 1.5 million people who receive benefits from both SSDI and SSI (Social Security Administration, 2016a).
[14] In 2016, one work credit is earned for every $1,260 in annual earnings, up to a maximum of four work credits per year.

between their last employment spell and the time they apply for benefits. SSDI benefits are a function of average career earnings, similar to Social Security retirement benefits (but without actuarial reduction for early claiming), and in August 2020 the average monthly benefit for disabled workers was $1,259 (Social Security Administration 2020a). There is no analogous contribution requirement for SSI, which is financed from general fund revenues. SSI payments are based on the federal benefit rate, which is $783 per month for an individual in 2020. In addition to cash benefits, both disability programs confer eligibility for health insurance—Medicare in the case of SSDI and Medicaid in the case of SSI.

Unlike other federal benefit programs administered by the Social Security Administration (e.g., retirement benefits), the process of claiming disability benefits can be long and complicated, and a favorable outcome is not assured—even for people who have made the required payroll tax contributions to become insured for SSDI. This is because insured status is necessary but not sufficient. SSA must also determine that the applicant is "*unable to engage in any substantial gainful activity (SGA) because of a medically-determinable physical or mental impairment(s) that is expected to result in death or that has lasted or is expected to last for a continuous period of at least 12 months.*" The practical application of this standard to modern disability cases requires complex judgments, and results in substantial variation in outcomes across disability adjudicators (Maestas, Mullen and Strand, 2013).

To apply for SSDI or SSI benefits, forms *16 Application for Disability Benefits* and *3368 Adult Disability Report* can be filed online, or in person at a local Social Security Field Office.[15] Field office staff first verify that the applicant is not currently engaging in substantial gainful activity—generally defined as earning $1,260 per month or more in 2020. Next field office staff

[15] Applicants can also call SSA's toll-free telephone number, which provides them with an appointment at their local field office.

assist applicants in developing their applications. This can involve interviewing the applicant in order to complete items on Form 3368. Form 3368 collects personal information about the applicant, including English language proficiency, current work activity, job history (over the last 15 years), a report of medical conditions, a list of medications, and a description of medical treatments received from each medical provider. Medical records from all relevant providers can be submitted with the application, or they will be requested by SSA.

Once the application is complete, the field office forwards it electronically to the state office of the Disability Determination Service (DDS), where the application is assigned to a disability examiner. The examiner will request the applicant's medical records if not already included with the application. If the application is not sufficiently developed or if there is conflicting medical evidence or for other reasons, he or she can request that the applicant undergo a consultative medical exam by an SSA medical consultant. If the applicant refuses, a possible outcome is a denial for refusal to submit to the consultative medical exam. If the application is not adequately documented and the applicant does not provide additional information as requested, a possible outcome is denial for insufficient evidence.

Once requested documentation is received, the examiner uses a five-step sequential decision process to decide whether the applicant meets SSA's disability standard. The first step is to verify that the applicant is not earning above the SGA level and as noted above, this step is done by field office staff. In Step 2, the examiner screens the application for short-duration and non-severe impairments, and denies those cases. In Step 3, the examiner checks the applicant's medical diagnoses against SSA's Listing of Impairments (conditions deemed severe enough to qualify the applicant on that basis alone) and allows those cases. The remaining cases proceed to Steps 4 and 5, where the examiner uses vocational information—such as education, training, work history, and age—in combination with detailed assessments of the claimant's physical

and/or mental residual functional capacities. In Step 4, the examiner considers the applicants' work history and assesses whether the applicant has the functional capacity to perform any of his or her past jobs. If yes, the application is denied. If no, then the examiner proceeds to Step 5, in which the applicant's education, training, work experience, age and residual functional capacity are used to determine if the applicant has the capacities to perform *any* job in the national economy. If so, the applicant is denied. If not, the applicant is allowed.

Applicants who are denied benefits in their initial review have the option of appealing. The first level of appeal is called Reconsideration (available in most, but not all states during our study period). This entails a second review of the application by another examiner in the same DDS office. If the application is denied on Reconsideration, the applicant can request a hearing before an Administrative Law Judge (ALJ). Most hearings are conducted at the nearest Social Security regional hearing office in the presence of the claimant—and any representative enlisted by the claimant. Depending on the applicant's ability to travel and other factors, hearings may be done by video or (during our analysis period) before traveling judges. If an applicant is denied by an ALJ, a further appeal can be pursued with the SSA Appeals Council, and then Federal Court. At the appellate level, the same five-step decision process is used; that said, appeals often involve the submission of updated medical evidence, which if the applicant's condition has worsened, can increase the likelihood of an award.[16]

If a claimant's application is successful, they receive any past-due benefits in the form of a lump-sum back payment. The back payments cover the number of months between the established onset date and the date of approval minus a five-month waiting period. Retroactive

[16] To address allegations that representatives often suppressed unfavorable evidence—for example, evidence related to the applicant's recovery, new regulations took effect in 2015 that require claimants to submit all known evidence relating to their disability. Accordingly, SSA revised its rules of professional conduct to state that representatives have a responsibility to help claimants comply with this requirement; those who do not comply can be referred for investigation, sanctions, and penalties.

benefits are available for SSDI awardees and cover a maximum of 12 months.[17] While initial determinations are rendered in just over three months' time on average (Table 3) (including slightly less than one week at the field office), pursuit of an appeal at the hearing level extends total processing time for appellants to nearly three years on average (Autor et al., 2015).

In order to enlist the services of a representative, he or she must file a statement with SSA appointing the representative. To receive direct payment of an authorized fee, the representative must register with SSA and meet SSA's eligibility criteria. Under SSA's fee agreement policy, the representative agrees to receive payment on contingency—that is, only if the claim results in an allowance, and only if there is back pay owed. If a case is successfully awarded and a representative has submitted a signed fee agreement prior to the date of the first favorable determination, a payment is made to the representative equal to 25 percent of the back pay up to a maximum payment of $6,000.[18] SSA pays authorized fees directly to the representative by direct deposit, and the amount is deducted from the claimants back pay.[19] Importantly, representatives are forbidden from collecting fees from applicants outside of an SSA-authorized Fee Agreement or Fee Petition, and doing so can result in disbarment from SSA hearings as well as other sanctions.[20]

By our estimates, attorneys comprise 82.5 percent of appointed representatives from law firms in initial SSDI cases and 83.6 percent of appointed representatives from law firms in

[17] The maximum in retroactive benefits is paid when the disability onset date is determined to be at least 17 months before the applicant's filing date. SSA then withholds five months' worth of benefits to account for the SSDI waiting period, for a maximum retroactive period of 12 months. For SSI, the applicant's filing date is the disability onset date, so there is no allowable retroactive period of disability extending prior to application (nor is there a waiting period).

[18] The payment amount is reduced by an assessment (i.e., a user fee). Payments for SSI-only cases do not follow this formula.

[19] In unusual cases in which a fee agreement was not filed before the date of the first favorable determination or decision, the claimant revokes the representative's appointment, or a denial was issued but representative services were performed on the client's behalf, the representative can file a Fee Petition with SSA after the determination or decision.

[20] If a third party is paying the representative's fee, other conditions apply (see 20 CFR 404.1720 and 416.1520).

appellate cases.[21] The rest are non-attorneys. While all attorneys are eligible for direct payment of authorized fees if they register with the agency, only certain non-attorneys are eligible.[22]

Despite many potential advantages to claimants, the way in which representatives are compensated for their services may create perverse incentives on the margin, particularly among representatives who operate in for-profit settings. The structure of SSA's fee policy implies that the fee payment is maximized when cases move slowly, but ultimately result in a favorable decision. In extensive interviews with a variety of stakeholders and participants in the determination process, including field office and DDS office staff, the SSAB (2012) heard a number of troubling allegations about representatives, usually attorneys. Among these were that some representatives appear to deliberately slow down cases, filing incomplete or partially developed applications and failing to respond to requests, all for the suspected purpose of delaying the case long enough to maximize the applicant's back pay—and their fee. Further allegations include withholding relevant information and introducing new evidence at disability hearings that could have been presented earlier.

In the next section, we provide a framework for understanding the incentives at play, from both the claimant and representative perspectives.

3. A Model of SSDI Representation

Given the complexities of the application process, there are many ways in which a claimant's representative can beneficially assist applicants. An experienced representative can

[21] These shares are calculated among the representatives who have registered for the direct payment system, which we track through SSA's Appointed Representative Data Base.

[22] Since 2010, SSA has been able to apply the fee withholding procedures, and thus direct payment of authorized fees, for certain eligible non-attorney representatives who hold bachelor's degrees or equivalent qualifications, pass a social-security law examination, secure malpractice insurance, go through a criminal background check, and satisfy requirements for continuing legal education. 42 U.S.C. § 406(e)(2).

discourage clients who have little chance of ever being allowed; this can facilitate a quicker return to the labor market and less decay of human capital. They can help the applicant understand unfamiliar concepts, such as what it means to be insured for disability benefits, and craft sophisticated strategies for achieving the best possible outcome given limitations in the applicant's case. They may help the applicant avoid mistakes. They can expedite the process of obtaining medical records (reducing the workload of the DDS examiner) and see that the applicant keeps appointments for consultative medical and psychological exams. Their involvement should enhance the completeness and quality of the application, and this should result in cases that are more fully developed. Ultimately, diligent and effective representation should lead to faster processing times, cases that are more likely to be allowed, and for those that are denied—a more decisive signal about the applicant's ultimate prospects. This in turn could reduce unnecessary appeals and case backlogs, which are costly to the Social Security system.

To illustrate the value of representation to the claimant, first imagine an individual who must decide whether to enlist legal representation for their SSDI application. Let V^D be the present discounted value of SSDI benefits, such that $V^D = K\big(t(r)\big) + B\big(t(r)\big)$. The first term $K\big(t(r)\big) = b * [t(r) - 5]$ is a lump sum "back payment" for benefits, which is equal to the monthly benefit b times the total number of months from onset to decision ($t(r)$) minus the 5-month waiting period. Since representation may affect case processing time, the back payment is a function of r, a dichotomous variable equal to 1 if the applicant enlists representation, and 0 otherwise. The second component $B\big(t(r)\big)$=$\sum_{s=t(r)}^{FRA} b\left(\frac{1}{1+d}\right)^{s-t(r)}$ is the present discounted value of the monthly benefit b, payable from decision month until the month the applicant reaches full retirement age (FRA), discounted at a fixed monthly discount rate d.

The applicant receives V^D with award probability $p(r)$, which may be affected by

representation. If the applicant is initially denied, which occurs with probability $1 - p(r)$, he appeals with probability $a(r)$. If the applicant enlists representation, he must pay the representative's fee $F(t) = \min[0.25 * K(t(r)), 6000]$—but only if they win. As described above, the representative's fee is 25 percent of the applicant's back payment, capped at $6,000.

The applicant enlists representation if the expected payoff from representation is greater than the expected payoff associated with no representation:

$$p(0)V^D + \big(1 - p(0)\big)a(0)p(0)V^D < p(1)[V^D - F] + \big(1 - p(1)\big)a(1)p(1)[V^D - F] \quad (1)$$

where the t subscripts are suppressed for readability. The expected payoff shows the applicant can be awarded V^D immediately on initial review, or subsequently on appeal. Rearranging equation (1), gives the applicant's decision rule, expressed as a comparison of relative probabilities and relative payoffs:

$$\frac{p(0) + \big(1 - p(0)\big)a(0)p(0)}{p(1) + \big(1 - p(1)\big)a(1)p(1)} < \frac{V^D - F}{V^D} \quad (2)$$

This condition illustrates that the applicant trades off a percentage of SSDI benefits for an increase in the expected probability of receiving benefits. If representatives had no impact on the award probability, likelihood of appeal, or on processing time—that is if $p(0) = p(1)$ and $a(0) = a(1)$—then the left-hand side of equation (2) equals 1. It would never be worthwhile to enlist representation, for any positive fee amount F. If, however, representatives increase the award probability $p(0) < p(1)$, then the left-hand-side of equation (2) is less than 1, and representation is beneficial as long as benefits net of the fee are a larger fraction of gross benefits than that. This is likely to be the case for most applicants. For instance, the present value of SSDI

benefits (V^D) for an applicant who would receive the average benefit payment of $1,424 from the mean applicant age of 47 until age 65, is $358,442.[23] The average fee payment of $3,000 is only 0.008 of this amount, which makes the right-hand-side of equation (2) equal to 0.992. At the maximum fee payment of $6,000, the right-hand-side of equation (2) is 0.983. Even for an applicant who would receive the minimum (SSI) benefit of $783 per month, the right-hand-side of equation (2) is 0.985 if they pay the average fee amount and 0.970 if they pay the maximum fee amount. None of these figures incorporates the additional value of Medicare or Medicaid benefits, which valued at average spending per Medicare beneficiary in 2019, is worth $293,876,[24] and increases the right-hand side of equation (2) to 0.995 at the average fee amount or 0.991 at the maximum fee amount.[25]

In comparison, if legal representatives increased the probability of allowance by just two percentage points and had no effect on the probability of appeal (a), the left-hand-side of equation (2) would be 0.942—low enough to make representation worthwhile for the applicant receiving the minimum benefit amount (from the average age) and paying the maximum fee. If, additionally, representatives increase the probability of appeal, the left-hand side becomes even smaller, while if they reduce the probability of appeal, it becomes larger.

