The Uneven Distribution of Discretion: Parent Monitoring and the Rationing of School Resources

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Abstract

Social policies target scarce resources through tags—categorical labels like “low-income” or “disability” that reflect moral notions about who deserves help. The present paper begins with three gaps in what we know about how tags shape resource allocations. First, while past research focuses on how policymakers ration resources by changing which tags a policy targets, organizations may also ration resources by using discretion to decide which individuals belong to a tagged category. Second, this discretion may be unevenly distributed. Potential recipients who engage in more intensive monitoring of professionals and bureaucrats may reduce discretion to ration. Third, this uneven distribution of discretion may help explain why the same cost pressure has heterogeneous effects on rationing; a policy change might have larger effects on organizations where professionals have more discretion to ration resources. The paper uses school districts’ allocation of tags identifying students as having a disability, and parent monitoring of school districts’ decisions, as a case study to examine these dynamics. The paper first shows that despite federal prohibitions on letting cost impact who receives a tag, districts ration disability tags in response to cost pressure. Then, focusing on New Jersey, the state with the largest drop in tagging, I ask: is this drop evenly distributed amongst districts? If not, what role might parent monitoring of resource decisions, monitoring that reduces the discretion of district professionals, play in explaining unequal rationing? Using unique data gleaned from an Open Records Act request of database metadata that logs parent complaints, I find that districts with a history of more intensive parental monitoring of professional decisions experience a significantly lower probability of school professionals rationing resources by rationing tags.

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1. Introduction

How can organizations fairly allocate scarce resources? Sociologists have empirically studied this normative question by investigating features of allocation processes that appear to contribute to inequality.

One feature is discretion (Starr, 2008; Lipsky, 2010; Abbott, 2014). For social policy benefits, *tags*—categories like “veteran” or “mother” that identify an individual as deserving of a resource—limit discretion over whom to give a resource by restricting access to certain demographic or social categories (Skocpol, 1992; Starr, 1992; Mohr, 1994; Steensland, 2006). Third-parties like the federal government often specify which tags a policy should use, which resources tag-holders should receive, and what rights tag-holders have to participate in the allocation process. Tags thus curtail the discretion of those allocating the resource by specifying whom they should allocate to, what they should allocate, and whether and how potential recipients of an allocation may question an unfavorable decision.

The present paper, after presenting a framework for how tags shape the distribution of scarce social policy benefits, identifies three gaps. First, tags attempt to limit discretion by specifying who gets access to a resource. But tags may just move discretion earlier in the process—organizations may ration resources not through changing *which* tags a policy prioritizes (e.g., excluding those with a criminal record) but through changing *who* qualifies for the same tag. Second, bureaucrats and professionals might have different *degrees* of discretion to ration tags and depending on how closely potential recipients monitor and intervene upon their decisions. Third, these different degrees of discretion can lead to variation in rationing outcomes. The paper shows how we can use “administrative trace data” (Salganik, 2017) to measure monitoring of professionals at a large enough scale to show how this monitoring affects aggregate rationing outcomes.

The paper studies this using a specific case: tags that schools allocate to a student indicating that he or she has a disability, a tag given to between 10 and 20% of school-age children. The tag comes with a contract—an individualized education plans (IEP)—that gives the student and her parents the right to receive an earmarked set of school resources. The paper first shows how districts allocate fewer disability tags following cost-containment policies that mean each tag strains school budgets more. More interesting than the average effect is heterogeneity. The policy had little effect on access to tags in districts where parents more closely monitored professional decision-making, thereby reducing the professional’s discretion; the policy greatly reduced access to tags in districts where parents were less involved in surveilling school decisions.

The paper uses the case to make three contributions. First is to provide a framework that bridges two literatures. On the one hand, ethnographies examine micro-level interactions between professionals who use discretion to make decisions about how to allocate resources and the individuals who seek these resources (e.g., Heimer and Staffen, 1998; Lareau, 2000; Watkins-Hayes, 2009). These studies show how some clients, by interacting with a professional more than or in a different way than other clients, can shape the professional’s decision about allocating resources like attention in a NICU (Heimer and Staffen, 1998), extra help on schoolwork (Lareau, 2000), or welfare benefits (Watkins-Hayes, 2009). On the other hand, quantitative scholars study
how macro-level policies lead to large aggregate changes in resource allocations. These quantitative analyses also often show heterogeneous effects of policies: some organizations experience large reductions in how many resources they allocate following a policy change; others show few changes. One reason might be that different organizations face different degrees of monitoring by potential resource recipients and their advocates. If so, a framework to link these two levels of analysis can help us understand mechanisms behind these heterogeneous effects. The present paper bridges the gap by analyzing whether the histories of interactions between clients and professionals help explain a policy change’s uneven effect.

Second, by focusing on parents as the particular clients interacting with professionals, the case illustrates how the socioeconomic (SES) gradients that Lareau (2000) documents in parents using informal tools to curtail professional discretion—volunteering in classrooms (p. 61); requesting meetings with principals (p. 33)—extend to gradients in parents using formal tools to curtail discretion; in this case, parents filing complaints that shape the allocation of school resources.

Finally, the case helps highlight the dual nature of professional discretion: discretion to over-allocate an undesirable good or service (e.g., police officer discretion and the overuse of force against certain minority communities) and discretion to underallocate a desirable good. Applied to the present case, past researchers in what’s called the “disproportionality” literature have argued that school professionals use discretion to overallocate the undesirable good of disability tags to African-American students, particularly males (e.g., Losen and Orfield, 2002; Skiba et al., 2005; Blanchett, 2006). Yet social transformations have arguably changed the meaning of disability tags in certain contexts. As the costs of special education services increasingly strain school budgets (Rosenthal, 2016; Krent et al., 2018), and as the rise of diagnoses like autism fostered hopes that children could progress with the correct set of interventions (Eyal, 2010)—the tags that guarantee access to these hope-promoting services become more valuable.

If disability tags become a form of currency that some advantaged parents “fight to get” (Dumit, 2006) for the accompanying resources, professionals might use discretion to underallocate this now desirable good to certain students. This complexity in the social meaning of medical labels—the labels can serve as stigmatizing marks or as currency to convert into resources—may become increasingly important in the U.S. due to the decreasing prominence of cash welfare like TANF and increasing importance of disability-linked cash and in-kind services (Hansen et al., 2014; Olafsdottir, 2010; O’Brien, 2015; Dorfman, 2017). In turn, professionals who work in the organizations that ration access to disability tags, and who use discretion to do so, will face curbs on this discretion from a variety of social actors.

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1Autism was added as an “official” IDEA disability category as part of the 1990 re-authorization. While the disorder makes up anywhere between 1 and 8% of special education placement depending on the state and year, (Zirkel, 2011) finds that autism-related litigation makes up a disproportionate amount of litigation. Reviewing all federal court decisions (distinct from the much more frequent due process hearings analyzed in Section 5), Zirkel finds that: “autism litigation trended up from approximately 12–45%” of all cases during the period he studied (1993-2006), while autism enrollments ranged from 0 to 5%. He summarizes that: the “proportionality ratio of autism litigation to autism enrollments was more than 10 : 1.” In other words, IEPs associated with autism generate 10 times the amount of litigation one would expect if litigation tracked prevalence on a 1:1 basis.
1.1. How tags shape the distribution of resources

The horizontal arrow in Figure 1 depicts an unconstrained allocation process. An allocator makes an allocation decision—for instance, a binary decision about whether to call back a job applicant or not (Pager, 2003); a continuous decision about how much salary to offer a new hire (Abraham, 2017)—while facing few constraints from either third-parties or the potential recipient. Hiring decisions in private firms fall closer to this pole; likewise, elite private universities currently face few constraints and use shifting notions of merit to allocate scarce spots (Karabel, 2006).

Figure 1 then depicts the many constraints that reduce allocators’ discretion over whom to prioritize. Tags—categorical labels that filter from a pool of individuals into those given access to a resource—reduce allocators’ discretion in three ways. First, third-party actors may define which tags a person must display to receive the resource (tag-holders). Second, third-party actors may define the resources that a tag grants access to (tag-associated resources)—for instance, cash or in-kind transfers. Finally, third-parties may give tag-holders rights in this allocation process—for instance, the right to appeal a benefit denial (tag-associated rights).

In turn, policymakers hoping to contain the costs of a social policy can change each of these links to ration resources. For instance, the “end of cash welfare” via the shift from Aid to Families with Dependent Children (AFDC) to Temporary Assistance for Needy Families (TANF) as part of 1996’s Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) involved changes to all three elements: more restrictive tags that added more stringent “looking for work” requirements (Danziger, 2010; Tach and Edin, 2017); reduced benefit generosity through time limits (for a summary, see: Danziger, 2010); weakened due process rights due to the outsourcing of various processes to private contractors subject to weaker accountability requirements (Gilman, 2001; Eubanks, 2018).

1.2. Gap one: rationing resources by rationing access to tags

The welfare reform example highlights how tags can serve as levers in rationing, defined broadly as organizations prioritizing between individuals when allocating scarce resources. Focusing on the red arrow in Figure 1—how tags filter between a pool of potential resource recipients and those with access to a resource—there are at least three ways that changes to tags can be used to allocate fewer resources. First are changes to which tags are used—for instance, changing a
policy’s tag from one based on income alone to one that requires both income below a threshold and the presence of dependent children. Second, for the same tag, actors can implement a more stringent selection process or verification procedure for assessing whether the individual displays the tagged characteristic—for instance, what income documentation does an applicant need to provide? Finally, for the same tag and for the same verification process, there may be room for discretion that leads to variation in the strength of filtering—for instance, discretion in viewing medical records testifying to the severity of a patient’s pain as credible or not.

Past research overwhelmingly focuses on the first use of tags for rationing, investigating which tags policymakers use and why they use those tags. Broadly, scholars argue that U.S. social policy is structured around two broad “categories of worth”: the deserving poor and the undeserving poor (Katz, 1989, 1996; Mohr, 1994; Gilens, 2009; Steensland, 2006; Brown, 2013). The former are thought to have characteristics that entitle them to more generous social assistance; the latter, to either lack those characteristics or to possess others (e.g., illegal immigration status; a criminal history) that “pollute” otherwise pure categories (Brown, 2013; Curtis et al., 2013). In turn, policymakers translate the broad category of deserving poor into a set of specific tags.2

Rationing can thus occur through increasingly stringent definitions of who counts as “deserving” that manifest in layering additional tags onto a policy’s existing one. For instance, “culture of poverty” arguments by Murray (2008) and others proposed a definition of “deserving” where individuals needed to be actively looking for work to merit cash assistance (Danziger, 2010). States translated these moral ideas into specific tags that reflected an emphasis on work—for instance, only exempting mothers from work for the first 12 months of a child’s life or reducing the extent to which postsecondary or language education counted as work exemption (Gais, 2001; Danziger, 2010; Tach and Edin, 2017).

