Proceedings of the 2013 Land Policy Conference

Education, Land, and Location

Edited by Gregory K. Ingram and Daphne A. Kenyon

Education, Land, and Location

Edited by

Gregory K. Ingram and Daphne A. Kenyon

LINCOLN INSTITUTE
OF LAND POLICY
CAMBRIDGE, MASSACHUSETTS

Library of Congress Cataloging-in-Publication Data

Education, land, and location /
edited by Gregory K. Ingram and
Daphne A. Kenyon.
pages cm
Includes index.
Summary: "Addresses links between K-12 education, location, and land, and effects on racial, ethnic, and socioeconomic segregation; academic achievement; and equality of opportunity. Topics include: expanding school choice, charter schools, and homeschooling; property taxes, school finance, and alternative revenue sources; the structure of school districts; transportation to school; effects of school location; and the role of housing policies"—Provided by publisher.
ISBN 978-1-55844-289-4 (alk. paper)
1. School sites—United States. 2. School sites—United States—Sociological aspects.
3. Educational sociology—United States. 4. Education and state—United States.
5. Education—United States—Finance. 6. Municipal finance—United States.
7. Land use—United States. 8. Land use—Government policy—United States.
I. Ingram, Gregory K.
LB3220.E35 2014
371.6'10973—dc 3
2014006527

Designed by Vern Associates

Composed in Sabon by Achorn International in Bolton, Massachusetts.
Printed and bound by Puritan Press Inc., in Hollis, New Hampshire.
♻ The paper is Rolland Enviro100, an acid-free, 100 percent PCW recycled sheet.

MANUFACTURED IN THE UNITED STATES OF AMERICA

CONTENTS

ILLUSTRATIONS

Tables

Figures

5

Not by the Hand of Horace Mann: How the Quest for Land Value Created the American School System

William A. Fischel

The most arresting and underappreciated aspect of American education is how it is possible for a child who has completed fourth grade in June in Anytown, USA, to enter almost any other school in America the following September and have the skills to start fifth grade there. This condition would not be a surprise in France or Japan or many other nations in which education is controlled by a central government that typically strives for a uniform national curriculum. But American education is governed by about 15,000 school districts that have long had considerable latitude in what to teach, how to teach it, and even when to begin the school year. Even in the 1930s, European observers were said to be surprised and impressed by how uniform American education was, given its extremely decentralized nature (Tyack, Lowe, and Hansot 1984).

In the view of modern observers, however, the standard curriculum, calendar, and education methods could not have been developed and spread on their own. They must have been imposed on the districts by state superintendents and legislatures. Alternatively, the modern emergence of the controversial "Common Core" movement to standardize curricula among the states seems to assume that it is not standardized enough (Hess 2012). Either point of view presumes that local school districts are not capable of organizing a system of education without a lot of direction from higher levels of government.

The best-known progenitor of the standard features of American education is Horace Mann, the first superintendent of schools in Massachusetts. He regarded the 1787 law authorizing local school district autonomy as "the most

unfortunate law on the subject of common schools" (Mann 1847, 37), and he worked tirelessly to centralize and standardize the district system. Both admirers and detractors of standardized schooling regard Mann as the avatar of the modern state system of education (Peterson 2010). In keeping with their low regard for localism, most social scientists view school districts as arbitrary lines on a map, a now irrelevant bequest of the past. The original school finance case, *Serrano v. Priest*,[1] held that local financing was unfair because districts were "accidents of geography" (613).

The lines are not accidents, however, as will be shown by a measure of how urban districts' configurations vary across the nation. Nor were they the results of top-down edicts by education leaders such as Mann. District lines are the product of on-the-ground decisions by residents of rural areas. While it is legally uncontested that school districts are "creatures of the state" (Briffault 1990, 23), their formation has always been responsive to the demands of the local electorate, not least because state legislatures may be said to be creatures of local interests.

History is important for educational policy because so many modern education reformers regard the present system as the product of top-down efforts of the past. If that were true, it would seem logical to assume that the only way to reform that system was by the firm hand of the state and national governments. This view is shared by reformers across the political spectrum. People on the left regard education as a national, or at least a statewide, responsibility. Funding and curricula should come from the higher-level government, and uniform funding would be judicially enforced when political forces fail to do so (Liu 2006). Reformers on the right seek to empower parents by giving them vouchers to attend private schools (Friedman 1962; Howell and Peterson 2006). This agenda seems decentralized until it is understood that vouchers are to be created and funded by the state or national government, which will inevitably set the rules and conditions for distributing them. Both positions make sense for those who see local school districts as at best passive pawns and at worst obstructionist trolls in the development of mass public education in America. The top-down view is what I refer to as the hand of Horace Mann.

What follows works historically backward, starting with an accounting of the size distribution of modern school districts, then describing how they came to be in the early twentieth century, and finally describing the rural origins of the system's predecessor, the one-room schoolhouse and its independent school district, which provided mass education in the nineteenth century. The role of land value in the American education system is at least indirectly evident in each stage.

---

1. *Serrano v. Priest*, 5 Cal. 3d 584 (1971).

National Variation in School District Size: Of Farmers, Ranchers, and Planters

The national map of school districts in figure 5.1[2] is at a scale that offers a reasonable view of the areal size of rural American school districts. Urban districts are typically smaller in area, and it will require some statistical analysis to make generalizations about them.

From inspection of this map, it appears that the nation's rural school districts can be divided according to three historically characteristic agricultural activities of rural areas: (1) northern and midwestern farmers who grew row crops in well-watered regions; (2) western ranchers who grazed cattle in relatively dry or mountainous areas; and (3) southern planters who cultivated large tracts with slaves and (later) tenant farmers.