[23] This calculation uses the average monthly benefit of $1,424 for new awards in 2019 (SSA 2020d), a projected annual cost of living adjustment of 2.4 percent (Office of the Chief Actuary, SSA 2020) and a projected real discount rate of 1.3 percent, equal to projected 10-year Treasury yields (CBO 2021).

[24] We obtained this figure by assuming no Medicare spending in the year of entitlement (due to the Medicare waiting period) or at age 65 (since nearly all individuals qualify for Medicare at age 65), inflating average Medicare spending per beneficiary in 2019 ($13,987; Boards of Trustees 2020) by an estimate of projected medical inflation between 2023-2030 (3.5%), and applying a projected real discount rate of 1.3% (CBO 2021). CBO (2020) provides projections of the CPI-All index through 2030, but not the CPI-Medical index. To estimate projected medical inflation, we use the fact that average annual growth in the CPI-Medical index between 2010-2019 (2.5%) was 157% of average annual growth in the CPI-All index (1.6%). Applying this ratio (157%) to CBO's projected annual growth rates for the CPI-All index for 2023-2030 (2.2%), we obtain an estimate of the projected annual growth rate in the CPI-Medical index of 3.5%. We obtained CPI values for 2010-2019 from U.S. Bureau of Labor Statistics 2021).

[25] There are additional reasons to believe these estimates are lower bounds. First, they do not count the additional *retirement* benefits former SSDI recipients receive, relative to claiming actuarially-reduced retirement benefits at age 62. Second, because initial cases are decided in a matter of months, the average fee payment on initial cases is likely less than the overall average, which includes cases won on appeal.

One way in which the model departs from reality is that the allowance rate on appeal is substantially higher than the allowance rate on initial review, and most applicants secure representation for their appeal even if they did not have representation on their initial review. But allowing the allowance rate to differ on appeal has no impact on the tradeoff thresholds since it impacts the numerator and denominator of the left-hand side of (2) identically (assuming the applicant enlists representation on appeal, and so $a(0) = a(1)$).

While this simple framework abstracts from heterogeneity across applicants according to their type of disability x, it can easily be incorporated as an additional determinant of the applicant's expected allowance rate (e.g., $p(r; x)$), or as a monetized cost of applying for SSDI without legal assistance (e.g., $g(x)$). The former has no effect on the critical thresholds, unless representatives are more beneficial for certain kinds of cases than others. On the latter, the denominator of the right-hand side of (2) is reduced by the addition of an application cost term (e.g., $V^D - g(x)$), which serves to *increase* the net-of-fee benefit value. If application costs are higher than the representative's fee payment, then the applicant would always be better off enlisting representation (as long as representatives do no harm to an applicant's chances). Lastly, if representatives add time to cases, then this increases the left-hand side threshold, offsetting their value.

The claimant's decision rule shows that the value of representation to the claimant hinges on the degree to which representatives increase the chances of a disability award. Even a small increase in chances makes representation beneficial for many applicants. But representatives may be selective about which types of cases they accept, since they are only paid if they win, and if there is a back payment owed. Equation (3) illustrates the decision rule of the representative, where here we explicitly incorporate applicant heterogeneity and suppress the r notation since $r = 1$ in all relevant terms. In addition, we define $c(a, x)$, which lets the cost of representing an

applicant depend on the applicant's type of disability and the likelihood of appeal (which requires additional effort and because it takes longer, is discounted by the factor δ). The decision rule says that the representative will take the case as long as the expected fee payment is greater than the costs of representing the applicant.

$$\left[p(x) + \left(1 - p(x)\right)ap(x)\delta\right]F(t) > c(a,x) \qquad (3)$$

This condition has several implications relevant for our analysis. First, it implies that representatives will be selective. They will choose applicants with a higher award probability, whose cases are less costly to develop, and who are likely to have back payments owed. Second, represented cases will tend to have larger back payments (but only up to a point because of the fee cap), but this can be achieved by either increasing processing time, or by alleging an earlier disability onset date (since back pay is owed from the established disability onset date until the decision date). Third, because costs are increasing in the probability of appeal $\left(\frac{\partial c(a,x)}{\partial a} > 0\right)$, equation (3) also implies that representatives will be less likely to continue representing initially denied claimants on appeal, since they may not be willing to incur additional costs.

Lastly, it is worth noting that the contingency-fee structure of representative fees is incentive compatible. In a principal-agent framework where the effort spent by the representative on the client's claim is imperfectly observed by the claimant and thus cannot be contracted upon, the optimal representative fee structure maximizes the claimant's chances of award, at the same time as it balances the representative's risk of financial loss against any incentives that would arise from "insuring" the representative against losses (e.g., if there were a fee guarantee). But because representatives work on contingency, representatives bear full risk for negative outcomes under SSA's current fee structure. This ensures incentive compatibility—the representative's own interests are in fact aligned with the claimant's best interest. But full risk-

bearing also affects the participation constraint. The contingency-fee structure may cause representatives to be so highly selective of clients that they are unwilling to take on many disability cases, rendering the supply of representation in disability cases inefficiently low. It may also incentivize production models that minimize effort per case, or utilize cheaper forms of labor than attorneys, such as paralegals.[26]

4. Data and Summary Statistics

4.1 Administrative Data

Our analysis draws upon multiple administrative datasets. We obtained the universe of SSDI applications filed from 2010 through 2014 from the Management Information Electronic Disability Folder (MEDIB). We extracted all SSDI applications that received an initial medical determination by a state DDS, for a total of 7,431,904 applications.[27] The MEDIB contains information from multiple sources, including the application intake forms (e.g., Disability Report SSA-3368), which contain information about the claimant's age, male/female gender, completed education, English language literacy, medical conditions (including height and weight, presence of pain), alleged disability onset date, recent work activity, and any prior vocational training. This information is self-reported and not modified by SSA staff or corrected to conform to statutory definitions. The data fields are applicable to all claimants and have very low rates of item non-response.[28]

The MEDIB also contains administrative information recorded about the claim. We use

[26] This provides a potential explanation for two striking features of the disability representation market: the presence of super-sized firms that have developed high-throughput business models around paralegals and the presence of an exceptionally large number of small firms that take on just one or two disability cases a year.
[27] Our sample excludes applicants who only apply for SSI and not SSDI. We also exclude 777,886 applications (10.5 percent) that were not decided by a state DDS (which included the Federal DDS and DDS offices in U.S. territories), or where the DDS code did not correspond to a known DDS.
[28] By comparison, other administrative data sets may contain information only for beneficiaries or may contain individual data items that are only recorded if the information is relevant to the determination.

the DDS code to identify the state DDS handling the claim. We use the Regulation Basis Code assigned by the DDS examiner to determine if the claim was allowed at the initial level, and if so, whether it was allowed for meeting the listings or for meeting the medical-vocational criteria. We identify two types of denials that are considered negative procedural outcomes—denials for insufficient evidence and refusal to submit to a consultative medical examination. These outcomes often reflect communication difficulties between the DDS examiner and the applicant or the applicant's representative; if the full set of medical evidence is not made available within a reasonable time period, the examiner may decide the case with these denial codes. We also identify two case file characteristics that could be considered positive procedural outcomes because they may speed processing--whether the claim was filed electronically and whether an email address was given. We make use of the body system and primary diagnosis codes assigned by the DDS examiner, as well as processing flags indicating the claim was evaluated concurrently for SSI eligibility, eligible for expedited handling,[29] or pulled for Quality Assurance (QA) review.[30] Date stamps were used to calculate the number of days a claim was in process at the field office and the DDS.

To identify whether a claimant had a legal representative, we merge the MEDIB data with administrative information from two databases that record the appointment of representatives. The Appointed Representative Data Base (ARDB) records representatives who have registered for the direct payment system and the Modernized Claim System (MCS) records other types of representatives, including those who would potentially be paid through a fee

[29] The expedited handling flags are Quick Disability Determination (QDD), Compassionate Allowance (CAL), Terminal Illness (TERI) and Wounded Warrior (WW). These expedited handling flags are associated with faster processing times at the DDS. In our data, for claims filed in 2014, when controlling for the set of covariates described here and later, the QDD flag is associated with a reduction in processing time of 45.4 days on the basis of a mean of 92.2 days. The CAL flag is associated with 20.6 fewer days, TERI with 12.0 fewer days, and wounded warrior with 9.2 fewer days. See Rajnes (2012) for descriptions of these programs.

[30] Claims flagged with QA review are associated with longer processing times. In our data, for claims filed in 2014 that are randomly selected for QA review, processing time increases by 6.2 days.

petition and those who waive payment.[31] In cases where the information in the two data systems contradicts each other, we use the information from the ARDB. The information is timestamped, so it allows us to identify at what point during the initial claim process a representative was appointed. In our analyses, we focus on representatives who are either attorneys or non-attorneys (these are referred to as eligible for direct pay non-attorneys (EDPNAs)), who have registered for direct payments and who are part of firms.

We further linked our MEDIB extract with information drawn from the Case Processing Management System (CPMS), which contains the universe of *appellate* cases. This had two purposes. First, we used the CPMS to track whether the initial applications in the MEDIB (if denied) were ever appealed to the ALJ hearing level (by December 2018), and if so, the outcome and date of the ALJ decision. We used this date to calculate total case processing time for cases observed on appeal; otherwise, we use the DDS decision date to calculate total processing time. Similarly, we use the ALJ decision outcome as the final case outcome for cases observed on appeal; otherwise we use the DDS decision outcome as the final case outcome. [32]

The second purpose of using the CPMS was to construct our instrumental variables. We first identify all appellate cases in 2009 and 2010 in the CPMS and whether they had representation. We next construct national appellate case counts by firm (using the *firm name* field), and classify firms as large, medium and small based on the distribution of firm case counts

[31] The information in the ARDB and MCS data bases are now available in a single dataset called the Registration, Appointment and Services for Representatives (RASR) database.

[32] This is an approximation of the final outcome and total processing time for two reasons. First, initially denied applicants may request "reconsideration" of their claims by the DDS and, when denied, choose not to continue the appeal to the appellate level. Of applications filed in 2014, 0.6 percent had this pathway (Social Security Administration, 2020b). Second, applicants may pursue further review after denial at the appellate level, including at the Appeals Council or in federal court. Of applications filed in 2014, 4.5 percent had this pathway (ibid). In both cases, we underestimate total processing time.

in these two years.[33] The distribution is highly concentrated. Large firms encompass the largest 8 firms, which represented 16.7 percent of all appellants with representation ("clients") during this period. The approximately 1,300 next largest firms, which we call medium sized, represented the majority of clients, 71.3 percent. The remainder, approximately 4,000 small firms, represented 12.0 percent of clients.

This gives us non-time varying firm-size "tags" for each of these firms that appear in the appellate data in the 2010-2014 period. We then calculate "market-share" variables—the percent of all appellate cases represented by large firms, medium firms, and small firms for each hearing office and each month.[34] The reference category for the market share variables includes unrepresented appellate cases, cases that are represented by individuals (i.e., non-firms), and cases represented by firms operating outside of SSA's direct payment system.[35] Next, we use a geographic crosswalk to assign these hearing office market shares to each observation in the initial claims data on the basis of their zip code. We explored different lags between appellate market conditions and representation at the initial level and find that a one-month lag has the most explanatory power. Importantly, there is no overlap between the instruments and our main analysis sample by construction. For example, an initial claim filed in September 2012 would be assigned instruments based on appellate cases decided in August 2012. Hence, the cases observed in the appellate sample making up the instruments were decided before the initial cases in our main analysis were filed.

Our base case model uses these three "market share" instruments (share large, medium

[33] We selected the thresholds for large, medium, and small based on visually-identified break points in the distribution of firm case counts. We did this because the market is highly concentrated; a small number of super-sized firms dominate the market with case counts that are an order of magnitude greater than the typical medium-sized firm. At the other extreme are a large number of small firms that represent just one or two cases per year.
[34] Representatives register as individuals and payments are also made to individuals; however, we aggregate by the associated firm if one exists. Thus, we use the shorthand that applicants can be represented by a firm.
[35] The reference group also includes a small number of firms that did not operate in the disability market in 2009 or 2010 but appeared later.

and small). Additionally, for robustness, we consider two other instrumental variables approaches. First, we sum the three market shares to form a single instrument – the share of appellate cases represented by *Any Firm*. Using the three market-share instruments allows the different firm sizes to have a different impact on initial representation. However, the single instrument captures the total effect of the appellate market and is helpful for the purposes of testing validity, when operationalizing tests with multiple instruments is complicated (Mogstad et al. 2020). Second, we use the three appellate market share instruments adjusting for appellate case characteristics (we discuss these "residualized instruments" below).