Yet this first form of rationing—changes to the tags a person needs to display to qualify for assistance—is a highly visible policy change. And that visibility can make it difficult for policymakers to ration access to a resource by shifting to a more restrictive set of tags. For instance, the visibility of proposals to raise the Medicare age from 65 to 67 have sparked significantly more public criticism than subtler cost-containment efforts within the program (Oberlander, 2018). As a result, the most visible form of rationing through tags—rationing through changing which tags an individual needs to display—may be accompanied by two, less studied forms of rationing.

First is rationing through keeping the same tag(s) but changing the formal procedures organizations use to assess whether an individual displays the tagged characteristic. For instance, concerns about rising rates of Supplemental Security Income (SSI) and Supplemental Security Disability Insurance (SSDI) claims, especially for mental disorders, led not only to changes in 1996 reforms to how disability was defined (e.g., the exclusion of drug or alcohol dependence from allowable adult disorders) but also new procedures to more stringently assess the extent to which mental disabilities impaired behavior (Social Security Office of Policy, 2018).

2These tags vary across policies, within the same policy over time, or within the same policy but across states/sub-national entities.
Yet formal changes to how an individual proves she belongs to a tagged category are still recorded in regulations; these changes are thus still visible to concerned recipients, advocates, and constituents. The third form of rationing through tags involves what Hacker (2004) calls *subterranean retrenchment*—rationing not through formal policy revisions but through subtle changes in how actors implement the same policy. In particular, tags vary in the degree to which those assessing individuals for the tag have discretion to decide who qualifies. Generally, tags like age involve less discretion. Other tags allow for more discretion. For income, there may be discretion in giving people second changes to submit the correct paperwork to verify (Eubanks, 2018). For disability, there may be discretion on where along a continuous spectrum of need—for instance, varying severity of pain or attention difficulties—to draw the binary threshold that gives one a claim to assistance (Kelman and Lester, 1997; Little, 2010; Dorfman, 2017).

As the first part of the analysis that follows shows, this discretion means that organizations facing cost pressures may ration tags—organizations identify fewer individuals as members of a category—without any changes to the content or verification procedure for a tag. Thus, while tags reduce discretion by specifying whom organizations should prioritize for a resource, they do not fully eliminate discretion. Instead, tags can push discretion earlier in the process as professionals and bureaucrats exercise discretion over deciding who displays a tagged characteristic.

1.3. *Gap two: how does discretion 1) vary across potential recipients of a resource in ways that 2) produce variation in rationing outcomes?*

These examples highlight how professionals and bureaucrats have some discretion to decide who falls within a tagged category like “disability” or “low income.” This discretion can lead to the first part of the top arrow in Figure 2, a version of Coleman’s 1990 “boat” of macro-micro linkages. In particular, policy changes or cost pressures can lead to fewer allocations of a resource like a tag (A → D; a macro-macro path). The micro-level mechanism is a professional exercising discretion over whether an individual displays a tagged characteristic (A → B; a

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3Though this is not universal—for instance, age is highly relevant for refugees from Syria seeking asylum in Western European nations and being below 18 can help an individual’s chances of asylum. In the absence of birth records, or when the veracity of these records is in doubt, bureaucracies have struggled to assess who falls above versus below this threshold (e.g., Sauer et al., 2016).
Figure 2 also shows how this overall drop in allocations following a policy change or cost pressure may be accompanied by uneven drops or heterogeneous effects across subgroups. Some continue to access a resource like a tag; others lose or are denied access. And in turn, the micro-level mechanism for the average effect (professional or bureaucrats’ discretion over whom to give tags) suggests a micro-level mechanism for the heterogeneous effects: variation in this discretion across different potential recipients of a resource. Some professionals might have more discretion to ration resources by rationing tags. Some professionals might have less discretion. And the differences in discretion might be related to the professional or organization’s interactions with potential resource recipients (Lipsky, 2010)—some potential recipients engage in more intensive monitoring and intervention into professional decision-making, monitoring and intervention that reduces discretion.

What forms might this monitoring take? And how might variation in monitoring cause variation in discretion over allocating a resource like a tag? Past analyses of professions generally focus on two close conceptual cousins of discretion—autonomy and authority—and how these vary between professionals (Parsons, 1939; Larson, 1979; Abbott, 2014; Starr, 2008).

In the present article, I argue that discretion is attached to decisions rather than professionals—for instance, school professionals have more discretion over which students they allocate attention to in class (Booher-Jennings, 2005, 2006) than over how severely they can discipline students (Arum, 2005). In turn, defining discretion as a decision-level characteristic means that discretion can vary across potential recipients of an allocation.

What contributes to an uneven distribution of discretion across potential recipients of an allocation? Appendix Table A1 highlights examples of how professionals and bureaucrats ex-
ercise discretion over other important allocation decisions beyond tags: desirable goods (hiring managers allocating job offers), undesirable actions (police officers allocating force), and mixed goods (physicians allocating opioids). The Table also shows how a variety of actors–professional societies; state regulators; concerned citizens–use tools to try to curtail discretion in each of these decisions. Table 1 summarizes two dimensions of these tools. First, who uses a tool to try to curtail a professional’s discretion over allocating a resource? Second, is the tool the agent uses informal or not legally-binding—for instance, citizen protests to try to curtail police discretion over the use of force? Or is the tool formal/legally-binding—for instance, a federal court places a local police department under a consent decree to try to curtail police discretion? As I discuss in the next section, the present paper focuses on a neglected cell in the context of professionals who serve children: individuals using formal tools to curtail the discretion professionals have over whom to give a resource. And this type of curtailment may differ from the wealth of research that documents parents using informal tools to curtail discretion (Lareau, 2000, 2011; Heimer and Staffen, 1998; Eyal, 2010, 2013).

Table 1: Actor that curtails discretion v. formality of tool actor uses

<table>
<thead>
<tr>
<th>Individual uses tool</th>
<th>Tool for curbing discretion is informal/non legally-binding</th>
<th>Tool for curbing discretion is formal/legally-binding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parents pursue informal strategies to curtail discretion by child-serving professionals (Lareau, 2011; Eyal et al. 2010)</td>
<td>Litigation over school disciplinary practices (Arum, 2005); EEOC litigation (Dobbin, 2009)</td>
</tr>
<tr>
<td>Non-state organization uses tool</td>
<td>Informal strategies (protests; public pressure) by health-related social movements</td>
<td>School finance litigation by public interest law firms (e.g., Corcoran et al., 2008)</td>
</tr>
<tr>
<td>State organization uses tool</td>
<td>Agency officials meet with professionals in regulated industry to warn about impending enforcement (Carpenter, 2010, p. 449-450)</td>
<td>FDA denies approval to drug product</td>
</tr>
</tbody>
</table>

1.4. Gap three: linking discretion- curtailing interactions to aggregate rationing outcomes

Returning to Figure 2, part of the challenge in studying how discretion-curtailing interventions affect aggregate rationing outcomes (C $\rightarrow$ D) is observing these interventions–either informal or formal–on a large-enough scale to see how they moderate policy reforms. Ethnographic studies that zoom in on a few organizations have yielded rich evidence of nodes B (professionals exercising discretion in allocating some resource) and C (some potential recipients curtailing this discretion more than others). In particular, focusing on parents, higher socioeconomic status (SES) parents have been shown to engage in greater monitoring of and intervention into the decisions of professionals, surveillance that reduces discretion (Hays, 1998; Heimer and
But understanding the more complete set of pathways—how variation in monitoring of professionals leads to variation in rationing outcomes—requires measuring these social interactions on a large-enough scale to investigate how they moderate large-scale policy changes. That involves measuring interactions in either a representative sample or census of organizations that the policy affects. The present article re-purposes data from an electronic database used to record complaints parents file (regardless of whether those complaints are later withdrawn) to study these interactions on a large scale (all school districts in a state (~500), observed over a period of ten years). As Salganik (2017) notes, researchers can use this type of government “trace data” to study behaviors at scale, and researchers have used complaints to study behaviors like neighborhood disputes (Legewie and Schaeffer, 2016) and citizen willingness to call police after police brutality (Desmond et al., 2016). While other research shows how organizations use log databases like the one in the present paper to engage in surveillance of citizens (Brayne, 2017), the present article flips the database’s use to study how citizens engage in monitoring of and intervention into organizations that changes how those organizations allocate resources.

1.5. The specific case: rationing disability tags in schools

Between 10 and 20% of school-age children are tagged as having a disability, a tag that gives them access to an IEP, a contract for services under the Individuals with Disabilities Education Act (IDEA), which evolved from 1975’s Education for All Handicapped Children Act (EAHCA).

The federal government tries to place sharp limits on school districts’ discretion over decisions about allocating resources to students with the disability tag. Framed in terms of Figure 1, the federal government through the IDEA and associated case law uses all three levers to reduce school district discretion. First, the federal government defines the process that school districts must follow when deciding whom to give a disability tag (red arrow in Figure 1). School districts and states are constrained by a broad child find mandate—districts are told not to wait for students and parents to come to the district requesting services for a disability; instead, districts are obligated to try to proactively find all students who need the tag. In addition, school districts and states must follow a highly specific procedure that Figure 3 outlines and use a uniform set of thirteen disability categories—e.g., speech/language disorders; autism; deaf-blindness—when deciding which children have a disability.

Second, the federal government limits discretion through defining what resources a district

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5Lareau (2000) highlights revealing details of parental intervention into these classrooms such as how higher-SES mothers volunteer in classrooms as a way to monitor teacher performance and collect evidence to bring to principals to complain in the case of unsatisfactory performance (p. 65). (Heimer and Staffen, 1998, ’s) ethnography of parental monitoring of medical professionals in neonatal intensive care units (NICU’s) shows important details such as one parent renting a room at the hospital in order to be there to watch her child’s care “like a hawk” after a medical mistake (p. 252), though the authors emphasize that use of these tools is not strictly confined to upper-middle class parents.

6A detailed account of the legislative history and dynamics of the EAHCA and subsequent reauthorizations is beyond the scope of this paper. For a detailed account, see ((?Ong-Dean, 2009)).

7More formally, states and districts must “identify, locate, and evaluate” all students with disabilities and who are in need of special education services. This obligation extends to “children with disabilities who are homeless children or are wards of the State, and children with disabilities attending private schools, regardless of the severity of their disability”(20 U.S.C. § 1412(a)(3) (2006); 34 C.F.R. § 300.111(a), 2012).
must provide in an IEP and through granting parents of children with disabilities strong rights to influence these resource allocations. Many social policies use a formula to determine the magnitude of resources an individual receives—for instance, one that adjusts for household size or pre-retirement earnings. In contrast, the emphasis on the IEP as an individualized contract means that parents and school districts negotiate over what resources a child is owed by the district. For instance, a parent or advocate for the child may propose 60 minutes of speech therapy a week, a district counters with 20 minutes, and the IEP ends up somewhere in between (Caruso, 2004). These negotiations can sour and parents who feel that the district has not provided an appropriate depth of resources to the child are given rights to file formal complaints. In these complaints, parents can argue that the district, in choosing to deny a child a resource, violated the child’s right to a Free and Appropriate Public Education (FAPE) in the least restrictive environment (LRE). Or as school professionals put it, the “least restrictive appropriate.” These rights trump cost considerations by the district— if a service is needed to fulfill a child’s right to an appropriate education, the district must provide it regardless of the cost.

