

Are Court Orders Responsible for the “Return to the Central City”? The Consequence of School Finance Litigation

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Central cities’ populations have rebounded over the last few decades, but scholars are unsure why. I propose and offer econometric evidence for a novel hypothesis—legal changes have driven central cities’ resurgence. In particular, state fiscal aid for schools in poor cities, mandated by state courts, has made poor cities more desirable places to live by improving their schools and reducing their taxes.

I test my hypothesis by taking advantage of the natural experiment resulting from the dramatic increase in transfers to some states’ poor cities in response to court-ordered school finance equalization, using Census data on over 20,000 cities and towns. The key threats to accurate measurement are that poor places may have grown differently than rich places in the absence of school finance redistribution, and places in high-redistribution states may have grown differently than places in low-redistribution states. To address these concerns, I use a continuous version of the “difference-in-difference-in-differences” econometric technique. The results show that redistribution had a large effect on urban population growth between 1980 and 2010, explaining about one-third of the “return to the central city.” I then conduct a case study on the local finances of Connecticut, and find that the state transfers for education led to tax reductions, as well as the intended increases in education spending.

Finally, the Article suggests the importance of considering two underappreciated efficiency virtues of state aid to poor places in discussions on fiscal federalism. First, financing schools locally discourages people from living in poor cities by requiring that their residents pay for the costs of providing services to the cities’ poor. The results show that the location choices of many people are affected by this local financing. Second, the Article shows that school finance redistribution promotes the positive externalities associated with central city living. These arguments could be used in future legislative debates or litigation in support more school finance redistribution.

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I. Introduction

Over the past few decades, American central cities have rebounded. The share of the U.S. population living in cities at the center of metropolitan areas (“central cities”) reached its nadir in 1980.² Since 1980, central cities have grown so fast that they have not only maintained their share of the national population but actually increased it. In 2010, 33% of the U.S. population lived in central cities, the highest proportion since 1950.³ A variety of explanations have been offered for this “return to the central city,”⁴ including drops in crime, increases in the value of agglomeration, and changing preferences and demographics.⁵ I offer a new explanation for this resurgence and provide econometric evidence for its importance: a change in law has favored central cities. In particular, state supreme courts requiring school finance redistribution to poor central cities have unintentionally made them more desirable places to live.

To test this hypothesis, I study the “natural experiment” in local government financing resulting from court-ordered school finance redistribution of vast amounts of resources from rich

² The country’s 554 central cities were defined by the Office of Management and Budget in 1999 and “generally consist of one or more of the largest population and employment centers of a metropolitan area.” *Central Cities of Metropolitan Areas*, U.S. CENSUS BUREAU (Jan. 28, 2002), <http://www.census.gov/population/estimates/metro-city/cency.txt>. For example, the “central cities” of the San Francisco-Oakland-Hayward Metropolitan Statistical Area are San Francisco, Oakland, Berkeley, and Alameda.

³ Mark Mather et al., *Reports on America: First Results from the 2010 Census*, POPULATION REFERENCE BUREAU 15 (July 2011), <http://www.prb.org/pdf11/reports-on-america-2010-census.pdf>.

Note though that Joel Kotkin holds the contrary view that there has been no return to the central city, partly because he cuts Census data differently than the Census itself does or is talking about employment, not residential population. See Joel Kotkin, *America’s Fastest-Growing Counties: The ‘Burbs Are Back*, FORBES (Sept. 26, 2013), <http://www.forbes.com/sites/joelkotkin/2013/09/26/americas-fastest-growing-counties-the-burbs-are-back/> (noting that most of the fastest-growing counties are in suburban or exurban areas); Joel Kotkin, *The Triumph of Suburbia: Despite Downtown Hype, Americans Choose Sprawl*, THE DAILY BEAST (Apr. 29, 2013), <http://www.thedailybeast.com/articles/2013/04/29/the-triumph-of-suburbia-despite-downtown-hype-americans-choose-sprawl.html> (noting that, “in 91 of America’s 100 biggest metro areas, the share of jobs located within three miles of downtown *declined* over the 2000s”).

⁴ See e.g., LEIGH GALLAGHER, *THE END OF THE SUBURBS: WHERE THE AMERICAN DREAM IS MOVING* (2013) (arguing that there has recently been a renaissance in American cities); *Return to the City*, PLANETIZEN.COM, <http://www.planetizen.com/node/36734> (last visited Aug. 15, 2013) (containing a series of articles on the “return to the city”).

⁵ See *infra* notes 60-75 and accompanying text.

suburbs to poorer cities.⁶ Since the early 1970s, responding to state supreme court orders, legislatures have mandated vastly increased state spending in poor school districts to reduce large inequalities in spending across poor and rich locations.⁷ For example, New Haven, CT, in 1999 received \$1,140 per *resident* (and \$7,967 per student) from the state government for schools, while its rich suburb Orange received a comparatively minuscule \$64 per resident.⁸ This is a stark change from 1970, when New Haven received \$193 per resident (in inflation-adjusted 1999 dollars) and Orange received \$304 per resident. In aggregate, vast sums of money are at stake; by 2000, state governments spent \$200 billion on elementary and secondary education; that was about \$2,000 per household, or 4.5% of median household income.⁹

My hypothesis is that these large sums of money for schools have caused at least one of two outcomes in poor places: improved school services or reduced tax rates due to the fungibility of the transfers. As a result, more residents have been drawn to live in poor cities.¹⁰ In other words, an unintended consequence of school finance equalization has been making poor places

⁶ The literature on school finance litigation is vast. *See e.g.*, Carlee Escue, William E. Thro & R. Craig Wood, *Some Perspectives on Recent School Finance Litigation*, 268 EDUC. L. REP. 601 (2011) (summarizing recent developments in school finance litigation); Michael Heise, *State Constitutions, School Finance Litigation, and the "Third Wave": From Equity to Adequacy*, 68 TEMP. L. REV. 1151 (1995) (overviewing school finance litigation through the mid-1990s); Kevin R. McMillan, *The Turing Tide: The Emerging Fourth Wave of School Finance Reform Litigation and the Courts' Lingering Institutional Concerns*, 58 OHIO ST. L.J. 1867 (1997); Douglas S. Reed, *Twenty-Five Years after Rodriguez: School Finance Litigation and the Impact of the New Judicial Federalism*, 32 L. & SOC'Y REV. 175 (1998); William E. Thro, *To Render Them Safe: The Analysis of State Constitutional Provisions in Public School Finance Reform Litigation*, 75 VA. L. REV. 1639 (1989); William E. Thro, *The Third Wave: The Impact of the Montana, Kentucky, and Texas Decisions on the Future of Public School Finance Reform Litigation*, 19 J.L. & EDUC. 219 (1990).

⁷ *See, e.g.*, *Serrano v. Priest*, 487 P.2d 1241 (Cal. 1971) (finding that the Equal Protection Clause of the U.S. and California constitutions guarantee more equal funding across school districts, leading to more centralized funding). For a list of state court decisions, see *School Finance Litigation, By Year, Case, and Status, By State: 1970 - 2009*, NATIONAL CENTER FOR EDUCATION STATISTICS, <http://nces.ed.gov/edfin/litigation.asp> (last visited Dec. 5, 2013). For an overview from the economics perspective, see David Card & Abigail Payne, *School Finance Reform, the Distribution of School Spending, and the Distribution of Student Test Scores*, 83 J. PUB. ECON. 49 (2002).

⁸ These statistics are my calculations of data from *Annual Survey of Governments*, NATIONAL BUREAU OF ECONOMIC RESEARCH, http://data.nber.org/asg/ASG_release/ (last visited Sept. 28, 2013) and *Grant Calculations, Reports and Analyses*, CONNECTICUT STATE DEPARTMENT OF EDUCATION, <http://www.sde.ct.gov/sde/cwp/view.asp?a=2635&q=320574> (last visited Dec. 6, 2014).

⁹ *Id.*

¹⁰ A third outcome, improved non-school services, is also possible.

more desirable places to live and thereby increasing their populations. And since central cities tend to be poor places, with much higher poverty rates (19%) than suburbs (7.5%), making poor places more desirable makes cities more desirable on average.¹¹

I take two approaches in the Article. First, using Census data for all cities, towns, and other Census-designated places, which I collectively call “places,” I study whether places that have received greater amounts of school redistribution have had a higher population growth rate.¹² To do so, I address two biases that confound accurate measurement of the effect of financial transfers on population growth. First, poor places’ populations tend to grow more slowly, since such places are less productive and therefore attract fewer residents.¹³ They also receive more school finance funds, so that naïve analysis may show that the receipt of school finance funds *decreases* population growth. To address this “poor place bias,” I control flexibly for places’ initial median income levels. Second, states may have grown at differential rates even in the absence of school finance redistribution. For example, Sun Belt states grew rapidly from 1980 to 2010, and some Sun Belt states also redistributed little, so that naïve analysis may again suggest that the receipt of school finance funds decreases growth. To address this “state bias,” I control for each state’s average growth rate. With these controls, I effectively implement a continuous version of the “difference-in-difference-in-differences” econometric approach, comparing population levels (i) in poor versus rich places, (ii) in states with high versus low amounts of redistribution, (iii) before versus after the redistribution. I effectively measure population growth differences between places with the *same* initial income level, but differing

¹¹ See Edward Glaeser, Matthew Kahn & Jordan Rappaport, *Why Do the Poor Live in Cities?*, 63 J. URB. ECON. 1, 1 (2008) (finding that the main reason for high poverty in cities is the presence of public transportation). Of course, there are many other potential explanations of the concentration of the poor in cities, including intentional siting of public housing, an older housing stock, and exclusionary policies in suburbs.

¹² An example of a “census-designated place” other than a city or a town is an unincorporated area recognized by the Census.

¹³ Of course, there are other potential causal mechanisms, and the bias could go the other way. However, the analysis below confirms that the bias goes in this direction.

amounts of redistribution because they are in different states. These results suggest that school finance redistribution has played a large role in increasing the growth rates of poor cities in states with large amounts of redistribution. In particular, the results imply that school finance redistribution explains about one-third of the return to the central city between 1980 and 2010.

Second, to better understand the mechanisms involved, I study local finances in Connecticut.¹⁴ I first show how there has, indeed, been a revolution in local finances for the poorest places in Connecticut, with the share of local finances funded by the state nearly doubling to half of all revenue between 1972 and 1999, while the share of revenue from the state has declined substantially for wealthy communities. I then trace how the state transfers are used, documenting an unintended consequence of school finance litigation: a substantial amount is used to reduce taxes, not to improve the intended service, thereby spreading the benefits of the revenue across the locality.

In the second part of the Article, I turn to the legal implications of these econometric findings. First, the results provide a partial measure of the degree to which the American system of local governance falls short of efficiently allocating households to the places where they wish to live. In particular, the Article provides the first test of the importance of a key assumption of the Tiebout model, the dominant model for local government. Charles Tiebout argued that local financing of services leads to efficient production of local public goods as “consumer-voters” move to the community that provides them the bundle of services and amenities that they desire.¹⁵ However, the model assumes that there is no local redistribution. Indeed, in the Tiebout

¹⁴ For a review of the Connecticut experience, see Lauren A. Wetzler, *Buying Equality: How School Finance Reform and Desegregation Came to Compete in Connecticut*, 22 YALE L. & POL’Y REV. 48 (2004). See also Michael Heise, *State Constitutional Litigation, Educational Finance, and Legal Impact: An Empirical Analysis*, 63 U. CIN. L. REV. 1735 (1994) (finding unclear evidence of increases in spending in Connecticut and Wyoming after school finance decisions).

¹⁵ Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416 (1956).

model, any attempt at redistribution from rich to poor residents of a locality would be self-defeating, since rich residents would immediately and costlessly move away to a competing jurisdiction with equivalent services and no redistribution.¹⁶ Yet, redistribution in education finance is an inherent feature of American local government law resulting from state constitutional requirements for the provision of education and for uniform taxation of property, so that local governments must provide education to the poor but cannot tax them much to pay for it.¹⁷ In any jurisdiction with poor individuals who can afford to pay little to educate their children, the well-off must pay part of the society's fixed obligation to educate the poor. This "poverty fine" discourages the well-off from living in the same jurisdiction as the poor, since it is bundled into the cost of living in jurisdictions with high poverty rates and can result in middle-class people living in large cities paying high taxes in exchange for receiving low-quality services.¹⁸ Thus, the legal implications ensue from a second interpretation of the econometric results: they measure how large the behavioral response is when financing for local education is decoupled from the poverty rate of the city's residents, which is precisely what school finance redistribution does. The result that the behavioral response to leveling the local finance playing field is large suggests that the drag on effective Tiebout sorting may be substantial.

Adding to the mix of costs and benefits of school finance redistribution, this large behavioral response in location choice to school financing then suggests two reasons that school finance redistribution may be valuable on grounds of efficiency and not only equity, as typically argued. Of course, these reasons are not dispositive and should be considered alongside other

¹⁶ HARVEY ROSEN, PUBLIC FINANCE 530-35 (3d ed. 1991).

¹⁷ Robert Ellickson, *Suburban Growth Controls: An Economic and Legal Analysis*, 86 YALE L.J. 385, 452 (1977).

¹⁸ Joseph Gyourko, *Place-Based Aid Versus People-Based Aid and the Role of an Urban Audit in a New Urban Strategy*, 3 CITYSCAPE 305 (1998); Janet R. Pack, *Poverty and Urban Public Expenditures*, 35 URB. STUD. 1995 (1998). For a review of the link between property taxes and school funding, see DAPHNE A. KENYON, THE PROPERTY TAX – SCHOOL FUNDING DILEMMA (2007).

concerns like maintaining local control and improving the educational outcomes of poor children, to name just two other potential goals.¹⁹ First, school finance redistribution paying for the fixed costs of poverty allows Tiebout choice to play its role in letting individuals choose to live where their welfare is maximized.²⁰ Thus, school finance redistribution may increase private efficiency. Second, many argue that the “sprawl”²¹ avoided by city living causes a host of problems, including long highly-congested commutes, increased greenhouse gas consumption, economic segregation, and reduced economic productivity due to a loss of agglomeration—so school finance redistribution may increase *social* efficiency as well.²² The results fit within my larger project on fiscal federalism²³ to develop evidence helpful for understanding the level of government that should raise taxes to fund local services. In particular, the results suggest the significant consequences for residents’ quality of life of funding one type of expense at the local level: the provision of services such as education to the poor.²⁴ As a result, the Article offers

¹⁹ See *infra* notes 35-36 & 236-237 and accompanying text.

²⁰ For a discussion of the distortion to location choice arising from unequalized fiscal capacities between states, see Kirk Stark, *Rich States, Poor States: Assessing the Design and Effect of a U.S. Fiscal Equalization Regime*, 63 TAX L. REV. 957, 962-65 (2009). Stark attributes the original argument about this inefficiency to Nobel-Prize-winning economist James Buchanan. See James M. Buchanan, *Federalism and Fiscal Equity*, 40 AM. ECON. REV. 583, 586-81 (1950). This phenomenon has also been recognized in school finance litigation. See *Edgewood Independent School District v. Kirby*, 777 S.W.2d 391, 393 (Tex. 1989).

²¹ I do not mean to use “sprawl” pejoratively; rather, I only wish to connote the phenomenon of people living outside the central cities of metropolitan areas.

²² See *infra* notes 182-191 and accompanying text.

²³ Some may not consider an Article largely on the relations between local and state governments a proper subject of “federalism,” which some define as the relationship between states and the federal government. However, others have called for a federalism that considers other levels of government. See, e.g., Heather Gerken, *Foreword: Federalism All the Way Down*, 124 HARV. L. REV. 4 (2010) (arguing for this position); Richard Briffault, “*What About the ‘Ism’?*” *Normative and Formal Concerns in Contemporary Federalism*, 47 VAND. L. REV. 1303, 1304-05, 1311-13 & 1315 n.43 (1994) (for a description of others who argued for this position).

²⁴ This question of fiscal federalism has been litigated in law journals and courtrooms for decades. For the academic debate, see, e.g., Robert P. Inman & Daniel L. Rubinfeld, *The Judicial Pursuit of Local Fiscal Equity*, 92 HARV. L. REV. 1662 (1979) (offering a skeptical view of the ability of courts to achieve greater equity in education funding without more centralized funding); Daniel Shaviro, *An Economic and Political Look at Federalism in Taxation*, 90 MICH. L. REV. 895 (1992) (arguing that neutrality of taxes across locations generally often suggest greater centralization in taxation); and David A. Super, *Rethinking Fiscal Federalism*, 118 HARV. L. REV. 2544 (2005) (arguing, among other things, that states should revise their fiscal constitutions to take account of recessions). For the debate in courtrooms, see, e.g., *San Antonio Independent School District v. Rodriguez*, 411 U.S. 1 (1973) (finding that the poor do not constitute a suspect class that would trigger the strict scrutiny test under the Equal Protection Clause of the U.S. Constitution and that local control of schools constitutes a rational reason to maintain

reasons that state and federal aid to poor localities might be not only equitable but also efficient—or at least more efficient than previously thought.²⁵ These results could be used in future legislative debates or litigation to support more school finance redistribution, since they suggest reasons that state funding for educating the poor promotes private and social efficiency.

In Section II, I describe the history of school finance litigation in the United States. In Section III, I develop the theory explaining why population would be affected by state transfers. Section IV describes the empirical strategy, data, and results of the national analysis of the effect of state transfers on population growth. Section V describes the empirical strategy, data, and results of the analysis of Connecticut local finances. After Section VI's discussion of the academic debate between Tieboutian supporters of decentralization and their critics, Section VII describes potential legal implications, especially relating to efficiency reasons for state and federal funding for the costs of providing services to the poor. Section VIII concludes.

II. School Finance Reform in the United States

The American political system has generated a variety of responses to the dilemma of what level of government should fund one of the most important functions of local governments—the provision of public education. These struggles serve a dual purpose in this Article. First, they generate the statistical variation that I study empirically; the school finance redistribution they produced are the basis for my novel explanation of the “return to the city.” Second, as I will argue in Section VII, the empirical response of households to the various state approaches offers insight into how school finance should be structured, by suggesting the extent

local financing, despite the great disparities in taxable property across jurisdictions); *Serrano v. Priest*, 487 P.2d 1241 (Cal. 1971).

²⁵ This analysis builds on an earlier analysis concluding that, among the tools to address fiscal inequalities across places, income redistribution or central financing are likely most effective. Inman & Rubinfeld, *supra* note 24.

to which tying the payment for the fixed costs of poverty to location affects residential location choice.

Schools have long been primarily the responsibility of local governments, though some state and federal involvement is longstanding.²⁶ For example, the federal Land Ordinance Act of 1795 and the Northwest Ordinances of 1787 set aside funds for school construction.²⁷ Federal involvement expanded substantially as part of President Lyndon Johnson’s “War on Poverty” with the passage in 1965 of the Elementary and Secondary Education Act, which provided funding to schools with disadvantaged students.²⁸ As a result, the federal share of education spending increased from less than 3 percent in 1958 to about 10 percent in 1968.²⁹ In most states prior to the 1970s, the vast majority of funding for schools came from property taxes raised at the local level.³⁰

The dominance of local governments in local school finance began to change in the beginning of the 1970s prompted by litigation in the courts.³¹ In the subsequent decades, most state supreme courts began mandating some kind of school finance equalization. Legal scholars have divided this litigation from the 1970s through today into three phases.³² The first phase included arguments based on the federal Equal Protection Clause. In the path breaking 1971

²⁶ PATRICK J. MCGUINN, *NO CHILD LEFT BEHIND AND THE TRANSFORMATION OF FEDERAL EDUCATION POLICY, 1965-2005* 25 (2006).

²⁷ *Id.* at 26.

²⁸ Pub. L. No. 89-10, 79 Stat. 27 (codified as amended in 20 U.S.C. § 70).

²⁹ MCGUINN, *supra* note 26, at 33.

³⁰ C. Kirabo Jackson, Rucker Johnson & Claudia Persico, *The Effect of School Finance Reforms on the Distribution of Spending, Academic Achievement, and Adult Outcomes* 1 (Nat’l Bureau of Econ. Research, Working Paper No. 20118, 2014).

³¹ Jackson et al., *supra* note 30.

³² Heise, *supra* note 6.

case *Serrano v. Priest*,³³ the California Supreme Court held that the state's local financing of schools violated the California and U.S. Constitutions' equal protection clauses.³⁴

The U.S. Supreme Court could have chosen to follow *Serrano* and require more equalization of funding across school districts as a federal Constitutional matter, but in the 1973 case *San Antonio Independent School District v. Rodriguez* it opted not to do that.³⁵ Education reformers had hoped that the Court would rule in their favor given the favorable language in cases like *Brown v. Board of Education*, which declared that the "opportunity [of an education] . . . is a right which must be made available to all on equal terms."³⁶ Over vigorous dissents arguing that the "fundamental rights" to education seemingly guaranteed by previous decisions were not instantiated by the Court, the majority found that the poor do not constitute a suspect class that would trigger the strict scrutiny test under the Equal Protection clause of the U.S. Constitution. Instead, echoing the reasoning of Tiebout, the Court found that local control of schools constitutes a rational reason to maintain local financing, despite the great disparities in taxable property across jurisdictions.

³³ 487 P.2d 1241 (Cal. 1971).

³⁴ After the state legislature acted to equalize education funding, state voters passed Proposition 13, which limited the local property tax to 1% of property value, among other changes including those affecting how property was valued. CAL. CONST. art. 13A. Some argue that *Serrano* caused Proposition 13, by reducing the amount that a locality benefited from paying its local taxes. See William Fischel, *How Serrano Caused Proposition 13*, 12 J.L. & POL. 607 (1996). But see Kirk Stark & Jonathan Zasloff, *Tiebout and Tax Revolts: Did Serrano Really Cause Proposition 13?*, 50 UCLA L. REV. 801 (2003) (challenging the claim of Fischel by offering a different empirical assessment); William Fischel, *Did John Serrano Vote for Proposition 13? A Reply to Stark and Zasloff's "Tiebout and Tax Revolts: Did Serrano Really Cause Proposition 13?"*, 51 UCLA L. REV. 887 (2004) (defending the original proposition that *Serrano* caused Proposition 13). For an excellent overview of Proposition 13, see ARTHUR O'SULLIVAN, TERRI A. SEXTON & STEVEN M. SHEFFRIN, *PROPERTY TAXES AND TAX REVOLTS: THE LEGACY OF PROPOSITION 13* (2007). For a doctrinal critique of *Serrano*, see Stephen R. Goldstein, *Interdistrict Inequalities in School Financing: A Critical Analysis of Serrano v. Priest and Its Progeny*, 120 PENN. L. REV. 504 (1972). As a result, the endogenous political response to school finance equalization has served largely to limit school funding. I combine school finance reforms across the country in my empirical analysis, both those like California and those unlike it. I also focus on the school finance reform of Connecticut, which does not exhibit the problems that California's has; in particular, if towns in Connecticut choose to spend more on education, they keep the full amount of increase in tax revenue for their own locality.

³⁵ 411 U.S. 1 (1973).

³⁶ 347 U.S. 483, 484 (1954).

