

Systemic Inequities in Special Education Financing

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ABSTRACT

Since the implementation of IDEA in 1975, as spending on education has continued to grow, a large portion of that spending has been dedicated to students with special needs. This study uses a panel dataset of local and intermediate school districts to examine the complex special education funding and delivery scheme in the State of Michigan. Using taxable value per pupil as a proxy for a district's wealth, we find large inequities in expenditures per special education student based on a district's wealth and that these inequities are exacerbated by Michigan's Intermediate School District system. We also find the composition of special education students varies significantly based on the district's wealth and this composition is likely to change with changes in a district's wealth.

INTRODUCTION

The unique educational needs of handicapped children were not addressed by the American public education system until relatively recently. In 1975, Congress passed the Education for All Handicapped Children Act.¹ This law requires that states provide a “free and appropriate” public education in the “least restrictive environment” to all children, including those with disabilities.

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1. PL 94-142, 1975.

The law also stipulates that these services are to be provided “regardless of cost.” Since the implementation of this law, renamed the Individuals with Disabilities Education Act (IDEA) in 1990, as spending on education has continued to grow, a large portion of that spending has been dedicated to students with special needs. Rothstein (2010) estimates that special education consumes around 20% of all school spending, while around 13% of children nationwide are identified as having special needs (United States Department of Education 2013).

Much of the empirical work on special education finance has focused on the financial incentives embedded in state special education financing systems and how school districts respond to these incentives. Mahitivanichcha and Parrish (2005) examine the incentives in a variety of state funding systems, including weighted systems, census-based funding, and full reimbursement systems, finding little evidence that fiscal incentives uniformly affect practice. They conclude that the relationship between incentives and practice is complex, and caution that while state financing policies may impact how districts provide special education services, the impact occurs within an intricate web of factors which include federal legal entitlements, diagnosis, and treatment decisions that are often based on professional judgment, and state program oversight and monitoring.

Dhuey and Lipscomb (2011) conducted a more comprehensive study of all nine state census-based funding systems, including special education identification rate data for thirteen years from all fifty states. They found that state adoption of census based funding reforms was associated with an approximately 10% reduction in special education identification rates. They also found other changes associated with fiscal incentives including differing identification rates in earlier and later grades (particularly in the more subjective diagnosis categories), changing placements for disabled students, and differing exit rates. This study, along with the Mahitivanichcha and Parrish study, focused on variations across states. There is also research looking at variations within a state, allowing for the particular details of the state system to be taken into account.

Kwak (2010) examined the special education funding system in California, finding that when the price increased for special education due to the 1997 policy change to a census-based system, districts responded by classifying fewer students as disabled. Cullen (2003) examined how districts respond to incentives provided in the Texas special education financing system, where there is variation in the state revenue gains districts receive when identifying an additional special education student, depending on the district tax base wealth and other district characteristics. Cullen concluded that financial incentives play an important role in determining the size of special education programs in Texas. Battisti, Friesen, and Hickey (2012) similarly found that districts responded to financial

incentives. Their study concluded that in British Columbia, when supplemental grants for special education students were eliminated, fewer students were identified as having special needs.

In addition to incentive considerations, researchers have examined equity issues around special education funding. Considering across state variation in expenditures, Harr, Parrish, and Chambers (2008) report that existing state systems tend to produce disparities in funding and expenditures that are unrelated to cost factors associated with the disabled student's needs. Baker and Ramsey (2010) raised equity concerns in their study of special education funding in two states with census-based systems. The authors found that children with disabilities were not uniformly distributed across districts in these states, resulting in dramatic disparities in special education funding per identified special education student.

Employing a unique panel dataset of Michigan school districts, this article uses across district and within district, across year variation to examine Michigan's special education expenditures and enrollment. Taking into account the complex incentive structure provided by Michigan's special education funding system, this study scrutinizes both the composition of special education students and the resulting spending patterns across districts with different taxable values. Using taxable value per pupil as a proxy for district wealth, we find large differences in special education expenditures across local school districts with wealthier districts spending significantly more per pupil. We also find that this inequity is exacerbated by Michigan's Intermediate School Districts, which provide additional special education services and resources for local school districts.² Finally, our results indicate that poorer districts not only have larger fractions of students requiring special education services, but also that the level of services required by special education students varies with district wealth and the composition of special education students is likely to change with changes in a district's wealth.

SPECIAL EDUCATION IN MICHIGAN

Michigan funds special education services through a combination of per-pupil funding and cost reimbursement.³ Historically, the level of special education funding provided by the state has been low. According to Parrish and Chambers

2. Many states have Regional Education Service Agencies similar to Michigan's Intermediate School District that provide staff development, purchasing and administrative services, along with special education services, to the local school districts.

3. See Citizen's Research Council (2012) for an overview of Michigan's special education funding structure and Michigan Department of Education (2013) for details of the administrative rules for special education.