4.2 Summary Statistics

Summary statistics for our initial applications analysis sample are shown in Tables 1-4. Table 1 presents demographic and claim characteristics and shows that applicants are fairly evenly split between males and females and nearly one-half are ages 50-67.[36] Almost 70 percent have no more than a high school degree or GED, and 27 percent report vocational training. A little less than 10 percent of applicants have a processing flag for expedited handling or QA review, and just over half were evaluated concurrently for SSI eligibility. Table 2 presents diagnosis and health characteristics and shows that more than half of applicants have either a mental health impairment (major affective 12 percent, schizophrenia/psychoses 1.4 percent, anxiety/neurotic 3.3 percent, other mental 3 percent) or a musculoskeletal impairment (back 19.1 percent, other musculoskeletal 16.4 percent). Almost 93 percent report pain, and only 25 percent have BMI in normal range.

Table 3 presents the mean and standard deviation of our outcome variables. The

[36] Our sample includes a small number of SSDI applicants who had reached full retirement age (ages 66-67), and thus would have no longer been eligible for SSDI. However, if their disability onset date occurred before full retirement age, these applicants could have been awarded SSDI benefits retroactively. This is especially advantageous because SSDI benefits convert to *full* Social Security retirement benefits, which are not actuarially reduced for early claiming the way Social Security retirement benefits are.

outcomes we analyze are initial allowance (=1 if yes), type of allowance (meet/equal listings or medical-vocational), processing time at the field office (in days), processing time at the DDS (in days), and total processing time (in days). To understand mechanisms, we examine the negative procedural outcomes, denial for insufficient evidence (=1 if yes) and denial for failure/refusal of medical exam (=1 if yes), as well as the positive procedural outcomes, claim filed electronically (=1 if yes) and email address given (=1 if yes). We analyze whether an appeal is sought conditional on initial denial (=1 if yes) as well as the final decision outcome (=1 if allowance, including allowance on appeal). These outcome variables are well suited for estimating the value of representation to applicants and for testing the theory of representative behavior that we discuss above in Section 3. They allow us to explore the effect of representation on delays in the case, reason for delays, as well as the ultimate success of the case. Table 3 shows that 47 percent of cases are ultimately allowed, with 32 percent allowed at the initial level and the rest allowed on appeal. Among those denied at the initial level, 4.3 percent are denied for insufficient evidence and 2.6 percent are denied for refusal to submit to a consultative medical examination. Total case decision time averages 316 days, with 6.4 days at the field office and 92 days at the DDS.

4.3 Facts about Representation at the Initial Review Level

Table 4 presents descriptive statistics for representation at the initial level as well as our instruments. The top panel shows that in our initial claims sample covering 2010-2014, 12.4 percent of initial claims use representatives, based on our measure of representation, direct-pay attorney or EDPNA in firms. Another 2.5 percent have direct pay representatives (attorney or EDPNA), not in firms, and 5.4 percent are not direct pay. Figure 2 shows the percent of initial cases with a representative appointed prior to initial filing, by year. There is a clear rise over the period, from about 7.9 percent in 2010 to 14.9 percent in 2014, an increase of almost 90 percent

over this four-year period.[37]

Representation is not only increasing over time but exhibits significant variation across local areas. Appendix Figure 2 plots the share of representation at initial determination for 2010 (Panel A) and 2014 (Panel B) by 3-digit zip code. These maps show tremendous spatial variation in the extent of initial representation. In 2010, there are relatively higher rates of representation in Utah, Minnesota, Florida, Southern New York, parts of Missouri, Illinois and west Texas. These representation rates get very high – up to more than a quarter in the highest utilization areas. Notably, by 2014 many more areas exhibit these high rates of representation.

Representation rates also vary substantially by demographic, health, diagnosis, and other claim characteristics (Tables 1 and 2, column 2). Representation rises sharply with age: 6 percent of those under age 30 use representation compared to 15 percent among those ages 50-59. Rates of representation do not exhibit much variation across gender, and are highest among those with high school degree or GED. Importantly, we see that expedited cases that have *high* rates of allowance (e.g., wounded warrior, terminal illness) have *low* rates of representation. In contrast, primary diagnoses with *lower* rates of allowance (e.g., back, musculoskeletal) have *higher* rates of representation. This highlights the fact that representation is not randomly assigned to cases; applicants select into representation, and representatives select applicants.

To address the potential selection into representation, we use the firm market-share instruments, defined above. The bottom panel of Table 4 (Representatives in Firms) presents the means and standard deviations of those variables, for the full analysis sample of initial claims (same sample as above in Panel A). In our base case model, we use the three market share instruments: the large firm market share at the appellate level averages 5.9 percent, with 24.4

[37] We compare our data series to other data series in Appendix Figure 1.

percent at medium sized firms and 4.1 at small firms. The instrument *Any Firm* is just the sum of the three market-share instruments, and thus totals 34.3 percent. These market shares exhibit variation across regions in the U.S. and over time. Appendix Figure 3 plots the three market share instruments for 2010 and 2014 by 3-digit zip code. These maps show tremendous spatial variation in the instruments across time and across space, with losses in market share occurring in the medium-firm market and to a lesser extent the small-firm market, and modest gains in market share occurring among large firms.

5. Empirical Approach

Our empirical approach starts with the following model:

$$y_{idt} = \alpha + \beta r_{idt} + \pi' X_{idt} + \eta_t + \theta_d + \varepsilon_{idt} \quad (4)$$

where y_{idt} is a disability application outcome for individual *i* in period *t* based in DDS office *d* and r_{idt} is a dichotomous variable equaling 1 if the applicant used a representative in the initial claim process. The model also includes controls for demographics, claim characteristics, and health (X_{idt}) (see full list in Tables 1 and 2), as well as fixed effects for year-month of application (η_t) and DDS office (θ_d). The standard errors are clustered on DDS office.

An observational ordinary least squares approach is not likely to lead to a causal estimate of the effect of representation on disability outcomes. As shown in Tables 1 and 2 and discussed above, there is significant cross-sectional variation in the use of representation. This raises concerns about selection into representation that could bias the OLS estimate of β.

Figure 3 explores the potential bias by plotting estimates from two models – in one model we regress y on the control variables and in the other model we regress representation r on the same controls. Here, for y, we use initial allowance, a dichotomous variable equaling one if the case was allowed at the initial level. We plot the pair of coefficients for each control variable

X—the coefficient on X in the representation regression is measured on the horizontal axis and the coefficient on X in the initial allowance regression is measured on the vertical axis, and the size of the circle reflects the relative number of observations with this characteristic. The horizontal axis shows the relationship between claim characteristics and the propensity to have a representative at the initial review. This provides insight, and quantification, of the incentives for representatives discussed above, and allows us to illustrate the nature and extent of selection into representation. The top panel of Figure 3, which plots the estimates on the dummies for primary diagnosis, shows that diagnoses with lower rates of initial allowance—back, musculoskeletal, and anxiety/neurosis—have higher rates of representation. In contrast, cases with higher rates of initial allowance—neoplasms, intellectual, sensory—have lower rates of representation. This pattern would suggest that OLS would be biased downward, away from finding a positive effect of representation. The coefficients on demographic and administrative variables (bottom panel of Figure 3) show less of a clear pattern for the direction of the bias, although, as above, cases flagged for expedited handling have a higher rate of allowance and are least likely to have representation. Of course, we are controlling for all of these variables in our models, but if the unobservable determinants of case outcomes follow these same patterns, we would expect OLS to be biased downwards.

For the instrumental variables model, we estimate a first stage equation:

$$r_{idt} = \alpha + \gamma' Z_{dt} + \vartheta' X_{idt} + \eta_t + \theta_d + \varepsilon_{idt} \quad (5)$$

where Z_{dt} is our vector of instrumental variables. Our instrumental variables take advantage of the geographic and time variation in the market for representation *at the appellate level*. As described above, representatives are relatively new to the initial application process, whereas for decades most applicants who appeal their case to the hearing level have had representation. With the substantial decline in allowance rates on appeal—from 79 percent in 2008 to 55 percent by

2017 (Figure 1)— revenues for representatives declined as well—by nearly 30 percent (Figure 1)—and this may have led to development of new business models around the initial claim process. We use the evolution—across geography and time—in the market shares of large, medium and small firms at the appellate level as instruments for "upstream" representation at the initial level. This empirical approach identifies the local average treatment effect (LATE) – the causal effect of representation for applicants on the margin of taking on a representative. We discuss this and more generally, the assumptions for validity of the IV approach below.

6. Empirical Analysis of Legal Representation and SSDI Case Outcomes

6.1 First-Stage Estimates

Table 5 presents the first stage estimates. In our base case model, we have three instruments, the share of appellate cases, lagged one period, handled by representatives associated with large, medium and small law firms. The coefficients on all three instruments (see column 1) are positive and statistically significant with an F-Statistic of 11.83. The coefficient on large firm market share is 0.109 and shows that an increase in the appellate market share of large firms of 1 percentage point leads to a 0.11 percentage point increase in initial representation. Using the baseline representation of 12.4 percent and the 2010-2014 increase in large firm market share of 2.5 percentage points, this implies a 2 percent effect on initial representation. The coefficient on medium firm market share is 0.081 and on small firm market share is 0.146. We cannot reject equality across these three instruments.

In Table 6 we present estimates for a balance test, to examine the validity of our instruments. In particular we identify a set of predetermined characteristics, including events prior to filing (number of days between stopping work and filing, number of days between onset and filing, whether there were changes made to work activities prior to stopping work), English

language skills, and filing date information (day of the month, day of the week). We regress each of these characteristics on our three instruments, as well as the controls (those listed in Tables 1 and 2) and fixed effects for DDS and year-month. Of the 36 coefficients (3 instruments x 12 balance variables) we have four statistically significant at the 5 percent level. We take this as confirming of a key assumption of the IV approach – that the instruments are not correlated with the unobservable determinants of case outcomes.

Another piece of confirmatory evidence on our instruments is presented in Appendix Table 1. There we show alternative first stages, where we use alternative definitions for what we classify as legal representatives (that is, our measurement of the endogenous variable). Our baseline definition (col. 1) includes all direct pay attorneys and EDPNAs in firms. Alternatively we consider direct pay attorneys and EDPNAs not in firms (col. 2), attorneys and EDPNAs not direct pay (col. 3), and other non-direct pay (col. 4). These results show that our instruments operate to significantly affect the "disability law firm market" (direct pay, in firms) but not the other types of representation. This fits with our reading of the events in the representative market.

6.2 Validity of IV Approach and Interpretation of LATE

Before proceeding to the instrumental variables estimates, we discuss and provide evidence on the conditions required to interpret the two-stage least squares estimates of the causal effect of representatives. As already shown in Table 5, our instruments are strongly and significantly associated with representation at the initial level. Further, our balance tests and alternative first stages (Table 6, Appendix Table 1) provide supporting evidence that our instruments only affect outcomes through a single channel, the probability of having a legal representative. The third condition needed to interpret our two-stage least squares estimates as the LATE effect of representation is monotonicity. In our setting, monotonicity requires that

applicants who use a representative under conditions with low market shares in appellate cases also use one when faced with a high market share.

To examine the monotonicity assumption, we follow the approach in Dahl et al. (2014) and Dobbie et al. (2016) and present graphical representations of the first stage by fitting a local linear regression of legal representation against our instruments. Our base case model has multiple instruments, so we make a few adjustments to examine monotonicity one instrument at a time. First, we consider *Any Firm*, the single instrument that is the sum of the three market share instruments. The linear first stage estimates for this model are in column 2 of Table 5 – and show that a 10 percentage point increase in any firm representation at the appellate level leads to a 0.89 percentage point increase in representation at the initial level (a 7 percent increase and an F statistic of 33.3). The first panel of Figure 4 plots the flexible analog of the first stage (right axis) along with a histogram of the instrument (left axis). Following Dahl et al. 2014 and Dobbie et al. 2016 we trim the top and bottom 1 percent of the instrument from the sample in generating the graphs). The results show that the rate of representation is monotonically (and quite linearly) related to the *Any Firm* market-share instrument.[38] In the remaining panels of Figure 4, we repeat this for each of our three market share instruments (large, medium, and small). In each panel, we show the local linear first stage for one instrument, while including the other two instruments in the set of exogenous variables. Each of the three instruments exhibits monotonicity over almost all of the range of the instrument.[39]

[38] There is an inflection point where the *Any Firm* instrument reaches 0.45. There is small violation of monotonicity in the right tail of the distribution; our main results are not sensitive to the inclusion or exclusion of this part of the sample.

[39] Estimating the local linear regressions in Figure 4 requires 2 steps. First, we remove the effects of the covariates and fixed effects from the endogenous variable by estimating the linear first stage regression with the full set of control variables (as in Table 5), and then recombining the first-stage residual with the predicted effects of the instruments (and the mean of the dependent variable for scaling). Next, the local linear regression is performed by regressing the endogenous variable net of covariates and fixed effects (and in the multiple instrument cases, the other instruments) on the relevant instrument. In each of the figures, the local linear regression function and the histogram are both trimmed by 1 percent at the top and bottom of the distribution of the instrument.