In turn, the federal government attempts to further limit discretion by setting the standard that school districts must use when deciding whether a given set of resources counts as an “appropriate” allocation.
1.5.1. The fiscal context behind pressure to ration tags: a nearly unfunded mandate

The federal government thus places strong limits on district discretion through all three elements of Figure 1—the federal government defines who should receive a disability tag, the depth of resources districts owe students, and what rights parents have in these decisions. Yet these mandates are largely unfunded. While the federal government was supposed to fund 40% of the additional costs of providing IEP students with services, allocations have hovered closer to 10%, making the entitlement nearly unfunded (Draggo, 2016). As a result, allocations from state budgets (40-45%) and local revenues (40-45%) are the most important financing sources. And while these lower levels of government provide the majority of financing, they are prohibited from formally changing how districts allocate the tags (red arrow), which resources tag-holders receive (green arrow), or what rights tag-holders have to shape these resource allocations (blue arrow). This leads to a nearly unfunded mandate where the federal government requires districts to allocate disability tags to all who need them and to provide “appropriate” resources to each tagged student, but funds few of the associated costs.

In turn, in a recent case, *Endrew F. v. Douglas County School District*, the Supreme Court both raised the standard of what districts owe students and re-affirmed that costs should not play a role. Endrew’s parents filed a complaint over whether a Colorado district was required to reimburse the tuition for a special needs private school focused on autism (Firefly Autism school) that cost $40,000/year at the time of Endrew’s placement and $70,000/year by the time the case was litigated (Transcript of Oral Argument at 10-11, *Endrew F. v. Douglas County School District*, 2017 (No. 15-827)). Average per-pupil expenditures in the District are roughly $7,000 per year, meaning that what was at stake was whether the district owed Endrew a depth of resources roughly ten times that of non-tagged students. Framed in terms of Figure 1, the case concerned the green arrow—had the district done enough when offering in-school services in its IEP or did Endrew’s parents have a right to the more expensive therapeutic school placement?

Most amicus briefs (11 out of 15) supported the parents, with disability rights and legal services organizations arguing that districts needed to comply with a robust standard of benefit in order to protect the rights of students with disabilities to a fair shot at equal educational outcomes. The few briefs in support of the district were filed by organizations representing school administrators—most notably, an organization, “Great City Schools” that represents the superintendents of all major urban public school districts (e.g., Chicago, New York City, Los Angeles Unified, San Francisco, as well as 66 others). A major concern was that giving parents

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8The local fiscal context matters, and is explored more fully in the district-level analysis, but does so less systematically. This is because while the state budget often contains explicit aid to districts for special education services, local revenue is rarely explicitly intended for these services; instead, local revenue is diverted from the general education students for whom it is intended to make up federal/state revenue shortfalls in a process some call “enroachment” or cross-subsidization (Conlin and Jalilevand, 2015).

9For instance, an amicus brief filed by a coalition of different disability rights organizations cited *Brown v. Board of Education* when arguing that children with disabilities are owed services under a higher standard: “A number of circuit courts, including the Tenth Circuit, have erroneously concluded that schools must only provide these children an education that is of merely more than de minimis benefit. For children with disabilities, this deprivation of educational opportunity truly ‘affect[s] their hearts and minds in a way unlikely ever to be undone.’” (*Brown*, 347 U.S. at 494, cited in Disability Rights Organizations amicus brief)
an enhanced right to resources, while funding few of these rights claims, would have a crippling
effect on school budgets. The district administrators argued that “the costs associated with the
dramatic change in the definition of FAPE proposed by petitioner would likely be astronomical”
and argued that these costs would be especially difficult at a time when these districts faced
“crippling budget cuts” in the wake of the Great Recession. As they put it, the “petitioner’s
proposed standard is a financial load that public school district budgets simply cannot bear”
and that the “the Court, without the ability to increase such funding [federal appropriations to
IEPs], should not adopt a costly definitional change that Congress has not.” Put differently, if
Congress wanted to enhance parents’ rights in school allocations, they should fund the associated
claims.

1.5.2. The moral context behind pressure to ration tags: prohibitions on explicit rationing

How did the Court reconcile these tensions–costly resource claims attached to a tag; insufficient
federal funding of those claims; districts worried about crippling effects on school budgets?
In oral arguments, Justice Kennedy asked whether cost should play any role in districts’ decisions
about resources for tagged students:

What we’re talking about is the word ‘reasonable’ that we see throughout the law.
Do – do you see any – any function for that word and, in addition, as part of what
reasonable is, is there any place to discuss the cost that...would be incurred for,
say, severely disabled students? (Transcript of Oral Argument at 8-9, Endrew F. v.

As the lawyer for the parents (plaintiffs) in the case put it, and as the Justices agreed, costs
should not play a role:

There are going to be some extreme cases, and the Court saw one several years ago
in the Garrett F. case, which involved a situation where a child with a ventilator
needed full-time nursing services, and the Court quite clearly said that even there,
where the school district was saying that was going to cost $30 to $40,000, the Act
does not permit cost to trump what the Act otherwise requires (Transcript of Oral
Argument at 10, Endrew F. v. Douglas County School District, 2017 (No. 15-827))

The Court unanimously sided with the parents (the plaintiffs), ruling that a district must
provide a sufficient amount of resources to “enable a child to make progress appropriate in
15-827 (U.S. March 22, 2017)). More importantly, the Opinion did not address districts’
cost concerns. Instead, the Opinion emphasized that resource decisions must be tailored to
an individual student’s needs, a tailoring that must trump cost challenges: “A focus on the

10 More precisely, the student’s IEP must be “reasonably calculated” to offer this level of benefit, wording
that gives districts some latitude for good-faith attempts to offer resources that end up not helping the child
make sufficient progress. The Court ruled that more than minimal was far too low a standard, but also rejected
the plaintiff’s proposed standard—“an education that aims to provide a child with a disability opportunities to
achieve academic success, attain self-sufficiency, and contribute to society that are substantially equal to the
opportunities afforded children without disabilities”—as too high.
particular child is at the core of the IDEA. The instruction offered must be ‘specially designed’ to meet a child’s ‘unique needs’ through an ‘individualized education program.’ §§1401(29), (14)’(emphasis in original).

In sum, the Opinion enhanced the rights that parents of students with the disability tag have over resource allocations and re-affirmed that these rights should override cost constraints.

1.6. One possible result: using discretion to ration tags in the wake of cost pressures

The urban school districts’ amicus brief warned that “public school district budgets simply cannot bear” some of the resource claims that parents make once they have a disability tag. This fiscal context–finite school budgets; unfunded federal mandates–combines with a moral context in which districts cannot cite cost as a rationale for denying a student either a disability tag or tag-associated resources. How might district professionals–most notably, school administrators concerned about balancing budgets across a pool of students–respond to this pressure to ration school resources?

Returning to the earlier three forms of rationing, district professionals are barred from rationing by changing the content of the disability tag–for instance, districts cannot eliminate more costly disabilities like autism from the definition of who receives a tag for resources. Likewise, districts are barred from rationing by changing the process used to give an individual a tag–for instance, they cannot restrict allocations to students referred by teachers rather than students referred by either teachers or parents. This leaves the third form of rationing: rationing by exercising discretion within the same formal policies. In turn, districts might engage in two forms of rationing. First is using discretion to interpret what counts as the "least restrictive appropriate" set of services. For instance, a district seeking to avoid paying for an expensive private school placement might argue that while the school might benefit the student, it would go against the "least restrictive" part of the standard by segregating the student from his or her peers without disabilities. Second is by rationing the tag itself. The present article focuses on the second. While both forms of rationing may occur in response to cost pressure, there are no systematic data on the content of IEPs. Thus, by examining the rationing of tags, we end up with a conservative estimate of whether districts ration in response to cost pressure.

Figure 4 presents the framework from Figure 2 applied to the present case. I review each question in turn.

1.6.1. Question / hypothesis one: do districts ration disability tags when they face cost pressures?

First (red) is a macro-level question: do districts ration disability tags when they face cost pressures? Because cost pressure is often endogenous to unobserved and observed characteristics of a district’s parents, the present paper exploits state-level shifts that change the cost pressures associated with disability tags. Broadly, state contributions to districts typically start with a “base rate” where a district may be allocated, for instance, $10,000 per student on the basis of its average daily membership (ADM). States where districts face less cost pressure with each additional disability tag they offer use weighting financing, where they weight each disability-tagged student as a multiple of a general education student for the purposes of the state allocation to the district. For instance, New York uses a single pupil weighting system where each IEP
student, regardless of his or her disability, is weighted as 1.41 times that of a general education student; so if a district received $10,000 from the state for each general education student, it would receive $14,100 for each special education student (Ahearne, 2010, p. 36). Districts in these states face fewer cost pressures caused by federal control over tags.

The paper exploits shifts between weighting financing to capitation financing, which is also sometimes called block granting. In these formulas, a district’s allocation from the state is largely not sensitive to the number of students the district tags as having a disability. Appendix Table A2 outlines nuances within these two general categories.

The present paper largely focuses on states that switch to block grants. While these regimes take various forms outlined more fully in Appendix A2, most important about these formulas is that they compound the cost pressure districts face in satisfying parents’ resource claims. While passed by legislatures across the ideological spectrum—e.g., both Alabama and California shifted to block grants in the mid to late 1990’s despite different legislature party composition—block grants generally reduce state budget expenditures on tagged students. In particular, since the grants mean that districts receive a lump sum that is not sensitive to either how many students the district identifies as having a disability or the intensity of services a district provides to each tagged students, the formulas place cost pressure on districts that might lead districts to ration tags.