(1996), in 1987–88, Michigan ranked near the bottom on special education state funding, reimbursing only 22% of special education expenditures. Only four states contributed a lower percentage. Seventeen years of litigation between the state of Michigan and local schools resulted in the *Durant* (1997) decision, which mandated that the state pay “28.6138% of total approved costs for special education” and “70.4165% of total approved costs for special education transportation” (Seilke and Russo 1999). The Michigan education funding terrain changed in 1994 with the passage of Proposal A, centralizing education funding so that approximately 74% of district general education revenues, on average, were now provided by the state (Israeli and Murphy 2007). The State of Michigan chose to interpret the *Durant* decision to include the general per-pupil funding already allocated for every student as satisfying its legal obligation, thus avoiding any responsibility for the added costs associated with special education (Seilke and Russo 1999) and maintaining the state’s relatively low level of funding.

Michigan currently has 549 local school districts and 280 charter schools. Each local district and charter school belongs to one of 57 Intermediate School Districts (ISDs), countywide or several county organizations that coordinate services for a group of school districts.⁴ ISDs provide a wide range of services that can include professional development for the teachers of member districts, business services, curriculum development, career and technical education, alternative education, and technology services (Garcia, Shimmel, and Wraight 2011). ISDs in Michigan also coordinate special education services and may provide services that overlap with local district programs. Local school districts may maintain their own programs, or place students in ISD programs. All ISDs have facilities, but they vary in programs and services. Some ISDs provide comprehensive special education services, while others provide minimal services. In addition, local districts may contract for services or receive in-kind services from their ISD. Along with these ISD resources and state funding, local districts receive special education funding from the federal government.

Each ISD levies several property taxes, including a special education property tax for its member districts. The ISD develops an allocation plan for local and federal funds, which must be approved by the Michigan Department of Education, but the ISD is not obligated to distribute the funding to member districts. Local districts, on the other hand, may find that special education revenues from state, federal, and local sources do not cover their special education expenditures, requiring additional funds from the district’s general fund.⁵

4. Charter schools are assigned membership to ISDs and are eligible to receive special education revenues from federal, state, and local ISD sources. Because the number of special education students at charter schools is minimal, we focus on local school districts and ISDs.

5. Conlin and Jalilevand (2015) documents this cross subsidization from the general fund.

Federal law has established and protected the rights of disabled students and ensured that states and local districts provide adequate special education services. The law makes important stipulations that services are to be provided regardless of cost, and in the least restrictive environment, and empowers parents and students in decisions over provided services. Parents may have the option of choosing whether their child receives services at the ISD or in the local school. While school districts may have a financial incentive to place more severely disabled students at the ISD (when available), federal law provides a competing incentive for placement of the disabled student at their local school whenever possible. Parents of disabled students may also advocate for local placement. In addition, the federal IDEA funding reauthorization law has a “maintenance of effort” requirement (*Individuals With Disabilities Education Act*, 20 U.S.C. § 1400, Section 34 CFR 300.203) stating that funds “shall not be used . . . to reduce the level of expenditures for the education of children with disabilities made by the local education agency from local funds below the level of those expenditures for the preceding fiscal year.” Districts must budget “at least the same total per-capita amount” (Federal Register 1999) in order to be eligible for federal IDEA funds in that year. The purpose of the law is to ensure that special education spending levels are maintained, regardless of the levels of federal funding. State departments of education are tasked with oversight of local districts to ensure compliance with federal law.

DATA AND SUMMARY STATISTICS

The dataset consists of annual enrollment and financial information provided by the Michigan Department of Education (MDE), the Michigan Center for Educational Performance and Information (CEPI) and the Michigan Department of Treasury (MDT). Table 1 contains the summary statistics for local school districts from 2003 through 2011 and for ISDs from 2003 through 2010.⁶ The enrollment data, provided by the MDE and CEPI, indicate that the average local school district has 2,776 full-time equivalent (FTE) students and that 388 have Individual Education Plans (IEPs). An IEP outlines planned special education services that will be provided for the student.⁷ All disabled students will have an

6. Each year denotes a fiscal year for the districts. For example, 2003 corresponds to fiscal year 2003 which goes from July 1, 2002 to June 30, 2003.

7. Special education services are determined and delivered through the Individualized Education Program (IEP), a contractual arrangement between the student’s family and the school district (*Individuals With Disabilities Education Act*, 20 U.S.C. § 1400, 2004). Federal law includes a “stay put” provision requiring any changes in special education services be incorporated into the IEP and approved by the IEP participants (Martin, Martin, and Terman, 1996). This contractual method of delivering special education services results in relative stability in the provision of services. Any unapproved changes in services could be interpreted as a breach of contract, initiating a due process complaint procedure between the school district, disabled students, and the parents, and resulting in arbitration or litigation. The National Center on Dispute Resolution in Special Education (2014) reports over 17,000 such com-

Table 1. Descriptive Statistics Annual Observations from 2003 through 2010 or 2011

	Means (Standard Deviations)
Enrollment:	
General and Special Education FTEs at Local District	2,776 (5,389)
Students with IEPs at Local Districts	388 (870)
Special Education FTEs at Local Districts	120 (410)
Special Education FTEs at ISD Facilities	233 (252)
Expenditures:	
Special Education Expenditures per IEP at Local Districts	8,140 (4,074)
Special Education Expenditures per FTE at Local Districts	39,880 (80,322)
Special Education Expenditures per FTE at ISD Facilities	650,434 (4,011,484)
ISD Special Education Millage Rate	2.52 (1.08)
Taxable Value per Total FTE at Local District Level	347,749 (1,029,834)
Taxable Value per Total FTE at ISD Level	230,796 (80,355)
Local District Observations	4,394
ISD Observations	399

Note: There are 186 observations where the number of special education FTEs is zero and 188 observations where the number of IEPs is zero.

