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Growth in the Supplemental Security Income Program for Children: The Role of Local Jurisdictions and Fiscal Incentives [⊗]

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1. Introduction

Over the past twenty years, the number of children classified as disabled and receiving benefits from the Supplemental Security Income (SSI) program has increased dramatically. In 1990, 308,589 children under the age of 18 received SSI benefits. By 2007, there were 1,121,017 children on the program, an increase of more than 250%. The passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) in 1996 included provisions intended to stem the growth of the SSI program among children, but growth in caseloads was only temporarily interrupted.

Explaining the growth in child SSI caseloads is complicated by the fact that the federal program is only one in a patchwork of programs providing assistance to low-income children who often face multiple disadvantages. Programmatic and legal changes that relaxed SSI eligibility criteria for children interact with these other programs. Prior studies have focused on the interactions between the SSI program and the state administered Aid to Families with Dependent Children (AFDC) and Temporary Assistance to Needy Families (TANF). Evidence suggests that evolving fiscal incentives for both individuals and states under SSI relative to the cash welfare programs helps to explain the growth in child disability rolls.

The existing literature has yet to address the influence of coexisting local programs targeted to children potentially eligible for SSI. Most notably, special education programs in public schools are also targeted to children with disabilities. As such, there is significant overlap in participation. Factors that influence how aggressive localities are in classifying students as disabled for the purposes of eligibility for special education services might in turn influence the share of children deemed eligible for SSI.

In this paper, we examine whether counties in which the school districts had incentives to classify a larger share of students as disabled in turn witnessed greater expansions of SSI caseloads. We exploit variation in the additional state revenue provided for students served in special education as compared to students served in regular education across schools districts in Texas in the early 1990s, which Cullen (2003) shows influenced student disability rates. We find that the growth in caseloads following the 1990 SSI liberalization is amplified in localities where the state school finance system encourages liberal identification of students with special needs.

Our analysis highlights that there is a great deal of heterogeneity in participation in the child SSI program across localities within a single state. This suggests that there are additional policy levers for influencing participation rate, and should also be of interest more broadly from the perspective of fiscal federalism. Much public policy analysis uses the state as the level of observation, which could overlook relevant variation in the implementation of programs across localities arising from the layering of state and federal interventions.

2. Background

A. Supplemental Security Income for Children

Supplemental Security Income (SSI) is a federally funded program that provides income support to disabled individuals with limited financial resources.[1] The program was originally designed to provide resources for disabled adults. However, since its inception, it has evolved to become an important source of support for the families of disabled children. Of the almost 6.5 million blind and disabled SSI recipients in 2009, 1.2 million, or 18.5%, were under the age of 18 (Social Security Administration, 2010).

Due to the means-tested nature of the program, children on the SSI program are significantly more disadvantaged than children in the general population. Over half live with a single mother, almost half live in families with at least one other person with a disability, and almost half live in families with no wage earner (Rupp et al., 2005-06). SSI payments account for 48% of family income for children on SSI, and Duggan and Kearney (2007) find that child SSI enrollment significantly reduces the probability of living in poverty. Finally, child SSI recipients are more likely to be boys than girls, by about three to two.

As illustrated in Figure 1, the number of SSI recipients under the age of 18 has risen dramatically over the past thirty years, with the most rapid growth occurring in the 1990s. Much of this overall time trend in SSI caseloads among children displayed in Figure 1 can be attributed to a series of changes in the program stemming from both legislative action and court challenges. An overall relaxation of disability determination rules began for adults with the Disability Reform Act of 1984. This trend of less stringent disability determination was extended to children in the late 1980s and early 1990s. The Social Security Administration began outreach

[1] SSI also provides means-tested support for the low-income elderly. While SSI is federally funded, a number of states provide supplemental benefits.

for disabled children beginning in 1989, and in the following year added some child mental health impairments, including attention deficit hyperactivity disorder (ADHD), to the list of qualifying disabilities (Garrett and Glied, 2000). Contemporaneously, the 1990 *Sullivan v. Zebley* Supreme Court decision rejected the Social Security Administration's policy of applying more restrictive standards for children than for adults.

For adults, the disability determination process has five stages. At the first stage, individuals must show that they are not involved in "substantial, gainful" economic activity. If an applicant earns more than the "Substantial Gainful Activity" (SGA) amount s/he is denied at this stage. The second and third stages involve medical evaluations. Those with "non-severe" impairments or impairments that are not expected to end in death or last at least 12 months are denied in Stage 2, and those with extremely severe impairments (those on an SSA list) are immediately allowed in Stage 3. Stages 4 and 5 consider capacity to work. Applicants who are able to work in jobs that they held in past are denied in Stage 4, and applicants who, given their age, education, and work experience, are judged able to work in any type of employment in the economy are denied in Stage 5.

Prior to *Sullivan v. Zebley*, the child disability determination process went through Stages 1-3 in the same way as the adult process. However, since capacity to work is not applicable for children, their process stopped after Stage 3. In practice, this meant that while adults with impairments not on the SSA list had an additional opportunity in Stages 4-5 to demonstrate eligibility for benefits, children did not have the same opportunity. Following the *Zebley* decision, SSA revised the child disability determination to include individual functional analyses (IFA). These IFAs would determine whether a child could "function independently, appropriately, and effectively in an age-appropriate manner" (Aron and Loprest, 2007), with one of the primary age-appropriate activities being school.