If the monotonicity assumption holds, the first stage estimates should be non-negative for all subsamples. We explore the implication of monotonicity in Appendix Table 2 by estimating the first stage for subgroups using baseline controls including gender, age, educational attainment, obesity, concurrent enrollment, and impairment. Panel A presents the subgroup first-stage estimates for our three-instrument model and Panel B presents the results for the *Any Firm* single instrument model. The first stage estimates are consistently non-negative and nearly all (50 out of 52) are statistically significant for each subsample, supporting the monotonicity assumption.

To understand and interpret the LATE, we characterize the compliers and their characteristics. We use the approach in Dahl et al. (2014) and Dobbie et al. (2016) who, like us, have continuous instruments. As above, we present four sets of results: one for the single instrument *Any Firm*, and one for each of our three instruments (large, medium and small market share) where for each we add the other two instruments to the set of exogenous variables. The complier results are presented in Appendix Table 3; the three panels vary by trimming the top and bottom 1 percent of the instrument (panel A), the top and bottom 1.5 percent (panel B) and the top and bottom 2 percent (panel C). The results for the single instrument (column 1) show that 4.7 percent of the sample are compliers, meaning their use of initial representation depends entirely on the local presence (market shares) of firms handling appellate cases. We also find that 13.8 percent are always takers (i.e., they will use representatives at the initial level even in lowest market share settings) and 81.6 percent are never takers (i.e., they will not use representatives at the initial level even in highest market share settings). This high percentage of never takers makes sense given that initial representation rates peak at 16 percent in our sample period (Figure 2). We find qualitatively similar findings for each of the three instruments (columns 2-4). For example, compliers are 2.7 percent for large firms, 3.3 percent for medium firms and 2.0

percent for small firms. Thus, each instrument alone moves 2-3 percent of the population in or out of initial representation and all instruments combined move 4.3 percent. These results are quite robust across different degrees of trimming of the instrument (e.g., panels B and C) and across local linear vs. linear models.

Appendix Table 4 presents the complier characteristics (again for the four different instruments, *Any Firm* and the three instruments one at a time). Compliers are more likely to be older than age 55, have higher income and assets (not apply for SSI concurrently), and have completed college. They are also more likely to have musculoskeletal conditions.

6.3 Instrumental Variables Estimates

Our two-stage least squares estimates, for our base case three-instrument model, are presented in Table 7. In total, we investigate eight distinct case outcomes: the likelihood of initial allowance, for any reason (column 1), for meeting/equaling the listing of impairments (column 2) or meeting the medical/vocational criteria (column 3); initial denial for insufficient evidence (column 4) or refusing a medical exam (column 5); the probability of appeal to the hearing level, given initial denial (column 6); total case processing time across all levels of review (column 7); and the final allowance rate, accounting for outcomes on appeal (column 8). These outcome variables are well suited for testing the theory of representative behavior that we discuss above in Section 3. They allow us to explore the effect on delays in the case, reason for delays, as well as the ultimate success of the case. In all models we control for demographics (age, age squared, and indicators for female, educational attainment, vocational training), health (BMI and BMI squared, pain indicated at application, major diagnosis class), claim characteristics (SSI concurrent claim, random QA sample, quick disability determination, compassionate allowance, terminal illness, wounded warrior) and fixed effects for year-month of filing and DDS office.

We find that, among those on the margin of obtaining representation, legal

representation increases the probability of initial allowance by a statistically significant 23 percentage points. Given a mean allowance rate of 32 percent at the initial level, this indicates very large effects among applicants whose representation status can be influenced by developments in the representation market structure. Most of this effect arises from a substantial 19.7 percentage point increase in the probability of allowance for having an automatically-qualifying condition on the listings (and a small 0.035 statistically insignificant effect of representation on the probability of allowance meeting the medical-vocational criteria). Perhaps surprisingly, legal representation leads to a 10.3 percentage point *increase* in the likelihood of denial for insufficient evidence (a very large effect relative to the mean of 4.3 percent), but has a very small and statistically insignificant effect on the likelihood of denial for refusing a required medical exam. Speculatively, while denial for inszufficient evidence is an undesirable processing outcome, it may reflect representatives "cutting their losses" in circumstances where a claimant's medical and other evidence turn out to be less compelling than originally anticipated.

Applicants on the margin who had representation for their initial review but who were initially denied are 60.1 percentage points less likely to file an appeal to the hearing level. This is large relative to the mean appeal rate of 0.510. Overall, using a representative in the initial claim process leads to a statistically significant reduction in the total case processing time of 316 days; this is a direct result of fewer appeals while there is *no increase* in processing time at either the field office or the state DDS (not shown). Finally, we do not detect a statistically significant effect of representation on the likelihood of final allowance.

Taken together, this evidence lines up well with the predictions of the model of representation. Increasing representation would facilitate a more efficient process – leading to more approvals at the initial stage and fewer approvals at the (more costly) appellate stage. Representatives accomplish this by recognizing when an applicant's medical condition meets the

listing of impairments, and thus should be automatically qualifying regardless of their residual functional abilities. This makes a certain degree of sense. The listing of impairments—a long, complex document filled with medical terminology—requires medical expertise to interpret.[40] Furthermore, increasing legal representation in the initial stage would appear to *deter* some applicants from pursuing their claims on appeal, resulting in a dramatic reduction in *total* processing time.

6.4. OLS and the Biases in Observational Estimates

As discussed above, OLS estimates of the effect of legal representation on SSDI case outcomes are unlikely to represent causal effects. The results in Figure 3 illustrate that cases diagnoses with higher rates of initial allowance, e.g., neoplasms, intellectual, sensory, and cases flagged for expedited handling, have systematically lower rates of representation. Likewise, cases with lower rates of initial allowance, e.g., musculoskeletal and anxiety/neurosis, are more likely to use representatives in the initial application process. If the unobservable determinants of case outcomes follow these same patterns, we would expect OLS to be biased downwards, away from finding a positive effect of representation on the rate of initial allowance.

We present the OLS estimates in Table 8. The table follows the same structure as the IV results in Table 7, displaying the OLS coefficient on legal representation for each of the eight outcome variables (across the columns). Each model includes the same covariates and fixed effects as Table 7. Overall, the observational results present a markedly different picture of legal representation than the IV estimates, consistent with the theorized bias due to nonrandom selection into representation.

The OLS estimates show that representation is associated with a 0.66 percentage point (2

[40] The Listing of Impairments for adults can be accessed at https://www.ssa.gov/disability/professionals/bluebook/AdultListings.htm

percent) increase in the likelihood of initial allowance (column 1); although statistically significant, the effect is small compared to the IV estimate of 23 percentage points. The effect of representation on *type* of allowance is the reverse of the IV results: in the observational data representation is associated with a -0.011 reduction in the probability of allowance for meeting the listings (col. 2) and a 0.018 point increase in the likelihood of allowance on medical-vocational criteria (col. 3). Further, columns 3 and 4 show two types of administrative denials that arise *more* frequently with representation—denial for insufficient evidence (8.6 percent effect) and denial because the claimant refused a required medical exam (3.4 percent effect). The observational results show that applicants who had representation for their initial review but who were initially denied are 34.5 percentage points (67.6 percent) *more* likely to file an appeal to the hearing level (col. 5), again this is the opposite sign from the IV results. Accounting for outcomes on appeal as well as the initial outcome, representation is associated with a 4.6 percentage point (9.7 percent) increase in the probability of final allowance (col 8). Overall, the OLS estimates show that representation is associated with 17.4 days of case processing time (col. 7).

The differences between the OLS estimates and the IV estimates across the various case outcomes are stark, indicating that confounding factors contribute substantial bias to the OLS estimates, and these biases appear to vary across outcomes. The OLS results, taken at face value, would lead to the conclusion that representation at the initial level leads to a slower, more costly process, with more appeals and fewer cases being allowed for meeting the listings. However, the evidence is compelling that these observational comparisons instead reflect the characteristics of cases that select into representation. Our model (Section 3) suggests this selection is likely to originate from both the representative claimant and sides. Selection on the representative side and is likely to originate from the contingency-fee structure. Representatives may screen

potential cases for those with the highest award probabilities and that would take the least amount of effort over an extended period of time. Selection into representation on the claimant side may arise from applicants who need help with complex cases.

6.5 Additional IV Results

Returning to the IV model, Table 9 examines how the estimates vary across primary diagnoses. We provide estimates for four subgroups: back, other musculoskeletal, mental impairments (major affective, schizophrenia/psychoses, anxiety/neurotic, other mental), and all other types of cases combined. We present six outcomes: initial allowance, allowed for meeting the listing of impairments, initial denial for insufficient evidence, appeal conditional on initial denial, total case processing time, and final allowance. On the margin, we find that legal representation leads to large increases in initial allowance for applicants with mental health conditions but much smaller and statistically insignificant effects for the other diagnoses. The effects on initial allowance for meeting the listing and the effects on denial due to insufficient evidence are more consistent across the diagnosis groups. Overall, across these three initial application outcomes, there is a consistent finding of stronger effects for mental and "other" and smaller (and often statistically insignificant) effects for back and other musculoskeletal diagnoses. The effects on seeking an appeal conditional on initial denial are qualitatively consistent across diagnosis groups – all showing that representation leads to large and statistically significant declines in appeals. The point estimates on the effect of representation on the total case processing time are all negative, though the effects are statistically significant only for mental diagnoses. Effects on final allowance across diagnosis groups mirror the effects in the full population in that they are not statistically significant except in the case of other musculoskeletal conditions, which are negative and significant.

Table 10 presents evidence on possible mechanisms for our main findings of a positive

effect of representation on disability claim outcomes. The first two columns show that legal representation leads to increases in claims being filed electronically (41 percentage point increase relative to a mean of 36 percent) and with an email address given (41 percentage point increase relative to a mean of 31 percent). These actions may increase the efficiency of administrative activities and communication around these claims. The final three columns present estimates for different elements of the case processing time: field office processing time (col. 3), DDS processing time (col. 4), and an indicator equaling one if the time from onset to DDS decision being larger than 5 months (col. 5). We find that legal representation has positive but statistically insignificant impacts on field office processing time and mean DDS processing time. However, legal representation increases the fraction of cases that take more than five months from onset to DDS decision by 33 percentage points relative to a mean of 84 percent. Recall from the model in Section 3 that representative payments are increasing in the time elapsing between the date of disability onset and the decision date. This shows that representatives work to get more distant onset dates yet they don't "add" processing time. This is a benefit from the SSA efficiency perspective.

6.6 Robustness

We also explored the robustness of our estimates to the instrument set. The results are presented in Appendix Table 5. In Panel A, we present the IV results for the single instrument *Any Firm* (the sum of market shares across small, medium and large firms). In Panel B we present the IV results where we included residualized versions of our three-instrument base case model. In particular, we adjust the appellate level firm size market shares for appellate case characteristics. This adjustment addresses the possibility that, even though the instrument is constructed from the universe of appellate applicants, these applicants might share characteristics

with the initial applicants in our sample because they live in the same area.[41] The first stage estimates for the residualized instruments is in Table 5 column 3 (we previously discussed the single instrument first stage, provided in column 2). The first stage point estimates are quite similar to our base case (Table 5, col.1) and the F Statistic is similar at 11.75 (versus 11.83 for our base case).

The two alternative instrument approaches generate qualitatively similar findings to our main results, showing that representation at the initial application level leads to significant increases in the rate of allowance for meeting the listings and the rate of denial for insufficient evidence, significant decreases in going on to an appellate hearing, and insignificant effects on the final allowance rate. The effect on initial allowance and total processing time, however, is smaller and less precise.

7. The Value of Representation

Our model in Section 3 illustrated how the value of representation depends upon the degree to which representation increases the allowance rate. In this section, we use our estimated coefficients to calculate the left-hand side of equation (2), and discuss various implications for the SSDI program. If we evaluate equation (2) at the values given by our IV estimates, we obtain a threshold estimate of 0.791. This implies that the representative's fee payment would need to reduce net benefits by more than 20.9 percent before representation would become undesirable.

[41] These include characteristics at the time of application filing (the local unemployment rate, age and age squared), at the time of the initial decision (the allowance rate at that DDS in that month, the step of the determination process at which the decision was made, whether the case was expedited, and the affected body system), and at the time of the appellate decision (the proportion of decisions allowed by Senior Attorney Advisors in that office in that month, whether the application was concurrently evaluated for SSI eligibility, whether it originated in a state without a DDS reconsideration process (so-called prototype states), and whether case flags indicate the applicant was a noncitizen, in jail, suicidal, in dire need, or had a terminal illness). The Senior Attorney Advisor initiative was part of the overall agency plan to reduce pending workloads for judges beginning in 2007. SAAs are able to issue allowances based on the evidence in the record. As a result, these cases do not require a hearing with a judge.

As described in Section 3, the average fee payment reduces expected benefits for a claimant that enters the program at the average by a little more than 1 percent. Thus, on average, representation is beneficial for claimants. There is, however, variation in the value of representation by the claimant's type of impairment. For applicants with mental health impairments, the threshold estimate is 0.224, meaning the fee payment would need to reduce net benefits by more than 77.6 percent before representation would become undesirable. In stark contrast, the threshold estimate for claimants with back pain is 1.22, indicating that representation is never worthwhile—unless application costs are *substantially* higher than the fee payment. However, for claimants with other musculoskeletal conditions that may meet or equal the listings, the threshold estimate is 0.303; the fee payment would need to reduce net benefits by more than 70 percent before representation would become undesirable.