That decision left to the states the issue of school finance equalization, thereby generating most of the variation in funding between states that I exploit in this Article. The cases based only on state constitutional claims constitute the next two waves. In the second wave, “equity” theory cases were argued based on equal protection clauses in state constitutions. These cases tended to focus on spending disparities and input measures like per-pupil spending.³⁷ The first post-*Rodriguez* state school finance case was *Robinson v. Cahill*³⁸ in New Jersey. Partly because of doctrinal difficulties in defining what “equal” meant, some scholars argue that these cases arguably have had limited success.³⁹ Typically, cases required “substantial” equality rather than full equality, perhaps bowing to the reality that equality would be very difficult to achieve.⁴⁰

In the third wave, “adequacy” cases were argued based on the fact that all state constitutions require the state to provide some level of education for children.⁴¹ These decisions challenge not the spending itself, but rather the quality of the education—for not meeting an adequate threshold of quality required by the constitution.⁴² For example, in *Rose v. Council for Better Education*,⁴³ the Kentucky Supreme Court decided what was arguably the first of the adequacy cases,⁴⁴ declaring that, on the basis of “adequate national standards,” even Kentucky’s

³⁷ Heise, *supra* note 6, at 1153. After 1983, the cases were aided by the publication of *A Nation at Risk: The Imperative for Educational Reform*, which helped alert Americans to the need for education reform. THE NAT’L COMM’N ON EXCELLENCE IN EDUC., *A NATION AT RISK: THE IMPERATIVE FOR EDUCATIONAL REFORM* (1983) (criticizing the quality of the American educational system and offering recommendations for improvement).

³⁸ 303 A.2d 273 (N.J. 1973), *cert. denied*, 414 U.S. 976 (1973).

³⁹ Heise, *supra* note 6, at 1162. *See also* JAMES E. RYAN, *FIVE MILES AWAY, A WORLD APART* 157 (2010) (arguing that school finance litigation has had limited impacts on outcomes overall). *But see* Jackson et al., *supra* note 30 (showing improvements in educational outcomes and increases in earnings as a result of increases in education spending).

⁴⁰ RYAN, *supra* note 39, at 150.

⁴¹ RICHARD BRIFFAULT & LAURIE REYNOLDS, *CASES AND MATERIALS ON STATE AND LOCAL GOVERNMENT LAW* 521 (7th ed. 2009). *See also* Peter Enrich, *Leaving Equality Behind: New Directions in School Finance Reform*, 48 VAND. L. REV. 100 (1995) (for an argument in favor of shifting to an adequacy-based approach instead of an equity-based approach, which Enrich argues had proven inadequate).

⁴² Some question the strict dichotomy between equity and adequacy cases. *See* RYAN, *supra* note 39, at 150-51 (arguing that equity cases have adequacy elements and vice versa).

⁴³ 790 S.W.2d 186 (Ky. 1989).

⁴⁴ Heise, *supra* note 6, at 1163.

relatively rich school districts required more funding.⁴⁵ This litigation continues to today, with the Washington Supreme Court recently finding the legislature of the state in contempt for not funding schools adequately as required in previous litigation.⁴⁶

As suggested by the Washington state decision, school finance reform has involved a complicated interplay between the courts, seeking to interpret state constitutions, and legislatures, seeking to stave off unfavorable judicial rulings and implement new judicial mandates. For example, by 2009, the New Jersey Court had issued 23 opinions⁴⁷ since it first invalidated the state's school finance system in 1973 in *Robinson v. Cahill*.⁴⁸ Similarly, Texas's scheme has recently again been declared unconstitutional.⁴⁹ As noted by James Ryan, "in no state has one trip to the courthouse been enough to secure long-term relief."⁵⁰

These school finance schemes have taken various forms.⁵¹ Although there are a variety of schemes for categorizing the reforms, a recent paper by the economists Kirabo Jackson, Rucker Johnson, and Claudia Persico divide school finance schemes into five non-mutually-exclusive categories.⁵² First, foundation plans establish a certain amount of funding, determine how much localities must provide based on local income and wealth, and distribute the

⁴⁵ 790 S.W.2d at 198.

⁴⁶ *McCleary v. State*, No. 84362-7, at 4-5 (Wash. Sept. 11, 2014) (order holding state legislature in contempt). See also Joseph O'Sullivan, *Contempt Ruling Ups Ante in Fight to Fund Public Schools*, SEATTLE TIMES, Sept. 11, 2014, http://seattletimes.com/html/localnews/2024518538_mcclearyorderxml.html.

⁴⁷ BRIFFAULT & REYNOLDS, *supra* note 41, at 515.

⁴⁸ 303 A.2d 273 (N.J. 1973).

⁴⁹ *Texas Taxpayer & Student Fairness Coalition v. Williams*, No. D-1-GN-11-003130 (200th Dist. Ct., Travis County, Tex., Aug. 28, 2014). See also Terrence Stutz, *Texas' School Finance System Again Overturned in Court*, DALLAS MORNING NEWS, Aug. 28, 2014, <http://www.dallasnews.com/news/education/headlines/20140828-texas-school-finance-system-again-overturned-in-court.ece>.

⁵⁰ RYAN, *supra* note 66, at 175.

⁵¹ Several potential avenues were not adopted by courts. Despite early expectations that school finance litigation would lead to a prohibition on using the local property tax for funding public schools, no court has required that remedy. See Linda Greenhouse, *Enthusiasm Is Waning for Proposals to Reform Property Taxes*, N.Y. TIMES, Dec. 19, 1972, at A1 (describing school finance litigation before the Supreme Court as raising the question whether the property tax is a constitutional source of income for public schools); RYAN, *supra* note 39, at 174. As well, "no court has required legislatures to . . . change boundary lines so that districts have roughly equal property wealth." *Id.* at 174.

⁵² See Jackson et al., *supra* note 30.

difference as state aid. Second, flat grants provide a similar per student grant to all school districts. Third, equalization plans provide more aid to districts with lower incomes (categorical aid) or property values (power equalization plans). Fourth are “reward for effort plans,” which provide more aid when districts enact higher tax rates, typically with a greater reward for poorer districts. Finally, some states imposed a spending limit on how much a district could spend, potentially recapturing amounts in excess of the spending limit.⁵³

This Article exploits this variation in what (if anything) courts have required and how the legislature has responded. Due to differences in state constitutions, the composition of state supreme courts at particular points in time, the composition of legislatures at particular points of time, the quality of the litigation, the favorability of facts in the case, whether the judges are elected or appointed, the racial composition of plaintiffs, and a host of other contingencies, the United States has great heterogeneity in its school finance systems across the states.⁵⁴ I use these differential changes in local financing structure as a natural experiment to understand how much school finance redistribution led to the return to central cities.

III. Theory: How Transfers Should Affect Population

In this section, I develop a simple model, isolating what I take to be a few essential variables to explain that where housing development will occur; the model will help to guide the understanding of the empirical results. Consider a typical poor city, which has a disproportionately large number of poor people, perhaps because it provides access to public

⁵³ Texas, Kansas, and Vermont use such plans, and they have been very controversial. *See* RYAN, *supra* note 39, at 154-55.

⁵⁴ RYAN, *supra* note 39, at 146 & n.4.

transit or for other reasons.⁵⁵ Suppose that, in time period 1, the poor city receives little funding from the state government. Its inhabitants likely will receive relatively bad services yet be subject to a high property tax rate because even a high tax rate on poor residents will yield relatively little tax revenue. As a result, a potential resident who is well-off will be able to buy a similar house for a lower price in the central city than in the suburbs, but will also face higher tax rates and assessments. The higher taxes and lower service levels “capitalize” into land values. That is, since high taxes and low service levels decrease demand to live in a place, the value of land in those places will go down. Capitalization further drives land values down and property tax rates up. Since any new development would face that high property tax assessment, in addition to the poor services, housing demand is relatively low. Figure 1 graphically represents the poor central city.⁵⁶ The housing market in the city at time period 1 is described by the *Housing demand*¹ and *Housing supply* lines, resulting in home price P^1 and quantity of homes Q^1 .

But now suppose that the state starts redistributing money to poor cities, improving services and lowering tax rates. Unless the housing supply is perfectly inelastic or perfectly elastic, this change will do two things.⁵⁷ First, it will increase property values for the existing housing supply, since the city will be a more desirable place to live. Second, developers will build more homes on undeveloped land (and, in a more complicated model, people will renovate old homes), allowing more people to move to the city, attracted by improved services or reduced tax rates. These changes are represented by the outward shift in housing demand to *Housing demand*², which results in an increase in home price from P^1 to P^2 and increase in the quantity of

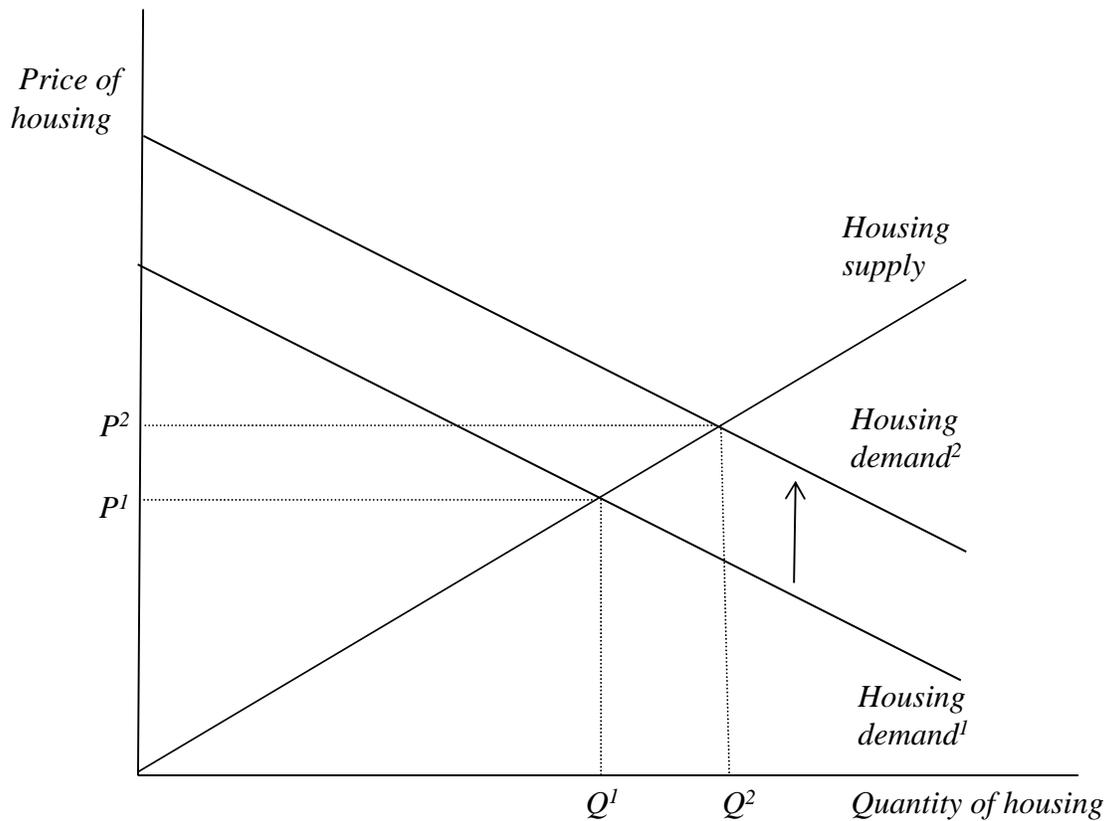
⁵⁵ Glaeser et al., *supra* note 11.

⁵⁶ The housing quantity can be thought of consisting of “housing unit-equivalents,” which converts houses of different sizes into a uniform measure. See JEROME ROTHENBERG, GEORGE C. GALSTER, RICHARD V. BUTLER & JOHN R. PITKIN, *THE MAZE OF URBAN HOUSING MARKETS: THEORY, EVIDENCE, AND POLICY* (1991).

⁵⁷ This analysis assumes that housing demand is downward-sloping, as in the figure.

homes to Q^2 , with $Q^2 - Q^1$ new homes built. The increase in home price from P^1 to P^2 due to the increased desirability of living in the place represents “capitalization.”

Figure 1: Effect of a Shift in Housing Demand from Increased Transfers



The role of capitalization is important to emphasize. In particular, the easier it is to build new housing, the flatter the housing supply line is, and the less capitalization there is into housing prices. One can see this by imagining that the housing supply line is perfectly horizontal (i.e., housing supply is “infinitely elastic,” or infinitely responsive to changes in price). Then, P^2 will be the same as P^1 , and there will be no capitalization at all. In contrast, if the housing supply line is perfectly vertical (i.e., housing supply is “infinitely inelastic”), there will be no change in quantity, and all of the change will be in price—all the benefit of the increased state

funding will be capitalized into housing prices. A larger housing quantity response goes along with a smaller capitalization response, all else equal.

Housing supply elasticities depend on both geographic and regulatory constraints. A town will have a perfectly inelastic housing supply if regulators permit no new housing, and housing supply becomes more elastic as regulators become more permissive. Likewise, housing supply will tend to be more inelastic in geographical areas where there is less easily-developed land, since developers must either build in more costly locations or build taller buildings on existing sites, both of which increase costs. A city with completely permissive regulators and an infinite supply of identical unbuilt sites will have a perfectly elastic housing supply; one may think of this as an extreme version of Houston. Albert Saiz recently estimated the housing supply elasticity across U.S. metropolitan areas and found that it ranged from a relatively (but not perfectly) inelastic 0.60 in Miami to a very elastic 5.45 in Wichita, Kansas.⁵⁸ The supply elasticity of 0.60 for Miami means that a price increase of 1% is related to a housing quantity increase of 0.60%; a housing supply of 0 is perfectly inelastic. Hence, even with the most inelastic metropolitan area supply, an increase in housing prices leads to a substantial quantity response—in other words, the housing supply is fairly elastic. This Article studies the change in housing quantity, which should respond to redistribution as long as the housing supply is not perfectly inelastic.⁵⁹

Suppose that someone who works downtown is moving and is deciding between two pieces of undeveloped land, identical except that they are on different sides of a municipal boundary. On one side is a poor city with high property tax rates and bad schools and on the other side is a rich suburb with low property tax rates and good schools. The suburban land will

⁵⁸ Albert Saiz, *The Geographic Determinants of Housing Supply*, 125 Q. J. ECON. 1253 (2010).

⁵⁹ Saiz estimates the housing supply elasticity in the New Haven-Bridgeport-Stamford-Danbury-Waterbury metropolitan statistical area (MSA) as 0.98 and in the Hartford MSA as 1.52. *Id.* at 1283.

cost more, since the value of good schools and lower taxes will be capitalized into it. Assuming the person values the good schools, he will probably build on the suburban side despite the higher land prices, since he values the schools and he will face lower property taxes there. The question this Article asks is to what extent improving services and lowering taxes in the poor city encourages future builders to put their houses on the city side of the border. Of course, there is little distortion to location choice when deciding the relatively narrow issue of which side of a border to live; the question is how responsive people's decisions are in aggregate. If the effects measured here are small, it will appear that people are willing to make only small changes in response to fiscal infusions into cities—they are willing to jump only over the border. If the effects are large, then people who would have lived far away would move into the city, meaning that their location choice was significantly distorted by school finance; for example, after the move, they could benefit from a much shorter commute.

IV. National Empirical Analysis: Court Orders and the “Return to the Central City”

A. Explanations of the Return to the Central City

This is the first empirical study to test whether reducing the tax burden and improving the services of poor inner cities through state transfers has helped lead to a “return to the central city.”⁶⁰ Researchers have suggested other explanations of this phenomenon. Increased immigration may have contributed to the return to the city, since immigrants live

⁶⁰ For data on the phenomenon, see Mather et al., *supra* note 3. For popular media reaction to the phenomenon, see *Return to the City*, *supra* note 4. Note that this trend was less visible when looking only through the 2000 Census. See Edward Glaeser & Jesse Shapiro, *Urban Growth in the 1990s: Is City Living Back?*, 43 J. REGIONAL SCI. 139 (2003).

disproportionately in cities.⁶¹ Likewise, delayed childbearing has changed the demographic structure to one with a larger fraction of childless young adults, who are more likely to live in cities than are young adults with children, possibly because they need less space.⁶² Smaller families may have a similar effect.⁶³ Other proposed explanations include rising fuel prices, which encourages city living because it is less energy-intensive, and a shift in preferences in younger generations toward city living.⁶⁴ Still others have suggested that reductions in crime, which was disproportionately a problem in cities, and increased demand for social interactions, which are denser in cities, partly caused the shift.⁶⁵ I offer a novel additional impetus: state courts ordered that, in effect, state legislatures increase subsidies for city living in the form of school finance redistribution.⁶⁶

This Article also asks whether the system of local fiscal federalism in the United States causes urban “sprawl,” the increase in area and decrease of population density of metropolitan areas. Americans in metropolitan areas overwhelmingly used to live in central cities. In 1910, 75% of people in metropolitan areas lived in central cities; by 1980, this ratio had decreased to 40%.⁶⁷ The leading explanation for sprawl combines technological and economic causes: cars have allowed people to move to suburbs, where they can enjoy large homes and large lots.⁶⁸

⁶¹ Leah Boustan & Allison Shertzer, *Population Trends as a Counterweight to Central City Decline*, 50 DEMOGRAPHY 125 (2013) (studying the choice between living in the suburbs and city between 1950 and 2000).

⁶² *Id.*

⁶³ See GALLAGHER, *supra* note 4.

⁶⁴ *Id.*

⁶⁵ Julie B. Cullen & Steven D. Levitt, *Crime, Urban Flight, and the Consequences for Cities*, 81 REV. ECON. & STAT. 159 (1999) (on the link between the decline of cities and crime); Edward Glaeser & Joshua Gottlieb, *Urban Resurgence and the Consumer City*, 43 URB. STUD. 1275 (2006).

⁶⁶ Others have studied the effect of school finance reform on spending and educational outcomes, but not on the return to the city. See Jackson et al., *supra* note 30.

⁶⁷ *Demographic Trends in the 20th Century*, U.S. CENSUS BUREAU (Nov. 2002), <http://www.census.gov/prod/2002pubs/censr-4.pdf>.

⁶⁸ See Edward L. Glaeser & Matthew E. Kahn, *Sprawl and Urban Growth*, in 4 HANDBOOK OF REGIONAL & URBAN ECONOMICS 2481, 2490-2504 (J. Vernon Henderson & Jacques-Francois Thisse eds., 2004). Robert Margo adds that rising incomes have increased the demand for land, increasing sprawl. Robert Margo, *Explaining the Postwar Suburbanization of the Population in the United States: The Role of Income*, 31 J. URB. ECON. 301 (1992).

This explanation supposes that people want to live in the suburbs—and that the car has enabled them to do so.

Public policies may also have encouraged suburban sprawl. For example, Robert Ellickson argues that suburban growth controls are a primary culprit.⁶⁹ William Fischel agrees, adding mortgage interest subsidies as a secondary explanation.⁷⁰ Others suggest that the development of the interstate highway system,⁷¹ crime,⁷² and flight from racial minorities or blight⁷³ have promoted sprawl. I test whether sprawl has been partly driven by the design of local taxes and public services—and mitigated by the revolution in local financing.⁷⁴

This Article also contributes to research on why there has been so little new development in desirable city locations. Edward Glaeser and others argue that zoning and excessive regulation have hindered development.⁷⁵ David Schleicher argues that the multiple veto points allow determined opponents, who would bear concentrated losses, to stop urban development projects.⁷⁶ Others argue that low school quality and issues such as crime are the cause.⁷⁷ I

⁶⁹ Robert Ellickson, *Monitoring the Mayor: Will the New Information Technologies Make Local Officials More Responsible?*, 32 URB. LAW. 391 (2000). See also Ellickson, *supra* note 17 (for the seminal analysis of suburban land use controls).

⁷⁰ WILLIAM A. FISCHEL, THE HOMEVOTER HYPOTHESIS 229-232 (2001). See also Richard Voith, *Does the Federal Tax Treatment of Housing Affect the Pattern of Metropolitan Development?*, FED. RES. BANK OF PHILADELPHIA BUS. REV. 3 (1999).

⁷¹ Nathaniel Baum-Snow, *Did Highways Cause Suburbanization?*, 122 Q. J. ECON. 775 (2007).

⁷² Cullen & Levitt, *supra* note 65.

⁷³ Edwin S. Mills & Luan Sende Lubuele, *Inner Cities*, 35 J. ECON. LIT. 727 (1997).

⁷⁴ This research also relates to research behind explanations for why states expand redistribution. See, e.g., Elizabeth Cascio & Ebonya Washington, *Valuing the Vote: The Redistribution of Voting Rights and State Funds Following the Voting Rights Act of 1965* (Nat'l Bureau of Econ. Research, Working Paper No. 17776, 2012) (showing that the expansion in black voting rights resulting from the Voting Rights Act of 1965 was accompanied by a shift in distribution of state aid toward localities with a disproportionately large black population).

⁷⁵ See EDWARD GLAESER, TRIUMPH OF THE CITY (2011); Edward Glaeser, Joseph Gyourko & Raven Saks, *Why is Manhattan So Expensive?: Regulation and the Rise in House Prices*, 48 J.L. & ECON. 331 (2005); Edward Glaeser & Bryce Ward, *The Causes and Consequences of Land Use Regulation: Evidence from Greater Boston*, 65 J. URB. ECON. 265 (2008).

⁷⁶ David Schleicher, *City Unplanning*, 122 YALE L.J. 1670 (2013).

⁷⁷ See Isaac Bayoh, Elena G. Irwin & Timothy Haab, *Determinants of Residential Location Choice: How Important Are Local Public Goods in Attracting Homeowners to Central City Locations*, 46 J. REGIONAL SCI. 97 (2006); William H. Frey, *Central City White Flight: Racial and Nonracial Causes*, 44 AM. SOC. REV. 425 (1979).

suggest that tax policy is partly responsible; because of the disproportionate presence of poverty in cities, tax rates are high and services are poor, discouraging new development.

B. Empirical Strategy

When measuring the effect on population growth of redistribution across communities of different income levels, a key concern is that these communities might have grown at different rates even absent changes in redistribution. As a result, it is important to compare otherwise similar cities in states with different amounts of redistribution. Then, as long as income does not have a different effect on population growth in different states for reasons other than differential state redistribution, the results are valid. Consider the example in Table 1, a two-by-two table with two states, each of which has a relatively poor place and a relatively richer remainder of the state. Essentially, the goal of the empirical analysis is to see if population growth rates between 1980 and 2010 follow a particular pattern. First, I measure the population growth rates of poor cities like Colorado Springs and Salt Lake City relative to the rest of their respective states. Then I calculate whether poor cities tend to have higher relative population growth rates in high-redistribution states. In other words, I measure whether poor places in high-redistribution states had higher than expected population growth rates—that is, whether the “return to the city” has disproportionately occurred in high-redistribution states.