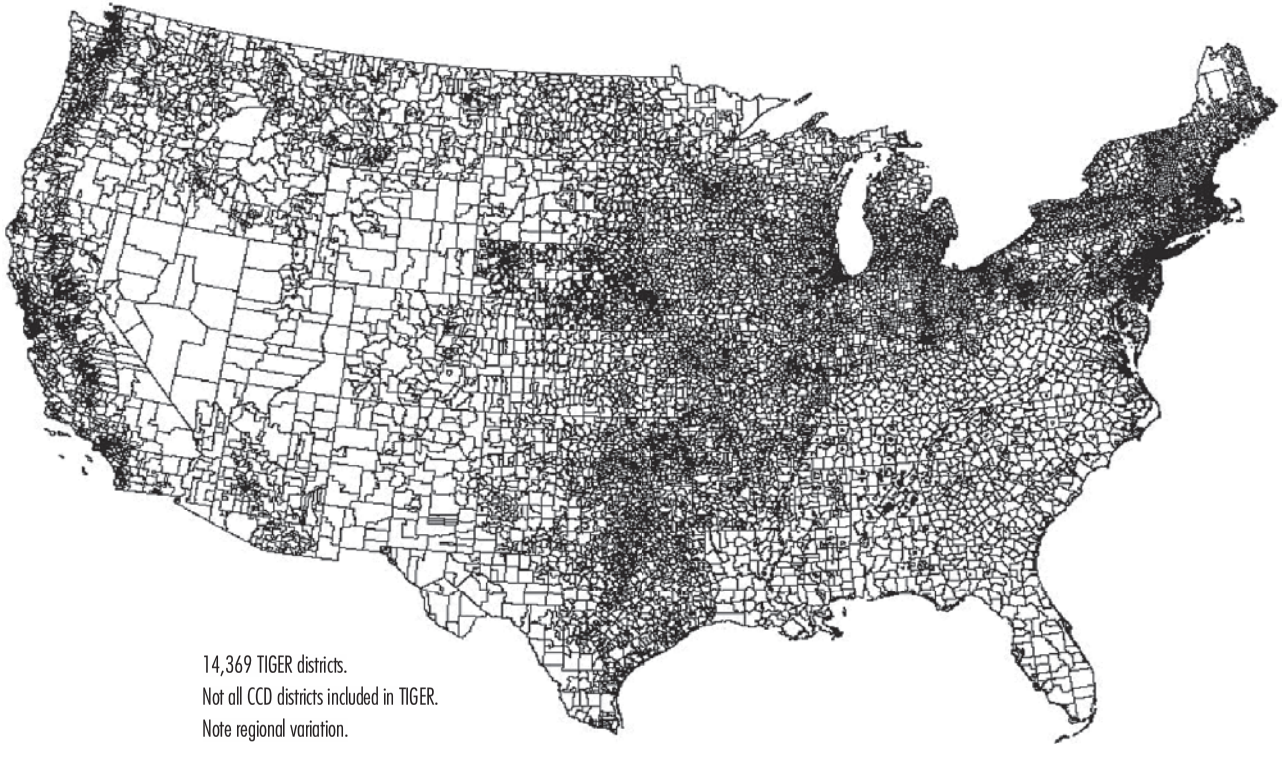
One can see that the rural North and the Midwest (continuing in this case down the western side of the Mississippi River) contain many rural school districts. The density of school districts becomes significantly lower (that is, land area per district is higher) as one moves west of the 100th meridian, the traditional rainfall divide between arid-land ranchers (to the west) and rain-beholden farmers (to the east) that vertically splits the Dakotas and the other states stacked on top of Texas. Continuing west through the lightly populated Rocky Mountain states, districts stay large in area until the rainy or irrigated farming regions of the Pacific coast are encountered.

The large-area districts of the far western states make it clear that district size is not a state affair. Washington, Oregon, and California have large-area, county-size districts in their arid and mountainous eastern regions, but the pattern of districts along their well-watered western coasts looks more like that of the rural North and Midwest. However, the states of the old South—those south of the Ohio River and east of the Mississippi—are substantially different. Counties form the basis for most of their rural school districts, though sometimes there is a doughnut pattern, with an independent city school district carved out of the center of the county.

The pattern of the rural districts is obvious on inspection of the national map, but most children in the United States now attend schools in urban areas. Because urban patterns cannot be seen clearly enough on a national map, it is not obvious that urban districts have the same regional variation as rural districts. To investigate the urban pattern, I will borrow from the work of Battersby and Fischel (2008), developed to measure school districts' competitive structure. Sarah Battersby and I wanted to see how much choice home buyers have among school districts in various urban areas.

2. To see this figure online with more detail, go to www.dartmouth.edu/~wfischel/images/HS&Unified%20districts.jpg.

Figure 5.1
Boundaries of U.S. School Districts, 2000



Source: U.S. Census Bureau (2000), www.census.gov/geo/maps-data/data/tiger.html.

Our measure of competition was borrowed from the economics of industrial organization. An industry that has only a few firms that occupy (in the sense of sales or employment) the industry is said to be highly concentrated and thus offers little choice of alternatives to consumers. A dated but intuitive measure of concentration is the "four-firm ratio." If the four largest firms have 80 percent of all sales or employment, the industry is said to be concentrated. An industry with a four-firm ratio of 30 percent is said to be fairly competitive, since the top four firms account for only 30 percent of all sales, and thus customers have more choices of firms to deal with.

The analogous index for school districts is the "four-district concentration ratio." It is the land area (not population) of the four largest school districts within an urbanized area (UA) divided by the land area of the entire UA. In table 5.1, the Columbus, Ohio, UA occupies the midpoint (35th place) of the four-district concentration ratios for the 70 American UAs with year 2000 population in excess of 500,000. The Columbus UA has 23 school districts that are at least partly within its borders. The largest district, Columbus City Schools, occupies 30 percent of the urbanized area (this statistic is not in the table), and the top 4 districts (including the city's) occupy 54 percent of the urban land area. The other 19 districts occupy the other 46 percent of the UA land area. If public education were an "industry" in Columbus, it would look fairly competitive to potential residents who were shopping for a school district in the manner suggested by Charles Tiebout (1956). Tiebout's model proposed that local government services were more efficiently supplied by having potential residents choose their services by selecting a particular community—"voting with their feet"—rather than by participating in local politics.

A few technical notes are in order. (More detail is available in Battersby and Fischel [2008] and Fischel [2009].) Because some districts are exclusively elementary or exclusively high school (as opposed to being "unified" from kindergarten through 12th grade), Battersby and Fischel (2008) weighted the count of districts by years of attendance, which is why there are fractions of districts in table 5.1. We used land area rather than population because competition and choice are spatial: to attend a school in a given district normally requires that parents live in the district. Urbanized areas are better measures of spatial opportunities than metropolitan statistical areas (MSAs) because MSAs outside New England include entire counties, and most of their land is not urban and thus not a realistic choice for most households.

A remarkable aspect of table 5.1 is the national variability in urban school district spatial structure. The districts are all in the same industry, public education, but their geographic structure is strikingly different. The least concentrated (and thus most competitive) urbanized areas—mainly large cities in the Northeast and Midwest—have scores and sometimes hundreds of districts, and the four largest districts of these UAs occupy less than a quarter of their land area. The most concentrated UAs—mainly in the arid West and the South, especially Florida—have monopoly-like structures.