IEP, whether severely or mildly impaired, but many students with IEPs spend a significant portion of their time in regular classrooms. Special Education FTEs measure the number of full time equivalent special education students. The fact that the number of IEPs at the local district is more than three times the number of FTEs suggests that many special education students at the local districts spend significant portions of the day in general education classrooms. The average ISD facility enrolls 233 special education students, who most often require special education services for the entire day and, therefore, are considered FTEs. While ISD facilities on average have a higher number of special education FTE students than local districts, the large number of local districts results in the number of total special education FTEs being five times greater at local districts than at ISD facilities.

The expenditure information was obtained from the MDE and CEPI with the

plaints were filed in the United States in 2011–12.

MDE providing those expenditures not reimbursed by the federal government and CEPI providing special education spending funded with federal dollars.⁸ In terms of expenditures, Table 1 indicates that the average expenditure per special education FTE, while significant at the local districts, is much greater at the ISD facilities. The higher expenditure level at the ISDs may reflect the fact that the ISD facilities serve the more severely disabled students, but also may be due to the inclusion of in-kind services provided by ISDs to students enrolled at local districts. There are several ISDs (most notably Oakland, Kent, and Wayne) that are outliers in terms of expenditures per FTE because they have very few students at ISD facilities but provide significant special education resources to local districts, explaining why the average expenditure per FTE is over half a million dollars for ISDs.

The MDT provided information on special education millage rates and property taxable values. Only ISDs are allowed to levy a special education millage and this tax revenue provides the majority of the total revenue received by ISDs. This revenue varies significantly across districts and ISDs because of vastly different tax bases. As indicated in Table 1, the average ISD special education millage rate is 2.52 and the average taxable value per FTE is 347,749 at the local district level and 230,796 at the ISD level—both with large standard deviations.

Table 1 indicates that significant resources are being spent on special education services at the local district as well as at ISD facilities. While there are many more special education students who reside at the local districts, the severely disabled are more likely provided services at the ISD facilities. There also appears to be significant differences across districts in terms of special education enrollment and expenditures which will be analyzed in more detail in the next section.

MICHIGAN SPECIAL EDUCATION ENROLLMENT AND EXPENDITURE VARIATIONS

This section documents how special education enrollment and expenditures vary across years; how the variation across districts is correlated with a district's tax base; and how special education enrollment and expenditures vary with changes in a district's tax base. Figure 1 depicts how the numbers of IEPs and special education FTEs at the local school districts have decreased across years with more significant decreases occurring in recent years. The 31% decrease in

8. MDE reports SE 4096 and SE 4094 are intermediate and local district cost reports required as part of Michigan's special education reimbursement framework that summarize district special education costs, excluding federal programs. These reports, available from the MDE, are the basis for state special education revenues received by school districts, but also include costs that are funded by local revenues. Federal guidelines require separate accounting for federally funded programs, so these costs are not represented on SE 4096 and SE 4094.