The various program changes led to rapid increases in SSI participation among children. The average annual growth rate in child SSI cases was 16.4 percent between 1986 and 1993. Several papers have analyzed the increase in child SSI caseloads over the 1990s, and have found that individual and state incentives were both important.

At the individual level, SSI benefits were larger than AFDC benefits in most states. For dually eligible families, the disabled child could receive the SSI benefit, while the remaining members received AFDC benefits based on the size of the family excluding that child. Garrett

and Glied (2000) show that the states with the highest increases in AFDC benefits experienced the lowest post-*Zebley* increases in child SSI caseloads. Similarly, Kubik (1999) finds that families were more likely to apply for SSI when they were eligible for lower benefits from other cash assistance programs.

At the state level, fiscal incentives also encouraged movement to SSI from AFDC. SSI is federally funded, while AFDC was funded by the state along with federal matching funds. Shifting individuals from AFDC to SSI therefore provided a net fiscal gain to states.[2] Kubik (2003) finds that states undergoing unexpected fiscal distress were more likely to experience increases in child SSI caseloads relative to their AFDC population over this same time period.

The PRWORA legislation included provisions specifically designed to stem the growth of SSI among children. Most notably, it eliminated the individualized functional assessments from the disability determination process for children.[3] The Social Security Administration was required to redetermine the eligibility of any children who had qualified for benefits on the basis of an IFA within 12 months. Approximately 264,000 child recipients needed to have their eligibility redetermined according to the new standards, and by of 1999, over 100,000 children were found ineligible (Davies, Iams, and Rupp, 2000). As is illustrated in Figure 1, SSI caseloads among children fell in the immediate post-PRWORA years. However, they began to rise again in 2000, and now exceed the pre-welfare reform peak.

B. Special Education

The *Zebley* decision made the connection between SSI and special education explicit, by relating eligibility to a child's functioning at school. Special education is governed by a federal mandate, the Individuals with Disabilities Education Act (IDEA). First enacted in 1975, IDEA requires that a "free and appropriate" public school education be provided for children with disabilities.[4] Schools must formally identify children with disabilities and map out the special services required in individualized education programs. These special services may be provided within a regular classroom or in separate classrooms or schools.

[2] This gain was strengthened by the passage of PRWORA, which replaced the matching grants for AFDC with block grants for TANF.
[3] It also removed all references to maladaptive behavior from the Listing of Impairments.
[4] The initial legislation was called the Education for All Handicapped Children Act (EHA).

Special education enrollments have steadily increased as the program that was initially targeted to severe physical disabilities has come to encompass a wide range of mental and emotional limitations of varying severity. As shown in Figure 2, 4.1 million children received services (roughly 10% of public school enrollments) in 1980, but by 2008 this number had risen to 6.5 million (13.2% of public school enrollments) (NCES, various years). In addition to changes in norms regarding nonphysical disabilities, the mechanisms for financing special education have played a role.

Unlike SSI, which is federally funded, special education is an unfunded federal mandate. The additional cost of serving special education students depends upon the type and intensity of services, and averages 2.3 times the cost of educating a regular education student (Moore et al., 1988). States generally attempt to compensate school districts for the additional program costs, most commonly by adjusting the pupil count upward within the basic aid formula. The weights applied to special needs students often depend upon the type of disability or instructional setting. Since additional revenues from the state are only loosely tied to the actual costs of providing those services, school districts may have an incentive to classify marginal students as disabled. Cullen (2003) and others show that districts expand special education programs when the revenue gain is greater, and that most of the responsiveness comes from the more subjective mental and emotional disability categories.

As with the SSI program, special education financing experienced a political backlash in response to growing realization of the relationship between fiscal incentives and program size. In response, a number of states have moved towards census-based funding for special education that relies on prospective and not actual counts of disabled students.

C. The Relationship between Special Education and Child SSI

Since both special education services and SSI receipt are limited to children with disabilities, there is significant overlap between the two. Approximately 70% of child SSI recipients participate in special education at some point during their schooling (Rupp et al., 2006), suggesting high special education classification rates among SSI recipients. In contrast, a survey of special education students and their families found that only 12% of special education students received SSI income (Wagner et al., 2002). This asymmetry is not surprising, given that SSI is means-tested but special education services are not.

The relative disadvantage of SSI recipients, in conjunction with the stricter disability determination process, also affects the distribution of disabilities relative to the overall special education population. Column 1 of Table 1 shows the distribution of disabilities among children in the Special Education Elementary Longitudinal Study (SEELS), a nationally representative sample of special education students aged 6-13. Column 2 shows the distribution for the subsample of SEELS respondents that receive SSI. SSI recipients are less likely than the overall SEELS sample to report diagnoses of learning disabilities and speech impairments, and significantly more likely to report diagnoses of mental retardation and physical disabilities. Though not proportionate, that child SSI recipients are represented across the less severe categories suggests that disability designation under the federal program is at least somewhat discretionary.

Given the overlap and inclusion of subjective diagnoses, SSI and special education policies are likely to mutually determine caseloads. Relaxation of SSI eligibility standards might mean that existing special education students not previously eligible for SSI would be newly eligible. In addition, students newly classified as special education might be encouraged or advised to apply for SSI benefits. Online resources aimed at educators encourage them to make sure that parents apply for appropriate programs available to their children. A 2001 Department of Education memo to special education coordinators included a section entitled "How Can Early Intervention or Special Education Programs Assist SSI Enrollment?" and included suggestions on referral activities, as well as assistance in evaluation and assessment.