These effects of representation translate to savings in SSDI processing costs. Our estimates show that representatives who are hired at the time of the initial case increase initial allowances, reduce appeals without affecting final allowance decisions. Per the SSAB, the unit cost of processing an initial claim is $1,187 and the cost of a hearing is $3,653. The cost of reconsideration is $585 per claim. Therefore, for claims that go to the hearing level to be allowed, the total cost per claim is $1,187+$585+$3,653=$5,425. By avoiding appeal, representation reduces the cost of processing the claim by 78 percent (1-1187/5425). Using our IV estimates of the effect of representation on initial allowance and appeals conditional on initial denial, we find that the 15 percent initial-claims representation rate for 2014, the last year in our sample, leads to a reduction in processing costs of $400 million compared to the counterfactual of no representation at the initial claims level. This amounts to a 13.1 percent reduction in processing costs. Because of selection into representation, increasing the share of initial claims using representatives may not lead to a simple scaling up of these cost savings.

8. Conclusions

Applying for SSDI is complicated and lengthy, and attorney and non-attorney representatives have long played a role in assisting with the preparation of these claims. While representation was once thought to be present only in appellate hearings, the Social Security Advisory Board (2012) noted a pronounced increase in representation at the initial level since 2009. However, much of the existing evidence on the role that representatives play in the process is anecdotal owing to data limitations. While there are many potential benefits of representation to both claimants and the disability system, representatives can receive larger payments for allowed claims that take longer to process. Related to these incentives, SSAB (2012) reports allegations that some representatives deliberately slow down cases, file incomplete and less fully developed applications, and fail to respond to requests. However, little systematic evidence has been available to evaluate these contentions.

In this paper, we comprehensively investigate the impact of claimants' representatives on case outcomes. In addition to exploring the validity of these allegations, we investigate the objectives of representatives and the extent to which they are or are not aligned with the objectives of claimants. Our analysis is made possible by new administrative data measuring representation in the application process. We use data covering 2010 through 2014 and focus on initial level representation owing to its rising importance and because most cases are finally decided at this level.

We find that the increase in representation at the initial level associated with changes in market structure at the appellate level improved the efficiency of the disability claim process. Use of a representative at the initial claim level led to an increase in initial allowances that is economically and statistically significant. Among the initial claims that were denied,

representation led to a very large reduction in the share that seek appeals. Taken together, we find that representation in initial claims led to a reduction in total processing time of a little less than a year while not leading to a statistically significant change in final allowance rates. Using estimates of the cost of administering the initial and appeals processes, we find that the 2014 representation rate of 15 percent generated a 13 percent reduction in SSDI processing costs compared to the counterfactual of no initial claims representation. Given these results, if SSA were to consider policy changes that encouraged more representation at the initial level, these results indicate that there would be large efficiency gains for applicants at the margin.

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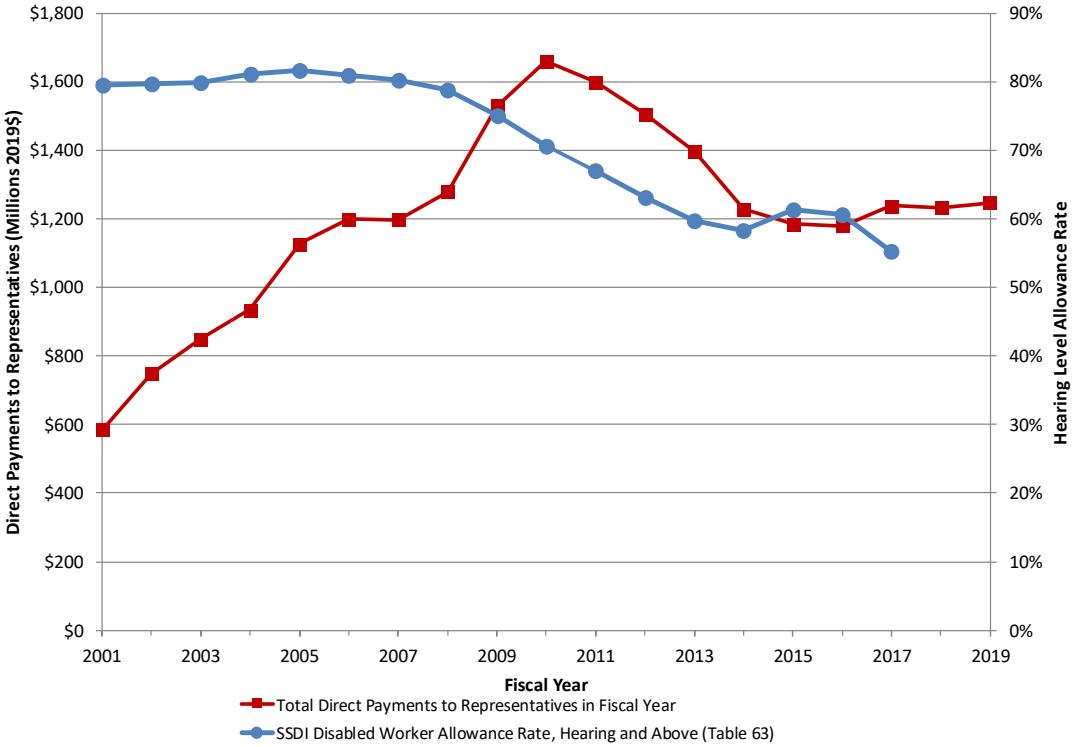
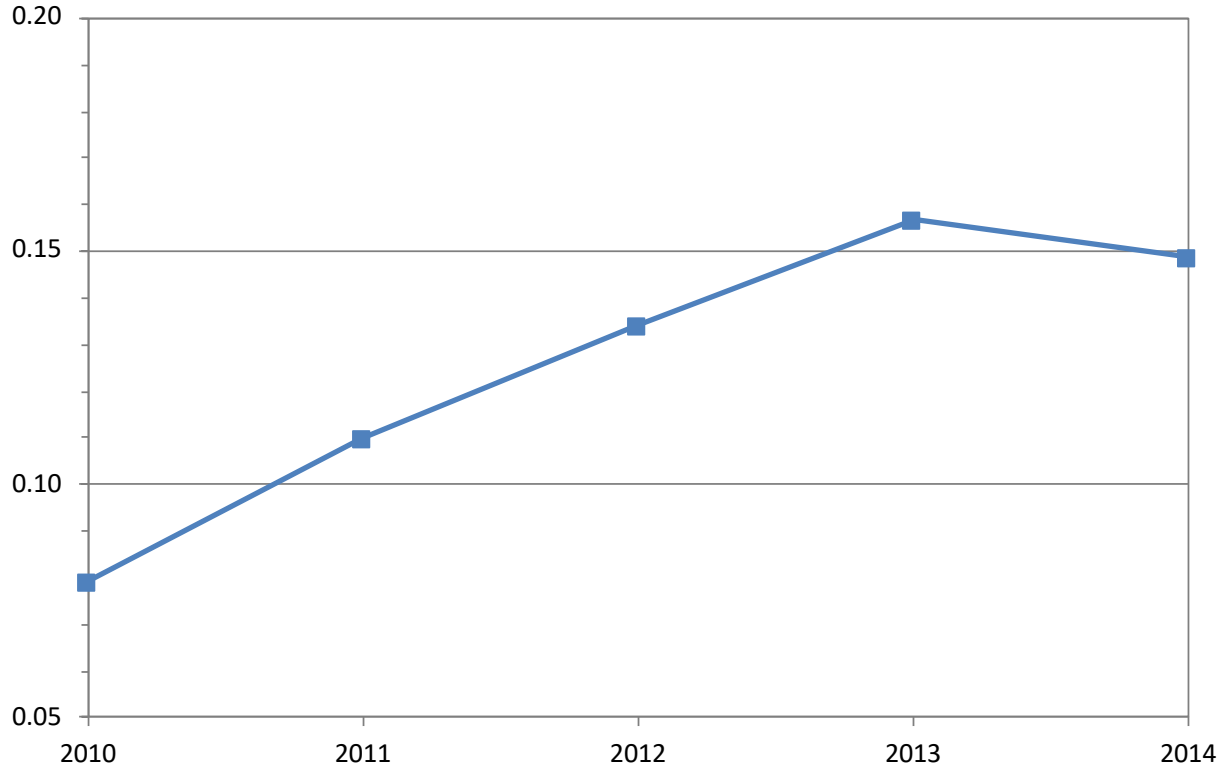
Figure 1: Direct Payments to Representatives and Appellate Allowance Rates, by year



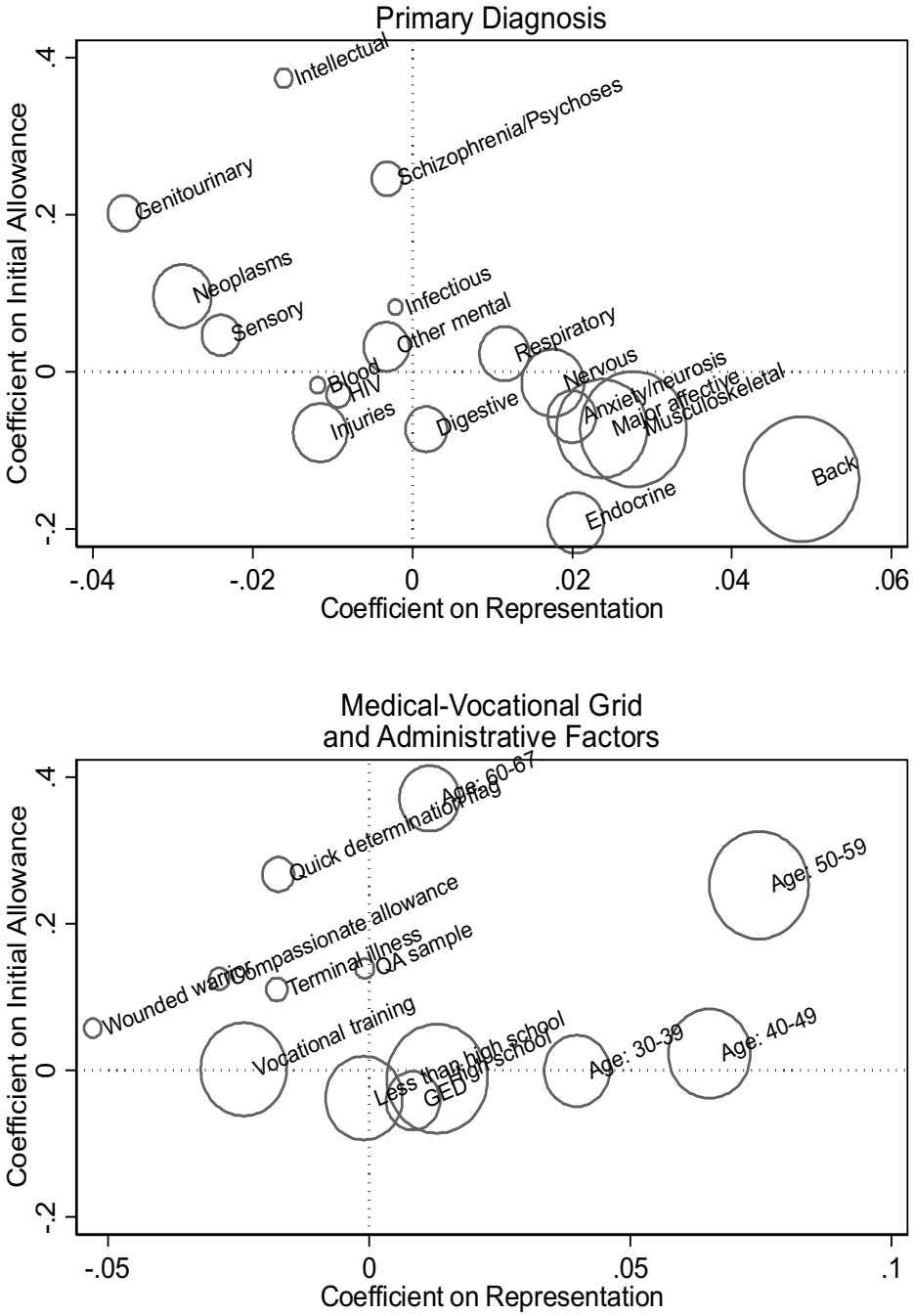
Source: SSA (2019a) and SSA (2020c).

Figure 2: Fraction of Initial Claims with Representation, by Year



Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years 2010-2014.