Table 1: Population Growth Rate, 1980 - 2010

	Poor place	Richer rest of state	Difference
High-redistribution state	Colorado Springs, CO (93%)	Rest of Colorado (72%)	21% (93% - 72%)
Low-redistribution state	Salt Lake City, UT (14%)	Rest of Utah (99%)	85% (14% - 99%)

Difference in differences: 106% (21% - -85%)

Consider how this two-by-two grid addresses the two key biases that arise in measuring the effect of school finance redistribution. First, suppose that we had two datapoints in the high-redistribution state of Colorado: the “experimental” city of Colorado Springs and the rest of the cities in Colorado as a control. Comparing places within a state removes the “state bias” resulting from the fact that Colorado’s population would have grown substantially even absent school finance redistribution. The way to calculate the effect of redistribution on the population growth of Colorado Springs is to begin with the population growth of Colorado Springs and then subtract the population growth of the “control” places. But a problem remains: relatively poor central cities themselves may have had a certain trend in population growth unrelated to redistribution, call it “poor place bias.”⁷⁸ Hence, the population growth of the “control poor city” Salt Lake City needs to be subtracted from the population growth of Colorado Springs as well. And then, as with Colorado, the population growth of Utah needs to be subtracted from the population growth of Salt Lake City to address the concern that Utah may have had a certain population growth trend.

This analysis leads to the following calculation: (Population growth rate of Colorado Springs – Population growth rate of the rest of Colorado) – (Population growth rate of Salt Lake City – Population growth rate of the rest of Utah). Conducting this analysis reveals that, while Colorado Springs’s growth rate of 93% exceeded that of Colorado (72%) by 21 percentage points, Salt Lake City’s surprisingly slow growth rate of 14% was 85 percentage points less than

⁷⁸ An additional example of “poor place bias,” motivating the multi-state empirical strategy, is illustrated by the example of local restrictions on housing development. There is evidence that liberal places restrict housing development more than conservative places do. Matthew Kahn, *Do Liberal Cities Limit New Housing Development? Evidence from California*, 69 J. URB. ECON. 223, 223 (2011). Liberal places also likely receive more funding for education, since liberal places often have high poverty rates and therefore receive more school funding from states. Thus, looking only within state, it may appear that school financing had little effect on population growth, but the financing actually could have a positive effect that is just confounded by the negative effect of having housing-restricting liberals running many of the cities receiving large amounts of funding. Comparing *across* states, between ones that redistribute a lot and ones that redistribute a little, alleviates this concern.

that of Utah as a whole (99%). Subtracting from excess growth of Colorado Springs over that of Colorado the analogous number for Salt Lake City yields a 106% excess growth for Colorado Springs—in other words, a doubling of population.

Of course, attributing all of this doubling of population to school finance redistribution in this two-city example is not credible. Though Colorado Springs and Salt Lake City had similar 1980 populations (215,000 and 163,000, respectively), had similar 1980 median incomes (\$16,000 and \$13,200, respectively), and are in the same region, the cities differ in many ways. I could have used other examples. Why did Kansas City, Kansas, grow more quickly than Kansas City, Missouri? Why did Tallahassee, Florida, grow more quickly than Birmingham, Alabama, or Jackson, Mississippi? Why did Grand Rapids, Michigan, grow more quickly than Canton, Ohio? Why did Portland or Salem, Oregon, grow more quickly than Seattle or Tacoma, Washington? Why did St. Louis, Missouri, grow more slowly than Chicago, Illinois? In all of these cases, the high-growth poor city was in the higher-redistribution state. In each case, though, the cities may be different in many ways. For this reason, I developed a dataset of 20,000 places, with the effect that these idiosyncratic differences average out. These idiosyncratic differences between places will not matter as long as poor places in high-redistribution states did not have some reason to *systematically* out-perform poor cities in low-redistribution states, other than the school finance redistribution itself.

The main empirical analysis is essentially a version of this four-city example with over 20,000 datapoints. I use regression analysis to relate these variables statistically. The large number of datapoints adds precision to the results, and the ability to compare across many states reduces concerns of bias. As in the example, the outcome variable is the population growth rate. Here I use the change in the logarithm of population between 1980 and 2010

($\Delta \log population_p$), a measure of the population growth rate at the place (denoted with the subscript “p”) level.⁷⁹ The first explanatory variable—and the one of greatest interest here—is whether the location is a poor city in a high-redistribution state. To create this variable in the regression, I “interact” (i.e., multiply together) the 1980 median income of the place ($median_income_p$) and the amount of redistribution its state (denoted “s”) undertakes ($redistribute_s$). Correctly measuring the effect of this variable is the goal of the regression, like the goal in my example of measuring the effect of redistribution on population growth in Colorado Springs. Then, as in the example, I subtract the population growth in the rest of each state. This I do by adding “fixed effects” for each state (I_s); in other words, I include in the regression a variable for each state.⁸⁰ As a result, the average population growth rate in Colorado will be subtracted from the growth for places in Colorado, and the same will be true of every other place and state. Finally, as I needed to subtract the growth of Salt Lake City from that of Colorado Springs, I need to control for the population growth of places of similar income. Hence, I control for the 1980 median income ($median_income_p$) of the place. This is the same variable that I used in the interaction term, but here the variable enters the regression alone. In the two-by-two grid example, I also needed to subtract the population growth of Utah as a whole; the state “fixed effects” do exactly this.

The following regression results from the combination of these variables:

⁷⁹ Taking the logarithm is common in economics and serves two purposes: first, it allows the results to be interpreted as changes in growth rates rather than levels, and second, it reduces the influence that statistical outliers have on the results.

⁸⁰ Note that normally interaction terms require that there is a separate control for each variable in the interaction. Here, I control for median income, but not state-level school redistribution. However, controlling for state fixed effects controls not only for differences between states in school redistribution but also for *all other* differences between states.

$$\Delta \log population_p = \beta_1 redistribute_s \cdot median_income_p + I_s + \beta_2 median_income_p + \varepsilon_p \quad (1)$$

I have explained what each of these variables means with the exception of the “error term,” ε_p , with which the model acknowledges that the variables included in the regression will not fully explain the differences in population growth across over 20,000 places. I am measuring the effect of the interaction between how much a state redistributes and a place’s median income on the change in the log population in that place (approximately the percentage change in population), controlling for a place’s median income and the place’s state.⁸¹

The key product of this regression is the coefficient β_1 . This is the effect of the interaction term of the amount of redistribution in a state and the place’s median income. Following the theory in Section III, we predict $\beta_1 < 0$, since in states with more redistribution, the effect of having a higher 1980 income should be more strongly negative because richer places receive less state funding in those states. For example, in states like Utah, with little school finance redistribution, the growth rate of poor places like Salt Lake City should be slower relative to the rest of the state than the growth rate of poor places like Colorado Springs relative to the rest of Colorado, which engages in much more school finance redistribution.

Consider the “identifying assumption” required for the results to be valid. Essentially, this methodology is a continuous version of a “difference-in-difference-in-differences” regression, measuring the difference in an outcome before and after, between poor treated places

⁸¹ Another way to think about the equation is as the reduced-form regression that would result if the independent variable were actual state transfers and the interaction of the measure of state-level redistribution and median income were an instrument. A benefit of not using actual transfers is that those could be “endogenous” to political decisions—for example, to target particularly needy cities. Thus, using actual transfers could bias the results toward zero if these needy places would have had particularly low growth rates in the absence of redistribution, since it would appear that poor places in high-redistribution states had low growth rates. Using instead the linear relationship within each state between a place’s median household income and the amount of state transfers it receives mitigates these concerns because this measure largely removes within-state city-to-city variations.

and rich control places in high-redistribution treated states versus low-redistribution control states. Viewed this way, the identifying assumption is similar to the familiar “common trends” assumption for any difference-in-differences regression. The identifying assumption here can be simply stated: in the absence of school finance redistribution, the difference in population growth rates between big poor places and small rich places would have been the same within high-redistribution states as within low-redistribution states.

Finally, this is an Article about the return to the central city, yet the analysis primarily concerns whether increased transfers to *poor* places increases their populations. Subsidizing poor areas leads to a return to the city because cities are disproportionately poor. Cities have substantially higher poverty rates than suburbs.⁸² Viewed differently, regressing 1980 log population (multiplied by 100) on 1980 median household income (divided by \$1,000) yields a coefficient of -9.18 ($t = 4.48$, $p = 0.000$), meaning that, on average, a place with a median household income \$1,000 greater than a comparison place has 9.18% less population. That is, on average, richer places have substantially smaller populations.

C. Data

I assemble data from two sources to estimate this equation. First, I use the Decennial Census, which collects data at the “place” level. Places are usually cities or towns, but also may be unincorporated areas recognized as places for the Census’s statistical purposes.⁸³ I use place-level data because the place is roughly the jurisdiction that we expect to benefit from school finance transfers. The cost of using the place level is that data on few variables are available.

⁸² Glaeser, Kahn & Rappaport, *supra* note 11.

⁸³ Note that the “place” may not be the level of government that receives the transfer from the state. For example, in unincorporated areas, there may be no entity to receive such a transfer. However, places are contained within areas that do receive such transfers, and the place level is recognized throughout the country by the U.S. Census.

Fortunately, the variables that I need are available: I use three variables from the Census, population in 1980 and 2010 and median household income in 1980.⁸⁴ I use 1980 because it is the earliest date at which a nearly comprehensive database of places is available from the National Historical Geographic Information System, my source of Census data.⁸⁵ I study the 30-year change because responses to changes in redistribution are likely to be very slow. The changes must be recognized, houses must be built, and people must move. Perhaps more important, feedbacks resulting from the “return to the city” may be even slower. For example, drawing in higher-income residents who themselves improve the tax base or more politically active individuals who improve local politics could take many years.⁸⁶

Second, as a measure of how much states redistribute across school districts with different incomes, I use data from a paper by David Card and Abigail Payne.⁸⁷ Their paper contains data for all states except for Alaska and Hawaii, and this Article follows suit.⁸⁸ Using the Census of Government and the Census of Population, Card and Payne regress school-district-level state 1992 transfers to schools on school-district-level median income. Conducting this regression separately for each state yields a slope coefficient that measures how much each state redistributes across school districts. Having data from 1992 allows state residents to have time to react to the redistribution, while still being toward the middle of the time period under study. Using state-level coefficients based on data at the school district level avoids the nearly

⁸⁴ The fact that household size has shrunk over time will not affect the results as long as household size does not both 1) change differentially in poor places in states with high redistribution versus other places and 2) affect the population growth of those places.

⁸⁵ NATIONAL HISTORICAL GEOGRAPHIC INFORMATION SYSTEM, <https://www.nhgis.org/> (last visited Aug. 10, 2013).

⁸⁶ See Richard Briffault, *The Role of Local Control in School Finance Reform*, 24 CONN. L. REV. 773, 805-06 (1992).

⁸⁷ See Card & Payne, *supra* note 7.

⁸⁸ Hawaii has a single, statewide school district. As a result it cannot have redistribution among school districts. John A. Thompson & Stacey E. Marlow, *Hawaii*, NATIONAL CENTER FOR EDUCATION STATISTICS, <http://nces.ed.gov/edfin/pdf/StFinance/Hawaii.pdf> (last visited Nov. 2, 2013). Data issues preclude the use of Alaska. See Card & Payne, *supra* note 7.

impossible task of collecting data on school finances for each city.⁸⁹ This would be extremely difficult because each state has a different form of local government, and there are often substantial variations within a state, including many school districts that are not coincident with cities.

D. Summary Statistics

Table 2 presents summary statistics for the key variables, weighted by 1980 population. There are 20,499 observations with complete data at the place level in 1980 and 2010. These observations cover 151,374,780 individuals, who constitute 67% of the 1980 U.S. population. The mean change in log population, multiplied by 100, is 17.22, so that the average population-weighted place increased population by roughly 17% between 1980 and 2010. The average place's median household income in 1980 was \$16,960.

Table 2: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.
Change in log population (x100), 2010 - 1980	17.22	41.85	-494.42	430.42
Median household income (\$100), 1980	169.60	53.16	0.00	750.01
State redistribution: change in state aid per student when school district median household income decreases by \$100	3.63	2.32	-1.34	16.32
Interaction of median household income and redistribution	619.39	445.04	-366.95	6,579.25

Note: There are 20,499 observations. Statistics are weighted by 1980 population.

The average amount of the state redistribution measure is 3.63. That is, in the average (population-weighted) state, when a school district's median income decreased by \$100, state aid per student increased by \$3.63 per pupil. States range from highly progressive at 16.32 (Wyoming), to actually regressive, at -1.34 (Louisiana), in which a decrease of \$100 in a

⁸⁹ Using estimates of actual spending also avoids the problem with using official formulas that may not be fully-funded by the legislature and therefore may not reflect actual spending levels.

district's median income *decreases* state transfers by \$1.34 per pupil. I then interact the place median income and state redistribution terms to produce the interaction term, which has a mean of 61.39. The results section explains how to interpret the coefficient on this number.

E. Results

Table 3 presents the main empirical findings of this research, all of which are weighted by 1980 population.⁹⁰ I focus on the main coefficient of interest, β_1 in equation (1), which is the coefficient on the interaction between a place's median income and the amount of redistribution in the place's state. Column (1) contains the results of the regression of population growth on the interaction term. The result is a positive coefficient on the interaction term, suggesting that, the more progressive the state, the more a place's higher median income *increases* its population growth. This initial result is the opposite of the expectation of a decrease in population growth. Column (2) adds in state fixed effects, addressing "state bias." These regressions add for each state a variable that takes the value zero unless the observation is from that state, in which case it equals 1, thereby controlling for all of the average characteristics of each state. Here, the coefficient of the interaction term increases and retains the same sign. Column (3) adds to the column (1) regression the other part of the interaction, 1980 median income, addressing "poor place bias"; the coefficient shrinks, but stays positive. Column (4) includes both the state fixed effects and median income, and the interaction coefficient's sign reverses, with a value of -0.0158 .

⁹⁰ For a graphical representation of the results, see Appendix Figure 1, which plots population growth by places' median household income separately for high-redistribution states and low-redistribution states. In low-redistribution states, richer places grew more quickly than poorer places. In contrast, in high-redistribution states, poor and rich places grew at roughly the same rate; because of the redistribution, the trend line rotates so that it flattens in these states, reflecting relatively higher growth rates of the poor places benefitting from the state aid.

Table 3: Effect on Change in Log Population, 1980 to 2010

	(1)	(2)	(3)	(4)	(5)	(6)
Interaction of median household income and redistribution	0.0123*** (0.002)	0.0214*** (0.004)	0.00726*** (0.002)	-0.0158** (0.007)	-0.0142** (0.006)	-0.0150** (0.006)
Median household income (\$100), 1980			0.0882*** (0.166)	0.1830*** (0.273)	0.4726*** (0.399)	0.8290*** (0.892)
Median household income (\$100) squared, 1980					-0.0065*** (0.006)	-0.0205*** (0.031)
Median household income (\$100) cubed, 1980						0.00016*** (0.000)
State fixed effects		X		X	X	X
R-squared	0.017	0.242	0.027	0.253	0.264	0.266

Note: There are 20,499 observations. Statistics are weighted by 1980 population.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The coefficient's reversal in sign shows the importance of addressing biases by controlling for both cross-state differences and differences in income levels across localities. In particular, the results show the importance of comparing states with different levels of redistribution to effectively get a counter-factual of states with little redistribution for states with large amounts of redistribution. For example, merely studying one state would yield results that look, on average, like column (2), which does not control for the place's median income. As the positive coefficient on median income in column (4) shows, a higher median income is positively associated with increased population growth. But it is precisely the fact that higher-income places receive less redistribution from the state through education that I am studying. The key is to separate out these two effects of higher income—the positive effect related to greater economic forces and the negative effect related to school finance redistribution—by controlling for median income directly and then comparing places across states that give different levels of school finance redistribution for places with the same median income.⁹¹

⁹¹ In technical terms, when trying to compare redistribution across locations of different income levels while controlling for median income, the regressor of interest and control would be collinear.

Columns (5) and (6) add terms for median income squared and cubed, respectively. These are potentially important controls in case the effect of median income on population growth is nonlinear.⁹² In these regressions, though, the additional terms have little effect on the interaction coefficient, changing it from -0.0158 in (4) to -0.0142 in (5) with income squared and -0.0150 in (6) with income squared and income cubed.

Since the coefficient in (6) is the most important quantitative result in the Article, I will pause a moment to interpret it, especially given that interpreting interaction terms requires extra care. First, the coefficient on the interaction term (-0.0150) is highly statistically significant, with a *t*-statistic of 2.36 and a *p*-value of 0.018. Second, the coefficient means that, on average, poor places grew faster in states with more redistribution, relative to the rest of the places in their respective states. In particular, if two places began with 1980 median income at \$100 less than the median income of the average place, the place in the state that redistributed an extra \$1 because of that \$100 lower income grew 0.015 percentage points faster than the place in the state that did not redistribute the extra \$1. For the state with the average amount of redistribution, that redistribution resulted in growth that was 0.054 percentage points higher for each \$100 decline in a place's median household income.

Take the example of Connecticut, a state considered in a case study below. Connecticut, the eighth most redistributive state in the data, redistributed another \$5.95 per student to cities for each \$100 decline in income. Suppose that it did not redistribute at all and compare the city of New Haven, with a 1980 median income of \$11,683 to its neighboring wealthy suburb of

⁹² To understand why it is important to add higher-order terms, consider the case in which terms *a* and *b* are interacted and separately controlled for, and *a* also has a nonlinear quadratic relationship with outcome variable *y*. Suppose as well that *a* and *b* are positively correlated; as a result, the interaction term will partly reflect the quadratic relationship of *a* with *y* and not the effect of the interaction on *y*. Including a quadratic term for *a* puts all of the loading of the quadratic relationship on the quadratic term and lets the coefficient on the interaction term express only the effect of the interaction.

Orange, with a median income of \$31,132. The results suggest that, because of Connecticut's redistribution, New Haven's population growth rate was 18.34 percentage points higher between 1980 and 2010 than its growth rate would have been had it had Orange's 1980 income.⁹³ Keep in mind that this is not the annual growth rate; it is the increase in growth over three decades. Given that many poor cities grew very little between 1980 and 2010 (only 3.81% in the case of New Haven), these results imply that redistribution made a large difference in achieving relative stability of poor cities' populations relative to rich suburbs in states like Connecticut with large amounts of redistribution across school districts.⁹⁴

The interpretation of the results can be generalized to the whole country. The results imply that, because of the redistribution, the difference in growth between the place in the country at the 10th percentile of income (\$11,951) and the place at the 90th percentile (\$24,376) in a state with the average amount of redistribution was 7.68 percentage points.⁹⁵ This difference is nearly half the average place's growth rate of 17.22 percentage points. Put another way, school finance redistribution explains 31.4% of the "return to the central city" between 1980 and 2010.⁹⁶

Finally, the large positive effect that median income has on the change in log population indicates that population has increased more in wealthier places.⁹⁷ The coefficient on median

⁹³ This calculation is (difference in incomes) * (difference in redistribution) * coefficient = (116.83 – 312.32) * (0 - 5.95) * (-0.0150). Note that Orange had far from the highest median income in Connecticut in 1980. For example, Darien had a median income of \$39,508, and Westport had a median income of \$40,139.

⁹⁴ Note that, because the coefficient is on an interaction term, it is not possible to say how much more a city like New Haven grew due to the redistribution without making reference to an alternative level of median income. This is why I compare New Haven to Orange.

⁹⁵ All these statistics are population-weighted.

⁹⁶ I calculate this statistic as follows: Cities grew 13.7% faster than the rest of the country between 1980 and 2010. Multiplying together the difference in median household income between cities and suburbs of \$6,953, the average amount of redistribution of \$3.625 per \$100 decline in median household income, and the coefficient of 0.0169 relating these two quantities to population growth yields population growth of 4.28 percentage points, which is 31.4% of the total population growth to be explained.

⁹⁷ This result that wealthy places have grown in population more quickly than poor places may seem inconsistent with the findings of Daniel Shoag and Peter Ganong, who show that wealthy states have not grown more quickly

income is positive and significant in all columns. The relationship appears to be nonlinear; the negative coefficient on the income squared term shows that the effect of having a high income on population growth tapers off somewhat at higher incomes.

F. Alternative Explanations

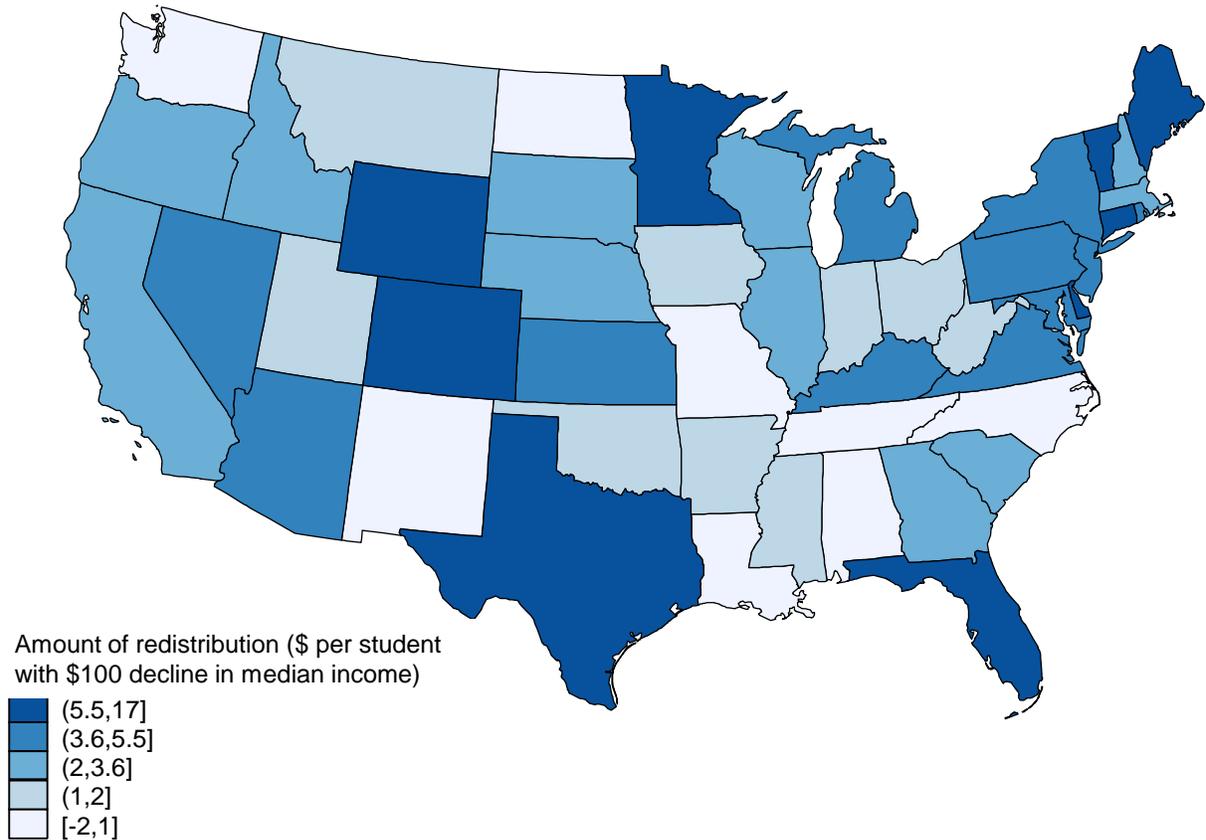
For these results to be valid, in the absence of school finance redistribution, the average difference in growth rate between poor and rich places must have been the same within high-redistribution states and low-redistribution states. In this section, I address several potential concerns about this fundamental assumption.