Despite the potential for these linkages, virtually no research in economics has examined the interplay between special education and SSI recipiency. One exception is Cohen (2007), who examines whether differential state-level incentives to move children from AFDC/TANF to SSI also led to increased special education enrollments. We instead examine influences in the reverse direction, testing whether fiscal incentives to shift students from regular to special education by classifying them as disabled helps to explain sub-state heterogeneity in SSI child caseload expansions in the early 1990s.

3. Data and methodology

As described above, a number of programmatic and legislative changes in 1990 significantly relaxed SSI eligibility standards for children. This relaxation led to significant growth in the

program in the early- to mid-1990s. In our empirical analysis, we examine whether counties that, on average, had larger fiscal gains associated with classifying students as disabled experienced larger growth in the share of children on SSI in the years immediately following *Sullivan v. Zebley*. We estimate the following ordinary least squares regression equation:

$$\begin{aligned}\Delta \ln\left(childSSIshare\right)_{i,1993} &= \ln\left(childSSIshare_{i,1993}\right) - \ln\left(childSSIshare_{i,1990}\right) \\ &= \alpha + \beta \ln\left(Incentive_{i,1991-1993}\right) + \mathbf{X}_{i,1990}\beta + \varepsilon_i\end{aligned} \quad (1)$$

The units of analysis are Texas counties, since this is the lowest level of aggregation for which the SSI data are publicly available. Our primary dependent variable is the change in the logarithm of the share of children on SSI between 1990 and 1993, which reflects the rate of growth in caseloads over this period. The key control variable, *Incentive*, represents the average gain in state revenue from classifying a marginal regular education student as special education, and the **X** vector controls for a number of county-level characteristics. Since the variance of the error term may vary across counties of varying sizes, we report robust standard errors.

Our data on SSI caseloads come from the Social Security Administration and are counts of the number of child SSI recipients in December of the given year. We denominate these with Census population counts. Figure 3 graphs the average share of children on SSI across Texas counties, and shows that this share doubled between 1990 and 1993. It also graphs the share of disabled non-elderly adults on SSI, which also grew over this time period but not as rapidly. Growth in SSI adult disabled cases over this time period should not respond to fiscal incentives for classifying children as special education, so we estimate a version of equation 1 that uses the change in the logarithm of the adult SSI share as the dependent variable as a placebo test. Of the 254 counties in Texas, we drop eight counties where the number of child SSI recipients is suppressed in various years, and eleven where there are no children on SSI for any of the analysis years. This leaves us with a sample of 235 counties.

The relevant incentives for classifying children disabled for the purpose of special education exist at the school district level. We use district-level data from the Texas Public Education Information Management System (PEIMS) to create a variable that represents the revenue gain associated with shifting a marginal child from regular education to special education. Texas school finance policy uses a two-tier system to determine aid to districts.[5] Tier 1 is a foundation grant that guarantees each district a certain amount of revenue per-weighted pupil for levying the

required minimum tax rate. Tier 2 is a matching grant that guarantees a certain amount per-weighted pupil for each mill (0.01% tax) that the district levies above that required minimum, up to a cap. Special education students are weighted to count more heavily than regular education students, so classifying a student as special education increases the weighted pupil count. The increase in the weighted pupil count associated with classifying a student as special education depends upon the type of instructional services the student will receive.

The fiscal gain associated with classifying a marginal regular education student as special needs is equal to the increase in the weighted pupil count, multiplied by the sum of the foundation grant per-pupil allotment plus the amount of per-pupil matching revenue. Variation across districts in the fiscal gain is also due to adjustments to per-pupil guarantees that account for regional cost differences and economies of scale, differences in the size and composition of the student body, student enrollment in a number of special programs, and whether the district is wealthy enough to generate sufficient funds locally. Since the actual fiscal gain in any given year depends directly on how aggressively districts (and counties) were reclassifying students, we use the school finance formulas in place each year to predict the gain based on school districts characteristics in the initial year. Our variable *Incentive* is equal to the average of the predicted fiscal gain for the 1991-92 and 1992-93 school years, which match closely with our December SSI counts and are the earliest years for which detailed district financial data are available.[6]

We control for a number of local area characteristics in 1990. Some are collected at the county level, including the unemployment rate and per capita income. Others are collected at the school district level, such as the student race/ethnicity distribution, the fraction of students economically disadvantaged, the number of students and schools, per pupil tax base wealth, and the share of the tax base that is residential. Several variables from the 1990 Census were also compiled at the school district level in the School District Data Book. These include the share of the population working in the same county and with various levels of education, and the share of households headed by single parent and living in urban areas. All school-district level variables, including the calculated fiscal incentive measure, are aggregated to the county level by weighting each school district according to its share of the county's child population count. In our

[5] This section draws heavily from Cullen (2003).
[6] We are still investigating, but the incentives for 1990-91 appear to have been comparable to those in 1991-92, other than for the very highest wealth districts.

preferred specification, we also control for contemporaneous changes in these county-level characteristics.[7]

Summary statistics for the sample can be found in Table 2. The mean share of children on SSI is 0.8%, and the mean rate of student disability is much greater at 13.1%. On average, the per-pupil fiscal gain across counties is $2,389.[8] Figure 5 shows the distribution of growth in the child SSI share from 1990-93 across counties, while Figure 7 shows the distribution of the fiscal gain. The next section explores whether these two distributions are systematically related.