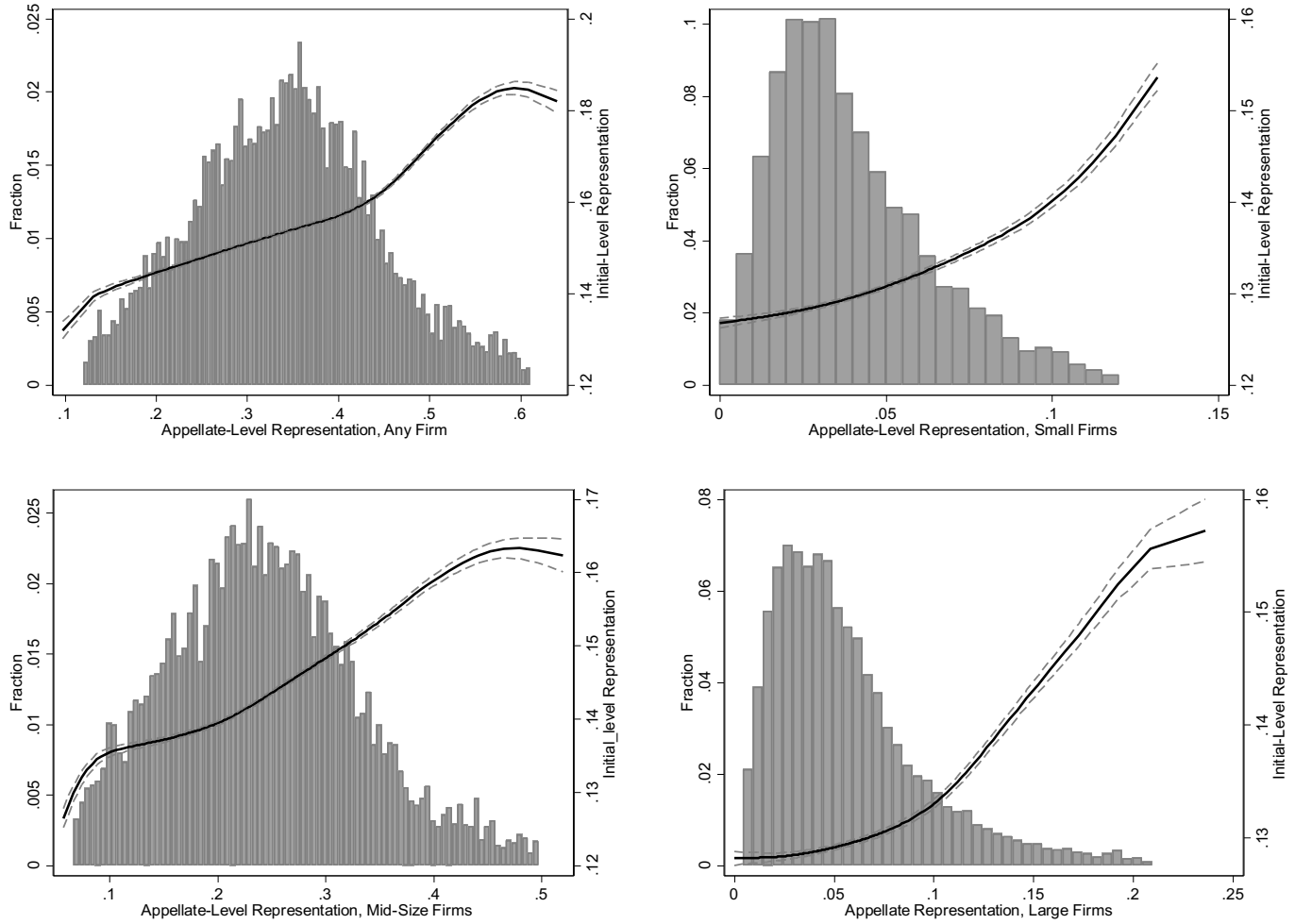
Figure 3. Correlation of Observable Characteristics with Outcome versus Correlation with Endogenous Regressor, Selected Characteristics



Note: each point represents two regression coefficients.
Marker size is population prevalence.

Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years 2010-2014.

Figure 4. Distribution of Instruments and First Stages



Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years 2010-2014. The right axis corresponds to the fitted local linear regression of initial representation and the left axis corresponds to the histogram of the instrument. Each figure (histogram and local linear regression) uses data that trims the top and bottom 1 percent of the instrument.

Table 1: Demographic and Claim Characteristics

	Category Share of Sample (1)	Share of Sample Category with Attorney Representation (2)
All	100.0%	12.4%
Female	49.2%	12.6%
Male	50.8%	12.2%
Educational Attainment		
Less than high school	21.8%	11.3%
High school	37.2%	13.0%
GED	10.7%	12.9%
Some college	20.8%	12.4%
College	9.5%	11.8%
Vocational Training		
Yes	27.1%	11.3%
No	72.9%	12.8%
Age Group		
18-29	10.1%	6.1%
30-39	15.8%	11.2%
40-49	24.8%	14.1%
50-59	36.0%	15.0%
60-67	13.4%	8.5%
Processing Flags		
Random Quality Assurance (QA) Sample	1.2%	12.2%
Quick Disability Determination (QDD) Flag	3.7%	6.6%
Compassionate Allowance (CAL)	1.5%	4.7%
Terminal Illness (TERI)	1.7%	5.8%
Wounded Warrior (WW)	1.1%	6.4%
Not flagged	90.8%	12.8%
Concurrent claim		
DI and Supplemental Security Income	52.5%	11.5%
DI only	47.5%	13.4%

Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years 2010-2014.

Table 2: Health Characteristics

	Category Share of Sample	Share of Sample Category with Attorney Representation
	(1)	(2)
All	100.0%	12.4%
Primary Diagnosis		
Major Affective	12.0%	12.3%
Schizophrenia/ Psychoses	1.4%	8.3%
Anxiety/ neurotic	3.3%	11.4%
Other mental	3.0%	8.4%
Intellectual	0.4%	4.5%
Back	19.1%	16.8%
Musculoskeletal (other than Back)	16.4%	14.4%
Infectious/parasitic	0.3%	11.2%
HIV/AIDS	0.8%	8.9%
Neoplasms	4.9%	6.7%
Endocrine/nutritional	4.5%	13.2%
Blood	0.3%	8.9%
Sensory	2.1%	6.9%
Nervous	5.6%	12.6%
Circulatory	9.4%	11.5%
Respiratory	3.6%	12.4%
Digestive	2.5%	11.3%
Genitourinary	1.6%	6.8%
Skin	0.3%	9.6%
Congenital	0.1%	8.6%
Injuries	4.2%	9.7%
Other/Unknown codes	4.5%	8.1%
Pain Indicated		
Yes	92.7%	12.9%
No	7.3%	6.7%
Body Mass Index (BMI) Categories		
Underweight	2.2%	10.2%
Within normal range	25.0%	11.1%
Overweight	29.8%	12.3%
Obese	42.9%	13.4%

Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years 2010-2014.

Table 3: Determination Outcomes--Summary Statistics

	Mean	Standard Deviation
	(1)	(2)
Claim filed electronically	0.364	0.481
Email address given	0.307	0.461
Initial allowance	0.320	0.467
Meets or equals the listings	0.128	0.334
Medical-vocational allowance	0.192	0.394
Initial denial for insufficient evidence	0.043	0.203
Initial denial for refusal to submit to consultative medical exam	0.026	0.158
Appellate hearing before Administrative Law Judge after denial	0.510	0.500
Final allowance	0.470	0.499
Time at field office (days)	6.4	10.5
Time at Disability Determination Service (days)	92.2	52.4
Total time (days)	315.8	355.3

Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years 2010-2014.

Table 4: Claimant Representation at the Initial Level--Summary Statistics

	Mean	Standard Deviation
	(1)	(2)
Panel A: Representation at Initial Applications		
Direct Pay		
Atty or EDPNA in firms [baseline model, endogenous variable]	12.4%	33.0%
Atty or EDPNA not in firms	2.5%	15.8%
Not Direct Pay		
Atty or EDPNA	2.3%	15.0%
Other	3.1%	17.3%
Any representation	*20.3%*	*40.2%*
Panel B: [Instruments] Firm Market Share Appellate Cases, One Month Lag		
Representatives in Firms [baseline model, instruments]		
Large Firm	5.9%	4.5%
Medium Firm	24.4%	9.3%
Small Firm	4.1%	2.5%
Any firm (sum of small, medium, large)	*34.3%*	*10.7%*

Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years 2010-2014.

Table 5: First Stage Estimates of Legal Representation at the Initial Level

	(1)	(2)	(3)
% Appellate Representation Large Firm	0.109***		0.097***
	(0.029)		(0.026)
% Appellate Representation Medium Firm	0.081***		0.077***
	(0.014)		(0.014)
% Appellate Representation Small Firm	0.146***		0.135***
	(0.049)		(0.045)
% Appellate Representation Any Firm		0.089***	
		(0.016)	
Residualized Instrument	No	No	Yes
F Statistic	11.83	33.27	11.75
Mean of the dependent variable	0.124	0.124	0.124
Observations	7,431,904	7,431,904	7,422,492
R-squared	0.04	0.04	0.04

Notes: Covariates include age, age squared, and indicators for female, education attainment, vocational training, SSI concurrent claim, BMI and BMI squared, pain indicated at application, random QA sample, quick disability determination flag, compassionate allowance flag, terminal illness flag, wounded warrior flag, major diagnosis class, and fixed effects for month and DDS office. Standard errors in parentheses, clustered by DDS office. *p<0.10 ** p<0.05 *** p<0.01.

Covariates used in forming residualized instruments include age, age squared, time from onset to filing, indicators for prototype states, concurrent applications, non-citizens, applicant is in jail, applicant is suicidal, applicant is in dire need, the percentage of claims in that area that are decided by Senior Adjudicative Attorneys and the characteristics of the application at the initial level, including expedited handling flags, QA sample, adjudicative step, body system code, and the allowance rate in the DDS at the time of decision.

Table 6. Balance Test

	Events Prior to Filing							Filing Date Information				
	Stop work to filing (days)	Onset to Filing (days)	Stopped work b/c of condition	Made changes to work activities prior to stopping work	Read English	Speak English	Write English	Day of the month (1-31)	Day of the week (1-7)	Monday	Tuesday	Wednesday
% Appellate Rep. Large Firm	-20.41	42.84	0.0283*	-0.016	-0.010	-0.014	-0.007	0.150	0.049	0.001	0.002	-0.013
	(33.53)	(51.01)	(0.015)	(0.032)	(0.046)	(0.056)	(0.046)	(0.225)	(0.081)	(0.013)	(0.013)	(0.015)
% Appellate Rep. Medium Firm	16.08	7.84	0.008	-0.018	0.023	0.025	0.023	-0.004	0.149***	-0.0136*	-0.015	-0.006
	(17.21)	(28.92)	(0.010)	(0.020)	(0.022)	(0.027)	(0.022)	(0.086)	(0.053)	(0.008)	(0.010)	(0.008)
% Appellate Rep. Small Firm	-1.24	-86.13	0.019	-0.0978**	0.044	0.040	0.048	-0.071	0.205**	0.008	-0.011	-0.0627***
	(51.65)	(67.51)	(0.032)	(0.049)	(0.070)	(0.081)	(0.070)	(0.301)	(0.080)	(0.015)	(0.017)	(0.016)
Observations	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904
R-squared	0.032	0.073	0.026	0.043	0.224	0.267	0.204	0.005	0.004	0.002	0.001	0.001
Mean of the dependent variabl	806.2	674.3	0.793	0.256	0.943	0.950	0.940	15.72	3.093	0.171	0.213	0.210

Notes: Covariates include age, age squared, and indicators for female, education attainment, vocational training, SSI concurrent claim, BMI and BMI squared, pain indicated at application, random QA sample, quick disability determination flag, compassionate allowance flag, terminal illness flag, wounded warrior flag, major diagnosis class, and fixed effects for month and DDS office. Standard errors in parentheses, clustered by DDS office. *p<0.10 ** p<0.05 *** p<0.01

Table 7: IV Estimates of the Effect of Legal Representation on Case Outcomes

	Initial Allowance			Initial Denial				
	Any reason	Meets Listing of Impairments	Medical-vocational	Insufficient Evidence	Refused Medical Exam	Appellate Hearing | Initial Denial	Total Processing Time (Days)	Final Allowance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Legal Representation	0.232**	0.197***	0.035	0.103***	0.006	-0.602**	-316.1**	-0.144
	(0.118)	(0.061)	(0.105)	(0.038)	(0.020)	(0.280)	(151.3)	(0.159)
Observations	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	5,051,907	7,431,904	7,431,904
Mean Dep. Var.	0.320	0.128	0.192	0.043	0.026	0.510	315.8	0.470

Notes: Covariates include age, age squared, and indicators for female, education attainment, vocational training, SSI concurrent claim, BMI and BMI squared, pain indicated at application, random QA sample, quick disability determination flag, compassionate allowance flag, terminal illness flag, wounded warrior flag, major diagnosis class, and fixed effects for month and DDS office. Standard errors in parentheses, clustered by DDS office. *p<0.10 ** p<0.05 *** p<0.011

Table 8: OLS Estimates of the Effect of Legal Representation on Case Outcomes

	Initial Allowance			Initial Denial				
	Any reason	Meets Listing of Impairments	Medical-vocational	Insufficient Evidence	Refused Medical Exam	Appellate Hearing | Initial Denial	Total Processing Time (Days)	Final Allowance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Legal Representati	0.0066***	-0.0110***	0.0176***	0.0037***	0.0009**	0.345***	17.36***	0.0461***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.000)	(0.004)	(4.085)	(0.003)
Observations	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904	5,051,907	7,431,904	7,431,904
R-squared	0.251	0.27	0.205	0.054	0.043	0.144	0.087	0.184
Mean Dep. Var.	0.32	0.128	0.192	0.043	0.026	0.51	315.8	0.47