Table 5.1
School District Concentration for the 70 Largest Urbanized Areas, 2000

Urbanized Area (four-district ratio rank, lowest to highest)	Number of Districts (weighted)	Population	Old South	Arid West	Four-District Ratio (%)
Boston, MA (1)	157.7	4,032,484			8.5
New York, NY (2)	417.9	17,799,861			13.0
Pittsburgh, PA (3)	86	1,753,136			17.1
Chicago, IL (4)	198.2	8,307,904			19.4
Philadelphia, PA (5)	152.7	5,149,079			19.7
Providence, RI (6)	49	1,174,548			22.3
Hartford, CT (7)	47.4	851,535			22.7
Detroit, MI (8)	85	3,903,377			23.0
Cleveland, OH (9)	58	1,786,647			25.4
Bridgeport, CT (10)	35.4	888,890			26.1
St. Louis, MO (11)	62.2	2,077,662			26.5
Seattle, WA (12)	37	2,712,205			27.0
Minneapolis, MN (13)	45	2,388,593			28.8
Buffalo, NY (14)	30	976,703			31.1
Springfield, MA (15)	34.4	573,610			32.3
Cincinnati, OH (16)	55	1,503,262			33.9
New Haven, CT (17)	28.7	531,314			34.7
Indianapolis, IN (18)	33	1,218,919			35.4
Albany, NY (19)	32	558,947			36.2
Akron, OH (20)	30	570,215			38.0
Allentown, PA (21)	30.1	576,408			38.5
Dayton, OH (22)	28	703,444			39.0
Milwaukee, WI (23)	40.4	1,308,913			40.2
Los Angeles, CA (24)	91	11,789,487		•	40.4
Dallas, TX (25)	48	4,145,659			41.3
Kansas City, MO (26)	27	1,361,744			41.9
Rochester, NY (27)	24	694,396			42.5
Portland, OR (28)	31	1,583,138			44.8
Houston, TX (29)	32	3,822,509			46.1
Grand Rapids, MI (30)	23	539,080			46.5
Riverside, CA (31)	20.4	1,506,816		•	46.7
San Francisco, CA (32)	35.2	3,228,605			48.2
Phoenix, AZ (33)	30.9	2,907,049		•	48.8

Table 5.1
(continued)

Urbanized Area (four-district ratio rank, lowest to highest)	Number of Districts (weighted)	Population	Old South	Arid West	Four-District Ratio (%)
Atlanta, GA (34)	23	3,499,840	•		54.0
Columbus, OH (35)	23	1,133,193			54.0
McAllen, TX (36)	15	523,144		•	55.5
Toledo, OH (37)	16	503,008			60.2
Sacramento, CA (38)	21.5	1,393,498		•	60.5
Virginia Beach, VA (39)	12	1,394,439	•		63.1
San Diego, CA (40)	23.6	2,674,436		•	64.9
San Jose, CA (41)	23.6	1,538,312		•	66.8
Oklahoma City, OK (42)	15	747,003			68.8
Denver, CO (43)	14	1,984,889		•	69.8
Omaha, NE (44)	12	626,623			74.5
San Antonio, TX (45)	18	1,327,554			76.0
Tulsa, OK (46)	12	558,329			77.1
Washington, DC (47)	16	3,933,920	•		80.6
Austin, TX (48)	11	901,920			85.2
Birmingham, AL (49)	11	663,615	•		85.3
Richmond, VA (50)	10	818,836	•		86.5
Tucson, AZ (51)	9	720,425		•	87.1
El Paso, TX (52)	9	674,801		•	87.9
Louisville, KY (53)	9	863,582	•		90.0
Concord, CA (54)	12.7	552,624		•	90.4
Nashville, TN (55)	7	749,935	•		92.7
Baltimore, MD (56)	7	2,076,354	•		96.9
Fresno, CA (57)	9.7	554,923		•	96.9
Memphis, TN (58)	7	972,091	•		98.4
New Orleans, LA (59)	5	1,009,283	•		98.6
Charlotte, NC (60)	7	758,927	•		99.4
Mission Viejo, CA (61)	6	533,015		•	99.9
Miami, FL (62)	4	4,919,036	•		100
Sarasota, FL (63)	4	559,229	•		100
Salt Lake City, UT (64)	4	887,650		•	100

(continued)

Table 5.1
(continued)

Urbanized Area (four-district ratio rank, lowest to highest)	Number of Districts (weighted)	Population	Old South	Arid West	Four-District Ratio (%)
Tampa, FL (65)	3	2,062,339	•		100
Orlando, FL (66)	3	1,157,431	•		100
Jacksonville, FL (67)	3	882,295	•		100
Albuquerque, NM (68)	4	598,191		•	100
Raleigh, NC (69)	4	541,527	•		100
Las Vegas, NV (70)	1	1,314,357		•	100

Note: • Urbanized areas in old South and arid West = less than 20 inches of precipitation per year.
Source: Battersby and Fischel (2008).

Another remarkable aspect of this structure is that most of the variation in *urban* competitiveness can be accounted for by the same factors as the *rural* variation in structure: farmers, ranchers, and planters. Table 5.2 displays the result of a linear regression in which the four-district ratio is the dependent variable. The independent variables are UA population (POPULATION), a dummy for average annual rainfall less than 20 inches per year (ARID WEST), and a dummy for location in the old South (OLD SOUTH). This includes the border states of Maryland and Kentucky but excludes Arkansas, Oklahoma, and Texas.

POPULATION is included simply because more populous UAs are larger in area and encompass more jurisdictions. ARID WEST is a proxy for rural settlement patterns. More precipitation encouraged more intensive use of the land, resulting in smaller farms and a higher density of rural and small-town population in the North and Midwest. Low precipitation resulted in low-density ranches and a wider scattering of small towns in the high plains states, which constitute most of the arid West. It would be more complete to include a measure of mountainous terrain that also contributed to low population density, but as a practical matter, none of the large UAs in this sample are in the mountains.

Each of the independent variables—POPULATION, ARID WEST, and OLD SOUTH—is highly significant. The adjusted R^2 of 0.68 indicates that they (and the constant) account for more than two-thirds of the variation in UA districts' concentration. A continuous variable for rainfall rather than a dummy for less than 20 inches (the ARID WEST variable) yields almost identical results. I prefer the dummy specification because it allows an intuitive comparison between the impact of being in the old South and low rainfall. It appears that OLD SOUTH contributes considerably more to the concentration ratio than ARID WEST, the former coefficient being about 0.50 and the latter about 0.36. Since the depen-

Table 5.2
Regression Summary: Determinants of National Variations in Spatial Concentration of School Districts in Urbanized Areas

Dependent Variable	Four-District Ratio	
R^2	0.692	
Adjusted R^2	0.678	
Standard error	0.166	
Observations	70	
Independent Variables	**Coefficient**	**t-statistic**
Intercept	0.458	14.29
POPULATION	–3.00587E-08	–4.00
ARID WEST	0.359	7.21
OLD SOUTH	0.499	10.20

dent variable, the four-district concentration ratio, varies between 0 and 1.00, with a mean around 0.5, these two geographies both have a large impact on urban school district structure.

The historical puzzle is why the old South has such a different school district structure than the equally farmable territory of the North. The explanation that follows is a compression of Fischel (2009), and it contains some speculative elements. The old South was the heart of slaveholding and, after the Civil War, racially segregated schools. Segregated schools were a diseconomy of scale because of the need to run two separate school systems—buildings, teaching staff, buses—over the same land area (Bond 1934). The enforcement of segregation also required more state control of local districts. Disfranchisement of blacks by means of the poll tax also disfranchised most poor whites, which left little opportunity for local political participation in rural areas (Margo 1990). Counties were the main vehicle for state control, and because of this and the diseconomies of segregation, the county became the default unit for the rural school district (Harlan 1958).