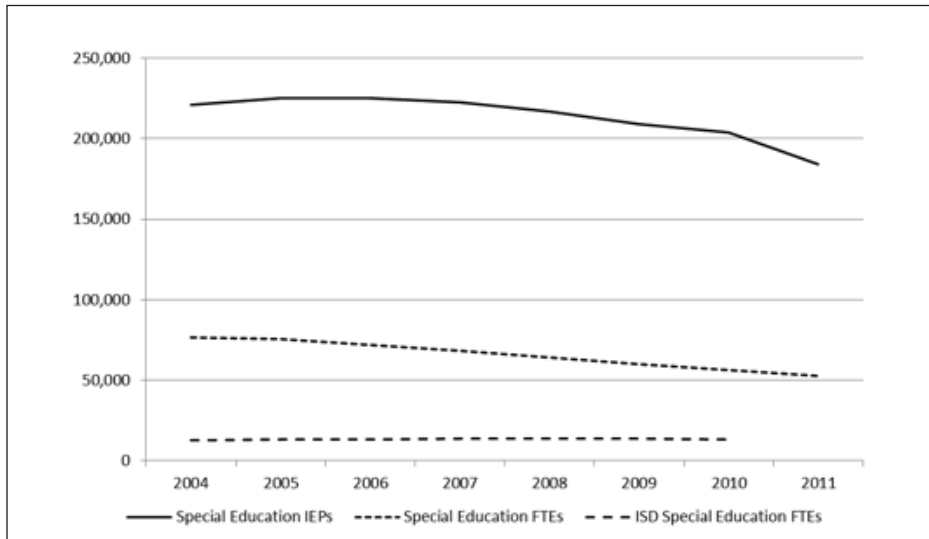


Figure 1. Michigan Special Education Enrollment by Year

special education FTEs and 17% decrease in IEPs from 2004 to 2011 are greater than the 11% decrease in general education FTEs during this time period. While special education FTEs and IEPs have decreased at the local districts, the number of special education students at ISD locations has increased by 3% from 2004 to 2010. The decrease in the number of special education IEPs and FTEs, along with the maintenance of effort requirement associated with IDEA funding and the American Recovery and Reinvestment Act (ARRA) funds (which began in 2009), has contributed to the increase in per pupil expenditures at the local districts. Figure 2 depicts this increase in special education expenditures per FTE and IEP across the years at the local districts. ISDs spend considerably more per FTE on their special education students than local districts and, in recent years, have experienced a significant increase in expenditures per FTE. This reflects a change in the type of students residing at ISD facilities, an increase in revenue, and/or an increase in in-kind transfers to the local districts.

Figures 3 and 4 present annual special education expenditures per IEP and FTE by local districts across different quintiles based on average annual taxable values per total FTE (sum of general and special education FTEs). To ensure that a local school district remains in the same quintile across years, we calculate a district's average annual taxable value per total FTE based on all years. The 20% of school districts with the largest average annual taxable values per total FTE are in the wealthiest quintile, the districts from 20% to 40% are in the wealthier quintile, the districts from 40% to 60% are in the median quintile, the districts from 60% to 80% are in the poorer quintile and the 20% with the smallest average annual taxable values per total FTE are in the poorest quintile.⁹

9. To ensure that the composition of each quintile does not change across years, observations for Dearborn Heights and Bangor Township school districts are dropped due to at least one year of missing