Notes: Covariates include age, age squared, and indicators for female, education attainment, vocational training, SSI concurrent claim, BMI and BMI squared, pain indicated at application, random QA sample, quick disability determination flag, compassionate allowance flag, terminal illness flag, wounded warrior flag, major diagnosis class, and fixed effects for month and DDS office. Standard errors in parentheses, clustered by DDS office. *p<0.10 ** p<0.05 *** p<0.01

Table 9: IV Estimates of the Effect of Legal Representation on Selected Case Outcomes, By Type of Impairment

	Initial Allowance		Initial Denial			
	Any reason	Meets Listing of Impairments	Insufficient Evidence	Appellate Hearing | Initial Denial	Total Processing Time (Days)	Final Allowance
	(1)	(2)	(3)	(4)	(5)	(6)
Main Results, Full Sample						
Legal Representation	0.232**	0.197***	0.103***	-0.602**	-316.1**	-0.144
	(0.118)	(0.061)	(0.038)	(0.280)	(151.3)	(0.159)
Mean Dep. Var.	0.320	0.128	0.043	0.510	315.8	0.470
Panel A: Subgroup = Mental Diagnosis (sample share = 0.20)						
Legal Representation	0.790**	0.419***	0.122**	-0.914**	-749.1**	0.229
	(0.341)	(0.124)	(0.059)	(0.391)	(319.4)	(0.315)
Mean Dep. Var.	0.268	0.122	0.053	0.481	324.1	0.388
Panel B: Subgroup = Back (sample share = 0.19)						
Legal Representation	0.040	0.018	0.0654***	-0.563**	-196.0	-0.235
	(0.085)	(0.017)	(0.024)	(0.285)	(134.9)	(0.146)
Mean Dep. Var.	0.331	0.014	0.031	0.545	329.5	0.502
Panel C: Subgroup = Other Musculoskeletal (sample share = 0.16)						
Legal Representation	0.019	0.0706**	0.040	-0.487**	-235.9*	-0.288**
	(0.078)	(0.035)	(0.029)	(0.221)	(123.2)	(0.147)
Mean Dep. Var.	0.248	0.040	0.029	0.609	376.5	0.463
Panel D: Subgroup = All Other (sample share = 0.45)						
Legal Representation	0.153	0.330***	0.175**	-0.583*	-206.2	-0.244
	(0.110)	(0.114)	(0.073)	(0.341)	(151.1)	(0.170)
Mean Dep. Var.	0.371	0.212	0.049	0.462	281.0	0.499

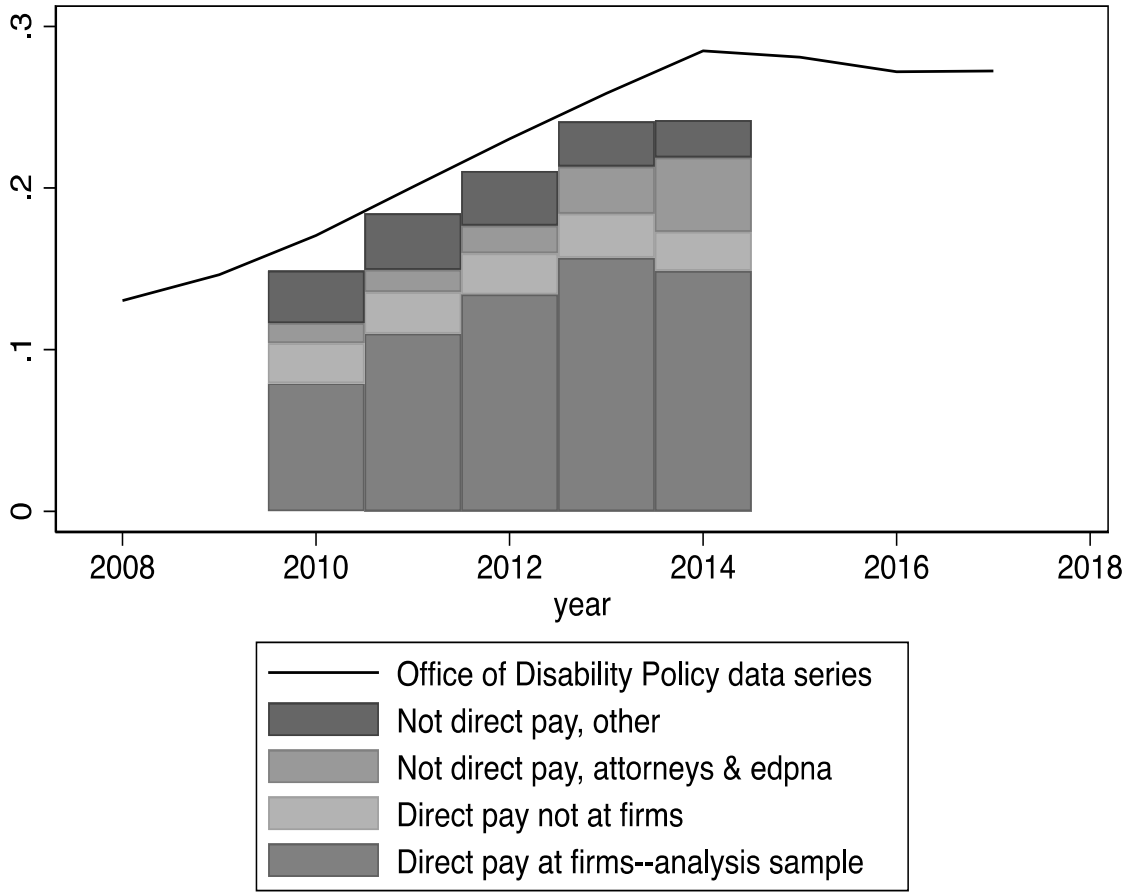
Notes: The All Other category includes impairments in the following categories: Infectious/parasitic diseases, HIV/AIDS, Neoplasms, Endocrine, Blood, Sensory, Neurologic, Cirulatory, Respiratory, Digestive, Genitourinary, Skin, Congenital, Injuries, and Other/unknown.

Table 10: IV Estimates of Intermediate Outcomes and Causal Mechanisms

	Electronic Communication		Time Segments		
	Claim Filed Electronically	Email Address Given	Field Office Processing Time	DDS Processing Time	Time from Onset to DDS Decision greater than 5 Months
	(1)	(2)	(3)	(4)	(5)
Legal Representatio	0.416**	0.405*	9.057	62.84	0.313***
	(0.200)	(0.219)	(7.106)	(40.96)	(0.101)
Observations	7,431,904	7,431,904	7,431,904	7,431,904	7,431,904
Mean Dep. Var.	0.364	0.307	6.353	92.24	0.844

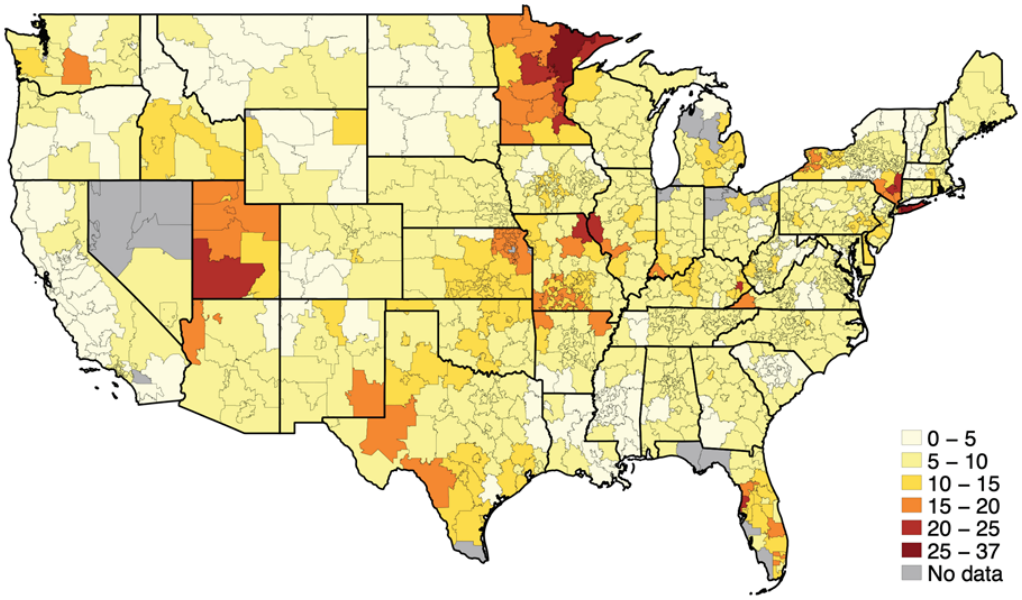
Notes: Covariates include age, age squared, and indicators for female, education attainment, vocational training, SSI concurrent claim, BMI and BMI squared, pain indicated at application, random QA sample, quick disability determination flag, compassionate allowance flag, terminal illness flag, wounded warrior flag, major diagnosis class, and fixed effects for month and DDS office. Standard errors in parentheses, clustered by DDS office. *p<0.10 ** p<0.05 *** p<0.01

Appendix Figure 1: Comparison of different measssures of representation at the initial claims level

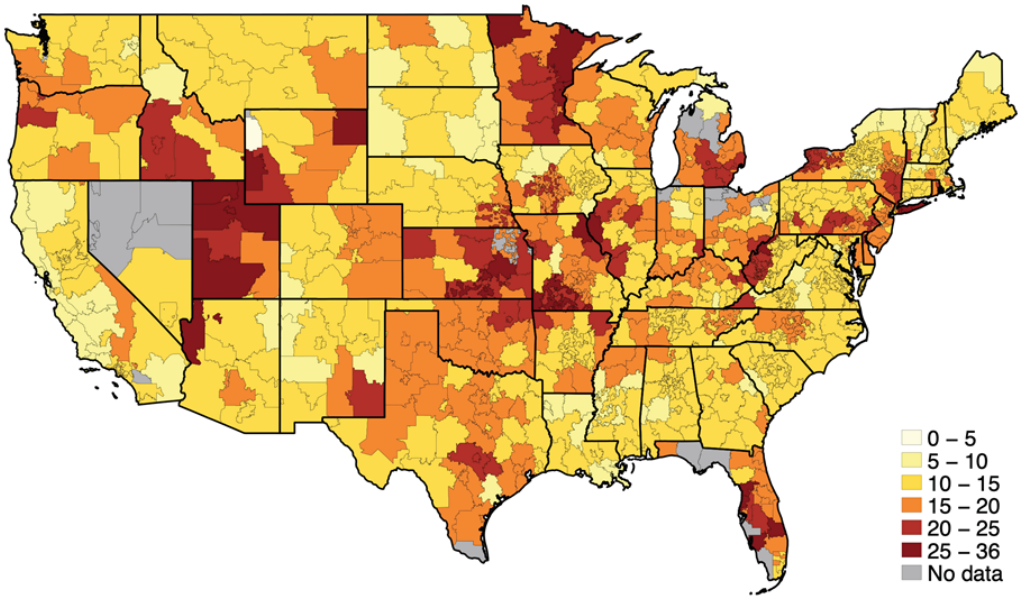


Source: Data come from U.S. Social Security Administration, unpublished data from the Office of Disability Policy, the Electronic Disability Collect System, the Appointed Representative Data Base, and the Modernized Claim System.

Appendix Figure 2: Representation at Initial Level by 3-Digit Zip Code



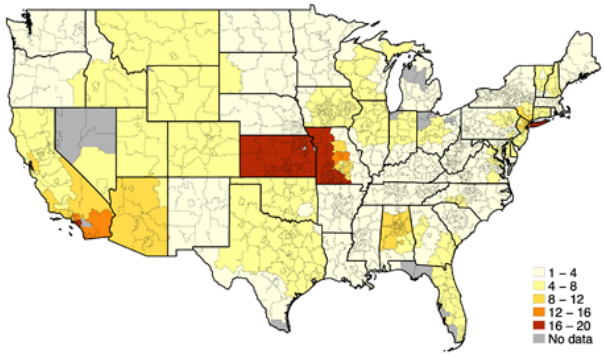
(a) 2010



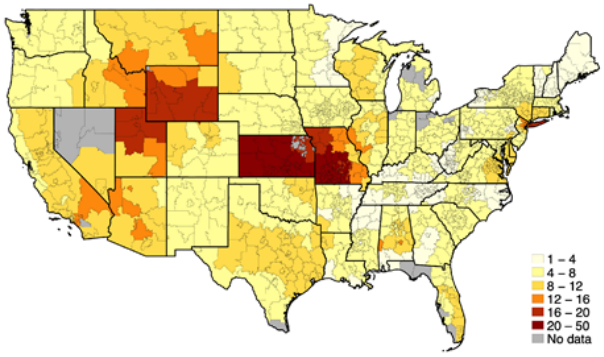
(b) 2014

Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System.