Southern states to the west of the Mississippi River—Texas, Arkansas, and Oklahoma—were mostly settled after the Civil War, and it is possible that their plethora of districts reflected the demands of settlers outside the plantation regions for locally controlled schools. (This is the speculative part.) The sketchy evidence of how they handled segregated schools suggests that it was in some ways worse than in the old South, in that many east Texas districts provided almost no schooling at all for blacks (Davis 1934). States in the old South did that, too, until it became evident in the 1940s that federal courts would enforce at least some semblance of the "equal" part of "separate but equal" education

demanded in 1896 by *Plessy v. Ferguson*[3] (Bolton 2000). After World War II, the countywide school district became the vehicle for rural provision of separate but equal education, which was, of course, a long way from equal. Once schools were desegregated under *Brown v. Board of Education* in 1954,[4] districts in the South were prevented from subdividing into the pattern of the North by the Voting Rights Act of 1965 in order not to recreate small, segregated districts (Motomura 1983).

The main point of this rural and urban comparison is to suggest that school districts in metropolitan areas were forged by the same forces that created modern rural districts. The rural was the mother of the urban. Rural districts after 1900 needed to collect enough students within their boundaries to create a high school. High schools were rare and unimportant before 1900, but as Goldin and Katz (2008) show, they became an essential part of public education in the twentieth century. Initially, rural districts were smaller than those in figure 5.1. A national map of all school districts in 1900 would be almost totally black with the more than 200,000 districts, most of them one-room schools.

Rural depopulation over the twentieth century forced the more remote rural districts to consolidate with neighbors in order to establish and maintain a viable high school. But if a rural district was near a city and became subject to suburbanization, the formerly rural district did not have to consolidate in order to maintain a high school. A rural district could maintain its own high school and possibly build additional campuses as suburbanization rolled over the existing pattern of rural districts.

Once a viable suburban district was established, it very rarely consolidated or broke up. In *Making the Grade* (Fischel 2009), I demonstrate that the count of school districts in urban counties in 1960 was very nearly the same as that in 2010, despite a massive drop in the number of school districts in the same state. The few available historical maps that show school districts indicate that suburban districts that formed early in the twentieth century retain substantially the same boundaries today.

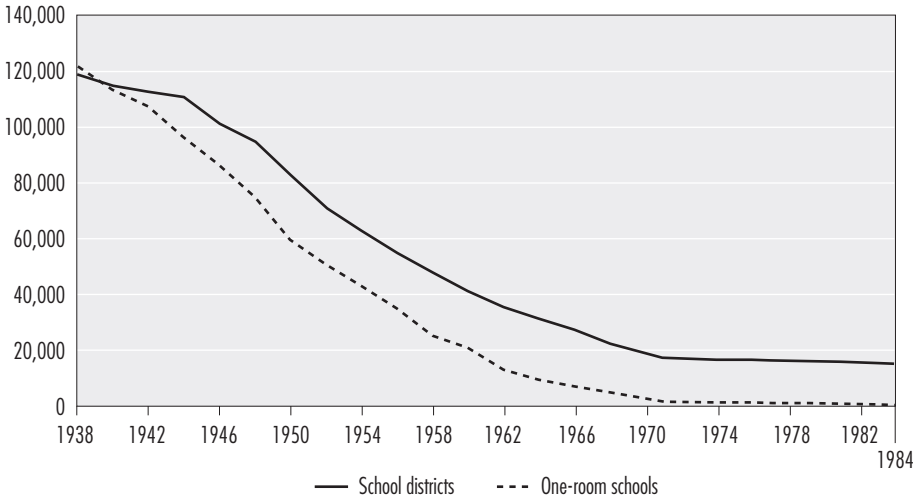
After about 1930, almost all of the reduction in the number of school districts was accounted for by rural consolidation. Figure 5.2 shows that the decline in the number of districts corresponds closely to the decline in the number of one-room schools, each of which usually constituted its own district (Fuller 1982). As the figure shows, the statistical demise of the one-room school by about 1970 was also the end of the aggregate decline in district numbers. Almost none of the post-1930 rural consolidation affected urban and suburban districts.

---

3. *Plessy v. Ferguson*, 163 U.S. 537 (1896).

4. *Brown v. Board of Education*, 347 U.S. 483 (1954).

Figure 5.2
Number of School Districts and One-Room Schools, 1938–1984 (two-year intervals)



Source: Gordon (2002).

Top-Down Versus Bottom-Up Explanations for Educational Reform

The title of this chapter suggests a negative hypothesis. The conventional story of the formation of modern school districts holds that it was forced on an unwilling populace by school administrators such as Horace Mann, backed by education theorists such as Ellwood P. Cubberley (Strang 1987). In contrast to this story, I believe the motor behind modern school districts was the same thing that motivates modern support for education by the majority of voters who have no children in public schools: land values. Since about 1920, the land values that have dominated political discourse at the local level have been those of the homeowners. (This was the basis for *The Homevoter Hypothesis* [Fischel 2001].) In earlier times, the land values of farmers and local businesspeople were paramount in the politics of local government in small towns and rural areas, where most people lived.

My hypothesis about the development of public education is bottom-up. Rural voters in the early twentieth century were concerned that they would be left behind in the race to establish high school education (Fischel 2009). The penalty for resisting modern education was that footloose immigrants would not want to buy property. Owners of all kinds of land, not just homeowners, were worried that poor schools in their jurisdiction would repel buyers.

The difficulty with this account is that there is little evidence that would pass modern statistical muster to show that property owners in 1900 were just as concerned about the effect of school quality on their major asset as homeowners are today. Most of the modern evidence comes from capitalization studies, in which a sample of homes and detailed data about them are used to infer that buyers care a lot about their school districts (Haurin and Brasington 1996; Oates 1969). Occasionally, studies have analyzed school district referenda in which voters were later polled about why they favored or opposed an increase in school spending (see, e.g., Brunner, Sonstelie, and Thayer 2001; Sonstelie and Portney 1980). All of these studies have been broadly consistent with the idea that voters support local schools when doing so will improve their property values. Almost none of the necessary data to undertake such studies were collected prior to 1950, by which time the modern school system was in place in all but the most rural areas.

The lack of data with which to examine the bottom-up thesis may explain why the top-down story is so prevalent. The most readily available information about how schools evolved is from the reports of state superintendents of education. Horace Mann was the first of these, and whatever else these early superintendents accomplished, they did write reports. (Mann's are collected in Mann and Mann [1872], published 24 years after his last year as superintendent.) Many of the reports have useful information, but it is largely presented from the point of view of the superintendents and their minions. Their goal from the beginning was to centralize the administration of education, and their reports usually extol that goal and castigate uncooperative local districts that wanted to do things their own way. Given that districts eventually did accede to consolidation and standardization, it seems logical to infer that they did so because of the urgings and blandishments of the state education establishment, personified by Mann and his articulate successors.