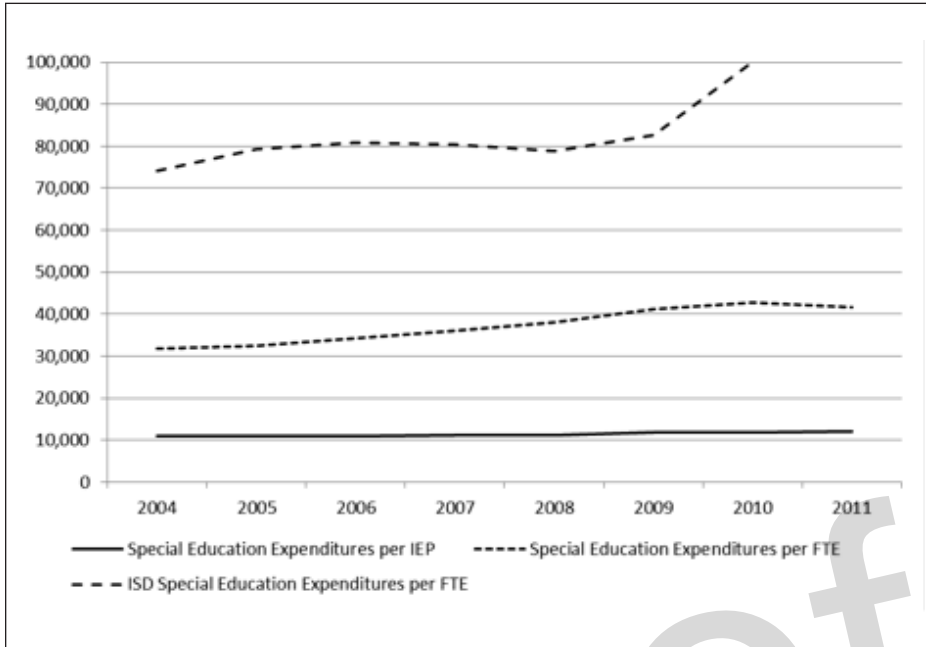


Figure 2. Michigan Per Pupil Average Special Education Spending, in 2012 dollars

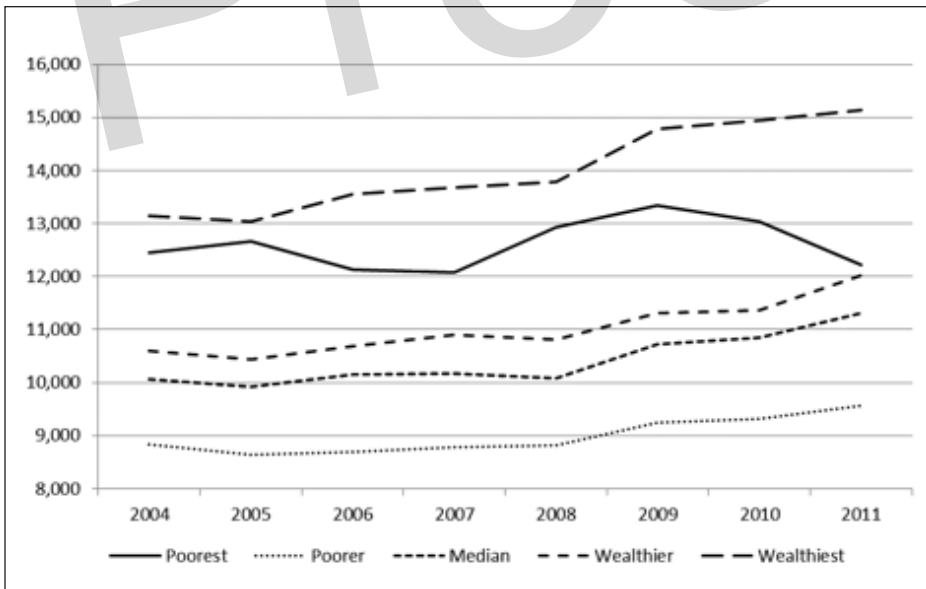


Figure 3. Total Special Education Expenditures per Student with IEP, in 2012 dollars.

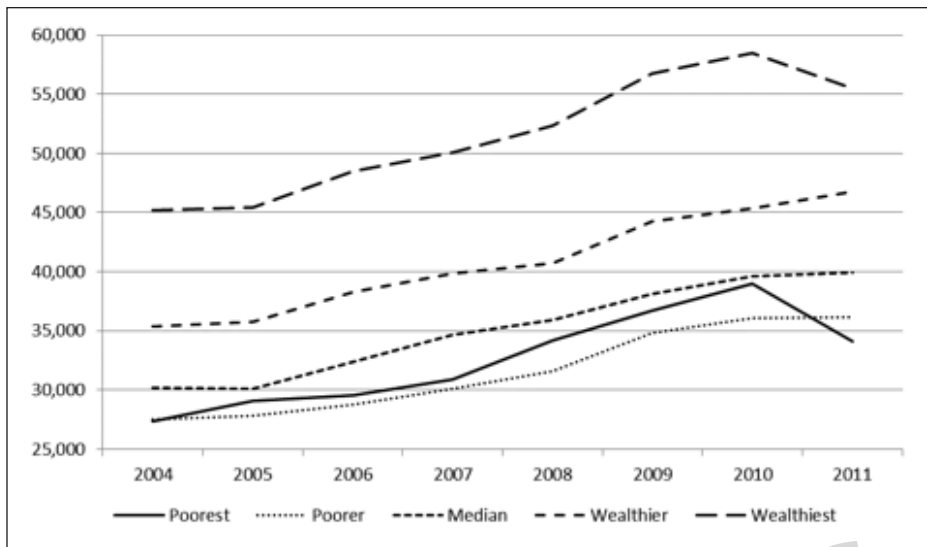


Figure 4. Total Special Education Expenditures per Special Education FTE, in 2012 dollars.

Using taxable value per total FTE as a proxy for a district's wealth, Figures 3 and 4 indicate that there are significant differences across districts in special education expenditures per pupil. These expenditure differences could reflect differences in the types of disabilities experienced by children across districts, differences in how districts identify disabilities, and/or differences in how children sort between local districts and ISD facilities. Figures 3 and 4 indicate that districts in the wealthiest quintile spend, on average, between \$2,000 and \$5,000 more per IEP and between \$8,000 and \$20,000 more per FTE than districts in the other quintiles. While the wealthiest districts have the greatest per pupil expenditures, these districts have the lowest ratio of special education FTEs to general education FTEs. This ratio is approximately 0.036 for the wealthiest and wealthier quintiles, 0.044 for the median and poorer quintiles and over 0.06 for the poorest quintile. This could reflect a large proportion of special need students attending public schools in the poorer districts.¹⁰ Interestingly, while average expenditures per FTE decreases monotonically with wealth quintile, the poorest quintile's average expenditures per IEP is greater than the other quintiles (except the wealthiest quintile). This difference is the result of the ratio of FTEs to IEPs being 0.39 for the poorest quintile and less than 0.30 for all other quintiles. One

information.

10. Charter schools are more prevalent in poorer areas and, on average, have a smaller proportion of special need students than local public schools.

possible explanation is that students in these poorest districts with relatively moderate disabilities are not being provided with an IEP. Another explanation is that the types of services required by special education students are significantly different in the poorest districts. However, this greater FTE to IEP ratio is not due to special needs students in these poorer districts residing in local districts rather than in ISD facilities. For districts in the two poorest quintiles, over a third of all special education FTEs reside at an ISD facility which is a much larger fraction than in the other quintiles.¹¹

While Figures 3 and 4 suggest inequities in special education expenditures based on district property wealth, these figures may underestimate the inequity if wealthier local districts are located in ISDs that provide significant services to special needs students—either at ISD facilities or through in-kind transfers. The fact that ISDs provide expensive special education services could have important equity implications since approximately 20% of special education FTEs in Michigan reside at ISD facilities. Figure 5 compares expenditures per FTE at ISD facilities across the different quintiles of ISD wealth. These quintiles are constructed in a similar manner as those for the local districts—based on an ISD’s average annual taxable value per total FTEs (sum of general education