A first potential concern might be that states with poor places that would have done particularly well even without the change in school finance are the states that redistributed more, thus artificially generating the relation between a large amount of redistribution in a state and the strong population growth of poor cities in the state. Figure 2, a map of the amount of redistribution by state in which darker colors indicate more redistribution, helps to alleviate this concern. Although redistribution is correlated with geography, being higher in the northeast and lower in the southeast, there is a great deal of geographic heterogeneity. The state with the greatest amount of school finance redistribution is Wyoming, for example. Texas and Florida also have some of the greatest amounts of school finance redistribution. Hence, the map shows the inaccuracy of the critique that the highest amounts of redistribution were only in liberal states

than poor states over a similar time period. Daniel Shoag & Peter Ganong, *Why Has Regional Income Convergence in the U.S. Declined?*, (March 2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2081216 (showing that between 1990 and 2010, there was no relationship between a state's per capita income and its population growth rate). However, my results are consistent with theirs because of the different levels of geographic aggregation. In column (4), I actually control for state effects. A smaller, but still positive, effect exists without the state effects in column (3). This can be explained, for example, by wealthy places in wealthier states (e.g., older suburbs like Greenwich, CT, with lots of growth controls) growing more slowly than wealthy places in poorer states (e.g., sprawling suburbs in Texas with few growth controls).

or the northeast, which one might think would have been more likely to have a return to the city even in the absence of school finance redistribution.

Figure 2: Map of State Redistribution



The apparently significant amount of arbitrariness in the location of high-redistribution states is borne out by further analysis. In particular, if one's concern is that poor places in regions with high amounts of redistribution may have grown more quickly than poor places in regions with small amounts of redistribution for economic reasons unrelated to school finance redistribution, a way to address the concern is to measure the effect of having more redistribution *within* a region. Controls for the effect of income, *within* region, need to be added in this case.

Adding controls for each of the nine Census Divisions⁹⁸ times each of median income, median income squared, and median income cubed (for a total of 27 controls) yields a coefficient on the interaction term that barely changes relative to the main result of -0.0150 from column (6) in Table 3. Indeed, the coefficient actually goes *up* a little in magnitude to -0.0185 , with a standard error that stays very similar at 0.0075. Further adding the equivalent 27 controls for population interacted with regional dummies to the 27 income controls similarly barely changes the results, yielding a coefficient of -0.0169 , with a standard error of 0.0070. This evidence shows that regional differences in the growth rates of poor places for reasons other than school finance redistribution do not appear to drive the results.

Second, states with a large amount of redistribution might also happen to be states with large amounts of annexation activity. Since larger (and therefore, on average, poorer) cities tend to be the ones that grow by annexation, if there were such a relationship, this annexation activity would bias the results by spuriously generating larger population growth in large cities in states with large amounts of redistribution. To address this concern, I collected data on all the annexations between 1990 and 2010 reported to the U.S. Census Bureau, comprising 184,041 datapoints.⁹⁹ I then measured the statistical relation between how much land was annexed during these years (as a fraction of total state land area) and how redistributive the state's school finance system is. The result suggests that there is no relationship ($p = 0.715$) and, to the extent that

⁹⁸ The Census Divisions are as follows: *New England Division*: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; *Middle Atlantic Division*: New Jersey, New York, and Pennsylvania; *East North Central Division*: Illinois, Indiana, Michigan, Ohio, and Wisconsin; *West North Central Division*: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota; *South Atlantic Division*: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia; *East South Central Division*: Alabama, Kentucky, Mississippi, and Tennessee; *West South Central Division*: Arkansas, Louisiana, Oklahoma, and Texas; *Mountain Division*: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming; and *Pacific Division*: Alaska, California, Hawaii, Oregon, and Washington. 2007 Economic Census: Regions and Divisions, U.S. CENSUS, http://www.census.gov/econ/census07/www/geography/regions_and_divisions.html (last visited Oct. 1, 2013).

⁹⁹ *Boundary and Annexation Survey*, U.S. CENSUS http://www.census.gov/geo/partnerships/bas/bas_annex.html (last visited Oct. 15, 2013).

there is one, it goes in the opposite direction to the one that would be concerning for the results above; that is, more annexation activity correlates with *less* state redistribution.¹⁰⁰

Third, one may be concerned that states with large amounts of redistribution had the largest drop in crime in their cities, thereby explaining the return to the city in places with large amounts of school finance redistribution. Arguably, crime rates could be an “endogenous variable” related to school finance redistribution itself, since some of the school funding from the state may have freed up funds in local budgets for crime prevention. But controlling for crime rates remains a useful robustness check. Although crime data are not available at the place level, they are available at the state level from the Federal Bureau of Investigation’s Uniform Crime Reports. I construct a variable to proxy for changes in crime by multiplying together (1) each place’s median household income and (2) the change in violent crime rates between 1980 and 2010 for the place’s state. If states that had large amounts of school finance redistribution also had poor areas that had particularly large declines in crime and this drove population gains, then the effect of being a poor city should be largest where crime dropped the most and including this variable should at least partially solve the omitted variable problem. With the full set of controls, plus the addition of the crime control, the main coefficient is -0.0179 (SE = 0.0077), very similar to the one without the control. Though the control is imperfect, this is reassuring evidence that crime is not an important omitted variable.

Finally, one might be concerned that states that redistribute more to local governments based on income also redistribute more for other reasons besides education, yielding results that

¹⁰⁰ To say that annexation is not biasing the results is not to say that annexation played no role in the return to the city. For example, suppose that, in all states, poor cities annexed surrounding areas; then the results would not be biased, but annexation would still lead to a measurable return to the city. An explanation that annexation has been an important cause of the return to the city would have to contend with the fact that cities’ share of the population decreased until 1980 and then increased. But annexation nevertheless exaggerates at least somewhat the share of the population living in central cities conceived as fixed geographic areas.

exaggerate the effect of school finance redistribution. This concern is mitigated substantially by the fact that school funding is the most important source of redistribution directly received by local governments.¹⁰¹ As well, to help address this concern directly, I control for states' political leanings, since perhaps the most likely way that school finance redistribution would be correlated with other forms of redistribution to poor cities is via the states' politics. To measure states' political leanings, I use the 2012 vote share for President Obama and interact it with 1980 median household income as I did with drops in crime.¹⁰² To two significant digits, the results stay the same, providing some reassurance that other forms of spending correlated with school finance redistribution are not driving the results.

V. Understanding the Mechanism: a Case Study on Connecticut

To better understand the mechanisms driving the effect of financial transfers on population, I examine in detail the local finances of Connecticut as a case study. Focusing on one state enables an analysis of the sources, destinations, and ultimate uses of funds, including tax reductions, increases in spending on education, and spending increases in other areas. Doing this on a national scale is essentially impossible because local finances differ greatly from state to state.

Connecticut is a good state to study for two reasons. First, it had a substantial amount of redistribution, resulting partly from the aftermath of the 1977 Connecticut Supreme Court case

¹⁰¹ See, e.g., *infra* Table 4.

¹⁰² In general, it is superior to use measures from the beginning of the period under study, to avoid the possibility that the control variable is itself affected by the object under study; for example, school finance redistribution could conceivably have attracted liberal voters to a state. However, the 1980 Presidential vote may not accord with many individuals' notion of what makes a state "liberal." For example, the region that voted most strongly for Democratic candidate Jimmy Carter was the South. In any case, using controls that are potentially affected

*Horton v. Meskill*¹⁰³, which mandated school finance equalization. For example, in the 2012-2013 proposed Connecticut state budget, New Haven received \$8,286 per student and its wealthy suburb of Madison received \$428 per student from the state.¹⁰⁴ Second, its government structure makes it unusually suitable for empirical analysis as there are essentially only two levels of government in the state, the state and the town. County government does not exist. In almost all cases, school districts share the same borders as towns; very few special districts cross town boundaries. This simplicity makes tracking transfers to local governments far more feasible than elsewhere in the country.¹⁰⁵ As well, the state government spends almost no money directly on elementary and secondary education, instead transferring nearly all the money to localities; this makes tracking the destination of the funds easier.¹⁰⁶

A. The Connecticut Story

Although the state of Connecticut has long transferred state revenue to localities for education, the differential treatment of rich and poor communities resulted from litigation in state courts on unequal access to education.¹⁰⁷ In *Horton v. Meskill*, the Connecticut Supreme Court found Connecticut's system of predominantly local financing of schools inconsistent with the state constitution. When the action was brought by plaintiff Horton in 1974, a kindergartner at Canton Elementary School, all school districts received \$215 per student from the state.¹⁰⁸ In 1975, as the case was being litigated in lower courts, the legislature increased the grant to \$250

¹⁰³ 376 A.2d 359 (Conn. 1977).

¹⁰⁴ *Proposed 2012-13 Education Cost Sharing Entitlements Comparisons*, http://www.governor.ct.gov/malloy/lib/malloy/ECS_FY2013_Proposed_Increase.pdf (last visited Sept. 10, 2013).

¹⁰⁵ A further reason is that there are virtually no annexations as a confound to population growth.

¹⁰⁶ The state spent literally no money on elementary and secondary education through 1994, and then very small amounts after that. *Annual Survey of Governments*, *supra* note 8.

¹⁰⁷ Nicholas Carbone & Evelyn Brody, *PILOTS: Hartford and Connecticut*, in PROPERTY-TAX EXEMPTION FOR CHARITIES 233, 236 (Evelyn Brody ed., 2002).

¹⁰⁸ *Horton v. Meskill*, 376 A.2d at 370 (citing CONN. GEN. STAT. § 10-262 (1974)).

per student and provided an additional grant of \$12.50 per pupil, funded by new state lotteries, for poorer towns.¹⁰⁹ The court found this insufficient. The supreme court noted that state

legislation . . . delegates to municipalities of disparate financial capability the state's duty of raising funds for operating public schools within that municipality. That legislation gives no consideration to the financial capability of the municipality to raise funds sufficient to discharge another duty delegated to the municipality by the state, that of educating the children within that municipality.¹¹⁰

After reviewing data describing how poorer places have a smaller property tax base, less spending, but higher tax rates,¹¹¹ it concluded that the system failed to secure the “fundamental right” to elementary and secondary education under strict scrutiny under the state constitution.¹¹²

It upheld the trial court’s requirement of the “adoption by the state of a financing program designed to achieve a substantial degree of equality of educational opportunity” while still “permit[ting] all towns to exercise a meaningful choice as to educational services to be offered to students.”¹¹³ The court emphasized that “[o]bviously, absolute equality or precisely equal advantages are not required and cannot be attained except in the most relative sense.”¹¹⁴

¹⁰⁹ *Id.* at 372-73 (citing 1975 Conn. Acts, No. 75-344; 1975 Conn. Acts, No. 75-341).

¹¹⁰ *Id.* at 377.

¹¹¹ *Id.* at 369-70.

¹¹² *Id.* at 375, 377. The Connecticut Supreme Court rooted its findings in three sections of the Connecticut Constitution. *Id.* at 365. These three sections in their entirety read as follows: “All men when they form a social compact, are equal in rights; and no man or set of men are entitled to exclusive public emoluments or privileges from the community.” CT. CONST. art. I, § 1. “No person shall be denied the equal protection of the law nor be subjected to segregation or discrimination in the exercise or enjoyment of his civil or political rights because of religion, race, color, ancestry or national origin.” CT. CONST. art. I, § 20. “There shall always be free public elementary and secondary schools in the state. The general assembly shall implement this principle by appropriate legislation.” CT. CONST. art. VIII, § 20. The trial court had held “that although local control of public schools is a legitimate state objective, since local control of education need not be diminished if the ability of towns to finance education is equalized, the local control objective is not a rational basis for retention of the present financing system; that the state has not selected the less drastic means for effectuating the local control objective and, therefore, the system, beyond a reasonable doubt, violates the constitution of Connecticut.” *Horton v. Meskill*, 376 A.2d at 365.

¹¹³ *Id.* at 370-71.

¹¹⁴ *Id.* at 371.

After *Horton*, in 1979, the legislature substantially revised the Guaranteed Tax Base established in 1975 to provide more funding for poorer towns.¹¹⁵ As well, following the holding in *Galullo v. Waterbury*¹¹⁶, that municipalities could use state education grants to pay for tax decreases or other services instead of education, the legislature added the minimum expenditure requirement.¹¹⁷ In 1988, the legislature replaced the Guaranteed Tax Base with the Education Cost Sharing (ECS) formula, which has been periodically revised to respond to state fiscal constraints and to “reallocate available state aid to different kinds of towns.”¹¹⁸ Though there have been year-to-year variations, the key point is that, since 1979, the state has redistributed substantially more to towns with lower “wealth,” defined in terms of the equalized property tax base as measured by the state of Connecticut.¹¹⁹ Broadly ECS aid is calculated in three steps: 1) measure the ratio of town property wealth to the guaranteed wealth level and then subtract this

¹¹⁵ D'Ann Mazzocca, *School Funding and the Courts*, OLR RESEARCH REPORT (Aug. 17, 1995), <http://search.cga.state.ct.us/dtsearch.asp?cmd=getdoc&DocId=20445&Index=I%3A%5Czindex%5C1995&HitCount=0&hits=&hc=0&req=&Item=4000>.

¹¹⁶ 175 Conn. Reports 282 (1978).

¹¹⁷ The case arose from the decision by the Board of Aldermen of Waterbury to lower its property tax to 84.85 mills from a proposed 87 mills, after learning that its share of lottery funds would be about \$1 million higher than expected; the city allocated the entire expected revenue increase to tax reductions and none to increased education spending. *Galullo*, 175 Conn. at 182, 184. The court held this despite the provision in the law that stated, “All aid distributed to a town pursuant to the provisions of [the guaranteed tax base program] shall be expended for school purposes only.” CONN. GEN. STAT. § 10-262e. As well, the Court acknowledged that “[t]he remarks made in the senate in support of [this provision] indicate that it was in fact intended to force towns to distribute the aid to their boards of education.” *Galullo*, 175 Conn. at 186. Nevertheless, the Court upheld the trial court in its finding that that the state funds were used for education; implicitly, the local funds that had been proposed for education spending were the ones used for the tax reductions. *Id.* at 186. The Court added that “[t]he legislative history of the [provision] indicates that legislators were aware of the possibility that tax-burdened cities might see the availability of additional state funds for education as an opportunity to reallocate existing city revenues and reduce taxes.” *Id.* To find the actions of Waterbury problematic, the law would have needed a “provision . . . which compels cities to use instant lottery funds to *supplement* the education allotment in their budgets.” *Id.*

¹¹⁸ Judith S. Lohman, *Changes in Education Cost Sharing Formula Since 1988*, OLR RESEARCH REPORT (March 26, 1998), <http://search.cga.state.ct.us/dtsearch.asp?cmd=getdoc&DocId=12398&Index=I%3A%5Czindex%5C1998&HitCount=0&hits=&hc=0&req=&Item=7835>.

¹¹⁹ *Equalized Net Grand Lists for Purposes of Educational Equalization Grants*, CONN. GEN. STAT. § 10-261a.

ratio from 1 so that poorer towns receive more money, 2) multiply this ratio by a foundation level of spending, and 3) multiply again by the number of students.¹²⁰

The litigation continued with claims of segregation between schools, which helped result in legislation increasing funding for school construction that was disproportionately used by poor towns. In 1996 the Connecticut Supreme Court held in *Sheff v. O’Neill*¹²¹ that the right to substantially equal access to educational opportunity is undermined by extreme racial and ethnic isolation.¹²² The court left the remedy to the legislature. As a consequence, the legislature quickly passed the Enhancing Educational Choices and Opportunities Act.¹²³ The legislation included substantial funding for school construction aimed at reducing segregation; the funding was allocated mainly in two ways. First, the state would completely fund construction of interdistrict magnet schools if the districts committed to the school for at least twenty years.¹²⁴ Second, schools receive additional funding if their construction projects serve to integrate local schools. Still, the magnitude of school construction spending is substantially smaller than that for equalization of operating expenses; the state spent a total of \$4 billion on school construction from 2001 to 2012,¹²⁵ while ECS grants totaled nearly \$20 billion.¹²⁶

¹²⁰ Mazzocca, *supra* note 115.

¹²¹ 678 A.2d 1267 (Conn. 1996).

¹²² For additional analysis on *Sheff*, see James Ryan, *Sheff, Segregation, and School Finance Litigation*, 74 N.Y.U. L. REV. 529, 529 (1999) (arguing that “school ‘finance’ litigation need not, and perhaps should not, be solely about money” and that instead “nonmonetary remedies [such] as racial and socioeconomic integration and school choice” should be explored).

¹²³ Conn. Acts 1997, No. 97–290.

¹²⁴ *Sheff v. O’Neill*, 733 A.2d 925, 929 (Conn. Super. Ct. 1999) (describing the construction subsidies). For additional information on Connecticut’s funding of interdistrict magnet schools, see Judith Lohman, *State Funding for Interdistrict Magnet Schools*, OLR RESEARCH REPORT (March 9, 2010), <http://www.cga.ct.gov/2010/rpt/2010-R-0056.htm>.

¹²⁵ *Education Finance in Connecticut: Overreliance on the Property Tax*, CCM PUBLIC POLICY REPORT 16 (Nov. 2012) <http://advocacy.ccm-ct.org/Resources.ashx?id=524d5981-e780-4b8f-bd8d-701de00ca464>. Connecticut has consistently not authorized the appropriations up to the level of the permissible statutory limit. Orlando J. Rodriguez & Jacob Siegel, *Problems with Connecticut’s Education Cost Sharing Grant*, CONNECTICUT VOICES FOR CHILDREN (Feb. 2011) <http://www.ctvoices.org/sites/default/files/Bud11CTEduCostSharingGrantProblems.pdf>.

¹²⁶ This statistic is from my calculations of data from Education Grants Database, CONNECTICUT OFFICE OF POLICY AND MANAGEMENT, http://www.ct.gov/opm/cwp/view.asp?a=3006&Q=383258&opmNav_GID=1386 (last visited Sept. 4, 2013).

The school financing system in Connecticut is quite different from that in California, the most-studied case of court-ordered school finance reform. In particular, the California Supreme Court required that some portion of high-spending districts' property wealth was "recaptured" for redistribution to low-wealth school districts.¹²⁷ Arguably as a result of the holding, voters supported the Proposition 13 initiative, which further limited the ability of localities to raise taxes to fund local services.¹²⁸ In Connecticut, in contrast, there is no "recapture" when school districts spend a lot on schools and no limit on their ability to raise taxes for local schools.

A second reason that state transfers to poor cities have increased is Connecticut's pioneering payments in lieu of taxes (PILOT) program, in which the state compensates towns for property tax revenue lost due to property tax exemptions. Before 1978, only state-owned property was part of the state's PILOT program.¹²⁹ Due in part to lobbying by cities and increasing pressure to levy a tax on non-profits to help cities pay for the services they provided to them, Connecticut passed the College and Hospital PILOT program in 1978.¹³⁰ At that point, the state reimbursed localities for 25% of taxes that state-owned properties would have paid if they had been taxed, and that grew to 45% two decades later. The amount of reimbursement for colleges and hospitals has increased with time as well, from 25% when passed, to 40% in 1987, 50% in 1988, 60% in 1991, and 77% in 1999.¹³¹ In fiscal year 2001, total PILOT payments for colleges, hospitals, and state-owned property totaled \$163 million and went disproportionately to poor communities, which tend to be central cities with large amounts of tax-exempt property.¹³² By fiscal years 2011 to 2013, Connecticut was spending about \$200 million per year on PILOT

¹²⁷ Stark & Zasloff, *supra* note 34, at 804.

¹²⁸ *Id.*

¹²⁹ Carbone & Brody, *supra* note 107, at 241.

¹³⁰ *Id.* at 242-43.

¹³¹ *Id.*

¹³² *Id.* at 243.

payments—a substantial amount of money, though approximately one tenth the \$2 billion per year the state spent on ECS payments.¹³³

B. Empirical Analysis

The primary dataset for studying Connecticut’s local finances is the Annual Survey of Governments from the Census Bureau, which has annual data from 1970 to 1999 for all Connecticut towns’ revenues and expenditures, including breakdowns by type and source.¹³⁴ I focus on the portion of total revenues (including for school buildings and PILOT)¹³⁵ coming from intergovernmental sources. Note that the time span covered by the Connecticut finance data (1970-1999) differs from that for the national population growth data (1980-2010). This difference is solely driven by data constraints and the desire to use as much data as available. That said, the time periods also dovetail nicely with the goals for using each dataset. It is desirable to start earlier with the Connecticut data because school finance reform started in the 1970s, so tracing the finances starting then is helpful. Likewise, ending later is desirable for the population data because, as argued above, the responses to changes in school finances are likely to involve substantial lags.

Figure 3 shows the share of revenue coming from intergovernmental sources from 1970 to 1999 in the top and bottom deciles of Connecticut towns by median income.¹³⁶ It shows that

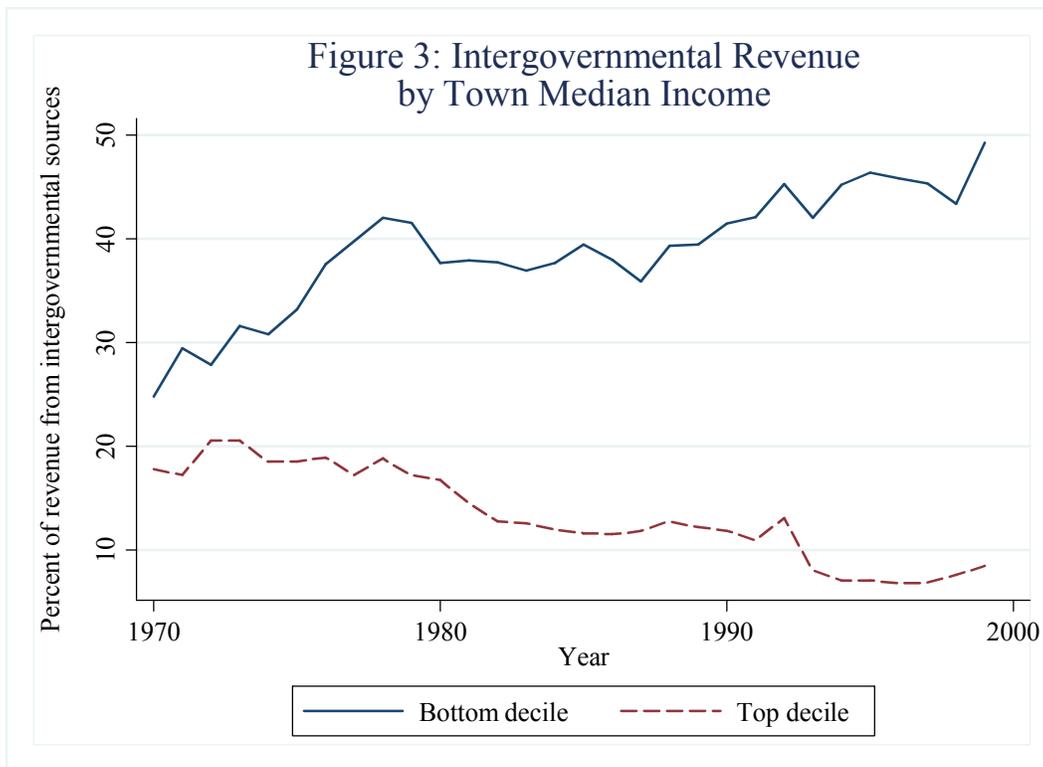
¹³³ Benjamin Barnes, *FY2010-11, FY2011-12 AND FY2012-13 Estimates of State Formula Aid to Municipalities*, OFFICE OF POLICY AND MANAGEMENT 15, 25 (Sept. 20, 2012) http://www.ct.gov/opm/lib/opm/budget/2012_midterm_budget/pdfs/FINAL_Municipal_Fiscal_Estimates_Book_Sept_20.pdf.

