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Why Are More Students Being Identified for Special Education? A Finance-Incentive Test Using CRPE's Unlocking Potential Data

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Overview and Rationale

Special education identification has risen across many states. Evidence suggests this increase reflects policy design—not solely shifts in underlying student need. A central, actionable lever is how states fund services for students with disabilities (SWDs). Funding features such as per-identified reimbursement, service-intensity tiers and caps, and category-specific weights change the marginal payoff to classify and serve students, especially in elastic entry categories like specific learning disability (SLD). These finance signals operate alongside accountability pressures and post-pandemic recovery efforts, potentially shaping (a) who is classified, (b) how students are served (placement/service mix), and (c) how long students remain identified.

This study tests whether state finance incentives help explain both the recent rise and persistent cross-state differences in identification, and for whom (by disability category). The analysis uses CRPE's Unlocking Potential Data Center as the outcomes backbone and pairs it with a transparent, public build of state finance features. The design extends prior research showing that school context and incentives influence identification, placement, and service patterns, applying that logic to a national, cross-state panel with an explicit focus on financial incentives

Research Questions

1. Do state finance features—summarized in a Finance Incentive Index (FII)—predict higher levels and faster growth in SPED identification?
2. When certain states make discrete formula changes (e.g., census → reimbursement; adding intensity tiers, etc.), how do identification rates change?

Data

The following data sources will be used to answer these questions:

- CRPE Unlocking Potential Data Center: state-year identification rates (overall and by disability category) for 2021 and 2023.
- Finance features (policy design): Education Commission of the States (ECS): whether states use census vs. per-identified reimbursement, presence of intensity tiers/caps, and category weights (e.g., SLD/OHI vs. low-incidence). These define our FII index. This information is available for the 2021 and 2023 school years.
- NCES F-33: state-aggregated revenue/expenditure per pupil and state_aid_share (state revenue ÷ total revenue) for controls/moderators for 2021 and 2023
- NCES/CCD: enrollment and subgroup shares (race/ethnicity) as well as pupil student ratios for context covariates for 2021 and 2023.

Measures

The study uses special education identification rates from CRPE's Unlocking Potential Data Center as the primary outcome for 2023. Where coverage permits, it also analyzes identification by disability category (e.g., SLD, OHI, ASD). These breakdowns allow the study to assess whether overall trends concentrate in elastic entry categories.

Key Predictors (Publicly Constructed)

The central predictor is an FII that reflects the marginal payoff to identifying and serving an additional SWD in each state-year. It is a two-component index created as

follows:

- **Allocation basis (AB) on [0,1]:**

census = 0; resource-allocation/resource-based = 0.25; single/flat weight = 0.50; multiple weights = 0.75; reimbursement = 1.0. For “hybrid” texts, the score averages all elements that appear (e.g., “census-based and reimbursement” → avg (01)=0.5).

- **Intensity structure (INT) on [0,1]:**

1 if the mechanism text indicates tiers/caps or stronger marginal incentives (contains “multiple weight”, “high-cost”, “tier”, or “reimbursement”); otherwise 0.

- **FII_raw** = mean (AB, INT) for each state-year.

Moderators and Controls

The study includes state_aid_share to proxy how tightly district budgets are tethered to state rules and thus how salient incentives may be. Additional controls include enrollment and subgroup shares (white vs nonwhite). It also includes pupil-teacher ratio and enrollment in the state.

Methods

The study uses two complementary designs to assess whether state finance incentives are associated with special education (SPED) identification:

1. **Change model (2021→2023):** Tests whether states with rising incentives experienced larger increases in identification.
2. **2023 cross-section:** Tests whether, in the latest year, higher incentives are associated with higher identification, conditioning on the same moderators.

Together, these approaches separate short-run movements from level differences and help gauge robustness.

Variables

- Outcome(s): State SPED identification rate, overall and by disability category (e.g., SLD, OHI, ASD).
- Key predictor: Finance Incentive Index (FII) scaled to [0,1]; higher values indicate stronger marginal payoff to identifying/serving an additional SWD. An indicator for intensity tiers/caps (INT) is included to isolate service-intensity incentives.
- Moderators/controls (X): state_aid_share, log enrollment, pupil/teacher ratio, and student composition (White vs nonwhite). All continuous controls are standardized as needed.