4. Results

Our preliminary regression results are presented in Table 3. Column 1 relates the logarithm of the 1990 child SSI share to the average fiscal incentive in place in school years 1991-92 and 1992-93. We find no significant relationship between the fiscal incentives and the initial level of child SSI receipt. Column 2 is based on our main dependent variable of interest – the change in the logarithm of the child SSI share between 1990 and 1993. The estimated coefficient is positive and statistically significant, suggesting that local incentives to manage more expansive special education programs are associated with larger growth in child SSI caseloads over the years immediately following the *Zebley* decision. Column 3 tests sensitivity to adding contemporaneous changes in county-level characteristics. The estimated effect remains statistically significant, and the point estimate increases in magnitude from 0.596 to 0.669. Results from our preferred specification in Column 3 suggest that a 10% increase in the fiscal incentive is associated with a 6.7% increase in the growth of SSI child caseloads between 1990 and 1993.

Adult disabled SSI caseloads in Texas were also increasing over this time period, but there is no reason why this growth should be related to special education fiscal incentives. If it is, this would cast doubt on whether our estimation strategy identifies a causal relationship. Column 4 presents results from a placebo test that uses the logarithm of the change in the adult disabled

[7] The control variables that come from the School District Data Book (see Table 2) only exist for 1990, so we cannot control for contemporaneous changes in these variables.

[8] As illustrated in Figure 6, the average gain increases over the time period under consideration. There was a significant school finance reform first implemented in 1993-94 that effectively increased the gain for high wealth school districts. At the county level, as at the district level, the change in the revenue gain (from classifying a regular education student as special needs) was negatively related to the gain in the pre-reform period (correlation is -.58). Despite this, the correlation between the gain prior to the reform (over the period 1991-92 and 1992-93 school

SSI share as the dependent variable. The estimated coefficient is small in magnitude and statistically insignificant, bolstering confidence in our interpretation of the results found for children.

5. Conclusion

Using data from Texas counties for 1990-1993, we examine the relationship between fiscal incentives encouraging expansive special education programs and growth in SSI-disabled cases among children. Our preliminary results suggest that the fiscal incentives counties faced to manage large special education programs in the early 1990s are positively and significantly associated with growth in SSI child cases between 1990 and 1993. The estimated elasticity is large in magnitude and on the order of 0.7.

In future versions of this paper, we plan to do additional work to confirm the robustness of these results, and to examine potential heterogeneity in the responsiveness across types of counties. In addition, we plan to examine the role of county-level financial constraints generated by unfunded mandates. The Indigent Health Care and Treatment Act was enacted in Texas in 1985, establishing the county's responsibility to provide health care for indigent residents under certain circumstances. This unfunded mandate places an additional constraint on counties, and could provide additional variation across counties in incentives to move children onto the SSI program, which comes with government-provided insurance through the Medicaid program.

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year) and after the form (1993-94 to 1996-96) was positive (0.22). See Cullen (2003) for details on the reform. We do not exploit this policy change in this version of the paper.