¹³⁴ *Annual Survey of Governments*, *supra* note 8.

¹³⁵ *Federal, State, and Local Governments: Government Finance and Employment Classification Manual: Descriptions of Intergovernmental Revenue Categories*, UNITED STATES CENSUS BUREAU, http://www.census.gov/govs/www/class_ch7_ir.html (last visited Sept. 15, 2013).

¹³⁶ The median income is from *Connecticut Income Data: U.S. Census 2000 Economic Data*, CONNECTICUT DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT, <http://www.ct.gov/ecd/cwp/view.asp?a=1106&q=250652> (last visited July 15, 2013). Median income from 1970

there has, indeed, been a revolution in Connecticut’s local finances. In 1970, bottom-decile towns received only 7 percentage points more of their revenue from intergovernmental sources than top-decile towns.¹³⁷ In the subsequent 29 years, though, the intergovernmental share to the poorest towns approximately doubled to 49.3%, while the intergovernmental share to the richest towns declined by more than half, to 8.5%. In those three decades, the local budgets of Connecticut’s poorest towns have been transformed, with nearly half of their revenues coming from the state and federal government, while state and federal government transfers have actually *declined* substantially as a percent of revenue in the richest cities.



would be more desirable, before any of the changes under study took place, but data from 2000 were more easily accessible, and towns’ median income ranking has changed little over the past several decades. For example, the correlation between median household income in 1980 and in 2007 among the subset of 79 towns available in the Census data is very high, at 0.956. (The correlation is weighted by 1980 population.)

¹³⁷ Bottom-decile towns received 24.8% of their revenue from intergovernmental sources, while top-decile towns received 17.8%.

Figure 4 is a scatterplot of the percent of all revenue from intergovernmental sources in 1997, the last year with full data in Figure 3, and median income in 2000. So that more of the town names are visible, I limit the scatterplot to towns with a population greater than 25,000. It shows that there is a very strong and generally linear relationship between median household income and intergovernmental revenues. In the figure, cities are generally where one might expect them to be; Hartford, Bridgeport, and New Haven – cities with large poor populations – are in the top left corner of low incomes and high intergovernmental transfers, while the rich suburb of Greenwich is in the bottom right corner. Nevertheless, there is a fair amount of dispersion in transfers among cities of roughly similar median income.

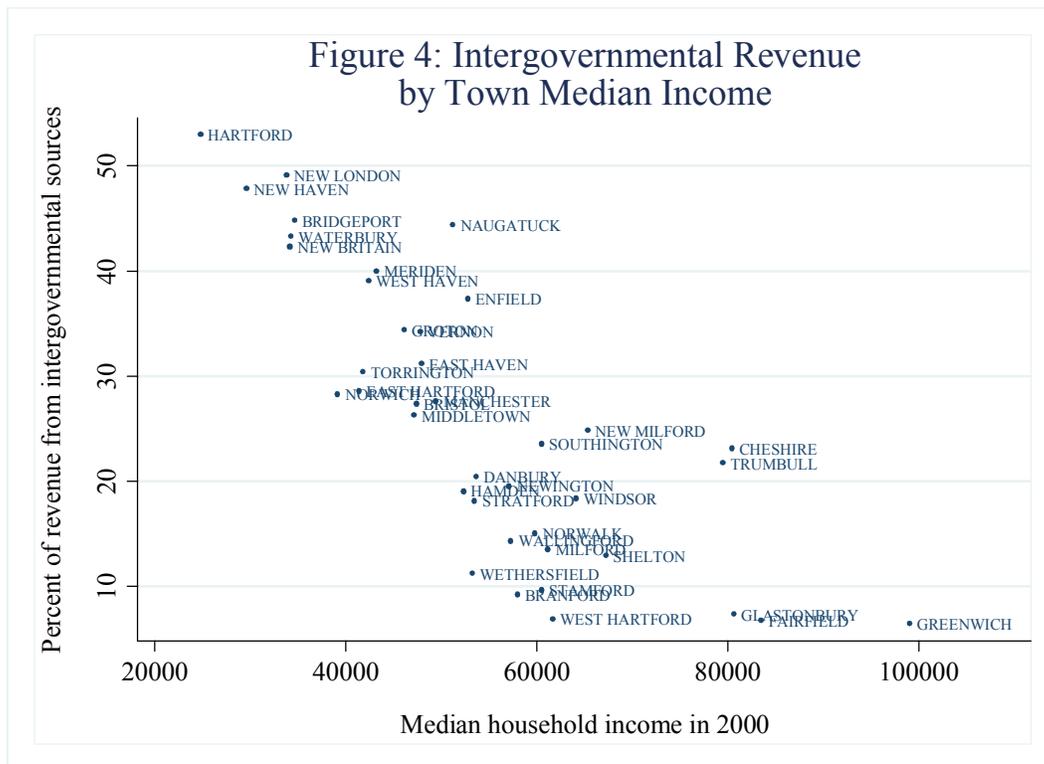


Table 4 shows how intergovernmental revenue in Connecticut is spent, as reflected in data from 1997. Connecticut towns received \$2.4 billion in intergovernmental revenue in 1997, nearly all of which (94.5%) was from the state government.¹³⁸ Of those intergovernmental transfers from the state, the vast majority was for education, constituting 68.7% of all intergovernmental transfers. This table confirms that, for Connecticut at least, the focus in the first part of the Article on transfers from the state and for schools was appropriate.

Table 4: Connecticut Intergovernmental Revenue in 1997

	Revenue (\$Millions)	Percent of total intergovernmental revenue
Total intergovernmental revenue	2,373	100.0%
Federal intergovernmental revenue	110	4.6%
State intergovernmental revenue	2,242	94.5%
State education transfers	1,631	68.7%

Note: local intergovernmental revenue forms the remainder.

Source: Census of Governments.

Increased transfers can be used to do several things: increase spending and potentially improve services in the intended area, increase spending and potentially improve services in other areas, and reduce locally-raised taxes.¹³⁹ Table 5 uses annual data from 1970 to 1999 for all Connecticut towns to show how localities have chosen to allocate their government

¹³⁸ An important caveat to this tally is that the federal government provided \$255 million in intergovernmental revenues “for education” and likely other funds that the state then passed onto localities. Unfortunately, the data are not broken down by elementary, secondary, and post-secondary education, so it is not possible to determine how much of this funding was in turn passed to localities for elementary and secondary education. (The data do contain the information that the state government directly spent only \$179,000 on elementary and secondary education, so—to the extent that the federal funding was for elementary and secondary education—it was virtually all passed on to localities.) Thus, the table understates the extent of federal funding as a source of intergovernmental revenue and overstates the role of the state.

¹³⁹ For a summary of literature on the extent to which money is spent on its intended purpose (i.e., the “flypaper effect”), see James Hines & Richard Thaler, *Anomalies: The Flypaper Effect*, 9 J. ECON. PERSP. 217 (1995).

transfers.¹⁴⁰ All the regressions include year and town fixed effects to control for anything that varies across all towns with time and any time-invariant town-level characteristics that may be correlated with how revenue is spent. Also, all regressions are scaled by town population, so that all quantities are measured per capita.¹⁴¹ Finally, all standard errors are clustered at the town level.

Table 5: How Towns Spent the Transfers

	(1)	(2)	(3)	(4)	(5)
	Per capita total revenue	Per capita local tax revenue	Per capita total revenue	Per capita local tax revenue	Per capita education spending
Per capita intergovernmental revenue	0.639*** (0.096)	-0.383*** (0.070)			
Per capita educational intergovernmental revenue			0.446*** (0.157)	-0.628*** (0.089)	0.337*** (0.066)
R-squared	0.913	0.891	0.901	0.900	0.886
Town fixed effects	X	X	X	X	X
Year fixed effects	X	X	X	X	X

Note: the regressions have 4,311 observations. Standard errors clustered at the town level
 *** p<0.01, ** p<0.05, * p<0.1

In Table 5, all results are highly statistically significant, beyond the 1% level. Column (1) shows that, for every \$1 of intergovernmental revenue, total local revenue goes up by \$0.64. Consistent with that, column (2) shows that, for every dollar of intergovernmental revenue, local tax collection goes down by \$0.38. These two coefficients should add up to 1, and they roughly do. These results suggest substantial crowdout—that is, money transferred from the state

¹⁴⁰ Some years are not available for some towns.

¹⁴¹ I measure the data per capita, rather than per student, because—as the regressions show—much of the spending is captured not by the students but by town residents.

crowded out local funds spent on education.¹⁴² But, of the funds spent on services, what do they purchase?

The most useful information about where money is spent is obtained by measuring how revenue “intended” for a specific purpose is used.¹⁴³ Hence, I switch to per capita intergovernmental revenue intended for education to study the effect of such transfers on education.¹⁴⁴ The results show that, of an extra dollar of education intergovernmental revenue, total revenue increases by \$0.45 (column (3)), tax revenue decreases by \$0.63 (column (4)), and education spending increases by \$0.34 (column (5)).¹⁴⁵ These results suggest that the majority of education transfers go to reductions in taxes, and, of the remainder, about three quarters goes to education spending, while another quarter goes to other forms of spending.

These results are, at least to some extent, specific to Connecticut. For example, law specific to Connecticut likely affects the extent to which towns can use state funds designated for school for something other than the intended purpose. As noted, in the 1978 case of *Galullo v. Waterbury*, the Connecticut Supreme Court held on statutory grounds that towns could divert money intended for schools to other purposes, and then the legislature added a minimum expenditure requirement. Other states could have different court rulings and statutes, which would affect the extent of crowdout.

¹⁴² Jackson et al., *supra* note 30, also show increased spending as a result of school decisions, but they do not calculate crowdout regressions and are unable to measure the effect on local taxes and spending other than schools, since they study only school districts.

¹⁴³ Otherwise, the measured effect will mix two factors—first, that less than all of the revenue is intended for any given purpose and, second, that not all the funds may go to its intended purpose.

¹⁴⁴ The downside is that, if per capita spending for education is correlated with other types of spending, the regressions will be biased.

¹⁴⁵ These numbers do not sum to one either because of the imprecision inherent in statistical analysis or because some of the money was spent on non-education services.

VI. The Tiebout Model and the Theory of Fiscal Federalism

What level of government should pay for government services? Before moving to the implications of my research for this question in the following section, I frame some of the issues involved using the dominant paradigm¹⁴⁶ for understanding local government positively and normatively, the Tiebout model.¹⁴⁷ The model's supporters have generally argued for decentralized provision of services, and its critics have generally argued for more centralized provision.¹⁴⁸ Charles Tiebout argued that, with an infinite number of cities to choose among and costless mobility, each individual will sort into a jurisdiction with individuals who have preferences and resources identical to his. As a result, everyone will be provided with his preferred bundle of services, since identical people will demand identical services from their governments. Social welfare will be maximized without any provision of services at a level of government above the city. This decentralized local governance structure may also promote competition among cities in the provision of public services like schools, thereby improving performance.¹⁴⁹

¹⁴⁶ Richard Briffault, *The Rise of Sublocal Structures in Urban Governance*, 82 MINN. L. REV. 503, 503 (1997) (“The dominant law and economics model of local government, based on the work of Charles M. Tiebout, assumes that decentralization of power to local governments promotes the efficient delivery of public goods and services.”); David Schleicher, *The City as a Law and Economic Subject*, 2010 U. ILL. L. REV. 1507, 1507 (2010) (“The study of the relationship between local government law and economics has long had one central text: Charles Tiebout's famous 1956 article, *A Pure Theory of Local Expenditures*.”).

¹⁴⁷ Tiebout, *supra* note 15. The “exit” option in response to undesirable local circumstances—the option suggested by Tiebout—is often contrasted with the “voice” option of improving those circumstances. See also ALFRED HIRSCHMAN, *EXIT, VOICE, AND LOYALTY* (1970).

¹⁴⁸ Various other issues can affect the desirability of taxing at different levels of government. For example, to the extent that taxation is related to provision of the service, there can be economies (or diseconomies) of scale at different levels of government.

¹⁴⁹ See, e.g., Caroline Hoxby, *Does Competition among Public Schools Benefit Students and Taxpayers?*, 90 AM. ECON. REV. 1209 (2000). But see Jesse Rothstein, *Does Competition among Public Schools Benefit Students and Taxpayers? A Comment on Hoxby (2000)*, 97 AM. ECON. REV. 2026 (2007) (critiquing Hoxby's econometric results as unsound); Caroline Hoxby, *Competition among Public Schools: A Reply to Rothstein (2004)* (Nat'l Bureau of Econ. Research, Working Paper No. 11216, 2005) (responding to Rothstein). A further argument in favor of small jurisdictions is that larger governments may have diseconomies of scale. See Briffault, *supra* note 86, at 791 (“In addition to promoting the opportunities for local choice, it has been asserted that local control constrains the unit costs of government services. These efficiency benefits derive from the relatively small size and greater homogeneity of most school districts, compared to the state or to possible metropolitan-area-wide districts.”)

Tiebout develops the idea of “consumer-voters” who choose among communities that provide different levels of different public goods.¹⁵⁰ Just as consumers in markets can choose the number of bananas they wish to buy, consumer-voters can choose the “quality of such facilities and services as beaches, parks, police protection, roads, and parking facilities.”¹⁵¹ Rather than selecting the number of bananas at the grocery store, the consumer-voter evaluates the services available in the various communities and chooses the one that matches his preferences by costlessly moving there. Tiebout argues that just as free markets provide an efficient amount of production and allocation of privately-produced goods and services to consumers, the process of consumer-voters choosing communities will lead to an efficient amount of production and allocation of government-produced goods and services.

The Tiebout model has been critiqued from multiple perspectives.¹⁵² For example, it does not incorporate cross-jurisdictional externalities.¹⁵³ As argued by Clayton Gillette, high contracting costs may prevent jurisdictions from contracting to address these externalities.¹⁵⁴ It does not consider distribution.¹⁵⁵ As well, in an insightful recent contribution, David Schleicher emphasizes the trade-off between sorting, or allowing people to move to a jurisdiction with the bundle of government-provided goods that they desire, and “agglomeration,” or accruing the benefits from dense development—“reduced transportation cost for goods, increased labor

¹⁵⁰ Tiebout, *supra* note 15, at 417.

¹⁵¹ *Id.* at 418.

¹⁵² One implication of several of these critiques is that, when one of several simplifying assumptions does not hold, there may, in fact, be no “equilibrium,” or stable mathematical solution, or that solution may not be Pareto optimal. Truman F. Bewley, *A Critique of Tiebout’s Theory of Local Public Expenditures*, 49 *ECONOMETRICA* 713, 713 (1981).

¹⁵³ See Richard Briffault, *Our Localism: Part II - Localism and Legal Theory*, 90 *COLUM. L. REV.* 346, 426-27 (1990); Richard Schragger, *Consuming Government*, 101 *MICH. L. REV.* 1824, 1834 (2003).

¹⁵⁴ See Clayton P. Gillette, *Conditions of Interlocal Cooperation*, 21 *J.L. & POL.* 365, 367 (2005) (“My underlying claim . . . is that the most significant obstacles to cooperation lie in high contracting costs.”). Various factors increase contracting costs, including difficulty monitoring behavior and courts’ reluctance to get involved, especially in budgetary matters. Clayton P. Gillette, *Regionalization and Interlocal Bargains*, 76 *N.Y.U. L. REV.* 190, 257-60 (2001).

¹⁵⁵ See Sheryll D. Cashin, *Localism, Self-Interest, and the Tyranny of the Favored Quarter: Addressing the Barriers to New Regionalism*, 88 *GEO. L.J.* 1985, 1991-2015 (2000).

market depth, and intellectual spillovers.”¹⁵⁶ Schleicher argues that the presence of many small governments promotes Tiebout sorting by giving residents many options, but does not promote optimal agglomeration benefits, since these benefits are felt across jurisdictional boundaries, and it may be difficult for a large number of cities to coordinate to maximize them.¹⁵⁷

Richard Schragger critiques not the assumptions of the Tiebout model but rather its supposed outcome of promoting efficiency and economic growth.¹⁵⁸ He argues, first, that rather than decentralization causing economic growth, the opposite causation appears to have been the case, and, second, that the main drivers of economic success have more to do with path dependency and luck than legal institutions like the degree of decentralization.¹⁵⁹

A final critique of the Tiebout model is its emphasis on tastes driving differences between taxes and spending across location, rather than differences in wealth. Richard Briffault elegantly describes the

blithe assumption that most interlocal tax and spending differences are attributable to differences in “tastes,” and not to differences in wealth. In theory, one locality might prefer a municipal golf course, another a new computer lab for its schools, a third might opt to repave its roads, and a fourth might decide to lower taxes and spend less on local services. In fact, however, many local taxing and spending decisions are based not on idiosyncratic local taste differences, but on the stark fiscal disparities that divide localities within each metropolitan area.¹⁶⁰

My empirical results show how much those fiscal disparities drive residential location choice by demonstrating the large mobility response when the disparities are reduced, showing the importance in reality of the fiscal disparities absent from the Tiebout model. This Article emphasizes the results of accounting for two important facts. First, poor people

¹⁵⁶ Schleicher, *supra* note 146 at 1507.

¹⁵⁷ *Id.* at 1512.

¹⁵⁸ Richard Schragger, *Decentralization and Development*, 96 VA. L. REV. 1837 (2010).

¹⁵⁹ *Id.* at 1837.

¹⁶⁰ Briffault, *supra* note 86, at 789-790.

disproportionately live in cities, and second, space matters. Although people may want to live close to their jobs, which are disproportionately in cities¹⁶¹, or may want to live in cities for any other reason, the Tiebout model—to put it simply—does not consider the existence space. It just has an infinite number of autonomous cities with no commuting between them. However, in reality, the American system of local financing “bundles” together living in poor cities with the need to pay for the fixed cost of services for the poor, thereby discouraging individuals from living in locations that they otherwise would prefer.¹⁶²

Scholars have long debated how policy should respond to the downsides of decentralization. Much has been written advocating the benefits of metropolitan government over fragmented jurisdictional control within metropolitan areas. This view suggests that metropolitan decentralization may lead to sprawl and inequality.¹⁶³ For example, Gerald Frug argues that “current urban policy adopted by every level of American government promotes the fragmentation of America's metropolitan areas” and that having metropolitan-level “communities” would be superior.¹⁶⁴ While I argue in the next section how this Article suggests deficiencies in the current decentralized make-up of metropolitan governments, the structure of local governments affects much more than the structure of local finances.

¹⁶¹ Edward L. Glaeser & Matthew E. Kahn, *Decentralized Employment and the Transformation of the American City*, 2001 BROOKINGS-WHARTON PAPERS ON URB. AFF. 1, 6 (2001) (showing that 18% of people lived within three miles of central business districts, but 26% worked there in 1996).

¹⁶² The “poverty fine” a middle class person often must pay to live in a city that results from the high concentration of poverty may also help explain the difference between the location of the rich and the poor in American and European metropolitan areas. Jan K. Brueckner, Jacques-Francois Thisse & Yves Zenou, *Why Is Central Paris Rich and Downtown Detroit Poor? An Amenity-Based Theory*, 43 EUR. ECON. REV. 91, 92 (1999). Since European countries tend to have more centralized financing of local services, there is less disincentive for the rich to live near the poor, perhaps helping to explain the different location distributions.

¹⁶³ See, e.g., ANTHONY DOWNS, *NEW VISIONS FOR METROPOLITAN AMERICA* (1994); MYRON ORFIELD, *METROPOLITICS: A REGIONAL AGENDA FOR COMMUNITY AND STABILITY* (1997).

¹⁶⁴ Gerald Frug, *The Geography of Community*, 48 STAN. L. REV. 1047, 1047 (1995) (“The federal government’s support for highways and home ownership, like the state-created rules of local government law, nurtures suburban autonomy, while the suburbs use their zoning power, and central cities their redevelopment authority, to isolate the poor in general and racial minorities in particular.”).

Rather, this Article contributes most to one component of the appropriate design of local government, namely local government *financing*, especially as it relates to schools.¹⁶⁵ While the Tiebout model explains some of the benefits of local financing, Richard Briffault discusses many of the downsides to local control of school finances. He points out three ways in which local financial control contributes to inequality in the provision of local education.¹⁶⁶ First, by “dividing states into districts of radically different taxable wealth, . . . the quality of local services [is] dependent upon the amount of local wealth.”¹⁶⁷ The second way is more subtle: local financial control “reinforces the consequences of the initial inequality by creating a regional ‘centrifugal force,’ that leads the affluent to physically segregate themselves from the less affluent, to deploy local land use powers to heighten the barriers to local economic integration, and to incorporate separately so as to protect local wealth and immunize local taxpayers from regional fiscal needs and demands.”¹⁶⁸ Third, Briffault argues that “local financial responsibility may ‘skim off’ the ablest, most active, and most effective parents from

¹⁶⁵ The analysis here also offers some insight into one part—perhaps the largest part—of the debate over the local financing of services, the property tax. Edward Zelinsky, once a strong critic of the local property tax and now a more moderate critic, offers one of the most thoughtful analyses on the local property tax and neatly summarizes current thinking on the issue. Edward Zelinsky, *The Once and Future Property Tax: A Dialogue with My Younger Self*, 23 CARDOZO L. REV. 2199 (2002). He argues that two intellectual developments have challenged the critique of the property tax as, among other things, inequitable. *Id.* at 2201-2203. First, research in economics by Harberger suggests that the ultimate “incidence” of taxes may not be borne by those who pay them—meaning that the tax cost of the property tax may be largely borne by owners of capital (e.g., those owning stock in corporations), not renters or homeowners of modest means. *Id.* at 2204. Second, Zelinsky notes that “[t]he alternative challenge to the traditional wisdom, premised on the seminal writings of Charles Tiebout, views the property tax as a wash: the payment of property taxes purchases offsetting benefits in the form of government services.” *Id.* at 2205. (For further discussion on the difference between the “benefit view” of the property tax holding that taxes reflect benefit received and the “new view,” holding that the property tax is borne by all capital, see Louis Kaplow, *Fiscal Federalism and the Deductibility of State and Local Taxes under the Federal Income Tax*, 82 VA. L. REV. 413 (1996).) Nevertheless, Zelinsky argues that “[p]arts of the critique retain force. Concerns about regressivity remain insofar as the tax is passed onto tenants or is absorbed by homeowners of modest means.” Zelinsky, at 2205. As well, “despite the disappointing gap between increased funding and improved student performance, persuasive reasons exist for allocating to the states a strong role in financing public education.” *Id.* at 2209. To this cogent reappraisal of the local property tax, I add another critique: the local property tax distorts where people live, hurting not only individuals but also society because of the higher-externality lifestyle associated with living outside of cities. Overall then this research contributes to critiques of unequal school funding and the local property tax structure that underlies this differential.