One problem with this account is the enormous delay between the urgings of state superintendents and the accomplishment of their objectives. Mann urged school consolidation at the town level (as opposed to the norm of many within-town districts) from the 1830s on, but townwide control was not accomplished in Massachusetts until the 1880s. As documented by Hal Barron (1997), Mann's exercise in frustration was repeated in most other northern states. In 1861, an Illinois state superintendent sought to reduce the number of independent school districts to fewer than 2,000 (Kaestle 1983), a goal that was not actually accomplished for another 100 years.

One-Room Schools Formed a Spontaneous Rural Network

It is critical to my task to describe the difference between the modern school system and the traditional system that prevailed in rural areas in the nineteenth century. (Education historians understand these differences, as described by Larry Cuban [1984], but not always their implications.) The transition between the

two systems was analogous to the transition in transportation technologies at the time. Canals and inland water routes were gradually displaced by railroads, and railroads were later displaced by modern highways and air transport. All of them were used to get people and things from point A to point B, but they employed substantially different technologies. They were also all networks in which the advantages of having one stretch of canal, railroad track, or highway were enormously augmented by having other, interchangeable segments that used the same technology.

The technology of education in rural America—which was where most Americans lived during the nineteenth century—was the tutorial-recitation method of the one-room schoolhouse (Fuller 1982). Modern observers often see the one-room school with uncomprehending nostalgia. Most reenactments of their classes have the costumes right but the technology wrong. The main error is projecting the age-graded method of instruction back onto the one-room school. Before 1900, most rural schools had no grades based on age.

On the first day of the summer or winter term (school was usually not held during spring and fall to free up young hands for planting and harvesting), the teacher, most often a young woman who had recently completed her own one-room-school education, asked each student how far he or she had previously progressed in the textbooks they had brought to school. She assembled recitation groups based on the students' previous mastery of reading, spelling, arithmetic, and perhaps one or two other subjects. She assigned to each group textbook sections to master, then called groups up to the front of the classroom in turn to have them recite what they had learned. Sometimes she would add some instruction, but most teachers simply demanded memorization of spelling lists, reading passages, and arithmetic facts and rules.

The tutorial-recitation method was useful for the rural population because it did not require continuous attendance. Children attended school irregularly because they lived far away (almost everyone walked) or some family crisis required their assistance. Boys often worked in the summer after age 10, so the summer term was more regularly attended by girls. As a result, the girls were usually placed in more advanced winter-term recitation groups than the boys. The more regular attendance by girls meant that they completed school at a younger age. (Completion meant they had run out of textbook material.) As a result, young women who were done with their schooling sometimes taught in schools attended by several boys who were older than the teacher (Perlmann and Margo 2001).

The tutorial-recitation technology of the one-room school was what might be called a folk network. A family moving from upstate New York to rural Wisconsin could send their children to the local school with the knowledge that they would always get a positive increment of education. The pedagogical method was the same almost everywhere (Finkelstein 1989). Moreover, the family could keep their children out of school to help raise a barn or tend to their sick grandmother for a month, with the assurance that when they got back to school, they

would not have to repeat a grade. There were no grades to repeat. The returnees would just be placed in different recitation groups and proceed as before.

The drawback of the one-room school and its technology was that children could not be taught much more than basic literacy and numeracy. By the middle of the nineteenth century, America led the world in the fraction of its children who could read and write (Goldin and Katz 2008). The one-room school's pedagogy was poorly adapted for advanced subjects, however. Even if qualified teachers could be found, there was not enough time in the day to teach students who ranged in age from 5 to 21 more than the basics. Modern examples of the basics-only constraint are the one-room schools run by the Amish, who see the absence of time for advanced subjects as a virtue in preserving their antimodern way of life (Fischel 2012).

High School Preparation Required Consolidated, Age-Graded Schools

The cure for the limitations of the tutorial-recitation method of one-room schools was multiclassroom, age-graded education. It allowed teachers to specialize and to rely less on memorization of textbook material. There was less in-school downtime. Most of a pupil's time in one-room schools was in what is now called study hall, and as a result there was very little homework. Age-graded schooling permitted a more rapid progression from the three R's to subjects that were needed to prepare for high school.

Age grading, however, could not apparently rely on the spontaneous coordination that made one-room school technology so universal. Someone had to decide what subjects would be taught in each grade so that teachers in, say, the fourth grade could build on material taught in the third grade. Because families and teachers often moved to new school districts, it was important to have a curriculum that could be taught in California to migrants from Illinois. Truancy became more of a problem because returning truants could not simply be shifted to another recitation group after the school year had begun. Bringing irregular students up to speed also took the teacher's time away from other students, and compulsory attendance laws began to address that external cost (Lassonde 2005). A standard school year, which allowed a long period (summer vacation) for newcomers to arrive and start with the school's established students, was also introduced along with age-graded education. (Summer vacation is another spontaneously developed standardization that continues to be erroneously regarded as an atavistic holdover of the agrarian past [Fischel 2009].)

The new technology of education was the product of urban experimentation (Angus, Mirel, and Vinovskis 1988). Nineteenth-century educators flocked to Europe to learn the Prussian system of age grading, but its application required a population density that allowed students to be divided into what eventually became eight age-specific grades. The ultimate goal of eight grades of education was a high school education. Cities and larger towns had by the end of the century

established high schools into which a largely self-selected cohort of students were funneled from the age-graded schools (Goldin 1998).

All of this coordination and standardization sounds very top-down, and modern education historians such as Tyack, Lowe, and Hansot (1984) argue that it could not have been otherwise. Within most cities, age grading was indeed the product of a more bureaucratic system. The lone teacher in the one-room school was replaced in the city by an educational team. Schools usually had a female teaching staff, with the exception of one male principal teacher, later called just the principal. He saw to it that the teachers taught a more or less standard curriculum—fourth graders could not do fifth-grade math—and brought discipline to those unruly boys who in the less structured one-room setting would just have left school for a term or two.

The biggest difficulty in creating an age-graded system was coordination across districts. The truly controversial aspect of the new system was how to create a national network. Rural schools persisted in their informal methods long after age grading and high school had become standard features of the cities and towns they surrounded. Two parallel and imperfectly meshed systems persisted for much of the early twentieth century. One-room schools after about 1900 were nominally age graded, but teaching the required subjects was difficult to do. One imaginative experiment was for rural schools to teach even-numbered grades one year and odd-numbered grades the next (Vermont Department of Education 1921). It did not catch on, though, perhaps because a newly arrived student ready for fourth grade was hard to place in a school that was doing odd-numbered grades that year.

Three forces brought rural schools into the age-graded system. The first was the declining population density of rural areas, which made walking to school less practical. The second was rural road improvements, which were sometimes undertaken with school improvements in mind, so that children in remote areas could be hauled by horse-drawn school wagons and later school buses to a central school (Ellsworth 1956). The third and most important factor was that a high school education was, in the early twentieth century, finally resulting in large economic payoffs for the great mass of students.

Up to about 1880, education beyond a "common school education" in one-room schools was mostly for a small elite (Reese 1995). This had less to do with the availability of high schools or academies, the latter of which were fairly common, than with the fact that a high school education did not have much of an economic reward for the vast majority of young people. As Claudia Goldin and Larry Katz (2008) persuasively argue, the explosive growth of high schools in the early twentieth century was the product of a new workplace that rewarded knowledge and skills beyond an elementary education.