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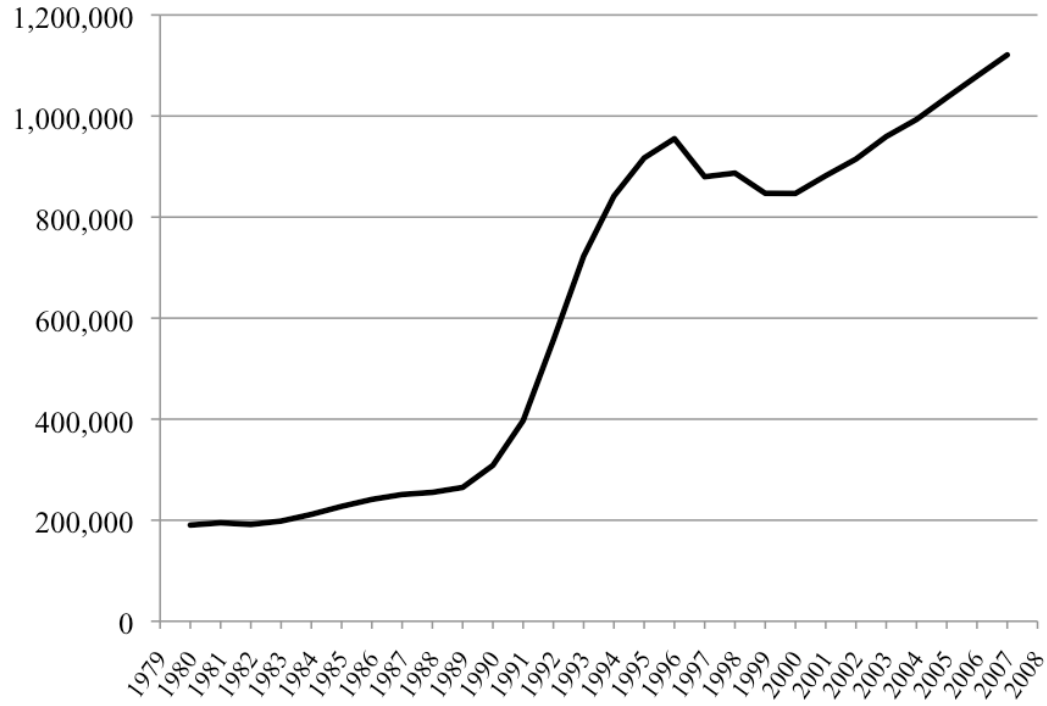
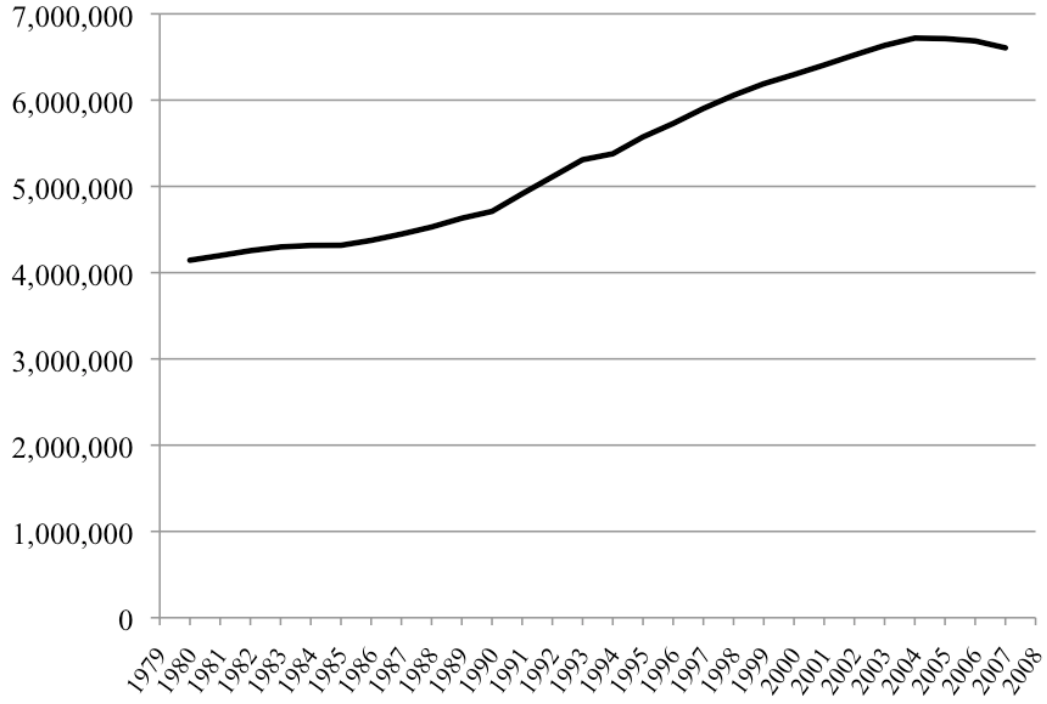
Figure 1. SSI child disabled cases, 1980-2007



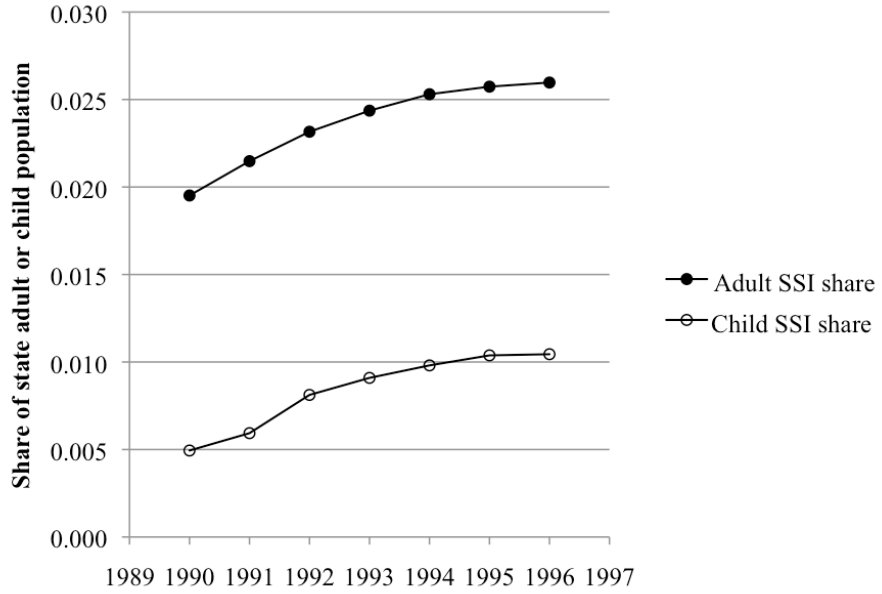
Source: Social Security Administration, Supplemental Security Record (Characteristic Extract Record format), 100 percent data.