Design 1: Change Model (2021→2023)

With two waves, a two-way fixed-effects panel reduces to first differences:

$$\Delta \text{IDRate}_{s,21\to23} = \beta\, \Delta \text{FII}_{s,21\to23} + \theta\, \Delta \text{INT}_{s,21\to23} + \gamma^{\top} \Delta X_{s,21\to23} + \varepsilon_s.$$

β is the within-state percentage-point change in identification associated with moving from a lower to a higher FII between 2021 and 2023. OLS with HC3 (heteroskedasticity-robust) standard errors were used for estimation, and results are presented as percentage-point and percent changes. Additional analysis included $\text{IDRate}_{s,2021}$ as a baseline control to adjust for mean reversion. All estimates were re-estimated with enrollment weights as a robustness check.

Design 2: 2023 Cross-Section

A levels model for the latest year:

$$\mathbf{IDRate}_{s,2023} = \alpha + \beta\,\mathbf{FII}_{s,2023} + \theta\,\mathbf{INT}_{s,2023} + \gamma^{\top}\mathbf{X}_{s,2023} + \varepsilon_{s}.$$

OLS with HC3 standard errors were used for estimation. Because FII $\in[0,1]$, β is the change in percentage points moving from the lowest to the highest observed incentive. Additional analysis included $\mathrm{IDRate}_{s,2021}$ to absorb persistent unobserved differences.

Preliminary Findings, Design 1

Table 1 reports results from the change model comparing 2021 to 2023. Special-education identification increased in nearly every state. After adjusting for funding changes, enrollment, student composition, and pupil–teacher ratios, the average statewide gain is about one-third of a percentage point. Comparable upward movement appears across categories: constants are large and positive for SLD, SLI, OHI, ID, ED, Autism, and Multiple Disabilities, with SLD showing the largest baseline increase.

Policy shifts account for a modest share of this rise. States that introduced or strengthened intensity tiers/caps—linking dollars to service intensity—experienced an additional uptick in overall identification (≈ +0.2 percentage points). Effects are not uniform: tiers/caps are associated with slower growth in Autism, suggesting a reallocation of classifications or services toward other categories. The composite FII shows no clear overall effect over this short window, but it is positively related to growth in Hearing Impairment, indicating that finance signals may be more salient in some low-incidence categories.

Demographic changes also align with category-specific shifts. Increases in the share of White students correspond to higher growth in Multiple Disabilities and lower growth in Traumatic Brain Injury—patterns that warrant equity-focused follow-up (e.g., referral and evaluation pathways). For Visual Impairment, higher state-aid shares are linked to slightly lower growth, another targeted signal to investigate.

Taken together, the findings imply that (1) most of the 2021→2023 increase reflects broad, system-wide forces rather than purely finance-driven effects; (2) intensity-based funding can modestly raise totals while altering the category mix—particularly dampening AU growth; and (3) finance incentives operate heterogeneously, with some categories (e.g., HI) more responsive than others. These patterns support pairing any funding reforms with monitoring of category composition and service placements and interpreting short-window estimates with caution.

Table 1: Changes in Identification and Finance Incentives, 2021–2023 (State-Level OLS Difference Model)

Predictor	Overall	AU	DB	ED	HI	ID	Multiple Disabilities	OI	OHI	SLD	SLI	TB	VI
Constant	0.003***	0.117***	0.000	0.044***	0.009***	0.047***	0.047***	0.003***	0.165***	0.335***	0.159***	0.001	0.003***
Δ FII (21→23)	0.000	0.009	0.000	0.006	0.001	0.007	-0.014	0.001	-0.016	0.037	-0.035	0.001	0.000
Δ Intensity tiers/caps	0.002*	-0.02*	0.000	-0.009	-0.001	0.007	0.012	0.000	-0.013	0.024	0.015	-0.003	0.000
Δ State-aid share	-0.007	0.128*	0.000	-0.027	-0.006	-0.017	0.056	-0.001	0.012	-0.068	0.044	0.007	-0.005*
Δ Log enrollment	-0.034	0.403	0.005	-0.015	-0.048	0.197	-0.174	-0.016	0.155	-0.490	-0.200	0.062	-0.005
Δ % White students	-0.042	-0.696	-0.012*	-0.418	-0.002	-0.313	1.378**	-0.014	-0.460	0.748	-0.146	-0.199*	-0.014
Δ Pupil/ teacher ratio	0.000	-0.001	0.000	0.000	0.000	-0.001	0.000	0.000	-0.002	0.002	-0.001	0.000	0.000

Preliminary Findings, Design 2

In the 2023 cross-section, there is no clear statewide association between the FII and overall special-education identification as presented in Table 2. Controlling for enrollment, state-aid share, student composition, and pupil–teacher ratios, the FII coefficient is small and statistically indistinguishable from zero. By contrast, the pupil–teacher ratio consistently predicts identification: states with lower ratios tend to report lower overall identification, suggesting that greater staffing intensity may substitute for labeling at the margin.