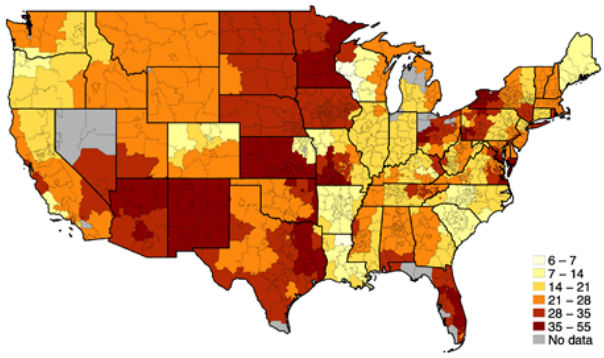
Appendix Figure 3: Instruments for Market Share of Firms at the Appellate Level



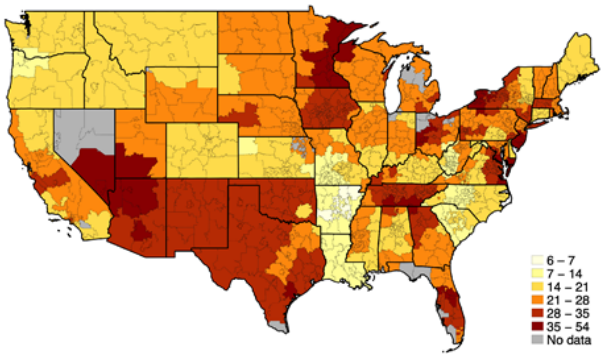
(a) Large Firms, 2010



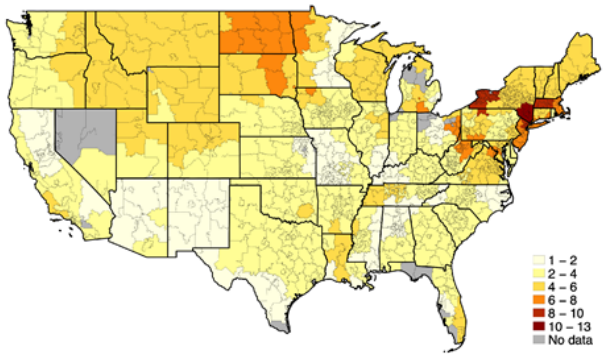
(b) Large Firms, 2014



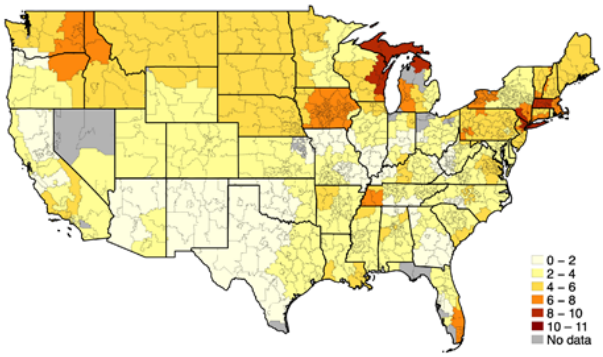
(c) Medium-Sized Firms, 2010



(d) Medium-Sized Firms, 2014



(e) Small Firms, 2010



(f) Small Firms, 2014

Appendix Table 1 First Stage Estimates by Alternative Measures of Representation

	Direct Pay		Not Direct Pay	
	Atty or EDPNA in Firms [BASECASE]	Atty or EDPNA not in Firms	Atty or EDPNA	Other
% Appellate Representation Large Firm	0.109***	-0.015*	0.024***	-0.025**
	(0.025)	(0.008)	(0.007)	(0.010)
% Appellate Representation Medium Firm	0.081***	0.007	0.007**	-0.004
	(0.014)	(0.008)	(0.003)	(0.007)
% Appellate Representation Small Firm	0.146***	-0.054**	0.011	0.009
	(0.049)	(0.021)	(0.009)	(0.016)
F Statistic	11.83	3.01	5.41	2.81
Observations	7,431,904	7,431,904	7,431,904	7,431,904
R-squared	0.04	0.02	0.01	0.01

Notes: Covariates include age, age squared, and indicators for female, education attainment, vocational training, SSI concurrent claim, BMI and BMI squared, pain indicated at application, random QA sample, quick disability determination flag, compassionate allowance flag, terminal illness flag, wounded warrior flag, major diagnosis class, and fixed effects for month and DDS office. Standard errors in parentheses, clustered by DDS office. *p<0.10 ** p<0.05 *** p<0.01

Appendix Table 2: First Stage Estimates of Legal Representation at the Initial Level, by Subgroup

	All	Female	Aged 55+	Less than High School	High School	GED	Vocational	Some College	College	Obese	Concurrent	Mental Impairment	Musculoskeletal Impairment
Panel A: 3-Instrument Model													
% Appellate Representation Large Firm	0.109***	0.0948***	0.132***	0.0706**	0.118***	0.0958**	0.0847***	0.112***	0.151***	0.110***	0.0491	0.0888***	0.162***
	(0.029)	(0.0285)	(0.0257)	(0.0343)	(0.0297)	(0.0387)	(0.0300)	(0.0265)	(0.0309)	(0.0303)	(0.0329)	(0.0319)	(0.0344)
% Appellate Representation Medium Firm	0.081***	0.0775***	0.0936***	0.0601***	0.0911***	0.0599***	0.0638***	0.0851***	0.0951***	0.0845***	0.0535***	0.0648***	0.109***
	(0.014)	(0.0134)	(0.0156)	(0.0134)	(0.0159)	(0.0135)	(0.0138)	(0.0144)	(0.0168)	(0.0150)	(0.0116)	(0.0134)	(0.0190)
% Appellate Representation Small Firm	0.146***	0.120**	0.149***	0.0861**	0.154***	0.136***	0.112**	0.166***	0.174***	0.141***	0.0432	0.125***	0.201***
	(0.049)	(0.0463)	(0.0525)	(0.0433)	(0.0536)	(0.0443)	(0.0491)	(0.0515)	(0.0560)	(0.0519)	(0.0404)	(0.0405)	(0.0645)
Panel B: 1-Instrument Model													
% Appellate Representation Any Firm	0.089***	0.0827***	0.103***	0.0632***	0.0986***	0.0694***	0.0697***	0.0943***	0.110***	0.0915***	0.0523***	0.0723***	0.122***
	(0.016)	(0.0143)	(0.0165)	(0.0131)	(0.0172)	(0.0133)	(0.0139)	(0.0160)	(0.0191)	(0.0163)	(0.0109)	(0.0135)	(0.0210)
Mean of the dependent variable	0.124	0.126	0.114	0.113	0.130	0.129	0.113	0.124	0.118	0.134	0.115	0.113	0.157
Observations	7,431,904	3,655,076	2,063,293	1,618,867	2,763,818	794,331	2,016,093	1,547,920	706,968	3,187,724	3,899,695	1,457,482	2,634,414
F Statistic, 3-Instrument Model	11.83	11.87	14.07	7.85	11.71	9.57	8.71	12.41	11.98	11.25	7.89	10.07	12.37
R-squared, 3-Instrument Model	0.04	0.032	0.044	0.034	0.039	0.033	0.032	0.037	0.035	0.034	0.034	0.034	0.035

Notes: Covariates include age, age squared, and indicators for female, education attainment, vocational training, SSI concurrent claim, BMI and BMI squared, pain indicated at application, random QA sample, quick disability determination flag, compassionate allowance flag, terminal illness flag, wounded warrior flag, major diagnosis class, and fixed effects for month and DDS office. Standard errors in parentheses, clustered by DDS office.
*p<0.10 ** p<0.05 *** p<0.01.

Appendix Table 3: Sample Share by Compliance Type

Model Type	Local Linear Model				Linear Model			
Model	1-Instrument Model	3-Instrument Model			1-Instrument Model	3-Instrument Model		
Firm Size (Instruments)	All	Large	Medium	Small	All	Large	Medium	Small
Panel A: Cutoff is top and bottom 1%								
Compliers	4.7%	2.7%	3.3%	2.0%	4.4%	1.8%	3.1%	1.5%
Always Takers	13.8%	12.8%	13.0%	12.7%	13.5%	12.4%	12.9%	12.4%
Never Takers	81.6%	84.4%	83.7%	85.3%	82.2%	85.7%	84.0%	86.0%
Panel B: Cutoff is top and bottom 1.5%								
Compliers	4.5%	2.4%	3.1%	1.7%	4.1%	1.7%	2.9%	1.4%
Always Takers	13.9%	12.8%	13.2%	12.7%	13.6%	12.5%	12.9%	12.5%
Never Takers	81.5%	84.8%	83.7%	85.6%	82.3%	85.9%	84.2%	86.1%
Panel C: Cutoff is top and bottom 2%								
Compliers	4.5%	2.2%	3.0%	1.6%	4.0%	1.6%	2.8%	1.3%
Always Takers	14.0%	12.8%	13.3%	12.7%	13.6%	12.5%	13.0%	12.5%
Never Takers	81.5%	84.9%	83.7%	85.7%	82.4%	85.9%	84.3%	86.2%

Notes: Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years

Appendix Table 4: Characteristics of Marginal Claimants

Model		1-Instrument Model		3-Instrument Model					
Firm Size (Instruments)		All		Large		Medium		Small	
Probabilities	P(X=x)	P(X=x|complier)	P(X=x|complier) /P(X=x)	P(X=x|complier)	P(X=x|complier) /P(X=x)	P(X=x|complier)	P(X=x|complier) /P(X=x)	P(X=x|complier)	P(X=x|complier) /P(X=x)
Characteristics									
Female	49.2%	45.8%	0.93	44.9%	0.91	47.0%	0.96	40.7%	0.83
Concurrent	52.5%	30.8%	0.59	26.7%	0.51	29.8%	0.57	17.6%	0.34
Age 55+	27.8%	30.3%	1.09	31.3%	1.13	31.3%	1.13	28.0%	1.01
Less than High School	21.8%	16.1%	0.74	13.0%	0.60	16.7%	0.77	12.8%	0.59
High School	37.2%	40.2%	1.08	39.4%	1.06	40.8%	1.10	39.7%	1.07
GED	10.7%	8.2%	0.77	7.6%	0.71	8.0%	0.75	9.2%	0.86
Vocational Training	27.1%	19.4%	0.71	19.4%	0.71	17.8%	0.66	21.2%	0.78
Some College	20.8%	21.0%	1.01	24.1%	1.16	21.1%	1.01	23.7%	1.14
College	9.5%	12.8%	1.35	12.8%	1.35	12.7%	1.34	11.7%	1.23
Obese	42.9%	43.2%	1.01	45.8%	1.07	44.3%	1.03	42.5%	0.99
Mental Impairment	19.6%	17.1%	0.87	16.7%	0.85	17.1%	0.87	16.6%	0.85
Musculoskeletal Impairment	35.4%	48.6%	1.37	52.6%	1.48	49.3%	1.39	51.5%	1.45

Notes: Compliers are defined by the difference in the probability of representation from the 1st to 99th percentiles of the indicated instrumental variable. Data come from U.S. Social Security Administration, Electronic Disability Collect System and includes 7,431,904 observations between years 2010-2014.

Appendix Table 5: IV Estimates of Attorney Representation on Outcomes, Alternative Instruments

	Initial Allowance		Initial Denial				
	Any reason	Meets Listing of Impairments	Insufficient Evidence	Refused Medical Exam	Appellate Hearing | Initial Denial	Total Processing Time (Days)	Final Allowance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Alternative Instrument: One Instrument *Any Firm*							
Legal Representation	0.168	0.165***	0.102**	-0.000230	-0.552**	-247.9	-0.141
	(0.115)	(0.0591)	(0.0410)	(0.0205)	(0.273)	(152.2)	(0.160)
Panel B: Alternative Instrument: Residualized Three Instruments							
Legal Representation	0.144	0.145***	0.130***	0.00285	-0.588**	-231.0*	-0.209
	(0.092)	(0.055)	(0.045)	(0.021)	(0.266)	(131.3)	(0.149)
Observations	7,422,492	7,422,492	7,422,492	7,422,492	5,046,871	7,422,492	7,422,492
Mean Dep. Var.	0.320	0.128	0.043	0.026	0.510	315.7	0.470

Notes: Covariates include age, age squared, and indicators for female, education attainment, vocational training, SSI concurrent claim, BMI and BMI squared, pain indicated at application, random QA sample, quick disability determination flag, compassionate allowance flag, terminal illness flag, wounded warrior flag, major diagnosis class, and fixed effects for month and DDS office. Standard errors in parentheses, clustered by DDS office. *p<0.10 ** p<0.05 *** p<0.01 Covariates used in forming residualized instruments include age, age squared, time from onset to filing, indicators for prototype states, concurrent applications, non-citizens, applicant is in jail, applicant is suicidal, applicant is in dire need, the percentage of claims in that area that are decided by Senior Adjudicative Attorneys and the characteristics of the application at the initial level, including expedited handling flags, QA sample, adjudicative step, body system code, and the allowance rate in the DDS at the time of decision.