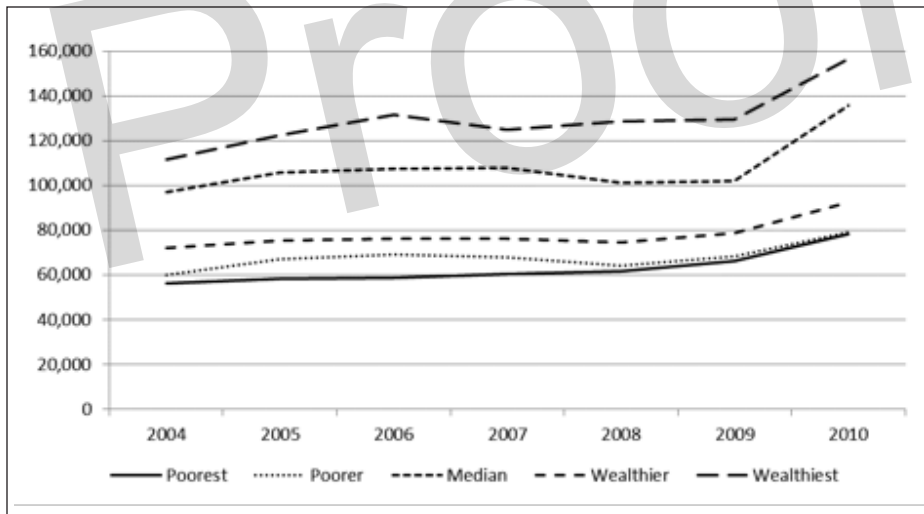


Figure 5. Special Education Spending at the ISD (per FTE) in 2012 Dollars.

FTEs and special education FTEs at the local district and ISD facilities).¹² Figure

11. This difference across the quintiles is driven by several ISDs (specifically Kent, Wayne and Oakland ISDs) with almost all special education students residing at the local districts. The fraction of special education FTEs that reside at an ISD facility is approximately a third for all quintiles if these three outliers are excluded.

12. While local districts in the wealthy quintiles are more likely located in the wealthy ISD quintiles,

5 indicates that the wealthiest ISD quintile spends significantly more per FTE than ISDs in the other quintiles.¹³ This suggests additional advantages for special education students and districts located in areas with high taxable values. Not only do these districts spend more at the local district level, but they may also provide better services for the more severely disabled students at ISD facilities and/or provide more in-kind transfers from the ISDs to the local districts.

The higher average per pupil expenditures at the wealthier ISDs does not imply that these districts are taxing themselves at higher rates to pay for special education services. Figure 6 depicts the special education millage rates at the ISDs, again by property wealth quintile, and indicates that wealthier districts have lower millage rates than their poorer counterparts. While wealthier ISDs have lower millage rates, they generate greater revenue per FTE at ISD facilities due mainly to the size of the tax base.¹⁴

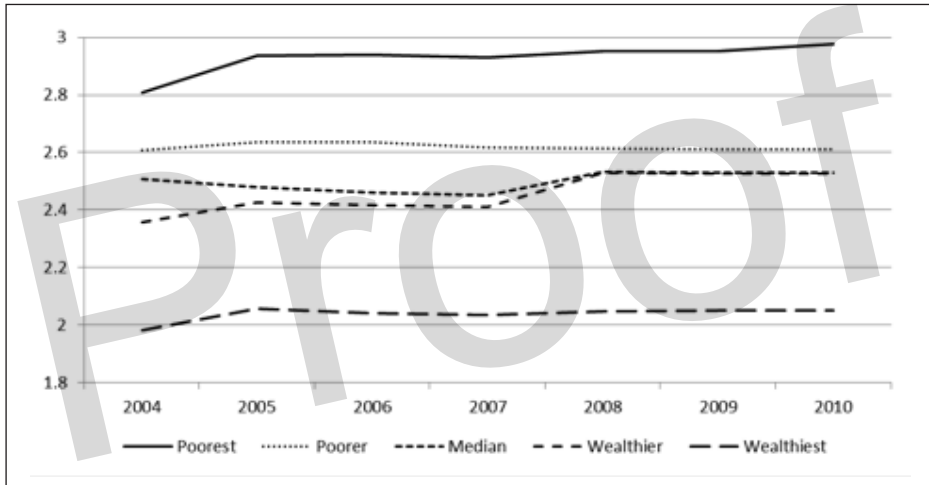


Figure 6. Special Education Millage Rates at the ISD

Figures 3, 4, and 5 suggest that wealthier districts have greater special education expenditures per pupil at the local district level as well as at ISD facilities. We further demonstrate this positive correlation between district wealth and special education expenditures by regressing the natural log of special education expenditures per FTE on the natural log of taxable value per total FTE

there are some wealthy districts that are located in ISDs with other local districts that are relatively poor, causing them to be in a relatively poor ISD quintile.

13. Even excluding the three ISDs (Kent, Wayne and Oakland) with minimal number of students at ISD facilities, the gap between the wealthiest quintile and the other ISDs is between \$10,000 and \$20,000 per FTE.