Figure 2. Children served in special education programs, 1980-2007



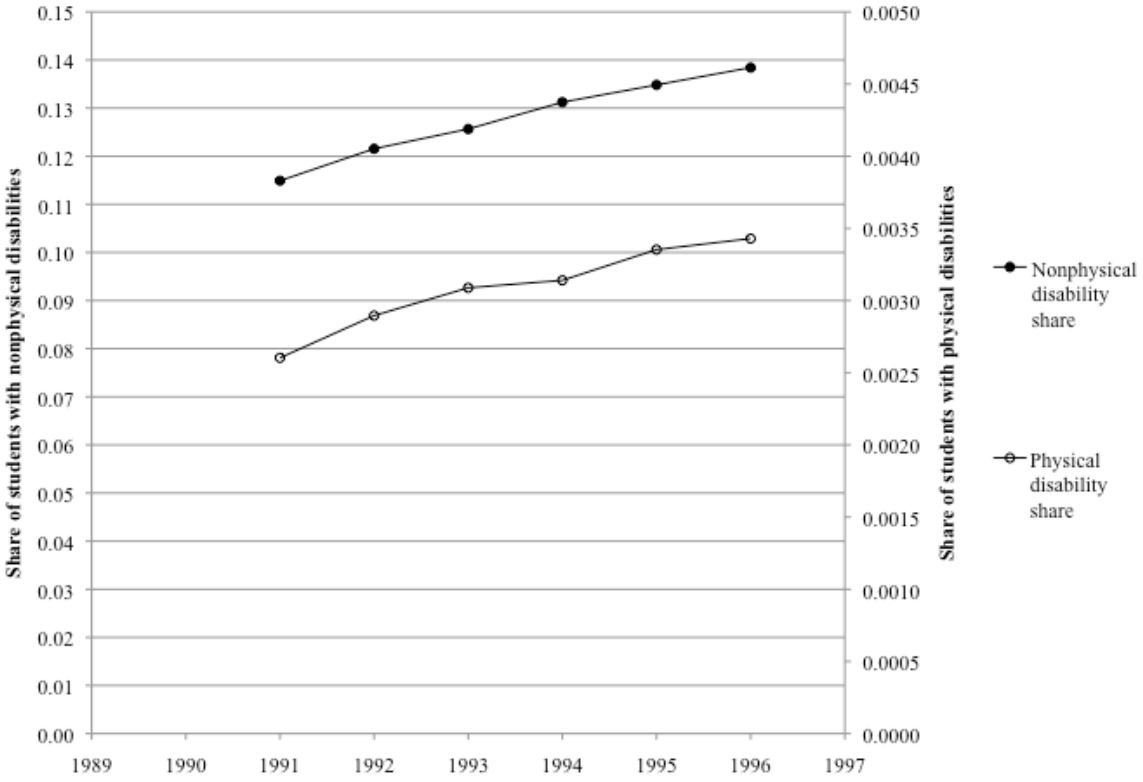
Source: NCES Digest of Education Statistics, various years.

Figure 3. Texas county average child and adult SSI population shares



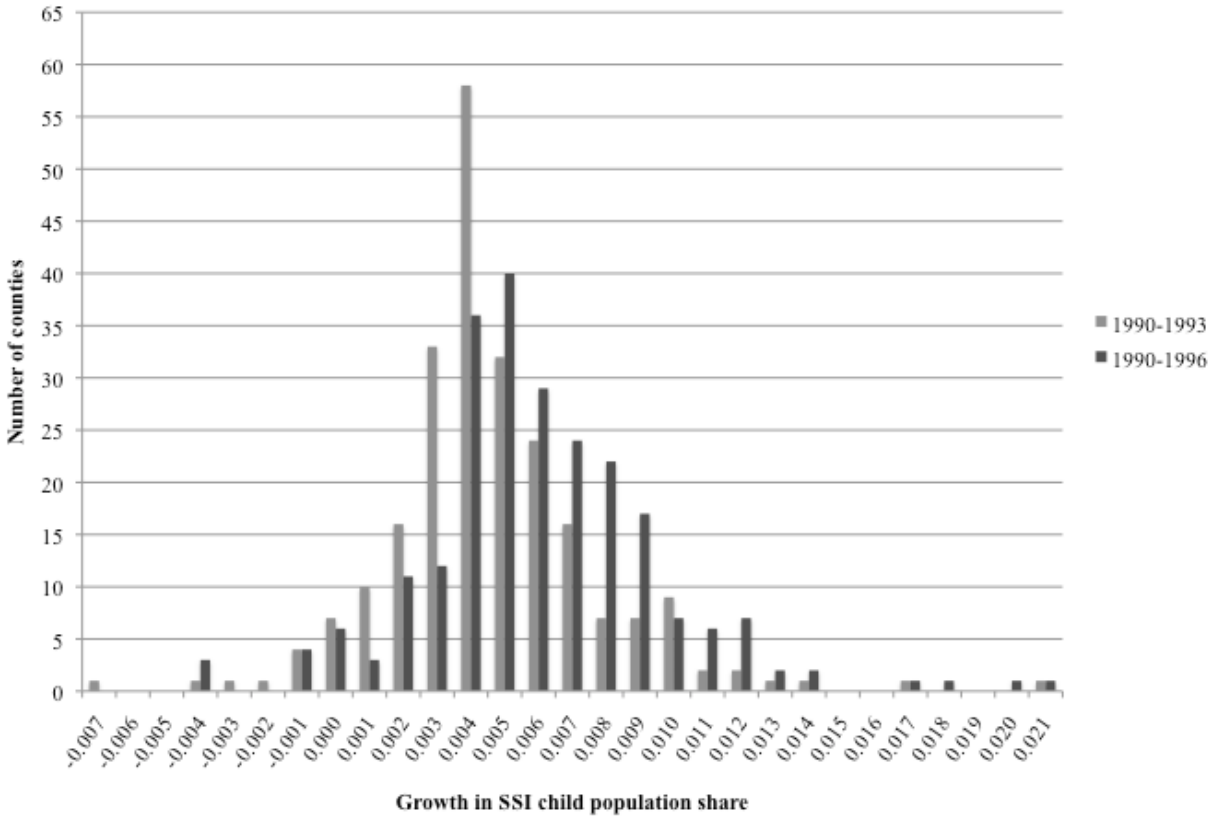
Notes: These are annual averages across the 235 counties included in the analysis, and are calculated from data on child and adult SSI recipients by county provided by the Social Security Administration.