11Other states use multiple pupil weighting systems. For instance, in South Carolina, students classified under autism are weighted as 2.57 times that of a general education student, while the “emotionally disabled” are weighted as 2.04 times, which would translate into $25,700 versus $20,400 respectively compared to a general education student allocated $10,000. These IEP-related weighting factors are often accompanied by weighting factors for students with other forms of need. The most common weighting factor is one for low-income students where students in certain poverty categories (e.g., Free or Reduced Price Lunch (FRPL) eligible) are weighted as a multiple of a base student (e.g., a 1.2 weight would translate into $12,000 for that student), with 30 out of 50 states in a recent review using this factor. 27 states also have English Language Learner (ELL) multiples. In addition to these student multiples, states sometimes use a “tax effort” multiple where a district is rewarded more if it sets a higher property tax rate on its local base. The purpose of these multiples are to try to ensure that state budget allocations do not supplant local contributions to schools. Other multiples include those to small districts due to failures of economies of scale and those that adjust for cost of living within the district. For a good non-technical overview of state education financing formulas, see: http://www.elc-pa.org/wp-content/uploads/2013/02/ELC_schoolfundingreport.2013.pdf. For more technical treatments and analyses, see: Corcoran et al. (2004); Lafortune et al. (2016)).
Figure 4 and the previous discussion suggest that one mechanism for rationing is discretion in deciding which individuals display a tagged characteristic. And Figure 3 highlights discretion at various stages of deciding which children should receive a disability tag. The child’s teacher has discretion at the stage: should a child be evaluated at all for the tag? When a child is evaluated, disability categories like “emotional disturbance” fail to map on to a single medical diagnosis and include criteria such as the child exhibiting “inappropriate types of behavior or feelings under normal circumstances” that allow for discretion in interpretation by school professionals and parents.\(^\text{12}\) If a child’s evaluation suggests a disability, the “child study team,”\(^\text{13}\) which in New Jersey is composed of a school psychologist, a learning disabilities teacher-consultant, and a school social worker, has discretion at the stage: does the evaluation indicate the child’s disabilities merit receipt of special education services through an IEP, receipt of a Section 504 plan under the Rehabilitation Act, which parents have come to derogatorily refer to as an “IEP-lite” due to its decreased rights,\(^\text{14}\) extra resources provided but that lack the formal rights to resources that come with an IEP, or no extra resources for the time being?

Highlighting this room for discretion in which children to give the disability tag, the right panel of Figure 5 shows the percentage of students in each state receiving a disability tag, with between-state variation that is likely not fully reducible to underlying differences in disability status.

The presence of this discretion leads to hypothesis 1, which the state-level analysis investigates:

\textbf{Hypothesis one:} despite federal prohibitions on taking cost into account, states’ shift to block grants that increase cost pressures will lead districts to ration the disability tag

\(^\text{12}\) Code of Federal Regulations, Sec 300.8, Child with a disability. In addition to ambiguity in Code of Federal Regulations that define the general criteria, states are given the discretion to define their own criteria for each disability category as long as it meets or exceeds the federal criteria set forth in the CFR. \(^\text{?}\) find that this state-level discretion has a small impact on prevalence rates of autism within special education, with states that adopt more generous criteria for autism that includes Asperger’s and other autism spectrum disorders exhibiting higher prevalence but their analysis is correlational rather than causal and the effects are modest.

\(^\text{13}\) The diagram and terminology refer to the specifics of New Jersey’s process, since that is the focus of the present analysis. Different states will have the same general structure but might use different terminology for professionals at each stage–for instance, the “child study” team might be called the “child find” team or another term

\(^\text{14}\) Author interview, October 25th, 2016. In addition, most resources for parents with a child with a disability emphasize that parents should seek an IEP rather than a “504 plan”: e.g.,Wrightslaw, a major resource for parents of children with disabilities, advises parents that they have “minimal rights” under a 504 plan compared to an IEP, and that the main focus of 504 plans is accommodation rather than substantive provision of learning-related services. Parent message board discussions echo these official sources. For instance, in response to a parent’s question about the differences between the plans for a child with Autism-Pervasive Developmental Disorder (PDD), with one parent saying that “Basically, 504 are for those who cannot get an IEP. Tp (sic) a great extent, it takes the District off the hook. It really should never be considered for a child with an autism spectrum disorder,” and another agreeing that: “As a special ed teacher I would say to a parent, if you get an IEP, don’t let it get away. A 504 will only allow the school to do less.” Source: Autismpdd.net.
1.6.2. Question / hypotheses two and three: is rationing unequally distributed across districts?

Is variation in discretion associated with these rationing outcomes?

Hypothesis one investigates whether districts, despite tight federal control over the disability tag and prohibitions on costs playing a role, use discretion to ration disability tags. Past research suggests that districts likely do have discretion. Dhuey and Lipscomb (2011), focusing on block grants in the 1990s, shows drops in who is given an IEP. Cullen (2003), focusing on Texas in the early 1990s, focuses on changes in the other direction, showing the effect of financial incentives that increase allocations of the tag.

The present paper’s main focus is on heterogeneity. Hypotheses two and three zoom in on the state with the largest average drop in IEPs following new cost pressures—New Jersey—and investigate two questions. First, is the rationing of tags evenly or unevenly distributed across districts (Hypothesis Two)? Second, if the rationing is unevenly distributed across districts, what role might uneven degrees of discretion among district professionals play? (Hypothesis Three)

**Hypothesis two**: districts will engage in different degrees of rationing of the disability tag following cost pressure

**Hypothesis three**: districts with higher degrees of parental monitoring of and intervention into professional decisions will engage in less rationing of tags

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15 The state-level analysis looks at these dynamics in a new decade (the 2000s) and improves upon their findings by using synthetic control techniques that address possible violations of state year fixed effects’ identifying assumptions
Returning to Figure 3, the blue squares highlight the primary actors who have the opportunity to curtail the discretion that school professionals have to ration resources: parents. Parents can monitor and intervene in professional decisions at several steps. Parents can request an evaluation to start the process (20 U.S.C. §1414(a)(1)); parents can supplement the district’s publicly financed assessments with privately paid for evaluations from their own set of medical and psychological professionals (IDEA 2004 §300.502(a)(3)(i)); finally, in the event of an unfavorable decision—often, the denial of an IEP—parents can use a formal appeals system, filing a request for a due process hearing, where the parent and district, sometimes represented by attorneys, each present evidence in favor of their arguments about the child’s eligibility for a disability tag or services after a tag has been issued to an administrative law judge who issues a ruling (20 U.S.C. §1415(f)(3)(C)).

Framed in terms of Figure 1, parents thus have the opportunity to use both informal tools to curtail the discretion that district professionals have over whom to give a tag and formal tools to curtail the discretion. The present paper investigates individual parents’ use of formal tools—attempts to formally curtail the discretion of professionals by filing a formal complaint against the district. This focus contrasts with a wealth of research on two other cells: parents using informal tools to curtail the discretion of school professionals and non-state organizations/social movements using formal tools.

1.6.3. Individual parents using informal tools to curtail discretion

A wealth of research documents how parents use informal tools to curtail the discretion of professionals who serve their child. Lareau (2000; 2011) documents ways that middle-class parents curtail discretion by school and medical professionals; for instance, with a certain strategy of question-asking in interactions or through volunteering in their child’s classroom to keep a watchful eye on the teacher. Heimer and Staffen (1998) highlight how parents curb discretion of decisions that medical professionals make in the neonatal intensive care unit (NICU). Eyal (2010) and Eyal (2013) expand Abbott’s 2014 jurisdictional framework to argue that professionals not only struggle with other professionals over jurisdiction, but that the case of autism highlights how parents, claiming to be “experts in their own children,” assert jurisdictional claims through a range of informal strategies: publishing a book that contained a checklist that parents could fill out documenting their child’s symptoms for another parent-advocate to collect (thus restricting clinicians’ flow of information); making use of one-way screens in the behavioral therapist’s office “that permitted parents to watch clinicians and therapists working with their children without being seen” (Eyal, 2013, p. 887).16

What changes when actors shift from informal tools to curtail discretion to using formal tools? Put differently, what makes the use of formal tools that parents use to curtail school professionals’ discretion worth studying? Two potential differences stand out. One is the scope of

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16 To be more precise, (Eyal, 2013) at one point argues that although “one way of reading” the account is “that it was just about jurisdictional struggles—though with a wider cast of characters” (p. 887), the case is more complex: although some professionals lost their monopoly, the “rewired network of expertise” became stronger after the cooperation of middle-class parents was secured.
the tools’ effect; the other is the durability of the effect. An informal complaint by one parent may be more likely to change the situation for a particular child (limited scope) and only for a short time (limited durability). Formal interventions to curtail discretion may be more likely to induce changes in organizational practices that affect outcomes for many children (broader scope) for a long duration after the discretion-curtailling intervention occurs (more durable). For instance, as Arum (2005) argues, formal legal intervention into schools—in his case, interventions challenging a district’s disciplinary practices—can leave an “organizational legacy...institutionalized in school forms, practices, and culture” (p. 6). Thus, a parent expressing concerns to a school principal may induce one change in practices. A parent submitting a formal complaint may induce changes that affect more students and/or are more durable.

1.6.4. Collective actors using formal tools to curtail discretion

Yet when an individual as opposed to a collective actor uses a formal tool, this puts the scope and durability of the effects more in doubt. In particular, past studies of non-state organizations using formal tools to curtail discretion over school resource allocations predominantly focus on social movement actors that file class-action suits against state legislatures to try to change how the legislature upweights certain disadvantaged groups in school financing formulas (Paris, 2001; Corcoran et al., 2004; Martin, 2006; Lafortune et al., 2016; Jackson et al., 2014). The cases claim to advance the interests of “all public school students” (Serrano v. Priest), children in “poor urban districts” (Abbott v. Burke), or other similarly broad parties (Fischel, 2003). These interventions are more likely to have broad-scope durable changes for two reasons. First, by targeting state legislatures rather than individual districts, the cases reduce the discretion of legislatures over state-wide resource allocations rather than reducing the discretion of specific districts over more specific resource allocations. Second, the outcome of a successful suit—a change to a state’s financing formula—may produce durable changes in resource allocations.

1.6.5. The present focus: individuals using formal tools to curtail discretion

In contrast, in the present case, I focus on individual formal complaints that parents attempt to file over a district’s decision about a specific child’s resources. I use data from an open records request for a database that records all attempts by parents to file a formal complaint. Most of these parent interventions never go to “trial”—more formally, most are never heard by an impartial state Administrative Law Judge (ALJ). Instead, many are settled or are used by the parent to gain leverage on districts in negotiations over resources. Furthermore, unlike litigation, parents can file a request for these hearings at no cost and without attorney representation.

Despite these features, broad-scope durable changes are possible. For instance, individuals file malpractice claims that focus on compensation for an individual harm rather than on organizational practices; furthermore, most malpractice claims that individuals file are either withdrawn by that same individual or settled (Golann, 2011). Yet a large body of research focuses on broad-scope durable effects on medical practice—most notably, the potential for “defensive medicine” where physicians provide more services to all patients they see because of either a past claim or fear of claims (e.g., Paik et al., 2017; Frakes and Gruber, 2018). Little existing research examines whether there might be defensive school spending—school professionals
allocating resources to stave off the threat of potential parent complaints.