¹⁶⁶ Briffault, *supra* note 86.

¹⁶⁷ *Id.* at 805.

¹⁶⁸ *Id.*

inner city communities that need them most, thereby leaving those communities not only with fewer economic resources, but bereft of the political resources necessary to secure the accountability of local political institutions and to empower local participation.”¹⁶⁹ And, as William Julius Wilson argued, the absence of middle-class black professionals may especially harm the prospects for the black youths who remain in central cities.¹⁷⁰ These arguments emphasize the complex types of feedbacks that can occur with local finance redistribution. Once finances move toward equalization, the middle-class may return to cities, generating endogenous political responses that improve services and attract more middle-class individuals. I will emphasize the efficiency aspect of this response.¹⁷¹

VII. Implications for Theory and Law

A. Implications for Theory: Tieboutian Decentralization versus Efficient Centralization

In this Section, I show how the large magnitude of the behavioral response to school finance redistribution suggests the importance of two underappreciated efficiency grounds for state funding of the education of the poor, to consider alongside other costs and benefits of state aid. First, it helps promote efficient Tiebout sorting as residents who live in jurisdictions with poor individuals are no longer forced to bear the cost of educating the poor and hence are no longer discouraged from living in the most efficient locations. Second, in encouraging the return

¹⁶⁹ *Id.* at 805-806.

¹⁷⁰ WILLIAM JULIUS WILSON, *THE TRULY DISADVANTAGED* (1987).

¹⁷¹ For the return of the middle class to the cities to be efficient, of course, there must not be offsetting efficiency losses resulting from their leaving the suburbs.

to the city, school finance redistribution avoids the negative environmental, social, and economic externalities of sprawl. I discuss each of these reasons in turn.

i. Private Efficiency: Promoting Effective Tiebout Sorting

The Tiebout model assumes that there is no local redistribution. But two features of state constitutions essentially require local redistribution to the poor in the absence of state or federal funding for the cost of educating the poor. First, state constitutional provisions require the provision of “free” elementary and secondary education.¹⁷² Second, state constitutions generally prohibit differential property tax rates.¹⁷³ All residential property must be taxed at the same uniform tax rate. As a result, residents of a town are “in it together” in a way that they would not be if schools were paid for by state-provided vouchers redeemable anywhere, or if enclaves of the rich in a poor city could have lower property tax rates to attract them to the city. Similarly, “[w]hen a municipality finances a service from general revenues, it is usually obligated to distribute the benefits of that service in roughly equal shares, irrespective of the general taxes the individual citizen may have paid.”¹⁷⁴ As a result of these factors, if a middle class person wants to live in a central city, he often must pay the “entry fee” of having higher taxes and worse services, which distorts residential location choice, an effect not considered in the Tiebout model. For example, some may want to live near work but will not because of high tax rates.¹⁷⁵

¹⁷² Ellickson, *supra* note 17, at 452. One might argue that this minimum required expenditure is a recent development, arising out of the school finance litigation in the 1970s. However, the constitutional requirements are longstanding, and it is the disparities in income between locations that are new. In 1960, city residents actually had a higher per capita income than suburbanites by 5 percent. By 1980, city residents had a per capita income equal to 90 percent of suburbanites’. By 1987, it was only 59 percent. Georgette C. Poindexter, *Towards a Legal Framework for Regional Redistribution of Poverty-Related Expenses*, 47 WASH. U. J. URB. & CONTEMP. L. 3, 10 (1995).

¹⁷³ *Id.* Note though that assessment formulas do not need to be the same. For example, some states systematically discriminate against industrial uses and in favor of single-family homes.

¹⁷⁴ *Id.* at 455.

¹⁷⁵ Ellickson, *supra* note 17, at 457 n.212 (“There is widespread agreement among economists that fiscal variations can create allocational problems.”) (citing James M. Buchanan & Charles J. Goetz, *Efficiency Limits of Fiscal Mobility: An Assessment of the Tiebout Model*, 1 J. PUB. ECON. 25 (1972) and Michelle J. White, *Fiscal Zoning in*

The problem is particularly stark because the wealthy have the highest opportunity cost of time, making it perhaps most natural for the well-off to live closest to work—even as they may be the ones most discouraged from living in inner cities near their workplace.¹⁷⁶

This fixed minimum cost of educating the poor must be borne by someone; the question is by whom. Purely local financing of education introduces an inefficiency in where people live by interfering with Tiebout choice. (I provide further explanation of this inefficiency in the Appendix.) Consider what would happen if Medicaid, the program funded primarily by the federal government to provide medical care to the poor, were funded by charging \$1,000 to middle-class residents of cities, but not to middle-class residents of suburbs. That would yield a distortion in residential location choice by encouraging people to live in suburbs.¹⁷⁷ But this system of charging the well-off residents of cities for society’s fixed obligation to pay for educating the poor—in addition to policing the streets of poor neighborhoods and providing other services—replicates the impact of this Medicaid thought experiment.

Without empirical evidence, though, we cannot know how much tying payment for services for the poor to location choice disrupts Tiebout sorting. This Article provides that

Fragmented Metropolitan Areas, in FISCAL ZONING AND LAND USE CONTROLS 31, 31 (Edwin S. Mills & Wallace E. Oates eds., 1975)).

¹⁷⁶ This distortion may be particularly large since household heads with the strongest incentive to live outside jurisdictions with high taxes and poor services are those with school-age children, which is likely correlated with being of prime working age and therefore having a desire to live near jobs.

¹⁷⁷ Discussion of the inefficiencies arising from differential taxation across locations dates back at least to 1970. See James M. Buchanan & Richard E. Wagner, *An Efficiency Basis for Federal Fiscal Equalization*, in THE ANALYSIS OF PUBLIC OUTPUT 139 (Julius Margolis ed., 1970). Kirk J. Stark studies how a federal equalization scheme would work across states. Kirk J. Stark, *supra* note 20. He focuses on the locational distortion between states; the concern is probably much bigger within metropolitan areas since there is likely much more mobility within metropolitan areas. His efficiency goal is to equalize “net fiscal benefits,” which can arise either from differential availability of source-based taxes (e.g., because of natural resources or a high concentration of wealthy) or local redistributive taxation. *Id.* The idea is that comparable “tax effort” would raise the same income in communities of different fiscal capacities. Stark reviews the different types of equalization, including total table resources, representative tax systems, and representative revenue systems. *Id.* at 30-32. Note though that some have argued that, under a certain unrealistic set of assumptions, locational tax neutrality does not matter. David E. Wildasin, *Locational Efficiency in a Federal System*, 10 REGIONAL SCI. & URB. ECON. 453 (1980) (arguing that, if there are no congestion costs and non-distortionary local taxes, there is no distortion).

empirical evidence. For example, it could be that few people would move to poor cities even if the cost of educating the poor there were completely paid for by the state, thus suggesting that the “poverty fine” generates little inefficiency. Thus far, I have interpreted my results as measuring how much school finance redistribution led to a return to the city. A second interpretation is that they measure how large an inefficiency results from tying paying for the fixed costs of poverty to location choice. School finance redistribution is exactly the natural experiment needed to measure how much unbundling these payments from location choice affects where people live.¹⁷⁸ As is conventional in the economics of public finance, a large behavioral response indicates a large inefficiency. If people do not respond very much to the bundling of costs to location, then this deviation from the Tiebout model is unimportant; little welfare is lost. In the extreme case, if no one moves as a result of school finance redistribution, then there can have been no inefficiency (of the type I describe here), since, even when the “poverty fine” is removed, no one chose to change locations; so there can have been no harm. In contrast, if there is a large behavioral response, then many people are harmed by the policy, generating a large inefficiency.

The meaning of a large versus a small behavioral response can be demonstrated using the framework from Section III. Suppose that the state transfers funds to a poor city in a way that fully compensates for the presence of the poor.¹⁷⁹ As a result of the transfers, the housing demand curve shifts up: for each quantity of housing, potential residents are willing to pay more (or, equivalently, at any price, more potential residents demand housing). The question then is

¹⁷⁸ The evidence in the Article—on how population changes with a place’s median household income—can be seen as a proxy for the ideal measure, which would measure the change with average per capita property tax base. But the two are strongly correlated, so median household income is a good proxy.

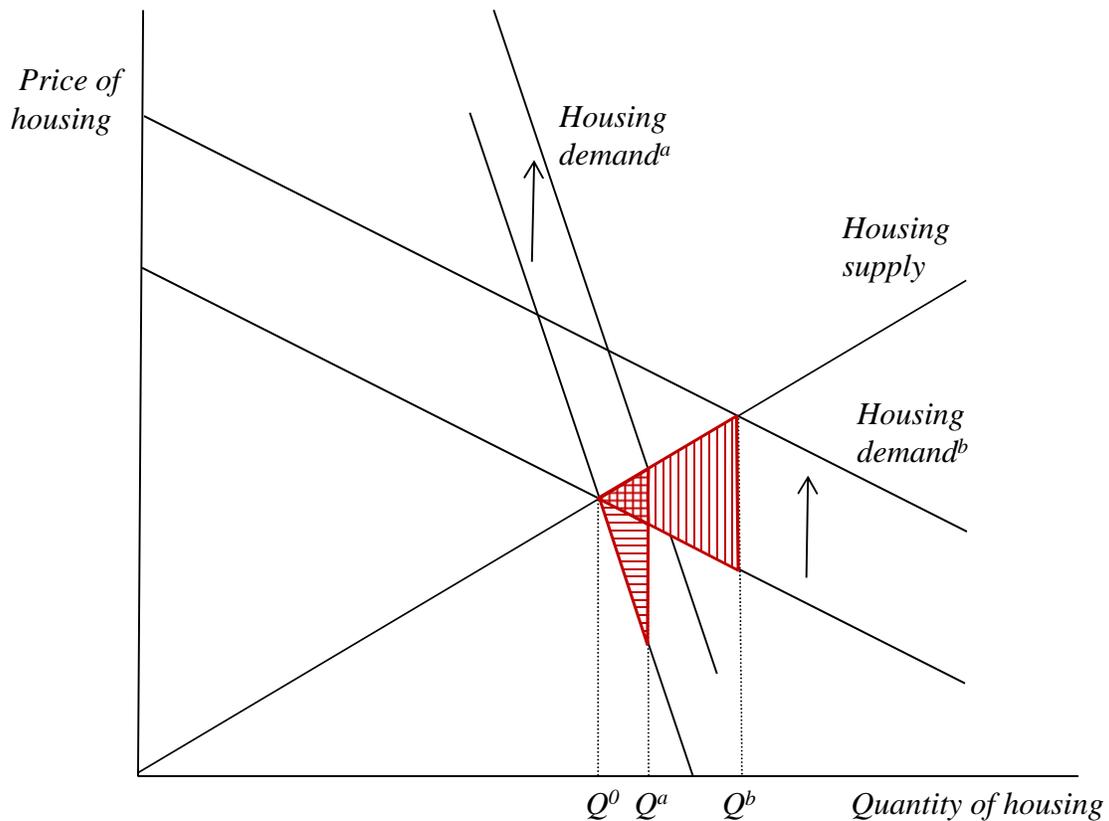
¹⁷⁹ The analysis is simplified in several ways. For example, the elasticity of housing supply also plays a role in determining the size of the deadweight loss: the more elastic the supply is, the greater the scope for a behavioral response, and therefore the greater the size of the deadweight loss.

by how much the quantity of housing—or assuming full occupancy, the population—changes. Figure 5 shows graphically how the size of the deadweight loss, the traditional measure in economics of inefficiency, varies with the behavioral response.¹⁸⁰ The area measured from zero quantity to the equilibrium quantity between the supply and demand curves represents the amount of social surplus and the deadweight loss represents the amount of inefficiency due to financing at the local level.¹⁸¹ If with state transfers the quantity increases only from Q^0 to Q^a , because the demand curve is the inelastic *Demand^a*, there is only a relatively small deadweight loss, amounting to the area with horizontal lines. With little quantity response, there is little efficiency loss, since few people care about moving back to the city. However, if the quantity increases to Q^b , because the demand curve is the elastic *Demand^b*, there is a substantially larger deadweight loss (the whole area with vertical lines), suggesting that there was a lot of pent-up demand to move back to cities and that state financing of education for the poor relieves it. The parameter that matters is by how much population changes for a given amount of transfers from the state, which is exactly the parameter I measure. Since I find a large population response because of the transfers, the results suggest that the inefficiency resulting from tying paying for the fixed costs of poverty to location are large.

¹⁸⁰ This deadweight loss is also known as a “Harberger triangle.” Arnold C. Harberger, *The Measurement of Waste*, 43 AM. ECON. REV. 58 (1964) (deriving the triangle method of analyzing deadweight loss); Arnold C. Harberger, *Taxation, Resource Allocation, and Welfare*, in THE ROLE OF DIRECT AND INDIRECT TAXES IN THE FEDERAL REVENUE SYSTEM 25 (John F. Due ed., 1964) (applying the triangle method to estimate deadweight losses due to income taxes in the United States). See also James R. Hines, *Three Sides of Harberger Triangles*, 13 J. ECON. PERSP. 167 (1999) (providing additional and more contemporary explanations of Harberger triangles).

¹⁸¹ Note that this is a somewhat unconventional diagram in that the policy change moves *toward* the more efficient outcome.

Figure 5: Efficiency Benefits of Increased Transfers



ii. Social Efficiency: Avoiding the Negative Externalities of Sprawl

Second, the problems arising from fiscal distortions of location choice are compounded by the foregone potentially large positive—and uncorrected¹⁸²—externalities associated with living in cities. The current tax regime promotes land use decisions that are contrary to current policy objectives to promote cities’ positive externalities. In particular, with the goal of reducing

¹⁸² The presence of externalities alone does not justify policy interventions. The externalities need to be uncorrected as well; that is, the government cannot already have policies in place promoting the activities leading to the positive externalities or discouraging policies leading to negative externalities. Indeed, targeted policies to address externalities are generally viewed as superior to untargeted ones. However, in the absence of targeted policies like a cap-and-trade scheme for greenhouse gas emissions or a subsidy to promote agglomeration—unlikely prospects at best—then untargeted policies are still efficiency-enhancing. Of course, in states like California and those in the northeast party to the Regional Greenhouse Gas Initiative that have imposed a price on carbon, further subsidizing city living to reduce GHG emissions is less desirable.

greenhouse gas (GHG) emissions and improving residents' quality of life, states around the country have sought to encourage development near jobs and transit hubs, precisely where taxes are the highest and local services the worst.¹⁸³ Living in central cities reduces a person's GHG emissions first by reducing vehicle miles travelled in cars because of the availability of transit and proximity to jobs.¹⁸⁴ According to the Urban Mobility Report, in 2011, congestion led Americans to travel 5.5 billion hours more and purchase an extra 2.9 billion gallons of fuel; together, these generated a cost of \$121 billion.¹⁸⁵ These costs are not all attributable to sprawl, but with 26% of jobs and only 18% of the population located within 3 miles of central business districts, sprawl is a significant contributor. Cities also reduce residents' GHG emissions because the higher-density multi-family development likely to occur in cities also uses less energy per square foot than single-family dwellings do because city units are surrounded by other units rather than the outside.¹⁸⁶ Estimates from Edward Glaeser and Matthew Kahn suggest that, between greater home energy consumption and transportation behavior, suburbanites generate about \$7 billion annually in externalities from their extra emissions of carbon alone.¹⁸⁷

¹⁸³ See, e.g., Mark Zaretsky, *Malloy Announces New Panel to Address Transit Development in Connecticut*, NEW HAVEN REGISTER (Dec. 10, 2012).

<http://www.nhregister.com/articles/2012/12/10/news/doc50c65cb67291d290294827.txt?viewmode=fullstory> (describing Connecticut Governor Daniel Malloy's attempt to increase transit-oriented development).

¹⁸⁴ Reductions in vehicle miles travelled also reduces congestion and the need to build more highways, which is important as the funds available for highway construction decline.

¹⁸⁵ David Schrank, Bill Eisele & Tom Lomax, *2012 Urban Mobility Report*, TEXAS A&M TRANSPORTATION INSTITUTE I (2012).

¹⁸⁶ See, e.g., Edward Glaeser & Matthew Kahn, *The Greenness of Cities: Carbon Dioxide Emissions and Urban Development*, 67 J. URB. ECON. 404 (2010) (arguing that residents in cities emit fewer greenhouse gases per capita).

¹⁸⁷ *Id.* at 415. This calculation comes from multiplying (1) the approximate extra per-household social cost of carbon emitted for living in suburbs versus cities and (2) the number of suburban households.

In addition to the environmental concerns, many scholars argue that cities induce agglomeration economies resulting from spillovers in ideas and greater labor market depth.¹⁸⁸ Finally, other social benefits may be promoted by the middle class's return to the city.¹⁸⁹ As argued by William Julius Wilson, middle-class individuals attracted to cities may be particularly valuable as role models to youths.¹⁹⁰ Similarly, as long as there are not offsetting losses elsewhere, the political benefits that Richard Briffault describes—of able citizens moving back to cities and improving political accountability—are also potentially valuable reasons to promote the return of the middle class to cities.¹⁹¹

iii. Taxes and Location Today

My results suggest the importance of efficiency reasons for centralized financing of local services for the poor, to consider alongside other costs and benefits of such financing. In the trade-off between the benefits of decentralization as described by Tiebout and the costs in equity and locational efficiency, the Article provides the first empirical evidence on the large magnitude of the distortion resulting from financing the costs of poverty at the local level. Tiebout's reasoning may remain compelling, but this Article's results offer new reasons for policymakers to discount them and to fund local services for the poor more centrally. These results show that increasing transfers to poor cities increases their spending on services and reduces taxes on their residents, thereby leading to increases in their populations. Yet, poor places in Connecticut at

¹⁸⁸ See Schleicher, *supra* note 146. For a review of the empirical evidence for agglomeration economies, see Enrico Moretti, *Local Labor Markets*, in 4 HANDBOOK OF LABOR ECONOMICS 1237, 1282-86 (Orley Ashenfelter & David Card eds., 2011).

¹⁸⁹ There is at least anecdotal evidence that the middle class is returning to cities. See ALAN EHRENHALT, *THE GREAT INVERSION AND THE FUTURE OF THE AMERICAN CITY* (2013).

¹⁹⁰ WILSON, *supra* note 170.

¹⁹¹ Briffault, *supra* note 86, at 805-06.

least still tend to have the highest property tax rates.¹⁹² See Figure 6, which plots 2012 equalized¹⁹³ property tax mill¹⁹⁴ rates and median household incomes in Connecticut's towns. Richer places do not always have lower taxes, but a general inverse relationship between tax rates and income obtains. For example, Connecticut's large poor cities of Hartford, Waterbury, New Haven, and Bridgeport have the state's highest tax rates. As well, in spite of the high taxes, poor cities in Connecticut also have the worst schools and the highest crime.¹⁹⁵ This evidence is only suggestive, since poor cities could also have higher taxes because of different policy choices or inefficient spending, but it is striking nonetheless.

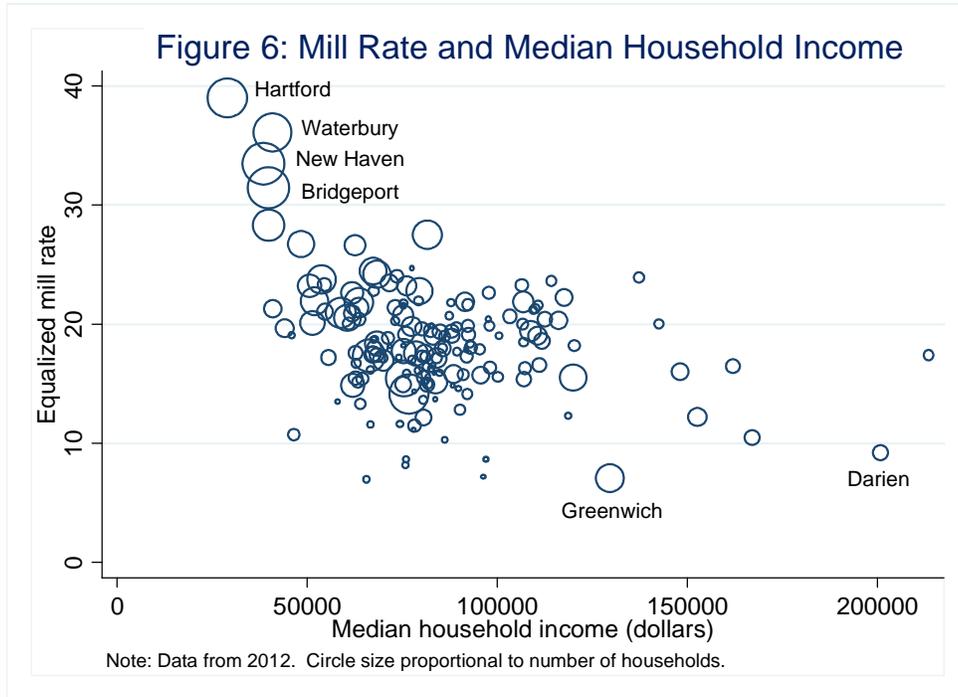
¹⁹² The extent to which poor places have high tax rates nationally remains an open question. There is no comprehensive national dataset on the variation in service quality and taxes across U.S. cities and, to my knowledge, no one has even conducted such an analysis for even a single state, making the following analysis for Connecticut all the more valuable.

Places with high poverty may not have high tax rates because of the presence of commercial property in cities. For example, Manhattan has many valuable offices to tax, and that helps to offset New York City's high poverty rate. Indeed, such an argument was cited in *Rodriguez* as a reason that local school finance does not discriminate against the poor; the Court cited statistical analysis of Connecticut towns in a *Yale Law Journal* Note as support. *San Antonio Indep. Sch. Dist. v. Rodriguez*, 411 U.S. 1, 22-23 (1973) (citing Note, *A Statistical Analysis of the School Finance Decisions: On Winning Battles and Losing Wars*, 81 YALE L.J. 1303, 1328-29 (1972)). So an analysis of contemporary Connecticut data is all the more instructive. In Connecticut, my own analysis shows that 81% of real property is residential—so that the scope for making up for a weak residential tax base with commercial property is limited. In any case, though, the correlation between median household income and per capita commercial, industrial, or public property is actually *positive* (with a correlation coefficient of 0.22); that is, richer towns actually have *more* non-residential property tax per household. See Appendix Figure 2 for a scatterplot of this relationship. Note that the three towns highest on the y axis are Greenwich, Darien, and Stamford. The data source is *Equalized Net Grand List by Town*, CONNECTICUT OFFICE OF POLICY & MANAGEMENT, <http://www.ct.gov/opm/cwp/view.asp?A=2987&Q=385970> (last visited Oct. 6, 2014).