Figure 4. Texas county average student physical and nonphysical disability shares



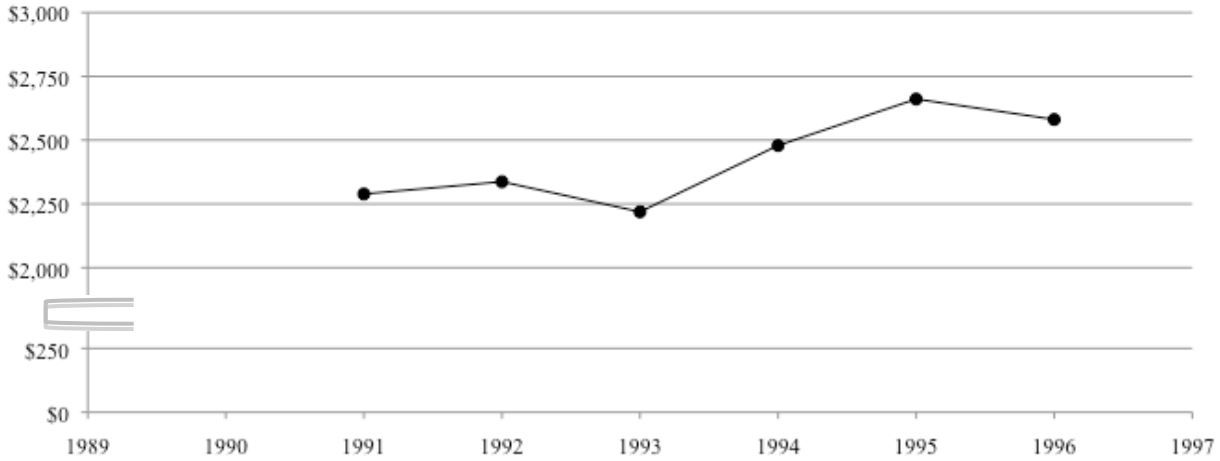
Notes: The physical disability share includes students with hearing or visual impairments, orthopedic impairments, or traumatic brain injury. All other impairments are categorized as nonphysical. The shares are calculated from district level Texas Education Agency administrative data aggregated to the county level for the 235 analysis counties.

Figure 5. Distribution of the change in the SSI child population share across Texas counties



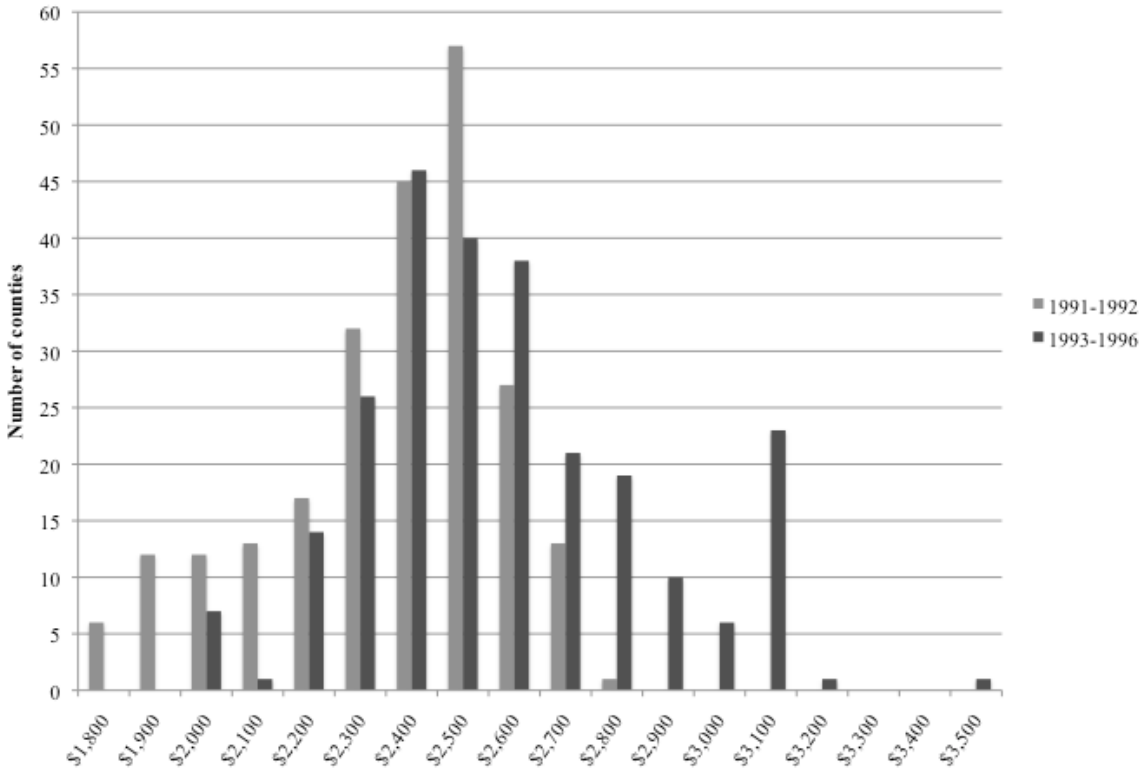
Notes: The sample is the 235 counties included in the analysis. The change in the number of SSI child recipients as a share of the child population is calculated from SSA data for two time periods: 1990-1993 and 1990-1996.