In turn, these parent interventions are aimed at reducing school professionals’ discretion over resource allocations. While an exhaustive account of the topics of these parent interventions is beyond the scope of the present paper, they represent attempts to curtail the discretion of district professionals over deciding whether a tag or whether a given set of resources is “appropriate.” Some complaints protest a district’s denial of a tag. More frequently, the complaints protest a district’s denial of a specific type of resource. For instance, in a complaint that went to a hearing, the parent requested a one-on-one aide for a student in his after-school activities:

Princeton High School has rejected my request for a one to one aide to work with [C.] in after-school activities. You have spoken to me via-phone a couple of times this year, stating that [C.] need to work on his social skills, in which I agree. One way to have him work on his social skills is by allowing and making accessible the opportunity to participate in academic and social programs with his peers.

The district responded by emphasizing the expertise of the district professionals who decided against the aide. For instance, the district emphasized the authority of a social worker who had attended hundreds of meetings with similar students to make decisions about IEPs:

Name redacted has ample experience as a licensed social worker and certified school social worker. She has participated in approximately 300 IEP team meetings and has developed and implemented as many IEPs for classified students. As a member of Princeton High School’s Child Study Team, Name redacted has been familiar with C. since he started at the high school in ninth grade, which is when she became his case manager. She is intimately familiar with his IEPs and records...While the team recognizes that social interaction with his peers is important, we do not agree that a 1:1 Aide for an after-school activity is appropriate.

Thus, regardless of the outcome of the complaint, the parent interventions represent parent attempts to curtail the discretion of district professionals and administrators over resource allocations. Hypothesis Three predicts that districts with more parent monitoring have less discretion to ration tags in response to cost pressure.

2. State-level analysis: do districts ration disability tags in the wake of cost pressure?

2.1. Data

To study cost pressure’s effects, we can exploit the fact that six states changed their financing regimes during the period under study (left panel of Figure 5), with Appendix Section 8.1 detailing legislative confirmation of these changes, Appendix Table A3 outlining data sources for the dependent and control variables, Appendix Figure A1 presenting correlations between the control variables, and Appendix Table A5 presenting descriptives.
2.2. Methods and results

2.2.1. Fixed effects analysis

Two sets of methods and results support the account that cost pressure causes districts to ration disability tags. Appendix Section 8.3 presents the full state/year fixed effects specification, which identifies the effects of financing regime changes solely off states that switch their formulas in either direction during the period under study (1999-2000 school year to 2010-2011 school year); standard errors are clustered at the state level (the treatment unit). The top panel of Figure A3 shows that a shift to capitation financing, a form of legislature-imposed fiscal retrenchment, is associated with a reduction of 0.885 percentage points in the percentage of students given a tag ($p < 0.05$). To quantify the magnitude of these effects, the bottom panel of Figure A3 presents on average how many fewer students would be in special education in a state that switches to capitation if that state is of different sizes: a state with a student population equivalent to the cutoff for the bottom 25% of enrollment in the 2008-2009 school year (the year of most of the changes), a state with a median student enrollment, and a state with a student population equivalent to the cutoff for the top 75% of enrollment in the 2008-2009 school year.

Since this effect is pooled across treatment states and averaged across treatment years, the counts, which range from approximately 2500 fewer students being given the disability tag to close to 9950 fewer tags depending on a state’s total count of students, are not observed in any actual state. However, the estimates do highlight that the result is not only statistically significant but also substantively meaningful in terms of fewer students receiving a disability tag, showing that school professionals do have sufficient discretion to ration tags in response to cost pressure. The results and their magnitude confirm and extend those of Dhuey and Lipscomb (2011)’s analysis of block grants in the 1990’s by showing that the second wave of these reforms, which occurred among a distinct set of states, had similar effects. The analysis that follows expands upon their findings in two ways: first, by using new synthetic control techniques to address possible violations of state-year fixed effects’ identifying assumptions and second and more importantly, by presenting the first investigation of which districts engage in stronger versus weaker rationing of tags.

2.2.2. Synthetic control analysis

The state-year fixed effect analysis provides suggestive evidence that the federal governments’ use of tags to direct allocations does not fully eliminate discretion. Instead, this moves discretion earlier in the process to decisions about who receives a tag. But for the results of state-year fixed effects models to be unbiased, the weighting states that did shift to block grants (treatment states) and the weighting states that did not shift to block grants (control states) can have different levels of tagging in the years leading up to the policy’s passage. But the analysis assumes that the trends in the years leading up to the policy’s passage were roughly parallel in order to estimate how the policy’s passage then affects these previously parallel trends.

In the case of financing formula changes, we might worry that the states that choose to switch financing formulas make this choice after observing particular trends in the percentage of children tagged as having a disability. For instance, states might switch to capitation financing
because they are experiencing particularly rapid increases in disability rates in the years prior to switching their financing formula. If this is the case, the control group used in the analysis may produce biased estimates of each financing change’s impact. This suggests that a more conceptually accurate control group, focusing on switches to block grants, might be the following:

**Treatment:** a state that switches from weighting to block grants

- **Control:** weighting states at risk of this switch that resemble trends in tagging rates of a treatment state prior to the treatment state switching its policy

Synthetic control analysis helps us accomplish this aim of matching states that switch formulas with control states that mirror the pre-policy trends in special education rates of states that shift their financing formula (Abadie et al., 2010), implemented using the “synth” package in R (Abadie et al., 2011). Appendix Section 8.4 describes the process in greater detail. Broadly, and focusing on New Jersey, we begin by observing a particular 1) level of disability tagging and 2) trend in disability tagging prior to New Jersey’s switch to a block grant. Then, rather than selecting one control state that resembles this level and trend, we take a “donor pool” of control states that were at risk of shifting to a block grant (so had weighting financing during the entire observed period). We then estimate the weights by finding the solution to the constrained optimization problem where the equation being minimized is the mean gap between the treatment state’s tagging rates and a weighted control’s tagging rates in the pre-treatment period, and the constraint is that the weights on the states must be non-negative and sum to one.$^{17}$

After a synthetic control is constructed using these two sets of weights, I then investigate whether after the financing formula change, special education rates in the “treatment” state diverge from special education rates in the composite state that resembles the treatment state’s pre-treatment trends. To confirm that this divergence is due to the effect of the policy and not due to chance, I conduct placebo testing. The purpose of these placebo tests is to examine whether these placebo states experience a post-policy divergence as large as the treatment states. If not, we can be more confident that the post-policy divergence witnessed in the treatment state occurs as the result of the policy rather than chance. More formally, the placebo tests calculate the following ratio, where $Y$ represents the tagging rate in the treatment unit (the real treatment state or a placebo treatment) or the weighted control unit ($Y_{\text{synthetic control state}} = \sum_{j=1}^{J} Y_{\text{state}_j \ast \text{weight}_{\text{state}_j}}$) where $j$ refers to each state with a non-zero weight, and in the following equation, $N_2 =$ number of post-treatment years and $N_1 =$ number of pre-treatment years:

(A) Post-policy root mean squared prediction error (RMSPE) (first year of policy to 2011):

$^{17}$More formally, we begin with a vector for the treatment state that contains the pre-treatment characteristics, which in our case, are both the special education rates ($Y$) and observed covariates ($Z$) specified above: $X_1 = (Z_1, Y_1, \ldots, Y_m)$ where $m$ represents different linear combinations of pre-treatment outcomes. Similarly, for the donor pool states, synth creates a matrix with the same observed covariates and pre-treatment outcomes: $X_0 = (Z_0, Y_1, \ldots, Y_m)$. Then, the algorithm finds two sets of weights that minimize the distance between the treated unit and synthetic control: first, a weight on the relative importance of each covariate (with the dependent variable likely to be weighted the highest) and second, a weight on each state to form the synthetic control. This was implemented using R’s “synth” package, with the program’s default algorithms used for the optimization part of the procedure (Nelder Mead and BFGS)
If the policy did have an effect in the treatment state, we would expect the state’s post to pre ratios to be among the largest in these placebo tests, since we expect the treatment to cause a divergence in disability tagging rates for a treatment state in the post-policy period.

The figure that follow depict the results with a dashed line dividing the period into pre-treatment school years (to the left of the line) and post-treatment school years (to the right of the line). Figure 6 presents the results of the synthetic control analysis of New Jersey, Appendix Figure A6 of Missouri, and Appendix Figure A7 of West Virginia. Taken as a whole, New Jersey seems to be the only state out of the three that shifted to capitation to exhibit a clear drop in special education rates relative to its synthetic control, as illustrated in both the graphical depiction of New Jersey’s post-policy trend and the results of the placebo test. More specifically, New Jersey’s RMSPE ratio is ranked second out of 33, indicating a less than 0.06 chance (2/33) that its post-capitation drop in special education rates is due to chance. In contrast, capitation appears to have little effect in Missouri and West Virginia. Instead, the graphs of these states highlight that in each of these state’s, the shift to capitation temporally followed drops in special education placement rates. Though further research is needed, one interpretation for these different patterns is that while New Jersey’s treatment spurred new organizational practices, the treatment in these other two states might have served as a post-hoc legislative approval on changes in tagging produced by other changes in organizational practices. Appendix Section 8.4 presents more details of the synthetic control construction and estimates; it also summarizes the RMSPE results of financing regime switches in the opposite direction (shifts from capitation to weighting), which causes increased rates of tagging in Alaska but not the other two states.

3. District-level analysis: how is discretion to ration tags distributed across districts?

The state-level analysis highlights how a macro cause–increased cost pressure associated with giving students a disability tag–leads to a macro outcome–states issue fewer disability tags. This confirms the presence of the top pathway in Figure 4.

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(8) The formulas go into effect at the beginning of a school year, there is no “gap year” in between when the new financing formula is enacted and when the formula goes into effect. However, some formulas do have phase-in periods where the formula is gradually escalated to full implementation, which would lead to attenuation in the results (since the policy is only partially enacted in the first couple treatment school years) rather than increase the magnitude of the results.
Figure 6: Synthetic control analysis of New Jersey shows a sharp drop in New Jersey in the post-block grant period relative to its synthetic control, a good match with the synthetic composite in the pre-treatment period, as well as a ranking of 2/33 on the RMSPE ratio placebo test.

The present paper’s main focus, however, is on exploring mechanisms behind lower tagging. If school professionals are able to use discretion to ration tags, districts may differ in the degree of discretion professionals have in these decisions. The next two hypotheses, analyzed at the district level, thus explore two questions. Do district engage in similar degrees of rationing tags? And if districts vary in the extent to which they ration tags, does variation in monitoring explain these unequal outcomes?