14. While the state of Michigan does provide some equalization funds to ISDs with smaller tax bases, these funds are not sufficient to compensate for the large tax base differences.

(along with year indicator variables). The estimates in Columns 1 and 4 of Table 2 indicate that a 10% increase in taxable value per total FTE is associated with approximately a 3% increase in expenditures per special education FTEs for local school districts and a 5.9% increase for ISDs. This specification uses primarily across district variation to identify the relationship between taxable value per total FTE and expenditures per special education FTE but does not account for differences in district size which may be important due to economies of scale issues. To account for potential economies of scale, we estimate the regression equation

$$\ln(y_{st}) = \beta_0 \ln(\text{Taxable Value Per FTE}_{st}) + \mathbf{X}_{st} \boldsymbol{\beta} + \boldsymbol{\theta}_t + \varepsilon_{st}.$$

The variable $\ln(y_{st})$ is the natural log of expenditures per special education FTE for school district s in year t ; $\ln(\text{Taxable Value Per FTE}_{st})$ is the natural log of the taxable value per total FTE for school district s in year t ; \mathbf{X}_{st} is a vector of school district characteristics to control for district size that includes special education IEPs (for local districts only), special education FTEs, and general education FTEs; $\boldsymbol{\theta}_t$ is year fixed effects; and ε_{st} is an idiosyncratic error term. Columns 2 and 5 of Table 2 present the coefficient estimates from this specification for local school districts and ISDs, respectively. These estimates indicate that, after controlling for district size, the positive correlation between taxable value per total FTE and expenditures per special education FTE remains but decreases for local districts and ISDs. This positive correlation may be the result of wealthier districts providing better services for special education students, being less likely to provide moderately disabled students with IEPs and/or having students with disabilities that require greater financial resources to address. To provide insight into these alternative explanations, we now estimate several alternative specifications that include district fixed effects.

Columns 3 and 6 of Table 2 provide coefficient estimates when district fixed effects are included as covariates in the initial specification. By including district-level indicator variables, this specification uses within district, across year variation to identify the relationship between changes in taxable value per pupil and changes in special education expenditures per pupil. The coefficient estimates in Columns 3 and 6 indicate that an increase (decrease) in taxable value per total FTE is associated with both an economically and statistically significant increase (decrease) in expenditures per special education FTEs at the local district and an economically significant decrease (increase) for ISD facilities. While these estimates may initially be somewhat surprising as ISDs receive the majority of their revenue from property taxes and local school district's funding changes little with taxable values, there are several possible explanations for these results. Consistent with Figures 3 and 4, the composition of students may change

Table 2. Special Education Expenditures Per FTE Regressions

	Local School Districts			Intermediate School Districts (ISD)		
	(1)	(2)	(3)	(4)	(5)	(6)
ln(Taxable Value Per Pupil)	0.30** (0.06)	0.17** (0.03)	0.29** (0.01)	0.59 (0.34)	0.05 (0.11)	-0.26 (0.18)
ln(Special Education IEPs)		0.66** (0.07)				
ln(Special Education FTEs)		-0.78** (0.04)			-0.84** (0.06)	
ln(General Education FTEs)		0.35** (0.05)			0.81** (0.05)	
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Local or ISD Fixed Effects	No	No	Yes	No	No	Yes
R-squared	0.15	0.57	0.52	0.03	0.92	0.98
Observations	4,205	4,163	4,205	399	399	399

Note: Dependent variables are natural logs of the listed revenue variables. Each specification contains year fixed effects. Robust standard errors, clustered at the local school district or intermediate school district level given in parentheses. ** p<0.01, * p<0.05.

with wealth where a decrease in taxable value results in an increase in services required for a typical special education student in that district. This would also likely result in a change in the number of special education FTEs. The number of special education FTEs may also be affected if taxable values influence a district's incentives to classify a student as special needs and provide the student with an IEP. Another explanation for the coefficient estimates is that decreases in taxable values result in greater fund transfers and less in-kind transfers from the ISD to the local district or a movement of special education students from local districts to ISD facilities.¹⁵ To provide further insight into these alternative explanations, we estimate similar specifications as those with district fixed effects in Table 2 using expenditures, FTEs and IEPs as dependent variables. The coefficient estimates from these specifications are included in Table 3.

The first column in Table 3 uses the district-level observations and regresses general education FTEs on taxable value to provide insight on the relationship

15. While we do not expect ARRA funding designated toward special education to significantly affect the relationship between taxable value per pupil and special education expenditures per pupil at the local districts, it may affect this relationship for Intermediate School Districts. Unfortunately, our data prevents us from identifying the amount of ARRA funding received by the different ISDs for special education programs.