¹⁹³ The Connecticut Office of Policy and Management produces “equalized” mill rates which value property according to a state formula by making aggregate property values comparable across towns. Without these equalized property values, towns could under-value properties overall to receive more school finance funds or under-value certain properties to reduce the property tax burden to their owners. With the property values equalized, the Office can calculate the equalized mill rate by dividing the amount paid in taxes by the equalized property values. *Mill Rates*, CONNECTICUT OFFICE OF POLICY AND MANAGEMENT, <http://www.ct.gov/opm/cwp/view.asp?Q=385976> (last visited July 28, 2013).

¹⁹⁴ A mill is one one-thousandth of the value of property. For example, a rate of 25 mills means that property owners pay 2.5% of the value of their property every year in property taxes.

¹⁹⁵ The poorest towns tend to have the lowest-rated schools and highest crime rates. Andrew Brady & Patricia Grandjean, *Rating the Towns 2011*, CONNECTICUT MAGAZINE, <http://www.connecticutmag.com/Connecticut-Magazine/November-2011/Rating-the-Towns/> (last visited Oct. 9, 2013).



My empirical results and the continued disparity in tax rates suggest that, when a developer is considering building a home for a well-off family, it is significantly less likely to choose to build in a poor city because new well-off residents must shoulder part of the fiscal burden of living in the same municipality as poor families.¹⁹⁶ The fact that local financing equalization has such a large effect on population growth suggests that some of the unattractiveness of poor cities for new residents may be an artifact of local financing structures, a factor not considered in the Tiebout model.¹⁹⁷ My results show the importance of local financing structures in reducing development in central cities and increasing sprawl.

I limit my claim in three ways. First, places differ from one another in many ways. In some places, schools, housing, and other goods and services cost more to produce than in others. Local governments may make different policy choices, redistributing more or less or spending

¹⁹⁶ More precisely, these incentives affect potential homeowners, either directly or through builders anticipating the preferences of potential buyers of their homes.

¹⁹⁷ Following the basic maxim of economics that larger distortions result when more elastic behavior is “taxed,” the distortion from the “poverty fine” must be large since location choice is quite elastic.

different amounts of money on services. Some local governments may be less efficient at spending money. What distinguishes all of these differences from the one I study is that none represents a fixed societal commitment, which will be borne regardless of where people live. If more people live in places where it is expensive to produce goods and services, the total societal cost of providing goods and services will increase, so that it is important that residents bear the cost of these increased costs. Redistributing more than the fixed societal commitment is a choice that local governments make that can increase social welfare; I do not speak to that choice. I am concerned only with the *fixed* societal obligation to pay for the education (and arguably other services) of the poor. Tying that fee to where individuals choose to live distorts their decisions without any offsetting benefits, since the costs still need to be borne by someone.

Second, I do not claim that all school finance redistribution is good or even that school finance redistribution is good on net. School finance redistribution can take many forms. I offer an efficiency reason for state-level or federal-level payments for the education of the poor, not—for example—for capping education spending as has happened in California. And there are reasons to be skeptical of school finance redistribution—for example, some may fear loss of control of local schools. In the overall assessment of costs and benefits of school finance redistribution, I offer additional evidence on the benefits side. It can improve efficiency by unbundling paying for the fixed costs of poverty from residential location choice and reducing the costs of sprawl, and my empirical results show that a significant scope for this efficiency gain.

Finally, let me be clear about my results' implications for distributional concerns. I have been discussing the implications of the results for efficiency. Although I do not make claims about their implications for overall *welfare*, it is nevertheless instructive to consider

distributional concerns, including the potential goal of promoting equity—by which I mean distributing more resources to the poor, for the sake of this discussion.¹⁹⁸ I have two relevant results: the mobility response to school finance redistribution is large, and much of the money intended for schools may go to tax reductions. There are also two relevant questions: First, does school finance redistribution appear more or less equitable in light of the results, relative to what one might expect if there is little mobility response and little of the money goes to tax cuts? Second, in light of the results, does school finance redistribution still appear to redistribute resources to poor children as intended?

The overall implications of the results for the first question, on how equitable school finance redistribution appears, are unclear. First, consider whether mobility back into cities promotes equity. If the people who return to cities have higher incomes than current residents, then their presence may increase the tax base. Their presence may also lower the per-student subsidy from the state, but by a smaller amount than tax revenue increases. As well, higher-income students may provide better peers in schools. On the other hand, if new, wealthier residents displace poorer residents through gentrification, those existing residents may be worse off, with longer commutes from the suburbs.¹⁹⁹ However, the extent of the displacement is limited as we observe large increases in overall population, the main finding of the Article.

The implications of using school funds for tax cuts are also unclear, but likely tilt against equity. Property tax cuts disproportionately benefit the well-off, who own more property and pay

¹⁹⁸ Of course, “equity” is a far more capacious concept than distributing more resources to the poor. However, since that is the most relevant concern with school finance redistribution, I will limit my analysis to this subset of concerns about equity.

¹⁹⁹ Another potential downside to mobility into cities is the need to share the existing commercial and industrial tax base with more residents. Of course, it is an empirical question how the commercial and industrial tax base changes with more residents. What is known is that the commercial and industrial share of the overall tax base is relatively small, at only 17% in Connecticut, so the importance of this factor is limited by the much greater importance of the residential tax base.

more in taxes.²⁰⁰ Poor city residents are quite likely to send their children to public schools though, so they benefit greatly from school spending. As a first cut, then, the poor may be worse off because of the diversion of funds for schools to tax cuts. However, the downstream effects of tax cuts could be more complicated: if they help bring back to cities good peers, more responsive government, and safer streets, then it is possible that much of the downside to the diversion of school funds could be countervailed.

Whatever the implications for how equitable school finance redistribution appears, that redistribution still likely promotes redistribution to poor children as intended. Even with some of the funds going to tax reductions, a substantial portion still goes to funding education. And, though there is a large econometric debate on the question, some evidence shows that the funding has improved educational outcomes for poor students.²⁰¹ As long as the mobility response does not lead to such a large displacement of the poor that it overwhelms the combination of benefits of the education spending and improvements in the quality of life of cities, the net effect on cities' poor is likely positive. And, as noted above, since the main result of the Article shows a large population increase, the scope for displacement is limited. Overall then, the results suggest reasons that school finance redistribution promotes efficiency, while still redistributing to the poor.

²⁰⁰ Note that it matters which types of taxes places reduce in response to school finance transfers. For example, reducing property taxes could have different distributional impacts than reducing sales taxes.

²⁰¹ Card & Payne, *supra* note 7; Jackson, Johnson & Persico, *supra* note 30. However, other research fails to find effects. See, e.g., Julian R. Betts, *Does School Quality Matter? Evidence from the National Longitudinal Survey of Youth*, 77 REV. ECON. & STAT. 231 (1995); Jeff Grogger, *Does School Quality Explain the Recent Black/White Wage Trend?*, 14 J. LAB. ECON. 231 (1996); Eric A. Hanushek, *The Economics of Schooling: Production and Efficiency in Public Schools*, 24 J. ECON. LIT. 1141 (1986).

B. Implications for the Value of Place-Based Policies

This work also informs the debate about the value of place-based policies, which “target transfers toward particular geographic areas rather than groups of individuals.”²⁰² First, this research emphasizes what school finance redistribution actually is—one of the largest, if not the largest, programs of place-based subsidies in the country.²⁰³ Consider whether school finance redistribution is better considered as benefitting a “geographic area” (poor cities) or a “group of individuals” (poor students). In particular, consider a poor individual deciding between living in a rich place and a poor place in a state that has just implemented school finance redistribution. As a result of the school finance redistribution, the poor city will likely now have better schools and lower taxes than it had before, so it is more attractive for the poor person than it was before. However, the same is true for a rich person. The poor place will, of course, have a disproportionately large number of poor people, so poor people will disproportionately benefit from the policy—but this is precisely what place-based policies do. A “person-based” policy could provide a voucher to a poor person to attend a private school or just provide a transfer to the individual; the benefits from these policies would be largely captured by the person, not the place. To my knowledge, school finance redistribution has not previously been framed as a place-based policy.

²⁰² Matias Busso, Jesse Gregory & Patrick Kline, *Assessing the Incidence and Efficiency of a Prominent Place Based Policy*, 103 AM. ECON. REV. 897, 899 (2013). See also TIMOTHY J. BARTIK, WHO BENEFITS FROM STATE AND LOCAL ECONOMIC DEVELOPMENT POLICIES? (1991) (providing a comprehensive taxonomy of place-based policies).

²⁰³ The Government Accountability Office estimates that the federal government spends about \$15 billion annually on economic development grants to communities with high rates of poverty and unemployment. *Federal Economic Development Grants to Communities with High Rates of Poverty and Unemployment*, GOVERNMENT ACCOUNTABILITY OFFICE, GAO-12-938R (2012). A recent *New York Times* article estimated that the states and local government spend \$80 billion annually for similar purposes. Louise Story, *As Companies Seek Tax Deals, Governments Pay High Price*, N.Y. TIMES, Dec. 1, 2013, at A1. State governments spent a much larger \$200 billion on schools in 2000. *Annual Survey of Governments*, *supra* note 8.

The lens of place-based policy-making is important for assessing the value of school finance redistribution and vice versa: the experience with school finance redistribution is helpful for assessing the value of other place-based policies. The “standard” economics view is skeptical of such policy, which is seen as subsidizing precisely the places that are least productive.²⁰⁴ Indeed, taking the traditional skeptical view, place-based policies merely move people from one place to another without increasing welfare.

However, recent research has called this traditional skepticism into question.²⁰⁵ In particular, the traditional models depend on an idea of “spatial equilibrium,” which implies that each individual is indifferent between where he lives and every other place.²⁰⁶ These models do not take into account that individuals differ from each other. In particular, because of idiosyncratic preferences, moving costs, social networks, location-specific skills, and a variety of other factors, individuals are not indifferent between living in one place and living in all others. That everyone is not indifferent between their current location and every other location has important implications for place-based policies: individuals can benefit from such policies, which may be a desirable way to target needy individuals. But this Article qualifies this strand of recent theory: since there actually *has* been a large movement in population in response to

²⁰⁴ LOUIS WINNICK, *Place Prosperity Vs. People Prosperity: Welfare Considerations in the Geographic Redistribution of Economic Activity*, in *ESSAYS IN URBAN LAND ECONOMICS* 273 (1966) (arguing that place-based policies merely redistribute the location of employment and housing, rather than increasing welfare in aggregate). See also Edward L. Glaeser & Joshua D. Gottlieb, *The Economics of Place-Making Policies*, 2008 *BROOKINGS PAPERS ON ECON. ACTIVITY* 155, 227 (2008) (“[P]olicies that aid poor places are not necessarily redistributive and will have indirect consequences, for example pushing up housing costs and inducing poor people to move to poor areas.”)

²⁰⁵ Busso, Gregory & Kline, *supra* note 202, at 914 (“If most agents are inframarginal in their commuting and residential decisions, deadweight loss will be small and local workers will reap the benefits of place based interventions. If, on the other hand, agents have nearly identical preferences . . . deadweight loss will be substantial and government expenditures will be capitalized into land rents.”) See also the earlier critique JEROME ROTHENBERG, GEORGE C. GALSTER, RICHARD V. BUTLER & JOHN R. PITKIN, *THE MAZE OF URBAN HOUSING MARKETS: THEORY, EVIDENCE, AND POLICY* (1991) (emphasizing the importance of inertia and housing submarkets). Gyourko, *supra* note 18, also advocates for place-based policies.

²⁰⁶ The classic statements of spatial equilibrium are Jennifer Roback, *Wages, Rents, and the Quality of Life*, 90 *J. POL. ECON.* 1257 (1982) and Sherwin Rosen, *Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition*, 82 *90 J. POL. ECON.* 34 (1974).

school finance redistribution, many of the individuals benefitting from the redistribution may not be the intended beneficiaries.

Recent economics research has also emphasized a second reason to be more sympathetic to place-based policies. It argues that even if much of what place-based policies accomplish is moving people from one place to another, that could be advantageous, if certain agglomeration economies are at work.²⁰⁷ For example, if place-based policies move people to cities, and those additional people make current residents more productive without having a fully offsetting effect on the places from which they are moving, then place-based policies can improve overall welfare just by moving people from one place to another. Hence, if agglomeration externalities are significant in cities, then the place-based policies that bring more people to cities should seem more valuable because of the results in this Article showing that more people move to cities in response to those policies.

This Article suggests two new reasons to embrace place-based policies that benefit cities. First, the class of positive externalities extends beyond agglomeration economies to environmental and social externalities. Second, place-based policies benefitting cities counteract other implicit place-based policies resulting from the structure of local finances that discourage city living. Again, even if place-based policies only induce people to move, that can be a good thing. The traditional critique of place-based policies—that they change people’s locations without improving welfare—no longer holds when the existing fiscal structure’s “poverty fine”

²⁰⁷ Patrick Kline, *Place Based Policies, Heterogeneity, and Agglomeration*, 100 AM. ECON. REV. 383 (2010) (“My conclusions are shown to depend critically upon the degree of preference heterogeneity in the population and the structure of any agglomeration economies.”). See also Patrick Kline & Enrico Moretti, *Local Economic Development, Agglomeration Economies, and the Big Push: 100 Years of Evidence from the Tennessee Valley Authority*, 129 Q.J. ECON. 275 (2014) (measuring the agglomeration economies resulting from the Tennessee Valley Authority and showing that, while there were agglomeration economies, they were offset by losses elsewhere).

discourages people from living in cities.²⁰⁸ In fact, the traditional critique of place-based policies is flipped on its head: instead of place-based policies being ineffective because they merely redistribute population, place-based policies are effective precisely to the extent that they *do* redistribute population to where it is most efficient for them to live.

The foregoing analysis has reviewed the value of place-based policies relative to dim earlier beliefs about their value—a relevant discussion when there may be real-world constraints on the use of vouchers. I have not discussed their value relative to that of person-based policies. For the value of place-based versus person-based policies, the two efficiency reasons differ in their implications. To promote social efficiency like increasing agglomeration externalities and reducing greenhouse gas emissions from sprawl, place-based policies may be superior to person-based policies, since the latter would not as effectively target city living. In contrast, both types of policies promote private efficiency. Place-based policies, like aid to cities to pay for educating the poor, and person-based policies, like vouchers to pay for educating the poor, reduce the poverty fine that links location choice to paying for services for the poor.²⁰⁹ Overall, though, the important implication is that, in contrast to earlier beliefs that place-based policies had little value, the results here suggest that they have substantial value.

C. Implications for School Finance Litigation

An Article on school finance litigation raises the question of what the results mean for future litigation. The impact of the results on school finance litigation may be limited, since courts appear mostly animated by equal or adequate levels of education spending, and this

²⁰⁸ This is a version of the “theory of the second best,” stating that once there is already a distortion, a second “distortion” can actually be welfare-improving. See Richard G. Lipsey & Kelvin Lancaster, *The General Theory of Second Best*, 24 REV. ECON. STUD. 11 (1956).

²⁰⁹ Person-based policies may have other benefits like permitting the poor to move with the subsidy. Vouchers may also help ensure that the poor capture a larger fraction of the benefits.

Article speaks to efficiency—and, indeed, efficiency in how schools are funded, not how much they spend or how they spend it. However, my results on efficiency may suggest one alternative argument in future litigation, and I will do my best to make that case here. That case begins with the understanding that state constitutional rights are quite different from U.S. Constitutional rights in that state constitutions confer socioeconomic rights that the U.S. Constitution does not.²¹⁰ Of most relevance to this Article, all states confer a right to education.²¹¹

In conferring this right, fourteen state constitutions require that the systems of education are “efficient.”²¹² And my results could appeal to these constitutional requirements, by emphasizing the efficiency costs resulting (i) from discouraging people from living where they would prefer because of the “poverty fine” and (ii) from the externalities associated with encouraging suburban living. Indeed, what might be described as the problem of the poverty fine has already been discussed by the Texas Supreme Court as a contextual factor. In striking down Texas’s school finance system as inequitable, the court noted,

Property-poor districts are trapped in a cycle of poverty from which there is no opportunity to free themselves. Because of their inadequate tax base, they must tax at significantly higher rates . . . yet their educational programs are typically inferior. The location of new . . . development is strongly influenced by tax rates and the quality of local schools. Thus, the property-poor districts with their high tax rates and inferior schools are unable to attract new . . . development and so have little opportunity to improve their tax base.²¹³

²¹⁰ Helen Hershkoff, “*Just Words*”: *Common Law and the Enforcement of State Constitutional Social and Economic Rights*, 62 STAN. L. REV. 1521, 1523 (2009). Note, however, that *Rodriguez* says in dicta that the Constitution might guarantee “some identifiable quantum of education” to allow the expression of fundamental rights like free expression. *Rodriguez*, 411 U.S. at 36.

²¹¹ Molly McUsic, *The Use of Education Clauses in School Finance Reform Litigation*, 28 HARV. J. ON LEGIS. 307, 311 (1991).

²¹² AR. CONST. art. XIV, § 1; DE. CONST. art. X, § 1; FL. CONST. art. IX, § 1; IL. CONST. art. X, § 1; KY. CONST., § 183; MD. CONST. art. VIII, § 1; MN. CONST. art. XIII, § 1; N.J. CONST. art. IV, § 1; OH. CONST. art. VI, § 2; PA. CONST. art. III, § 14; S.D. CONST. art. VIII, § 15; TX. CONST. art. VII, § 1; W.V. CONST. art. XII, § 1; WY. CONST. art. VII, § 9. For the text of many of the constitutional provisions, see Molly A. Hunter, *State Constitution Education Clause Language*, EDUCATION LAW CENTER, <http://pabarcr.org/pdf/Molly%20Hunter%20Article.pdf> (last visited May 1, 2014).

²¹³ *Edgewood Indep. Sch. Dist. v. Kirby*, 777 S.W.2d 391, 393 (Tex. 1989). The quote is actually discussing the location of *business* development, but the location of high-income individuals has the same effect on the tax base. Indeed, the results here could strengthen the argument from business to both business and residential development.

By showing empirically the importance of decoupling poverty from incentives for new development, I strengthen the Texas Supreme Court's account of what generates the need for school finance redistribution: a cycle of poverty results from a low tax base, high tax rates, and low-quality services, discouraging development.

In at least the states requiring "efficient" systems of education and arguably others as well, those challenging school finance systems can argue that unequal school finance systems provide a large impediment to the efficient spatial allocation of residents. No state constitutional court that I am aware of has explicitly included such considerations in its definition of "efficient," but some courts have articulated capacious conceptions of efficiency that could accommodate efficiency in residential location arising from funding schools. For example, as noted by the Texas Supreme Court,

There is no reason to think that "efficient" meant anything different in 1875 from what it now means. "Efficient" conveys the meaning of effective or productive results and connotes the use of resources so as to produce results with little waste; this meaning does not appear to have changed over time.²¹⁴

My results essentially show that the current system of school finance generates quite a bit of waste. It distorts where people live, thereby creating waste not only because people do not live where it would privately be most efficient to live but also because they tend to live in high negative-externality locations.²¹⁵ It may seem unlikely that the constitutional framers

²¹⁴ *Id.*

²¹⁵ The Texas Supreme Court based its opinion invalidating the school finance system, in part, on the "efficiency" language. In interpreting the efficiency language, however, the supreme court interpreted "efficiency" as meaning something arguably more akin to equality, writing

We conclude that, in mandating "efficiency," the constitutional framers and ratifiers did not intend a system with such vast disparities as now exist. Instead, they stated clearly that the purpose of an efficient system was to provide for a "*general* diffusion of knowledge." (Emphasis added.) The present system, by contrast, provides not for a diffusion that is general, but for one that is limited and unbalanced. The resultant inequalities are thus directly contrary to the constitutional vision of efficiency.

considered efficiency in location. However, as the Texas Supreme Court itself noted, the system of local financing worked when enacted in the late nineteenth century, but wealth disparities between locations grew over time.²¹⁶ So the distortion I document provides new ammunition for addressing these disparities as a matter of economic efficiency.²¹⁷

This account notwithstanding, there are strong reasons to believe that courts would be skeptical of this interpretation of “efficient” given the unlikelihood that the drafters of state constitutions had it in mind. Since many of these constitutional provisions were adopted in the late nineteenth century, “efficient” may be taken to mean “effectiveness” in spending. Nevertheless, the Kentucky Supreme Court’s jurisprudence could provide a useful precedent for considering efficiency in how funds are raised, acknowledging that the path to its application elsewhere may be slim. Kentucky’s constitutional provision is quite short, consisting only of: “The General Assembly shall, by appropriate legislation, provide for an efficient system of common schools throughout the State.”²¹⁸ Based merely upon this requirement of efficiency, the Kentucky Supreme Court in *Rose v. Council for Better Education*,²¹⁹ required as an aspect of efficiency “a uniform [property] tax rate” to pay for schools.²²⁰ The Kentucky Supreme Court thus extends efficiency beyond “effective” spending of money, and beyond even uniformity in the spending of money, to uniformity in the *raising* of money. This is a precedent for efficiency

Id. at 396. Thus, the focus has been on the adequacy of the education provided in poor school districts, rather than on the inefficiency arising from the location choices of residents, which the results here address. *See also* *Rose v. Council for Better Education*, 790 S.W.2d 186 (Ky. 1989) (for another state supreme court decision using “efficiency” language in a state constitution to strike down a school finance system, but using the language to require an adequate education for children, rather than emphasizing the inefficiencies described here).

²¹⁶ *Edgewood Indep. Sch. Dist. v. Kirby*, 777 S.W.2d at 394.

²¹⁷ Similarly, such an argument could appeal to the goal stated in Kentucky’s 1890 constitutional convention “to seize every opportunity to make [public schools] more efficient.” *Rose v. Council for Better Education*, 790 S.W.2d 186, 194 (Ky. 1989) (quoting from DEBATES CONSTITUTIONAL CONVENTION (1890)).

²¹⁸ KY. CONST., § 183.

²¹⁹ 790 S.W.2d 186 (Ky. 1989). The Kentucky Supreme Court’s rationale is rather thin, relying on some expansive language surrounding the provision’s adoption and the testimony of some experts. Perhaps this thinness in the rationale is why its reasoning has not been adopted elsewhere.