4. Data: district-level analysis

4.1. Dependent variable

The dependent variable is a district’s count of students given a disability tag (issued an IEP) over the total enrolled students. Since Common Core Data is missing this district-level information for important years, I use New Jersey Department of Education’s district-level classification data. Appendix Table A15 discusses data sources for the other predictor variables. The final analytic sample of 598 school districts excluded about 80 small districts that were not at risk for a change in placement because they only existed as districts during either the pre-treatment period or the post-treatment period, but not both periods.¹⁹

4.2. Main predictor variable: parental monitoring

A key feature of the IDEA, and why many parents view IEPs as more desirable than other disability-focused contracts like Section 504 plans, is the robust system in place where parents

¹⁹Note that this is distinct from missing data during one of the periods, since Common Core Data tracks that. Instead, these are usually small charter-only districts that either existed at some point before the formula change (e.g., in 2004) but did not survive until the 2008-2009 school year (the first post-treatment year) or districts that existed at some point after the formula change (e.g., 2008-2009, 2009-2010) but did not exist in any of the pre-treatment years.
can intervene to protest IEP and service decisions made by school professionals at various points in the process depicted by Figure 3. In particular, the statute establishes a state-level due process hearing system that is designed to make it easier for parents to intervene on their specific child’s behalf than if the parents had to file a case in federal court (Melnick, 1995). These due process requests, which can only be filed by a child’s parents on behalf of that particular child as opposed to, for instance, public interest law advocacy groups filing class action suits on behalf of a group of children, are by definition challenges to a district’s special education related decisions: decisions about whether to evaluate a child, decisions about whether to issue an IEP after evaluation, once the child has an IEP, and decisions about which services to offer that child or whether the child’s needs warrant a private school placement at the district’s expense (Mueller and Carranza, 2011).

My argument in this paper is that these forms of parental monitoring may buffer the effects of cost pressure. Professionals in districts with greater histories of parental monitoring and intervention have less discretion to make changes to placement in the wake of this policy change. To operationalize a district’s history of parental monitoring and intervention, I filed a request under the New Jersey Open Records Act (OPRA, N.J.S.A. 47:1A-1 et seq), which is similar to a FOIA request but focuses on state-level government records, with the Records Custodian of New Jersey’s Office of Administrative Law (OAL). Appendix Figure A8 shows the language of the request. This request enabled the parental monitoring variable to capture all formal attempts at intervening in resource decisions about disabilities, even if the attempt, like most, ended in an informal agreement or formal settlement rather than a formal hearing. These “administrative trace data” thus re-purpose data collected for another use—helping a state office have an internal log of complaints—to study behavior across all school districts and years.

The request yielded metadata on all due process requests against New Jersey districts in the time range of the 2000-2001 school year to the present date. I then applied two inclusion criteria: the case was opened in the pre-treatment period (so opened at some point during the 2007/2008 school year or prior school years), since I am interested in the effect of pre-treatment parental monitoring on New Jersey district responses to cost pressure. Second, I excluded the small percentage of cases where the district filed a request against the parent (rather than the parent against the district) due to my interest in parental monitoring. This analytic sample of 3,821 interventions was then merged with Common Core and NJ DOE data on district characteristics and placement rates, with details and challenges of this name-based fuzzy matching described in Appendix Figure A9.

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20 In addition, parents must make use of this state-level due process hearing system before they progress to the district court level in disputes with districts, meaning that any intervention that eventually progresses to the district court level first passed through that state’s due process hearing system.

21 The reason for this request is that New Jersey, like most states, publishes decisions of due process requests that “go to trial” (more formally, are adjudicated by an Administrative Law Judge to result in a written decision). But these public decisions represent only a small fraction of all parental interventions in the form of protesting a special education decision, since most interventions result in a written, legally-binding settlement between districts and parents or are resolved more informally after the parent files a request. Therefore, the request yielded a comprehensive set of all attempts at formal intervention rather than the selected subset of attempts that progress all the way to a hearing and written decision.
The result is what I call each district’s *intervention history* in the pre-treatment period. This intervention history ranged from zero interventions in the pre-treatment period to 61 interventions in the pre-treatment period (Newark, the state’s largest district) with an average of 6.71 interventions per district in the pre-treatment period (an average of 0.84 interventions per district per school year). Yet to highlight that district demographics (and size) are not fully determinative of this intervention history, we can compare two districts—Boonton Township and Cranbury Township—with similar enrollments and similarly low percentages of students receiving Free or Reduced Price Lunch (< 2%). The different histories indicate that there is residual variation in interventions even amongst districts with similar demographic profiles:

<table>
<thead>
<tr>
<th>Count of parental interventions in school year (spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001 2002 2003 2004 2005 2006 2007 2008</td>
</tr>
<tr>
<td>Boonton 2 2 0 2 2 3 0 2</td>
</tr>
<tr>
<td>Cranbury 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>

The main results use a single measure—whether a district had at least one parent intervention in the pre-treatment period or no parent interventions—for three reasons. First is that, as the Newark case highlights, a district’s sum of pre-treatment interventions is more sensitive to district size than whether or not the district had an intervention at all. Second is that as the Boonton Township example highlights, there may be “contagion effects” within a district once the first parent files a complaint—that is, once other parents are able to see that parents can use this tool to shape resource allocations, we see a pattern where districts, after the first complaint, tend to have other complaints in future years; districts that have not yet had their first complaint tend persist in having zero complaints. An interactive visualization at this link shows these dynamics. Third, the same parent may file complaints repeatedly as shown in Table A14. These are not clerical errors: each case has a unique ID in the database log system. Instead, they likely reflect parents who use a repeated request for a due process hearing to ensure the maintenance of a service for their child from school year to school year. This occurs since the IDEA contains what’s called a “stay-put” provision where, if a district wants to discontinue providing a service to a child and the parent disputes that discontinuation and files a request, the district is required to continue providing the service until the dispute is resolved.

4.3. *Control variables*

The models also include the following control variables, all from the pre-reform period. For the purposes of interpreting coefficients, all percentages are coded as 0 - 100. First, since the disproportionality literature largely focuses on and finds significant differences in placement for African-American students, I focus on a district’s percentage of African-American students (or more precisely, the percentage of African-American students in public schools at the district) to control for differences in tagging that might be related to a district’s racial/ethnic composition. Second, because districts may be differently sensitive to state budget changes depending on whether they have the ability to compensate for state budget shortfalls with higher local allocations, I use a district’s percent reliance on non-local revenue sources in the pre-treatment school year (so 100% - % revenue from local sources). Districts with higher reliance on non-local
revenue sources have less local property and other tax wealth to compensate for changes in state aid, so are more fiscally vulnerable to changes in this state aid.

For parent socioeconomic status, I use a district’s District Factor Group (DFG) rating. DFG’s are eight letter-based categories that I convert to an integer, with the lowest integer representing the lowest SES districts and the highest integer representing the highest SES districts. Socioeconomic data is taken from the 2000 decennial census so is pre-treatment, and the DFG is a summary indicator of a district’s SES relative to other districts in the state based on a principal components analysis of six variables: percent of adults with no high school diploma, percent of adults with some college education, occupational status of adults, unemployment rate of adults, percent of individuals in poverty, and median family income. I also control for the district’s pre-treatment percentage of English Language Learners (ELL) in the most recent year in which this was measured, since ELL is a tag that, like the disability tag, comes with extra state and federal resources that might be diverted to address funding shortfalls following the fiscal reform.

Different model specifications also controlled for a binary indicator of whether a district was an Abbott district—that is, whether the district was among the 31 districts targeted for supplemental funding under the Abbott v. Burke school finance legislation—but the high correlation between this variable and the lowest DFG (20 out of the 31 districts were DFG = 1; the remaining were DFG = 2 or DFG = 3) led to the inclusion of DFG in the final models but not the Abbott indicator. Similarly, a district’s percentage of Free or Reduced Price Lunch (FRPL) eligible students was highly correlated with the DFG categories so is not included in the final model.

5. Results: district-level analysis

5.1. Descriptive results

5.1.1. Overall shifts in tagging

Figure A10 in the Appendix shows the full count of New Jersey districts at each special education placement rate in the school year prior to the formula change (2007-2008) versus the school year after the formula change. A two-sample Kolmogorov-Smirnov test of equality of distributions confirms that, despite being composed of the same districts, the two distributions are not equal (D = 0.25549, p < 0.001). In particular, we can see from the graph that following the policy change, there was a leftward shift in the distribution towards lower rates of tagging students.

5.1.2. Between-district heterogeneity in shifts in placement rates

Figure A10 reveals a shift in the distribution of districts towards lower rates of giving students the disability tag, but does not tell us whether all districts experience a shift downwards in tagging following the formula change or whether the downward shift is more concentrated amongst certain districts. Is whether a district experiences a drop in tagging following the formula change and if the district experiences a drop, the magnitude of this drop, correlated or uncorrelated with that district’s characteristics? While the next section explores this question...
more formally, Figure 7 provides a descriptive exploration. In particular, the left panel shows that districts in some counties (e.g., Mercer, the location of Princeton) experienced smaller to no drops in tagging in the wake of capitation, while districts in other counties (e.g., Camden) saw especially large drops in tagging (the size of the circle), with the colors of the circles indicating the level of student poverty in the district. But the Figure also highlights that parent SES is not very strongly related to the drops in tagging. Appendix Figure 8 highlights that many districts have similar tagging in the post-reform school year as the pre-reform year (a clustering around a 45 degree line); districts with lower parent SES appear slightly over-represented among those that ration tags, but there are also many higher SES districts that rationed tags. Appendix Figure A12, showing a district’s summary factor group rating on the x axis and the district’s drop in tagging on the y axis likewise shows a weak trend where higher SES districts have less of a drop in tagging, but also highlights significant variation within the same SES grouping.

While parent SES is a proxy measure for how likely the parents are to engage in monitoring and intervention of districts, we have direct data on (one) form of those interventions. The right panel of Figure 7 shows the parental intervention measure across districts/counties. Again, we see some counties where all districts have at least one intervention (e.g., Mercer and Essex county), and other counties where some districts have had at least one intervention but other districts have had no (formal) parental interventions in the pre-treatment period (e.g., Atlantic and Hunterton county).
Figure 7: Left panel: shows whether or not the district had any drop in tagging following the fiscal reform, with districts shaded from lower SES (light green) to higher SES (dark purple). The map highlights only a weak relationship between SES and rationing tags. Right panel: shows whether a district had any due process cases in the pre-treatment period. We can see some counties (e.g., Mercer County) where all districts have had at least one case, but others (e.g., Camden) where there is a mix of district with cases (red triangle) and district with no cases (teal circle).
5.2. Analytic results

Figure 7 highlights two descriptive characteristics of the post-reform landscape: the distribution of drops in tags following the cost pressure and the distribution of parent interventions in the pre-reform period.

One way to think about a district’s intervention history is that history having a causal effect on the district’s response to the fiscal reform. This interpretation maps on to how one attorney described her experiences working in two urban school districts with similar demographic characteristics and fiscal situations. One of the school districts had experienced litigation that led to a consent decree, which led to an extreme reduction in the discretion that professionals had in the district due to the strict legal control and supervision of the professionals’ work. The other had no consent decree. As she described, the two districts were like “night and day” when it came to tagging practices. The consent decree district conducted outreach in churches and low-income neighborhoods to satisfy their “child find” obligations to locate all children with disabilities residing in the district; the one without the decree, as she put it, “sort of sat around waiting for parents to repeatedly point out a problem.” While a consent decree represents a much more dramatic reduction in the discretion of district professionals than a parent filing a complaint, the attorney’s comparison highlights the idea of two districts similar on all observed dimensions (fiscal health; parent demographics)—one with a legal intervention; the other without—and that one shift leading to discernible differences in how the district allocates resources.