Table 3. Special Education Expenditures, FTE and IEP Regressions

	Local School Districts				Intermediate School Districts (ISD)	
	Gen Ed FTEs	Spec Ed Expend.	Spec Ed FTEs	Spec Ed IEPs	Spec Ed Expend.	Spec Ed FTEs
PANEL A:						
ln(Taxable Value)	0.01 (0.01)					
ln(Taxable Value Per Pupil)		-0.40* (0.03)	-0.68** (0.04)	-0.29** (0.02)	-0.32** (0.09)	-0.06 (0.17)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Local or ISD Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.99	0.99	0.98	0.99	0.98	0.98
Observations	4,387	4,287	4,208	4,204	399	399

Note: Dependent variables are natural logs of the listed revenue variables. Robust standard errors are given in parentheses. ** p<0.01, * p<0.05.

between taxable values and taxable values per pupil. The fact that the coefficient estimate associated with taxable value is close to zero suggests that district changes in taxable value result in minimal changes in general education FTEs and, therefore, corresponding changes in taxable value per pupil.¹⁶ When the dependent variable is total special education expenditures, the estimates in Table 3 suggest that a 10% increase in taxable value per pupil is associated with approximately a 4% decrease in special education expenditures for the local district and ISDs. For local districts, this expenditure decrease is on average less than the decrease in the number of special education FTEs where a 10% increase in taxable value per pupil is associated with a 6.8% decrease. For ISD facilities, the decrease in FTEs associated with an increase in taxable values is minimal and significantly less than the decrease in total expenditures. These results suggest that decreases in taxable values do not result in local school districts moving special education students to ISD facilities. This is likely due to the “least restrictive environment” provision stipulated in the federal IDEA law. However, the increase in special education expenditures at the ISD associated with a decrease in taxable value may be the result of smaller fund transfers

16. An explanation for this coefficient estimate is that general education students are likely to leave a district prior to an anticipated decrease in taxable values. This is difficult to test based on the limited time span of our dataset. As expected, based on this coefficient estimate on taxable value, the coefficient estimates on taxable value per pupil in all Table 3 specifications are similar to the estimates obtained when the taxable value per pupil covariate is replaced by taxable value.

from the ISD to the local district. In regards to the local districts, the coefficient estimate from the special education FTE specification does suggest that the composition of students changes with an increase in the number of special needs students for districts that experienced a decrease in taxable values. If services provided to students with specific disabilities at the local district change minimally and the manner by which districts determine special education FTEs do not change differentially, the differences between the coefficient estimate in the total expenditure, FTE and IEP specifications provide further evidence of a compositional change.¹⁷ The fact that a decrease in taxable value per pupil is associated with a larger increase in special education FTEs than in IEPs may be attributable to a compositional change, a change in how local districts determine whether a student warrants an IEP and/or a change in how local districts calculate special education FTEs. In summary, the estimates in Table 3 suggest that the composition of special education students changes with changes in a district's wealth and, while this compositional change may change the amount of resources the ISD transfers to the local district, it does not appear to appreciably change whether the special education student resides at the local district or at an ISD facility.

CONCLUSION

The intricacies of Michigan's special education structure, along with restrictions imposed by federal IDEA legislation, provide a complex environment to analyze the equity of and the financial incentives provided by Michigan's special education funding. Part of the difficulty arises because both local and intermediate school districts provide services directly to special education students; with intermediate school districts often servicing the more severely disabled students. In addition, only the intermediate school districts have the authority to levy property tax millages specifically for special education purposes. This results in most intermediate school districts providing cash, as well as in-kind transfers, to the local school districts.

Using a unique panel dataset on both local and intermediate school districts, this paper focuses on the variation in special education expenditures and composition of special education students across Michigan districts. We find that local school districts with high taxable value per pupil have a smaller fraction of students requiring special education services and significantly higher expenditures per special education pupil than local districts with relatively small tax bases. These per pupil expenditure differences across districts are exacerbated

17. The IDEA funding reauthorization law may make it difficult for some districts to reduce services for a student with an IEP due to the "maintenance of effort" requirement.

by Michigan's Intermediate School District system. While Intermediate School Districts in areas with high taxable values do not accommodate a larger fraction of special education students in ISD facilities (relative to the local districts), their expenditures per pupil are much greater; indicating that these ISDs are providing more extensive services at their facilities and/or providing more in-kind transfers to their local districts.

Taking advantage of the panel nature of the data, we find that the number of special education students and total special education expenditures increased more for local districts that experienced a decrease in their tax base. Our results also indicate that these changes are likely attributable to a change in student composition and not to a movement of students from ISD facilities to local districts or from local districts to ISD facilities. This type of student movement is impeded by IDEAs stipulation that districts provide a "free and appropriate" public education in the "least restrictive environment" to all children. The fact that the change in total special education expenditures is only slightly less than the change in the number of special education FTEs may be partially attributable to the "maintenance of effort" requirement in the 1990 IDEA funding reauthorization law.

Our main empirical results have important implications in regards to research measuring the inequities in special education funding and how schools respond to the financial incentives embedded in state financing systems. First, when measuring inequity across districts, it is important to account for not only expenditures at the local district level but also special education expenditures by Regional Education Service Agencies and Intermediate School Districts. Second, when measuring the incentive embedded in state financing systems, it is important to account for composition differences in the population of students requiring special education services as well as changes in this composition. Because controlling for compositional changes is challenging with panel, district-level data, using student-level information and tracking the students over time is likely necessary when estimating these incentive effects.

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