²²⁰ *Id.* at 216.

considerations in the raising of money to fund schools, which is what this Article argues for. Its conclusion of considering efficiency in the raising of funds could be bolstered by my results, making it more attractive elsewhere.²²¹

D. Implications for Legislative Action on the Financing of Local Services

An alternative to judicial action is legislative action. This Article documents how large an effect the uneven playing field of local finance has on residential location choices, generating significant inefficiencies. This distortion is problematic on its own and also because keeping people away from cities increases their negative externalities on others. The results then lend support to several policy proposals. Legislators who were previously unaware of these inefficiencies could take action in several ways. For example, consolidating metropolitan tax bases or even consolidating localities into metropolitan area governments would address the problem identified here.²²² However, consolidating metropolitan areas into single governments would likely do much more than equalize funding—it could change *how* money is spent for schools and other city services, how land is zoned, and the character of the whole range of local functions. These issues are beyond the scope of this Article. While the evidence here should make policy-makers more favorable toward metropolitan consolidation, whether such a policy should be adopted would depend on many other factors not studied here.

²²¹ Another potential argument in support of efficiency considerations in school finance litigation is that arguably the original intention of the state constitutional framers has played little role in the state supreme court opinions. At least some authors argue that, with the possible exception of a couple of recently-enacted education clauses, there is little evidence from state constitutional debates that framers of state education clauses intended “to create judicially enforceable provisions to be used in overturning legislative judgments regarding school financing.” John Dinan, *The Meaning of State Constitutional Education Clauses: Evidence from the Constitutional Convention Debates*, 70 ALB. L. REV. 927, 978 (2006). This lack of basis in original intent suggests that the original conception of “efficiency” may be of similarly little relevance.

²²² See DOWNS, *supra* note 163, and ORFIELD, *supra* note 163.

Rather, this Article’s most direct policy implication is that it strengthens on efficiency grounds the case for transfers to poor localities.²²³ In the context of Connecticut specifically, the results here may bolster the policy of education reformers who argue that the state should “fully fund” its Education Cost Sharing grants.²²⁴ Year after year, the Connecticut legislature has failed to authorize the maximum statutory amount of grants to poor school districts.²²⁵ Since Connecticut redistributes a relatively large amount, other states likely have even more scope to increase their grants to poor school districts. As well, the results could bring generate new supporters of school finance redistribution, including those wishing to reduce greenhouse gas emissions, promote productivity through agglomeration spillovers, or improve residents’ quality of life. Finally, the result that a large fraction of the benefits may go to tax cuts could increase support for school finance redistribution among those who have neither children in school nor real estate that stands to appreciate through better schools.

My argument does not imply that local finances should be fully equalized across localities. The motivating insight of the Tiebout model remains compelling: different people have different preferences, and it is inefficient to force different types of people to consume the same services. Some people desire higher taxes and more parks, while others desire lower taxes and fewer parks. Fully equalizing local funding would harm this element of free choice, while allowing localities to spend different amounts on the variety of services they provide preserves

²²³ Many proposals exist for remedying inequalities in school financing. Laurie Reynolds develops a proposal for a statewide property tax. Laurie Reynolds, *Uniformity of Taxation and the Preservation of Local Control in School Finance Reform*, 40 U.C. DAVIS L. REV. 1835 (2006).

²²⁴ See Rodriguez & Siegel, *supra* note 125, and *Education Finance in Connecticut*, *supra* note 125.

²²⁵ A separate issue barely addressed in this Article is “fiscal zoning”—that is, wealthier communities using zoning, especially by requiring large lot sizes, to keep out poorer individuals who can pay less in taxes. To the extent that state funds make up for the tax deficit resulting from a poor individual living in a locality, the incentive for fiscal zoning should be reduced. However, to the extent that the state provides *less* money to wealthier communities, as has been the case in Connecticut, the incentive for fiscal zoning increases, since the communities must depend more on their own residents to fund services, making their ability to pay taxes matter more. See, e.g., White, *supra* note 175.

free choice. Rather, my results strengthen the case for state or federal funding for one element of the costs of local governments—the costs of services for the poor that will be borne regardless of who is paying. The results make more compelling a *level* local finance playing field, unburdened by the “poverty fine” a middle class person faces when choosing to live in a city with high poverty rates, which distorts the person’s location choice.²²⁶

There are limits to the extent that states may engage in such equalization—well short of full equalization—without harming their competitive advantage relative to other states. The more Connecticut raises its income tax on the rich to fund redistribution to low-income towns, the more the rich are likely to leave Connecticut.²²⁷ The limitations on states’ abilities to redistribute and the continuing locational distortions suggest that federal involvement may be useful. Indeed, the argument that redistribution is a national public good has been used throughout Supreme Court jurisprudence.²²⁸

My results thus raise the question of whether the federal government should redistribute more to poor cities to improve locational efficiency.²²⁹ In 2012, the federal government provided

²²⁶ For example, the results provide additional support for “district power equalization,” in which state governments guarantee that the same local tax rates generate the same revenue per capita, regardless of local wealth. Such an approach lets communities tailor their education spending to their own preferences, without disadvantaging poor communities. See Gail F. Levine, Note, *Meeting the Third Wave: Legislative Approaches to Recent Judicial School Finance Rulings*, 28 HARV. J. ON LEGIS. 507 (1991). For a discussion of how fiscal capacity could be equalized between states by the federal government, see Stark, *supra* note 20.

²²⁷ Note, however, that there is little credible evidence of the geographic mobility of the rich in response to income taxes. One recent study, though, shows that the country of residency of European soccer players is quite responsive to tax rates, which is relevant if mobility between American states is similar to mobility between European countries. Henrik Kleven, Camille Landais & Emmanuel Saez, *Taxation and International Mobility of Superstars: Evidence from the European Football Market*, 103 AM. ECON. REV. 1892 (2013).

²²⁸ See, e.g., *United States v. Darby*, 312 U.S. 100, 108 (1941) (upholding under the Commerce Clause labor market regulations that sought to redistribute to the poor via better workplace conditions because “interstate commerce should not be made the instrument of competition in the distribution of goods produced under substandard labor conditions, which competition is injurious . . . to the states from and to which the commerce flows” through a race to the bottom in labor practices).

²²⁹ This argument supports as a policy matter the legal argument of Goodwin Liu that the federal government should spend more on education. Goodwin Liu, *Interstate Inequality in Education Opportunity*, 81 N.Y.U. L. REV. 2004 (2007).

\$14.5 billion²³⁰ in aid to local education agencies for students at schools with large numbers of poor students²³¹, as provided for in Title I of the Elementary and Secondary Education Act of 1965²³² and amended by the No Child Left Behind (NCLB) Act of 2001²³³. NCLB authorized increasing appropriations, up to \$25 billion in 2007.²³⁴ However, these funds have not been authorized by Congress. To put even this number in context, if the federal government redistributed as much per capita as Connecticut did in 2012, it would provide \$165 billion in school financing. Thus, my results strengthen the case for fully funding NCLB or even expanding funding, on grounds of allocational efficiency.

With increases in federal and state funds to local school districts, legislators might achieve not only the greater equality long sought by education reformers, but also improve efficiency in where people live, improving their quality of life. Efficiency would improve because leveling the local finance playing field gives people the opportunity to live in their desired locations without facing a higher tax burden and worse services in jurisdictions with a large number of poor people. But efficiency would also improve because evidence is accumulating that city living is socially beneficial. Increasing redistribution at the *federal* level would promote these goals not only by further leveling the playing field within states, but also by reducing the ability of the wealthy to avoid the taxes needed to fund this redistribution by moving across state borders, which would introduce another locational inefficiency.²³⁵

²³⁰ *Fiscal Year 2014 Appendix: Budget of the U.S. Government*, OFFICE OF MANAGEMENT AND BUDGET 321, <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2014/assets/appendix.pdf> (last visited Sept. 20, 2013).

²³¹ Some of this money is passed through states, but it ultimately reaches local school districts.

²³² 20 U.S.C. § 6301 (2013).

²³³ No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110.

²³⁴ 20 U.S.C. § 6302 (2013).

²³⁵ For example, Kirk Stark argues that redistribution should take place primarily at the federal level. Kirk Stark, *Fiscal Federalism and Tax Progressivity: Should the Federal Income Tax Encourage State and Local Redistribution?*, 51 UCLA L. REV. 1389 (2003) (arguing against the federal income tax deduction for state and local taxes as currently designed).

Of course, to expand aid to poor cities, many details would have to be worked out and various pitfalls avoided—though detailed discussion of these issues is beyond the scope of this Article. For example, if the aid is nominally “for schools,” policy-makers would need to decide if the aid would be per capita or per pupil—and, if the latter, how to treat charter schools. Federal and state authorities should also be alert to the concern about wasted money²³⁶; they could use audits and minimize the extent to which worsening a city’s fiscal situation increases aid (e.g., by conditioning payments on poverty rather than budget deficits). Ultimately, while no policy will be without concerns, this Article improves the argument for place-based aid to poor cities.

Two concerns about additional centralization in funding should be addressed, however. First, more centralized funding may remove local control, the main interest cited in *Rodriguez* for not requiring greater state funding of schools. However, state governments could redistribute with few strings attached, and the extent to which greater state control of school finance would lead to greater control of how schools function is, at this point, an unanswered empirical question.²³⁷ Second, one might be concerned that more funding through school finance redistribution would be throwing good money after bad. I cannot exclude the possibility that money is wasted in schools. However, if individuals are responding to the redistribution with their residential location choice, then likely the money is not wasted; if it were, there would be no reason to move in response to the transfers. Indeed, local governments cannot waste the money spent on tax reductions. If policy-makers are very concerned about this problem, and locational efficiency and not equity in school financing is the concern, then certain types of school financing formulas look more appealing than others. In particular, reward-for-effort plans

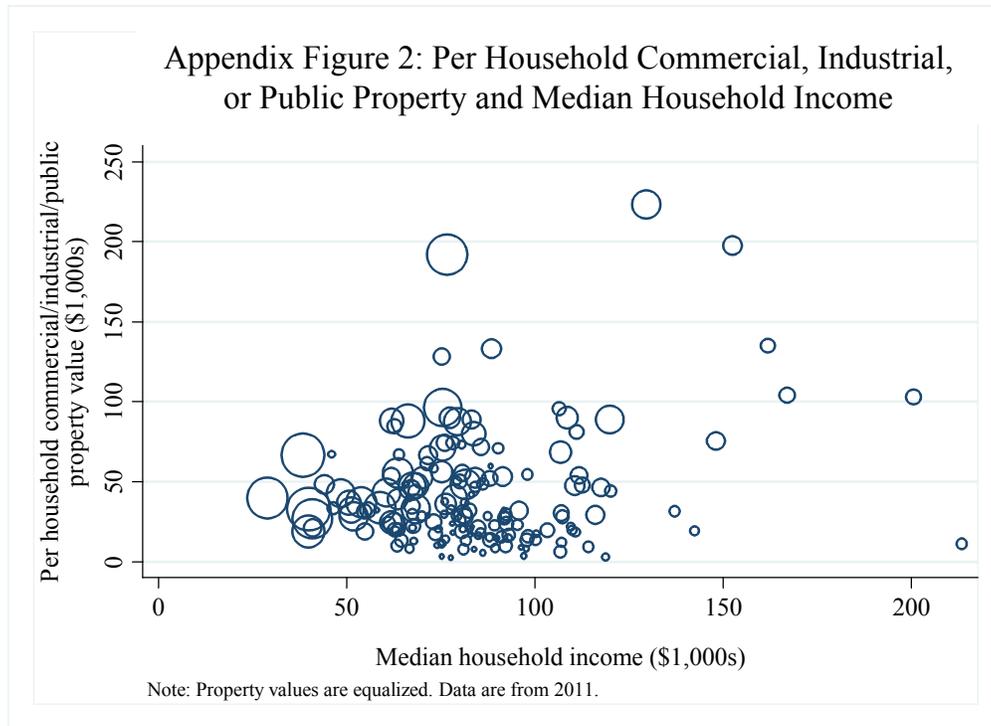
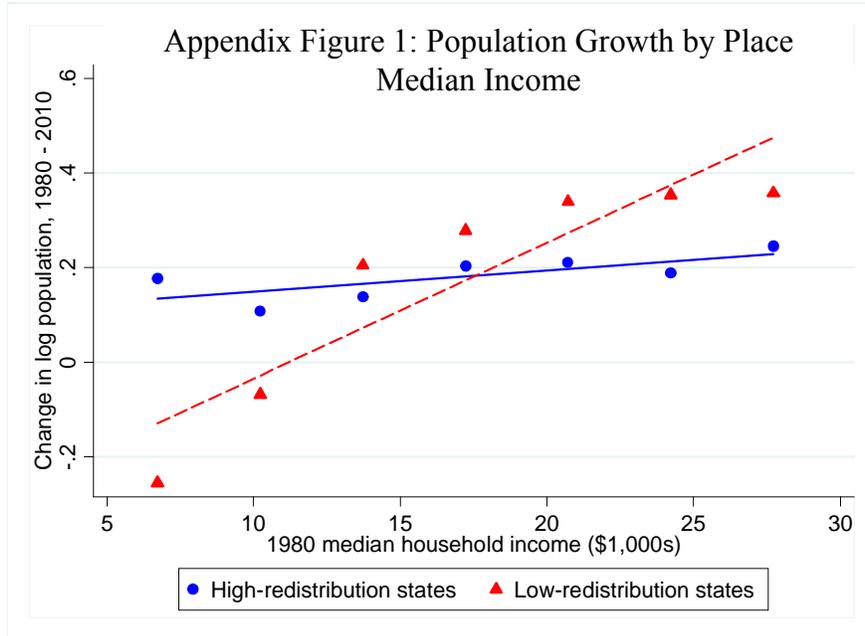
²³⁶ For example, officials in Detroit stole money. Mary M. Chapman, *Former Mayor of Detroit Guilty in Corruption Case*, N.Y. TIMES, Mar. 11, 2013, at A12.

²³⁷ Existing evidence on the question is mixed. See Briffault, *supra* note 86, at 801-02.

are particularly unappealing, since they make it more difficult to use school finance funds for tax reductions. Instead, flat grants or, better yet, foundation plans or equalization plans that do not require a certain amount of school spending achieve efficiency without requiring spending that some may consider perverse.

VIII. Conclusion

The evidence in this Article suggests that transfers from states to localities for education have played a substantial role in increasing the populations of poor cities and driving the “return to the central city.” These population shifts have been driven by a revolution in local finances, in which poor cities have become increasingly funded by the state. In Connecticut, these transfers have yielded both the intended increases in school spending and also unintended reductions in tax rates in poor cities. The fact that people are so responsive to transfers from the state suggests that the problems that poor cities face may be largely the result of local financing and that, if the costs of poverty did not need to be met at the local level, cities would grow even more. While arguments in favor of helping cities on the basis of social equity are commonplace, I show the importance of two *efficiency* arguments for transfers to poor localities—namely, reducing the distortion to location choices resulting from local financing in high-poverty jurisdictions and encouraging living in places with greater social benefits. There are many other costs and benefits of aid for poor localities, but these reasons offer additional justifications for considering such aid.



Appendix: Location Choice and the Poverty Fine

In this appendix, I further explain the claim that tying the fixed costs of poverty to residential location choice yields inefficiency. By “fixed costs,” I mean costs that society will bear regardless of where individuals live. A taxation scheme that charges individuals more than the marginal cost of a service in some locations, but not in others, without an offsetting benefit distorts²³⁸ individuals away from their preferred residential locations and reduces aggregate welfare.

To illustrate, consider the following example, which vastly simplifies much of the complexity of urban location decisions. The example reflects the “poverty fine” that middle-class households must pay in poor cities. As noted in Section VII, the poverty fine is an inherent result of two features of American law and two of American cities, which distort location choices of the middle class. The features of American law are the mandatory provision of public education, meaning that *someone* will have to pay for education, and the common state constitutional requirement of uniform property tax rates, which means that the rich will have to pay more when they are in jurisdictions with households that have less valuable property and therefore pay less than their proportional share of taxes. The features of American cities that combine with these features of American law to make the “poverty fine” inefficient are the presence of high concentrations of poor households in cities and the fact that, unlike in the Tiebout model, space exists. If all households could costlessly sort into newly-formed cities, the rich would not co-locate with poor households in cities²³⁹; in reality, though, cities are inescapably places where some households would prefer to live, since they represent agglomerations of American productivity. The example reflects these four features.

²³⁸ By “distorts,” I mean to describe a policy that reduces efficiency relative to another policy.

²³⁹ Of course, if wealthy households had a preference for living nearby low-income households, then they still could do so.

Suppose that there are two cities, Sun City and Cloud City; they are nearby each other.²⁴⁰ The cities are the same, except that Sun City is sunny and Cloud City is cloudy. There are three equally-sized groups of households, each of which will live in one of these two towns. Each household has one child to educate. There are poor people, all of whom live in Sun City, and there are two types of middle-class people. One type of middle-class person will always live in Cloud City. (They dislike the sun.) Another type of middle-class person prefers sun (the “sunny middle-class” group), but is close enough to the margin that they might live in either place. Suppose further that the cities produce only education and that education costs the same in the two cities. Individuals’ utility depends on only their income, the taxes they pay, and the amount that they value amenities. Suppose that their utility is calculated as follows: $Utility = income - taxes + value(amenities)$.²⁴¹ My claim is that, when education is financed locally, there is the potential for a significant loss of social welfare.

To make the example more concrete, let me put numbers on the relevant parts of the problem. Suppose that middle-class households earn \$200, and poor households earn \$50. Suppose that education has a fixed cost of \$25 everywhere. One can consider this cost of education the amount mandated by all state constitutions, which require the provision of public education. It is financed by a tax on income (or, equivalently, a tax on property if all individuals

²⁴⁰ Suppose, for example, that one is in the rain shadow of a mountain, and the other is not.

²⁴¹ This utility function abstracts away from distributional concerns, so that maximizing efficiency and maximizing utility are the same thing. Furthermore, utility can be measured in dollars. Also, the assumption of fixed income, which does not depend upon the tax rate, abstracts away from the differential distortion from varying tax rates. However, since it is generally believed that the distortion from taxation rises with the square of the tax rate, the way to minimize this distortion is to equalize the tax rates for all individuals, which reinforces the point made here.

spend the same percent of their income on property).²⁴² The sunny middle-class group members value the sun at \$14 and the clouds at \$0.²⁴³

Consider the two alternatives of the sunny middle-class group living in either Sun City or Cloud City. If they live in Sun City, the tax rate in Sun City will be 20% to fund the education for the children.²⁴⁴ In this alternative, the utility of the sunny middle-class group will be 174, since they receive \$200 in income, pay \$40 in taxes, and gain \$14 of utility from the sun. If this group lives in Cloud City, though, it will pay 12.5% in taxes to fund education. The utility of each household will be 175, since they earn \$200 in income, pay \$25 in taxes, and receive no utility from sun. Since they receive more utility in Cloud City, the sunny middle-class group will live there. This situation represents a distortion: the sunny middle-class households are living in a place that does not maximize efficiency.

Contrast a regime of local financing with the regime that results when Cloud City and Sun City have a consolidated tax base. In that case, the tax rate for everyone is 16.67%. Since the sunny middle-class group faces the same tax rate in both locations, they will live in Sun City. Since the same amount of total spending on schools takes place regardless and the only margin of behavior is where the sunny middle-class households live, this change of regime results in an increase of aggregate welfare from 375 to 389, as shown in the table. This table shows that there are three changes to utility. First, the utility of the sunny middle class improves because they live in the “right” city. Second, the poor benefit from having a richer tax base (and therefore lower taxes). Third, the members of the cloudy middle class are harmed by sharing the burden of educating the poor. Utility is redistributed from the cloudy middle class to the poor because

²⁴² As required by state constitutions, the tax rate on property must be uniform.

²⁴³ Suppose also that the cloudy middle class value living in Cloud City at \$0 and in Sun City at -\$100, and the poor value living in Sun City at \$0 and Cloud City at -\$100. These assumptions ensure that their location decisions are not marginal.

²⁴⁴ The average income of the two groups is \$125, so a 20% tax rate is required to fund an education that costs \$25.

of the changing tax rates, but this redistribution does not matter for efficiency, because this example just represents a zero-sum transfer from one group to another.²⁴⁵ The change that matters for efficiency is that consolidating the tax base lets the households that wish it to improve their quality of life by having their sunshine.

Appendix Table 1: Utility in Sun City and Cloud City

	Tax base	
	Consolidated	Separated
Tax rate		
Sun City	16.67%	50.00%
Cloud City	16.67%	12.50%
Utility		
Poor	41.67	25.00
Sunny middle class	180.67	175.00
Cloudy middle class	166.67	175.00
Total utility	389.00	375.00

Key to the analysis above was that the expense of educating the poor was “fixed.”²⁴⁶ Society had to pay that expense regardless of where people lived. In other cases, the costs of providing services may vary depending upon where people live; they are “variable,” in that they depend upon some behavioral response.²⁴⁷ For example, if teachers don't want to live in cities, so that educating the middle class children in cities costs more, then that additional cost should not be equalized on efficiency grounds. Similarly, if providing police protection for the middle class costs more because of a high crime rate in close proximity to their homes or if garbage disposal service is more expensive in high-density locations, these costs should also not be shared on efficiency grounds. Doing so would increase the overall societal cost of providing

²⁴⁵ If redistribution to the poor were welfare-enhancing, then the increase in welfare from a shift to a consolidated tax base would be even more pronounced than the increase in efficiency, since the poor gain from the shift.

²⁴⁶ The analysis also does not consider the potential benefits of local financing (e.g., the state government imposes harmful mandates because it gains control of funding), which could offset the distortion described here.

²⁴⁷ Here, I focus on the behavioral response of residents. Another potential behavioral response is in government activities. If the actions of local governments themselves increase the number of poor individuals in society, then those costs are no longer fixed and the analysis here is not applicable.

services by allowing some to pay less than the marginal cost of providing services to them.²⁴⁸ By the same token, if a banana costs more on top of a mountain or individuals wish to buy more anti-theft devices in high-crime locations, these costs should not be equalized across locations; these are variable costs that depend upon where people live.

It is important to distinguish these variable costs, for which equalization would increase the overall cost of providing services by inducing individuals to live in higher-cost locations, from similar fixed costs that do not.²⁴⁹ For example, if police costs are higher in cities because of intra-gang violence that does not affect the cost of protecting a middle class person thinking of moving to a city, that cost should be borne by a higher level of government: the social costs of policing gangs (or, alternatively, having little policing, and having worse gang violence) will be borne by someone, regardless of where the marginal middle-class household chooses to live.²⁵⁰ The point of this Article is that, in large part, the costs of poverty are fixed; they do not depend upon where middle class households live. The effect in aggregate of forcing local residents to bear those costs is to reduce efficiency by making it more costly for households to live where they want to live, without any offsetting efficiency gains.

²⁴⁸ Similarly, if the decisions of a city council affected the likelihood that a mine would leak arsenic into the water supply of many people outside of the city, there is a case for making the city pay for the clean-up to avoid the moral hazard that would result from forcing those beyond the city to pay for the clean-up. The key point is that there is a behavioral response that affects the size of the costs, making them variable costs.

²⁴⁹ In practice, distinguishing fixed from variable costs may be difficult in a host of borderline cases.

²⁵⁰ Note that there is nothing intrinsic to cities that makes “fixed costs” higher there versus suburbs. The key point is that these fixed costs are heterogeneously distributed through locations, affecting households’ location decisions and potentially reducing welfare.