The greater rewards accruing from a high school education drew families to cities that could provide it. Young people often left rural areas for the big city, where they boarded with relatives or lived independently so they could attend high school. But this was less than satisfactory, and the response of many families

was to move to a town that had a high school. In his biographical notes for his Nobel Memorial Prize in Economics, Vernon L. Smith (2002) wrote that his first year of schooling was in a one-room school in rural Milan, Kansas, in 1931. He described with satisfaction the modified system in which six grades were taught by a single teacher, but he noted that only reading, writing, and arithmetic were taught in all grades. At the end of the year, his teacher told his mother that he could skip second grade (Smith said he could not help but overhear the second grade's lessons), but that promotion became moot when the Smith family moved to Wichita, where Vernon attended the city's age-graded, multiclassroom schools. For whatever reason, the Smiths appeared to have voted with their feet for a more comprehensive education for their son.

Top-Down Forces Favored County Districts

Faced with a population that was moving to urban areas in part because of educational opportunities, rural school districts were urged to consolidate to form age-graded schools that led to high school. In 1909, the report of President Theodore Roosevelt's Commission on Country Life held that improved education was essential for retaining population in rural areas (Ellsworth 1960). How it was to be accomplished was not clear. Here is where the controversy is joined, if one can call me against most education historians a controversy. Most historians agree that the nineteenth-century spread of the one-room school and its pedagogy is an example of what is called spontaneous order. Ellwood P. Cubberley (1919, 155), the founder of modern education history and the first dean of the Stanford Graduate School of Education, marveled "how completely local the evolution of schools has been with us. Everywhere development has been from the community outward and upward, and not from the State downward."

Cubberley, however, regarded this tradition as something to be overcome in the new century. His ideal, shared by most education professionals, was the county school district. Local voters were to have no part in its creation. State government would simply eliminate the local districts and establish a county board of education. Cubberley allowed that the county board could be locally elected, but the primary administrator, the superintendent, was to be appointed from among the ranks of professional school administrators, the likes of which were being trained at Stanford and other schools of education administration. Within the county would be several consolidated elementary and high schools, but the areas from which they drew their students would be determined entirely at the discretion of county authorities.

Cubberley was not simply recommending the county as the basis for the new school district. He confidently predicted that it would happen, despite opposition from benighted local interests. He had reason to be optimistic. Many states had introduced bills to consolidate the tiny rural school districts along county lines. A commission funded by John D. Rockefeller in the 1920s studied Indiana's system and strongly recommended that the township unit system, which was already

relatively centralized, take the next logical step and adopt the county as the unit of the school district (Madison 1984).

The Rockefeller commission's recommendation was rejected by the Indiana state legislature. Most similar recommendations were defeated by other states' legislators or, if passed, were so riddled with exceptions that they had almost no influence on consolidation. Rejection of county governance continues to the present day. Outside of the old South, the arid West, and the most sparsely populated regions elsewhere (e.g., north-central Pennsylvania), school districts are not organized along county lines. In many states, districts routinely cross county lines. The county school superintendents in these states have to deal with at least some districts that are partly located in different counties. If the top-down story of consolidation were valid, the default district lines would correspond to county boundaries, or at least be a lot more respectful of them than is evident from maps that compare their borders. (The Google Earth feature that allows such comparisons can be found under its inconspicuous "US Government" layer.)

In fact, later state school officials who tried to promote the Mann and Cubberley framework began to admit defeat and conceded to the bottom-up forces. After World War II, a self-selected group of educators formed the National Commission on School District Reorganization. Its 1948 report, *Your School District* (National Commission on School District Reorganization 1948), describes the frustrations various state officials experienced in attempting to herd rural schools into consolidated districts.

Rather than just gripe about it, however, this group described an alternative to the top-down machinations. It involved the identification of "organic communities" of rural areas that had something in common with one another besides being in the same county or township. Once these areas had been identified, a consolidation proposal along those lines was much more politically acceptable to both the local residents (who had to vote to surrender their current districts) and the rural state legislators, who held most of the cards in the statehouse. In fact, this process of gradual consolidation by self-identified communities had been described by Cubberley (1914), although he explicitly preferred the top-down approach.

An earlier section of this chapter showed that the distribution of rural school districts was the progenitor of urbanized area districts in that suburban populations inherited the boundaries created for rural schools. This is relevant because it was rural areas that were most resistant to the Horace Mann–style standardization reforms. Mann and most other statewide officials wanted the rural districts to get on board with urban school reforms. If the reformers had gotten their way, urban school districts in every state and every region would be pretty similar. Indeed, they would all look like Clark County (Las Vegas), Nevada. It is ranked 70th in table 5.1, the least competitive, most concentrated of the group, with a single county school district governing the entire urban area. But the vast majority of urban school districts do not look like this. The UA distribution mirrors fragmented rural patterns, and the boundaries of urban districts were largely

determined by the demands of their residents for organic communities, not by the state education establishment.

Not all of the reforms proposed by school professionals were ignored. An influential commission funded by Andrew Carnegie in the early twentieth century proposed a standard classification of high school subjects and the proportion of the school year to be dedicated to each. These became the basis for the "Carnegie unit" of credit for high school courses, a concept that persists to this day. Education reformers often criticize the Carnegie unit and related standards as straitjackets that impede individualized instruction and educational experimentation (Tyack and Cuban 1995).

A virtue of such standards, however, is that they facilitate geographic mobility by both teachers and the families of students. A family can move from Seattle to Tampa between tenth and eleventh grade and be pretty certain that the Tampa school will teach American literature, just as the Seattle school does. By the same token, breaking out of the straitjacket is costly to mobility, which is why so few school districts do it. Nonconformity is hard on property values. The reforms that succeeded, like the Carnegie unit and the standard school year, were those that facilitated mobility-friendly standards without interfering much with local political control.

Congressional "School Sections" Enhanced the Demand for Federal Land

The argument so far has been about school governance. The evidence is consistent with the notion that local voters held most of the cards. The school professionals and the state education establishment proposed, but the voters disposed. Local control of the process does not necessarily imply that local voters were driven to accept changes out of concern for land values. But change they did, moving their school systems in a direction that showed they were pretty interested in property values.

Rural voters were in most cases landowners. Even where the electoral franchise was not limited to property owners and taxpayers, the most active participants in rural and small-town affairs were usually landowners. Up to the 1960s reapportionment court decisions, which required the principle of one person, one vote, state legislatures were disproportionately composed of legislators from rural districts (Tyack, James, and Benavot 1987). Indeed, the fact that the members of all American legislatures, including the U.S. Congress, continue to be elected from geographically contiguous (if not always compact) districts contributes to, as many lament, each legislator's exquisite attention to the local affairs of his or her district. It is unlikely that a widespread reform such as school consolidation would have reduced the net worth of a large and politically influential segment of the rural electorate.