To analyze the district’s intervention history in this way, we rely on selection on observables: once we condition on characteristics of a district correlated with both 1) the district’s likelihood of having any pre-treatment interventions and 2) the district’s likelihood of rationing tags following the cost pressure (the district’s drop in tagging relative to the pre-reform school year), we can identify the effect of having any interventions. Figure A13 describes the causal process.

Worth noting is that, by analyzing responses to the cost pressure (changes in placement in the reform year relative to the school year immediately preceding the reform), we can control for time-invariant factors that affect the levels of tagging across both pre-reform and post-reform years (e.g., parents of children with disabilities sorting residentially into districts with stable reputations for providing generous services) but that do not affect the change in tagging across the two school years.

I estimate the following two models, where \( i \) indexes districts, \( t \) refers to the post-reform school year (2008-2009), \( t - 1 \) refers to the pre-reform school year (2007-2008), \( Y \) refers to the disability tagging rate, and \( X \) contains a vector of pre-treatment covariates assumed to affect the likelihood of a case and the potential response to the cost pressure. First is a linear regression of the tagging rate in the post-reform year controlling for the placement rate in the year immediately prior to reform:

\[
Y_{it} = \alpha + \beta_1 \times \text{any case} \left( 1 = \text{yes} \right)_i + \beta_2 Y_{it-1} + \gamma X_{t-1} + \epsilon_i
\]  

Second is a logistic regression where the outcome is a binary indicator of whether there was

\(^{22}\) Author interview with attorney at public interest law firm, November 18th, 2016.
any drop in tagging placement following reform:

\[ 1(Y_{it-1} > Y_{it}) = \alpha_i + \beta_1 \times \text{any case (1 = yes)} + \gamma X_{t-1} + \epsilon_i \quad (2) \]

The quantity of interest in both of the models is \( \beta_1 \)–the effect of any intervention in the pre-treatment period on either the district’s post-reform rates (linear regression; controlling for pre-reform rate) or the district’s predicted probability of a drop in placement following the reform. In both models, \( X \) contains the controls summarized in Section 2.3.

I run each of the models on two samples. First is the full sample of 598 districts. Second is a sample pruned using coarsened exact matching (CEM) (Iacus, King, Porro, 2012). In particular, CEM prunes/re-weights districts to achieve better balance on covariates between treatment districts (districts with at least one pre-reform intervention) and control districts (districts with no pre-reform interventions). It does so by first coarsening each of the covariates into bins (e.g., districts with the same district factor group SES rating; districts that place between 5 and 10% of special education students), then performing exact matching of treatment and control districts within strata defined by those bins. While this matching still does not address unobserved confounders between these two groups, by restricting the sample to treatment and control districts with substantively similar values on observed covariates, we reduce the likelihood that our estimate of \( \beta_1 \) is sensitive to modeling choices (e.g., whether district socioeconomic status has a linear or quadratic effect on drops in placement). Figure A16 highlights the cutpoints used to coarsen the covariate values and the resulting pruning of the sample from 448 treatment districts and 150 control districts, to 205 treatment and 77 control districts occupying common strata. Figure A17 shows the reduction in imbalance between treatment and control groups on the means of the variables, while Figure A18 visually illustrates the reduction in imbalance on the distributions of those variables. We see in particular that before matching, treatment and control districts had imbalance on the percentage of students given a disability tag in the pre-treatment year–unsurprisingly, districts with a very low percentage of tagged students (e.g., some charter-only school districts that placed gave close to 0% of students tags) were less likely to have a case; likewise, districts with a very low district factor group rating (low SES) were less likely to have a case.

Table A16 highlights the results of the model in equation 1, showing that the presence of at least one pre-reform intervention has a positive and significant effect on a district allocating similar levels of disability tags as prior to the cost pressure. Perhaps easier to interpret, Table A17 highlights the results of the model in equation 2, which shows that districts with at least one pre-reform intervention are significantly less likely to have a drop in tagging following the reform. The results are robust to estimating these models on either the full sample or the CEM-pruned sample with better covariate balance. For the latter sample, since some treatment districts were removed if they occupied a strata without any control units, the meaning of \( \beta_1 \) (any pre-reform parent intervention) shifts from the sample average treatment effect on the treated (SATT) to the feasible treatment effect on the treated; that is, the effect of any pre-reform intervention on treatment districts with similar covariate values as control districts.

Figure 8 helps us assess the substantive significance of these results. Either setting other
covariates to their mean values or keeping them at their observed values, we see that districts with at least one parent intervention in the pre-reform period have a meaningfully lower probability of rationing tags following cost pressure. Put differently, the presence of parental monitoring helps buffer the students in a district from rationing.

Figure 8: Predicted probability of any drop in tagging following the cost pressure. The coefficients used in the model were from the estimates on the CEM sample; likewise, covariate means were calculated on this matched subsample. Means and 95% confidence intervals were generated using the method described in Tomz et al. (2001) of sampling from a multivariate normal distribution centered at $\hat{\beta}$ with $m = 10000$ draws, with the mean calculated as the mean across the draws, and 95% confidence intervals constructed from the 2.5 and 97.5% quantiles.

5.3. Robustness checks

The previous results make a few assumptions and we can test the results’ robustness to violations of these assumptions. The first assumption comes in the coding of “any intervention” as any parent intervention from the beginning of the pre-treatment period (the 2000-2001 school year) to the school year immediately preceding the fiscal reform. This assumes that an intervention has a substantial enough effect, possibly through mechanisms like a school putting in place procedures to forestall future cases in the presence of the first case, for its effects to persist in years beyond the school year immediately following the year the case was filed. We can test the robustness of the results to different assumptions about how far back a case could be filed to significantly moderate the effects of the fiscal reform. More specifically, I use the following procedure to test the results’ robustness to different windows in which a complaint can be filed:
1. **Change the window size for the treatment variable of any case:** Vary the coding of any case from any case in $t - 1$ (a district is coded as having a case only if the case was filed in the 2007-2008 school year immediately preceding the reform), $t - 2$ (the district is coding as having a case if the case was filed in the 2007-2008 school year immediately preceding the reform or the 2006-2007 school year), \ldots $t - 8$ (the district is coded has having a case if the case was filed anytime between the start of the observation period (2000-2001 school year) to the year immediately preceding the reform (2007-2008 school year))

2. **Perform CEM using that new treatment variable:** since changing the window size results in a slightly different set of treatment units, I then used CEM to match the new set of treatment units with control units

3. **Estimate the models described in equation 1 and equation 2:** if the results are robust across different window sizes of when a case can occur, we would expect the coefficient on “any case” to be consistent across these window sizes (though likely attenuated when we restrict to cases in more recent years because we switch from measuring the cumulative impact of cases across many school years to the short-term impact of a single case)

Figure 9 display the results of the robustness check for the linear lagged dependent variable model and shows that the presence of any parent intervention is robustly associated with districts engaging in similar levels of tagging following the cost pressure.

Appendix Figure A19 display the results for the logistic regression examining whether having any case reduces the probability of any drop in post-reform placement. The findings show the robustness of the results across different window sizes for when a parent intervention can occur in order to moderate the district’s response to the fiscal reform.

The second assumption in the analysis is the **ignorability or selection on observables** assumption discussed previously: conditioning on covariates, a district’s treatment status is unrelated to its potential outcomes (in this case, a drop in tagging following cost pressure relative to itself the year before). CEM strengthens that assumption by restricting the sample to treatment and control districts with similar observed characteristics. But we can also test the sensitivity of the results to confounding based on unobserved characteristics. In particular, we can ask the question: how large would an unobserved confounder need to be to “explain away” the relationship of interest (a case lowering a district’s probability of post-reform drops in placement?)

To address this question, I use an approach to sensitivity analysis outlined in Blackwell (2014). Broadly, I first use logistic regression to estimate a district’s probability of experiencing a parent intervention based on observed characteristics. This regression returns a set of predicted probabilities for each district—some districts have a high likelihood based on observed characteristics; other districts have a low likelihood of an intervention. I then use each district’s predicted probability to create a “confounding-adjusted” outcome for each district’s yes or no drop in tagging under the scenario of “one-sided bias”: I assume that districts that did experience a parent intervention have unobserved characteristics that put them at risk of no drops in tagging, and adjust the outcome accordingly. I then re-estimate the model described in equation 2, but replace a district’s observed outcome with its confounding adjusted outcome. I
Figure 9: Linear lagged DV results are robust to changing the size of a window for when a case can occur. The graph presents the coefficient and 95% confidence interval around the “any case” variable, which has a significant positive effect on the percentage of students placed in special education post-reform, controlling for a district’s pre-reform placement levels varying from a window size of one (case had to occur in the year immediately preceding reform for a district to be coded as having any case) to a window size of eight (case could occur anytime between the 2000-2001 school year and the school year immediately preceding reform). The graph shows that the results are robust to any window size, and the table shows the significance of the coefficient on any case across these window sizes.

<table>
<thead>
<tr>
<th>Window size for pre-tx case</th>
<th>( \beta ) on any case</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>School year immediately before reform ((t - 1))</td>
<td>1.3690</td>
<td>0.0011</td>
</tr>
<tr>
<td>( t - 2 )</td>
<td>1.7624</td>
<td>0.0000</td>
</tr>
<tr>
<td>( t - 3 )</td>
<td>1.5488</td>
<td>0.0005</td>
</tr>
<tr>
<td>( t - 4 )</td>
<td>1.8464</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>( t - 5 )</td>
<td>2.2804</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>( t - 6 )</td>
<td>1.9806</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>( t - 7 )</td>
<td>2.0414</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Any time between start of window and school year immediately before reform ((t - 8))</td>
<td>1.9303</td>
<td>&lt; 0.0001</td>
</tr>
</tbody>
</table>
then calculate the range of unobserved confounding needed to “explain away” the effect of a case on tagging. Appendix Figure A20 displays the results. We see that an unobserved confounder would need to explain over 25% of the variation in parent interventions in order to change the significance and main direction of the causal effect of these interventions on drops in tagging. This would be a very powerful confounder—by comparison, a district’s poverty level only explains about 1.4% of the variation in whether a district had any case.23

6. Conclusion

Many social policies use tags to prioritize individuals for scarce resources. The present paper uses the case of tags in school districts to study how organizations respond to cost pressure that affects prioritization. Districts with finite budgets and no discretion over how tags are ranked respond by rationing tags (state-level analysis). More importantly, rationing’s burden is unevenly distributed across districts and across students. Districts where parents more closely monitor and intervene upon professional decision-making engage in less rationing. Districts without this monitoring engage in more rationing. These results, robust across a variety of specifications, show that an uneven distribution of discretion can impact a child’s access to resources. In this conclusion, I review limitations of the present analysis, discuss directions for future research on mechanisms behind implicit rationing, and highlight the findings’ value for applications beyond parent monitoring of school districts.