Category-specific patterns differ. Finance signals appear to redistribute identification rather than shift all categories uniformly. Higher FII is associated with lower identification in Emotional Disturbance (ED) and Traumatic Brain Injury (TBI), but higher identification in Hearing Impairment (HI) and Visual Impairment (VI). For larger, more "elastic" categories—Specific Learning Disability (SLD) and Other Health Impairment (OHI)—point estimates are positive but not statistically precise in this single year.

Funding designs that tie dollars to service intensity (tiers/caps) also align with category mix: intensity provisions are linked to higher ED and TBI identification, and lower HI and VI identification. Contextual covariates behave intuitively: larger total enrollment is associated with slightly higher autism (AU) identification; higher shares of White students coincide with higher ED and speech–language impairment (SLI) but lower SLD.

Overall, the 2023 cross-section suggests that finance incentives and intensity rules may reallocate identification across categories rather than raising or lowering

totals. The most stable, system-wide association is the negative link between pupil–teacher ratios and identification, implying instructional capacity can reduce pressure to classify. Because these are observational, single-year associations across multiple outcomes, results should be interpreted cautiously.

Complementary change models (2021→2023) remain essential for clarifying directionality and policy timing, but the cross-section already indicates that finance design likely influences which needs are labeled as much as how many students are identified.

Table 2: Cross-Sectional Associations Between Finance Incentives and 2023 Special-Education Identification (State-Level OLS)

Predictor	Overall	AU	DB	ED	HI	ID	Multiple Disabilities	OI	OHI	SLD	SLI	TB	VI
Constant	0.189***	0.012	0.001	0.031	-0.006	-0.044	0.239***	-0.006	0.123	0.494***	-0.082	-0.001	-0.003
FII (2023)	–0.046	-0.020	-0.001	-0.080**	0.009**	0.039	-0.061	0.003	0.004	0.046	0.049	-0.020**	0.004**
Intensity tiers/caps (INT, 2023)	0.043*	0.008	0.001	0.074*	- 0.007**	-0.029	0.038	-0.001	-0.024	-0.014	-0.042	0.017**	-0.003**
State aid share	0.002	-0.013	0.000	0.053	0.005**	0.009	-0.067*	0.003	-0.002	0.018	-0.030	0.004	0.000
Log enrollment	0.001	0.0103**	0.000	0.003	0.001	0.006	-0.012**	0.000	0.006	-0.014	0.013	0.001	0.000
% White students(2023–24)	0.020	-0.046*	0.000	0.039**	-0.001	0.035	-0.020	0.000	0.048	-0.126**	0.090**	0.000	0.001
Pupil/teacher ratio (2023–24)	–0.004***	0.001	0.000	-0.004***	0.000	0.000	0.000	0.000	-0.004	0.004	0.003	-0.001	0.000

Implications and Future Research Avenues

Early patterns point to three practical implications. First, the 2021–2023 rise in special-education identification appears broad-based and likely reflects systemwide forces—pandemic recovery, evaluation backlogs, and national pressures—rather than funding mechanics alone. Second, finance design seems to nudge which needs are labeled more than it uniformly raises or lowers totals. States that added or strengthened intensity tiers/caps show a modest additional increase in overall identification and a rebalancing across categories (e.g., slower growth in autism alongside movement in other areas). Third, instructional capacity matters: in the 2023 cross-section, lower pupil–teacher ratios are consistently linked to lower overall identification, suggesting that investments in general-education staffing and supports may reduce pressure to classify students at the margin. Taken together, the evidence argues for pairing funding reforms with monitoring of category composition, referral pathways, and placement decisions, alongside continued investment in core instructional capacity (MTSS/RTI, evidence-based reading, intervention staff).

Findings are observational and state-level; finance policies are not randomly assigned. The change window is short and overlaps with pandemic-era dynamics and one-time federal supports, so some effects may lag implementation. The Finance Incentive Index and intensity indicators—while transparent and built from public sources—necessarily simplify complex formulas, particularly marginal dollars by category and service level. Finally, the models focus on identification rates rather than service minutes, exits, or placement shifts that would directly verify mechanisms.

Future work will deepen the design and the data. The extension of this work entails applying dynamic event-study models around clearly dated formula changes for a few states, and we will pursue opportunities for quasi-experimental leverage (e.g., threshold-based reimbursement rules, synthetic controls for major reforms). Finally, complementing the quantitative work with interviews of SEA/LEA finance and special-education leaders to validate the pathways will help identify implementation frictions that numbers alone cannot reveal.