Evidence for the primacy of land value concerns in founding schools comes from one of the last and most enduring pieces of legislation adopted by the Con-

federation Congress, the national government in power before the U.S. Constitution was ratified. The Articles of Confederation had no provision for a national tax, and collecting the requested revenues from the states for national business was difficult. By 1785, Congress had acquired an enormous asset that it regarded as a possible substitute for national taxation (Onuf 1987). This was what would come to be called the public land or public domain. It included, roughly speaking, all of the land between the Appalachian Mountains and the Mississippi River, then the western boundary of the United States. This territory had previously been claimed by various states based on their colonial charters. The Land Ordinance of 1785 and the Northwest Ordinance of 1787 were crafted by Congress to exploit this asset and provide revenues to service the country's considerable foreign debt and fund current government operations.

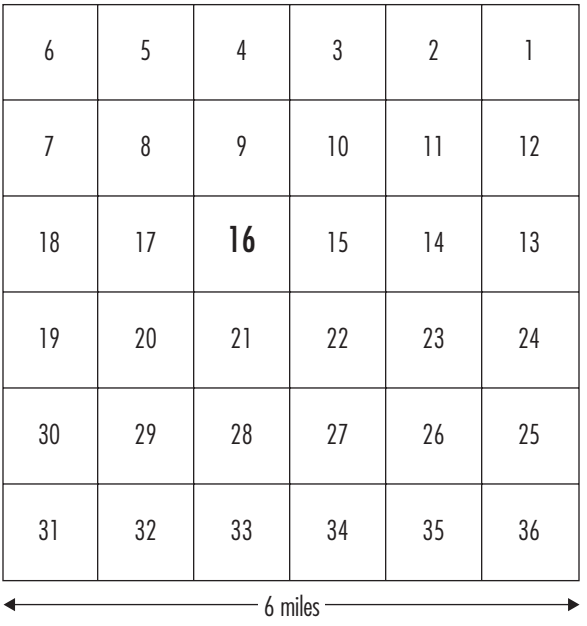
The Confederation Congress was now the world's largest land developer, and it had reason to create institutions that would maximize the value of its holdings. The Land Ordinance of 1785 organized the sale of public land to private individuals, while the more famous Northwest Ordinance of 1787 provided a governance framework that outlined the path from territory to statehood. The Land Ordinance set in motion the national survey, which divided the public land into township squares (Linklater 2002). Each square was six miles by six miles, and the standard subdivided unit, still called a section, was one square mile. The squares left an imprint on the land west of the Appalachians that can still be seen from the air today.

Figure 5.3 shows the numbering system for the township sections. The Land Ordinance of 1785 reserved section 16, one of the square miles near the center, "for the maintenance of public schools within the said township." The method of surveying and subdividing townships began in Ohio, and it was continued, along with the gift of the "school section," with only slight modification for almost all of the land disposed of by the United States throughout the nineteenth century.

The school section was an endowment, not a campus. A remarkable number of modern observers, including some who administer this land in the West, think that because the 16th section was central (or as central as it can be in an even-numbered grid), it was intended as a campus for the schools. This shows how difficult it is for Americans today to conceive of the conditions of everyday life in the nineteenth century. Children almost always walked to school, and a walk from the outer sections, say number 1 or 36, to section 16 would take the better part of a day. Given that most children had nontrivial chores to do at home, walking time was costly for the entire family.

The school section was to be leased annually, typically to farmers, and the income from it was divided among the many one-room schools that sprang up around the township as it became settled. A fully developed rural township would have on the order of 9 to 19 one-room school districts, each entitled to its share of the revenues from the school section (Swift 1911). I have never been able to discover why section 16 was the designated school section, but it did have the advantage of giving the township more degrees of freedom for relocating its

Figure 5.3
Location of the 16th Section Dedicated to Schools in the Congressional Township of the National Survey of Public Land



endowment to an adjacent section in case number 16 happened to have been preempted by a squatter who arrived before the official government surveyors did.

The establishment and continent-wide persistence of the 16th-section system surely gives the impression of a wise national government doing its best from the very beginning to implement the Jeffersonian ideal of universal education. Proponents of an increased role for the federal government in funding public education can point to this original role undertaken by the first national government and, after the adoption of the Constitution, continued by the national government throughout the nineteenth century. The federal government was no stranger to financing local public education.

The problem with this story is that there is not a shard of evidence that the Confederation Congress contemplated the education benefits of endowing township schools. Its debates were carefully recorded, and scholars who have pored over the written minutes have been unable to detect any mention of education benefits as a reason for the universal promotion of schools. After examining the deliberations about the Land Ordinance of 1785, Howard Taylor (1922, 13)

dryly concluded, "The thought of laying a permanent foundation for a public school system seems not to have entered into the discussion of the matter."

The more transparent reason for the school endowment was that it helped Congress sell land. Congress consciously shaped its land ordinances to appeal to buyers of land. The buyers who were best organized and able to make payment were a group of New Englanders, mainly from Massachusetts, who were organized as the Ohio Company. New Englanders had a long tradition of real estate development that took the form of organizing towns outside the original settlements along the coast (Akagi 1924; Martin 1991). Proprietors like those of the later Ohio Company would obtain land for financial consideration or political favors from the colonial governors, who were the agents of the king of England.

The typical size of a land grant in the farther reaches of New England was a township six miles by six miles, which proprietors would then subdivide to attract other settlers. To make the wilderness land attractive, the proprietors would reserve some parcels whose future revenues (from rent or sale) were earmarked for the support of a minister, a church, and local schools. Figure 5.4 reproduces the lots of the original proprietors of Norwich, Vermont (then claimed by the royal governor of New Hampshire), with the various school grants outlined. As in later grants, these locations were not where schools were placed. Placement of schools came after settlement, often on small parcels donated by farmers who wanted a school nearby so that their children did not have so far to walk. As population increased, new districts would be created so as to keep children's walking time within reasonable bounds. Unlike twentieth-century consolidated districts, which are rarely broken up, one-room-school districts had boundaries so elastic that it was difficult to keep track of them.

Knowing the traditions of its best potential customers, Congress tailored its land offerings to make them attractive to New Englanders. Indeed, much of the legislation was drafted by men who had an interest in the Ohio Company (Dennenberg 1979). Congress considered offering support of a church and a minister as well as schools. In the end, though, Congress declined because earmarking support for religion would create too much dissent among settlers who, unlike those of colonial New England, were apt to belong to several different sects (Elazar 1988).

School endowments turned out to be the most successful draw for settlements. Secretary of the Treasury Albert Gallatin argued in 1805 that congressional donation of school land to the new state of Ohio "would increase the value of the remaining lands and hence would involve no loss to the [national] government" (quoted in Gates 1968, 289). Gallatin's view seems to have been widely shared. Land speculators in Wisconsin actively encouraged schools to "induce New England settlers" (Jorgenson 1956, 34).