6.1. Limitations

The present analysis has several limitations. First, and relevant to the district-level analysis, are concerns about the ecological fallacy: misinterpreting district-level attributes and relationships as evidence for individual-level attributes and relationships. Two points on this matter are worth noting. First is that although special education placement is an individual-level outcome, the main predictor variable of interest—legal intervention into a district’s special education decision-making process—is arguably not only a district-level measure in terms of its legal meaning (the IDEA only permits parents to file cases against districts or occasionally cases against state educational agencies; it does not permit cases against individual teachers or schools), but also arguably has district-level consequences for students in the form of spillover effects from cases. In particular, we might care about the effect a due process request filed on behalf of student Bob, for instance, has on that same student Bob’s likelihood of remaining in special education following the shift to capitation (an individual-level analysis of how a legal intervention affects future placement processes for that same individual). But it is arguably more interesting to show that a due process request filed on behalf of student Bob predicts special education decision-making for students other than Bob living in the same district that was a defendant in Bob’s case (a district-level analysis of how an intervention affects placement processes for other students in the district that had to defend itself against a particular student’s claims).

23For implementation, since the present version of the causalsens package only allows for adjusting outcomes for a linear model, I implement a version of the confounding-adjusted outcome that allows for any form of predicted value using code I provide as part of the present article’s replication package.
Second, for the other predictor variables where we ideally would want individual-level data—for instance, we would be interested in whether students of a particular race are more or less likely to be placed following capitation, rather than whether a district’s racial composition predicts these responses—homogeneity within and segregation between districts on the base of race and SES, as well as New Jersey’s high number of districts/relatively low per-district enrollment compared to other states, is to our advantage. Appendix Figure A21 highlights the full distribution of two variables for which we would like to have individual-level rather than district-level data, the measure of student poverty and the percentage African-American students, and that shows that most districts are: 1) low on each of these measures; 2) there are not a large number of districts that are close to 50%. However, caution should still be exercised and we should interpret these variables as measures of district-level SES and race predicting district-level outcomes, rather than as evidence of what happens to Black and lower income students within a particular district.

Another limitation is the difficulty of disentangling fiscal variables from parental monitoring variables. For instance, a district’s percentage reliance on non-local revenue (greater fiscal vulnerability) exhibits a slight negative correlation with whether that district had any parental legal intervention in the pre-treatment period ($r = -0.11$). Although the analysis controls for this measure of observed fiscal vulnerability, there could be additional unobserved measures of fiscal vulnerability that remain reflected in the relationship between a lack of parental intervention in a district and higher drops in placement. This is especially important because although New Jersey’s special education reform was set in motion prior to the onset of the bulk of the Great Recession (the legislative committee published its report in 2006, with stakeholder meetings throughout 2007 and the legislation passed January of 2007), its first school year of implementation coincided with this economic downturn, which clearly had negative effects on many districts’ fiscal health.

The third limitation is that for shorthand, I have often referred to due process hearing requests as “parental monitoring” or “parental intervention,” when in reality, a request for a due process hearing is one among many ways that parents can monitor and intervene in institutions that serve their children. Indeed, using the due process hearing system is an intervention of last resort for many parents, one that usually follows a string of less formal interventions such as requesting meetings with school officials and expressing dissatisfaction at an IEP meeting. As I discussed in section four, it is more difficult to measure these less formal interventions on a large enough scale to see how systematic variation between districts is associated with systematic variation in response to a state-level policy change (in this case, capitation). But future research, for instance, using metadata from the email systems of all schools in a state that can track the frequency with which parents email school officials and a student’s teacher, could examine how these less formal and more frequent interventions into schools predict different responses to larger-scale policy changes.

6.2. Directions for future research

The present paper shows that the federal government’s requirement that districts take costs “off the table” when deciding about resource allocations leads to implicit rationing—districts
consider costs without explicitly stating that they are doing so—rather than no rationing. This quantitative analysis shows that costs matter. However, qualitative investigations can shed light on how districts navigate the space between formal federal prohibitions on costs playing a role and the reality of budget pressures.

6.2.1. Understanding the technological backdrop of rationing

Interviews with school professionals and attorneys at Chicago Public Schools (CPS) suggest two initial mechanisms for how costs might shape who receives a tag. CPS gives IEPs to approximately 12% of its students, which translates to about 45,000 students. Starting in 2016, the district changed the way it financed special education services, combining a separate fund earmarking resources for these students into one general pool meant to serve both general education students and students with IEPs. The district emphasized that the change would have no impact on services for IEP students.

Yet an Inquiry that the Illinois State Board of Education (ISBE) launched against CPS following complaints from advocates, parents, and educators showed that the district used its electronic IEP system to make it so difficult to include costly services in a student’s IEP that many students inappropriately lost access to needed services like aides, transportation, and an extended school year (Krent et al., 2018). In an interview a couple years prior to the official Inquiry, a legal aid attorney who represents low-income children in disputes with CPS argued that district administrators are careful not to explicitly cite cost as a rationale to deny student resources. Instead, the attorney argued that districts have put in place a variety of digital hurdles that are implicitly geared towards making it difficult to either include more expensive services in a child’s IEP or to finalize an IEP:

They’ve [district administrators] set up these procedures and things that, they’re all about limiting costs. They couch it in different terms, for sure. That’s kind of what you see a lot with the budget. You don’t hear people say, We can’t give you an aide because that’s too expensive. The team will say, We can’t give you an aide because we don’t have approval to do that. Or, We need to get downtown to approve that. Which, it’s about money essentially (Co-PI interview, October 25th, 2016)

The ISBE inquiry more systematically confirmed the attorney’s observations. When CPS changed its budget to try to contain general costs, the district made several changes to its electronic IEP system—the Specialized Students Management Tool (SSM)—that resulted in fewer “prescriptions” of costly services. SSM erected two types of digital hurdles. First, the electronic system contained forms auto-populated to default to not providing a resource—for instance, “the SSM auto-populates language in the IEP indicating that a student has not been determined eligible for ESY [extended school year services], even if the IEP team believes the student should be eligible” (Krent et al., 2018, p. 8). Educators and social workers who wanted to deviate from this default rule faced challenges unlocking the relevant fields. Second, the electronic system prevented various services—therapeutic day school placement; aides—from being included in a child’s IEP without prior authorization from a district representative, a procedure reminiscent of managed care cost containment efforts. Some gave up on issuing a disability tag / IEP at all.

36
These database default rules show how the forms of subterranean retrenchment that Hacker (2004) documents—scaling back a policy’s benefits not through formally revising the policy but through making subtler adjustments to how individuals access those benefits—are implemented in electronic systems. Eubanks (2018) shows similar dynamics in Indiana’s introduction of an electronic system for welfare eligibility determinations.

6.2.2. Understanding the moral backdrop of rationing

The previous theme highlights the technical infrastructure that allowed CPS to reduce services while not explicitly citing cost as a rationale for the reductions. Yet as Livne (2014) argues in his study of hospice care, professionals working in settings where third parties impose cost containment policies do not always view these policies as undermining their moral convictions to provide more resources. Instead, professionals are sometimes able to moralize scarcity—that is, to frame allocating fewer resources as a morally praiseworthy decision.

A public news investigation of service cutbacks in CPS suggests one way that district administrators may moralize scarcity: they may frame fewer IEPs as a praiseworthy attempt to reduce the over-identification of minority males as having a disability. A public news investigation into CPS discussed officials using this rationale: “In an internal CPS report...school officials made the case that too many students were identified as having special needs, especially Black and Latino boys” (Karp, 2017). Similarly, the same public interest attorney who discussed the technical infrastructure used to limit resources discussed districts’ moralization of these denials:

CPS is now putting out a lot of rhetoric about, we think we’re overidentifying young black men. While I see that ... I represent a lot of young black men, and the problem is not that CPS is over-identifying them, it’s that CPS does not have the resources to address the trauma that is present in the community...The problem is not that we’re pathologizing them, it’s that we’re not appropriately dealing with the challenges that they bring to school. I find it very cynical that they’re using that ...(Author interview, October 25th, 2016)

Similar complaints–districts potentially under-allocate IEPs or services to minority students, while justifying these decisions as ways of avoid disproportionate placement–have also emerged in Texas (Rosenthal, 2016) and Trenton, New Jersey (?). These disputes highlight tension between two meanings of disability diagnoses. Do IEPs serve as stigmatizing labels to be avoided—reducing teacher expectations; marginalizing students? Are they tags to be sought as currency for making resource claims? Or are they some combination of the two that depends on the district’s fiscal situation and demographic composition?

Existing social science research has overwhelmingly focused on the first meaning, investigating and expressing concern about the over-allocation of IEPs to minority males (Hosp and Reschly, 2003; Skiba et al., 2005, 2008). Meanwhile, federal and state governments require districts to track placement rates by race/ethnicity and can sanction districts for disproportionate placement (Hehir, 2002). Future qualitative research will investigate how districts moralize rationing of tags and associated resources.
6.3. Broader contributions

In sum, the present paper uses a specific case—how parent monitoring of districts affects discretion to ration resources—to advance three more general research literatures. First, the paper highlights how the federalist structure of U.S. special education policy—the federal government prohibiting professionals from taking costs into account but funding few of these costs; state governments passing policies to save costs—puts professionals who work in organizations governed by these conflicting mandates in challenging positions with regards to compliance. These challenges extend to many other policies where professionals face similar conflicting guidance from different levels of government, and are worthy of incorporating into new research agendas in fiscal sociology (Martin and Prasad, 2014).

Second, the paper highlights a case where an expanded set of state actors influences which children receive a medical label in the form of a special education diagnosis: state legislatures; local school district administrators; judges who hear parent’s protests about labeling decisions. While Conrad’s 2005 discussion of the role of the state in his article on “shifting engines of medicalization” focuses on a traditional set of health-focused state institutions—for instance, the FDA’s role in regulating pharmaceutical marketing and approving new therapies (p. 5, p. 10); the role of government licensure in inter-professional struggles such as those between obstetricians and midwives (p. 4)—newer research on what Buffel et al. (2017) call the “institutional foundations for medicalization” (p. 4) expands the set of state institutions thought to play a role in medicalization processes (e.g., O’Brien, 2015; Olafsdottir, 2010; Hansen et al., 2014). As disability-linked entitlements become an important part of the social safety net, legislatures and courthouses may play an increasingly important role in medicalization and de-medicalization processes and are worthy of more attention.

Finally, the paper presents a framework for understanding ways that actors curtail professional discretion in the wake of policy changes that researchers can apply to other cases: for instance, consent decrees for police departments that reduce officer discretion over the use of force or government attempts to curb physician discretion as a means of controlling Medicaid or Medicare expenditures.
7. References