Figure 6. Average revenue gain across Texas counties, by year



Notes: A county's revenue gain is the additional amount that the (child population weighted) average district would receive if it were to classify a marginal regular education student as disabled and serve the student in a special education instructional setting. The statistics presented are simple averages across the 235 counties included the analysis. The values are real 1992 dollars.

Figure 7. Distribution of revenue gains across counties, by state school finance regimes



Notes: The sample is the 235 counties included in the analysis. The distribution of (child population weighted) average district incentives across counties is shown for the school finance regime in place for schools years 1991-92 to 1992-93 and for school year 1993-94 onward.

Table 1. Distribution of primary disabilities among special education students

	SEELS, 6-13 years old, 1999		Texas Education Agency, pre-K to 12th grade, 1991-96
	All students	SSI recipients	All students
	(1)	(2)	(3)
Learning disability	40.99	27.92	55.71
Speech impairment	32.91	13.70	20.23
Emotional disturbance	5.96	9.28	7.12
Mental retardation	8.88	28.73	7.95
Other health impairment	4.64	4.77	4.59
Autism	1.55	2.99	0.55
Physical disability	5.07	12.62	3.84

Notes: The first two columns are authors' weighted tabulations of the Special Education Elementary Longitudinal Study (SEELS), a nationally representative sample of special education students. The final column is based on administrative data from all special education students in Texas public schools. The physical disability category includes hearing and visual impairments, orthopedic impairments, traumatic brain injury, and multiple disabilities. Other health impairment included attention deficit hyperactivity disorder.

Table 2. Summary statistics, by county and year

Variable	Mean	Standard deviation
Social Security Administration, 1990-1996		
Child SSI population share x 100	0.84	0.42
Adult SSI population share x 100	2.36	1.18
Texas Education Agency, 1991-96		
Fiscal incentive	2,389	373
Fraction of students with nonphysical disabilities x 100	12.8	3.23
Fraction of students with physical disabilities x 100	0.31	0.15
Fraction of students economically disadvantaged	0.47	0.14
Fraction of students black	0.09	0.10
Fraction of students Hispanic	0.32	0.26
Fraction of students other nonwhite race/ethnicity	0.01	0.01
Per pupil tax base wealth	211,926	342,395
Fraction of property residential	0.31	0.15
Total public school enrollment	17,671	54,730
Total number of schools	30.57	70.90
Bureau of Labor Statistics, 1990-96		
Unemployment rate	6.62	4.37
Per capita income	16,270	3,651
School District Data Book, 1990		
Share of population		
Working in the same county	0.746	0.162
With high school degree	0.300	0.044
With some college	0.229	0.054
With college degree	0.120	0.046
Median household income	26,089	5,778
Share of households		
Single parent	0.159	0.041
With no children	0.502	0.062
In metro area – urban	0.065	0.161
In metro area – rural	0.062	0.140
Not in metro area – urban	0.209	0.283
Not in metro area – rural	0.475	0.333

Notes: Means and standard deviations are presented based on 235 counties in each year. The data from the Texas Education Agency and 1990 School District Data Book have been aggregated to the county-year level by weighting each school district according to its share of the county's child population count.

Table 3. Relationship between county fiscal incentives and growth in the SSI child population share

	Dependent variable			
Control variable	*ln* (child SSI population share)			*ln* (adult SSI pop share)
	1990	Δ1990-93	Δ1990-93	Δ1990-93
	(1)	(2)	(3)	(4)
ln(Fiscal incentive prior to regime change)	-0.374	0.596*	0.669*	-0.036
	(0.365)	(0.366)	(0.384)	(0.133)
Includes 1990 level controls	Yes	Yes	Yes	Yes
Includes contemporaneous changes in county characteristics	No	No	Yes	Yes
R-squared	0.43	0.171	0.189	0.304
Number of observations	235	235	235	235

Notes: Each column presents results from a separate ordinary least squares regression for the dependent variable indicated in the column heading. The dependent variable is the logarithm of the child SSI population share in 1990 in column 1, the change in the log child share from 1990-1993 in columns 2 and 3, and the change in the adult log share from 1990-93 in column 4. Only the coefficient (and robust standard error) for the key independent variable, the logarithm of the fiscal incentive, is shown. The control set also always includes the 1990 values for: unemployment rate, per capita income, student race/ethnicity distribution, fraction of students economically disadvantaged, the logarithms of the total number of students and schools, the logarithm of per pupil tax base wealth, the share of the tax base that is residential, and the School District Data Book variables detailed in Table 2. When indicated, changes in the time-varying variables between the beginning and end of the period are also included.