As the nation extended its territory west, Congress increased the number of sections it reserved for schools because, as a Connecticut member of Congress noted, "the people put schools above internal improvements" (quoted in Gates

Figure 5.4
School Lots in Norwich, Vermont, Chartered in 1761

1968, 300). The 36th section at the southeast corner of a township (see figure 5.3) was initially added to the 16th-section endowment for Oregon, and the more arid states were offered as many as four sections per township (Swift 1911). It was said that the more generous offerings reflected the drier, less productive land of the West, but that same geographic condition would also have limited the population that needed schools. It seems more likely that Congress later became increasingly aware of the drawing power of education and used it in an effort to enhance the value of the remaining holdings.

The school section revenues were modest, providing for little more than six weeks of education per year in most areas (Fuller 1982). Local revenues from tuition-like "rate bills," local taxes, and other state funds and private donations were needed to finance even the modest needs of the one-room schools. But the school section funds were important as initial seed money. A Kansas teacher organized her frontier school in anticipation of getting school section money as soon as enough settlement land had been "proved up" and transferred to private hands (Stratton 1981). (The Northwest Ordinance of 1787 prohibited taxation of federal land.) As the century wore on, the school section revenues that funded the states' education trusts became less and less important. Much was

lost through theft, the Civil War, and mismanagement (Swift 1911). But the main reason for the decline in the importance of school section funds was the growth of age-graded schooling and high schools. These more comprehensive institutions created financial demands far above those that could be financed by a small fraction of rural land.

What looks like the first great top-down program for education, the school section endowment, appears to have been done mainly to appeal to purchasers of land. This is not to say it was a cynical ploy or that Congress had no regard for education. But congressmen had at least as much regard for religion, and endowments for that purpose were rejected for what look like practical reasons rather than principles. Keep in mind that the notion of separation of church and state was not a high constitutional principle at the time, not least because the U.S. Constitution had yet to be written when the Land Ordinance of 1785 was passed.

Slavery Undermined the Impact of Land Values on Public Schools

The final indirect evidence that land was the motivating factor for education was the radical difference between education in the South and education in the rest of the nation. Almost all observers at the time (e.g., Cubberly 1914) and in the present (e.g., Margo 1990) regarded education in the South as backward. Most attributed this to the baneful influence of slavery—it was illegal in most states to educate slaves—which spilled over into education for white children. Slavery was bad for white education in a different way, however. As Gavin Wright (2006) has emphasized, rural plantation owners were much less interested than northern farmers in improving the public attractiveness of their surrounding communities. A new plantation in Alabama, for example, was a self-contained community. It grew and became more specialized and profitable by acquiring more slaves. Attracting other white settlers added little to the plantation owner's profits. The political economy of this was such that in North Carolina, for instance, "political power rested in the hands of eastern slave owners who held the great bulk of their wealth in the form of human rather than real property. Unlike land, that investment was movable, and its value bore little relation to local development. As a result, North Carolina's governing elite gave scant attention to improving the countryside" (Leloudis 1996, 3).

By contrast, free white farmers in states such as Illinois generally welcomed white immigrants. They bid up the value of the pioneers' land, and the newcomers provided a more specialized community in which both formal and informal exchange led to mutual gains (Faragher 1986). Communities on the northern frontier sought to make themselves more attractive by creating public institutions. Among the more important were free public schools. Schools not only attracted newcomers; they also formed a locus of nonreligious social capital that made it easier for adults to undertake local cooperative ventures (Reynolds 1999).

Once slavery was prohibited in the South, forces similar to those in the North militated for universal public education. But, as noted earlier, racial segregation resulted in more costly schooling and hence usually a poorer education for whites as well as blacks. Segregation resulted in districts that were overly large, and as modern studies have shown, home values in large districts are less responsive to improvements in better schools (Hoyt 1999). The risk that local districts might empower blacks to vote for more education caused state legislatures to exercise more financial and administrative control through county governments (Margo 1990). All of this attenuated the connection between property values and school quality. Southerners were no less interested in education than other Americans. But slavery and its legacy undermined the institutions that connected local property values (and hence local property taxes) with school quality. Thus, the sad history of public education in the South can stand for inverse confirmation of the proposition that local attention to land values promotes public education.

Conclusions

The pattern of school district formation and other features of the American K–12 education system strongly suggest that the promotion of land values was a powerful motivator for its creation. The geographic distribution of school districts, which regularly follow county lines only in the South and in the arid West, is evidence that local voters and parents usually trumped the plans of the state education establishment and various reformers to establish school districts along county lines. The variation shown here suggests that researchers who use the school district as their unit of observation should understand that the formation of these districts was not the product of distinctive reforms in particular states. Instead, school district formation seems to have been determined by climatic and geographic factors that determined the density of the rural agricultural population in the North and West and by the legacy of racial segregation in the South.

The establishment of one-room schools throughout nineteenth-century America was one of the most successful mass-education ventures in world history. It was done with little direction from the federal or state governments. Schools were part of the real estate development process from colonial times through the twentieth century. Town founders from colonial Massachusetts (Martin 1991) to twentieth-century Celebration, Florida (Frantz and Collins 1999), have used the provision of public education to attract buyers and enhance the overall value of their enterprises.

That education was so widely used to attract settlers and land buyers is evidence that it was universally admired and desired. The federal government did encourage local education with the establishment of the school section endowments in the Land Ordinance of 1785. But these donations were primarily intended to improve the sale of the government's land. The appeal of education was a given, not something that had to be inculcated in the population. Only in

the South, where the dominant property system was ownership of human beings, not land, did the demand for real estate fail to serve as a force for establishing public schools.

The high school revolution of the early twentieth century was largely accomplished by the decisions of independent school districts, goaded by the land market. According to Goldin and Katz (2008), America leaped ahead of Europe and the rest of the world precisely because the top-heavy decision makers in other countries had to get national majorities on board with the idea of high school education. In America, by contrast, high schools percolated up from the bottom, and their initial success created a race to the top among districts, which accomplished nearly universal high school attendance long before it became the norm in Europe.

The discipline of the land market was the background motivator of the transformation of American education from one-room schools to age-graded schools. Districts that failed to conform found that their farms and land were unattractive to buyers, who shunned districts that could not stream children from primary school into high school. At an agricultural conference in the 1920s that was concerned with ways to revitalize rural areas, a government official concluded, "The intelligent man will not go out in an isolated district where his children cannot have educational advantages" (quoted in Fitzgerald 2003, 30).

REFERENCES

Akagi, R. H. 1924. *The Town Proprietors of the New England Colonies: A Study of Their Development, Organization, Activities and Controversies, 1620–1770.* Philadelphia: University of Pennsylvania Press.

Angus, D. L., J. E. Mirel, and M. A. Vinovskis. 1988. Historical Development of Age Stratification in Schooling. *Teachers College Record* 90:211–236.

Barron, H. S. 1997. *Mixed Harvest: The Second Great Transformation in the Rural North, 1870–1930.* Chapel Hill: University of North Carolina Press.

Battersby, S., and W. A. Fischel. 2008. The Competitive Structure of Urban School Districts in the United States and an Explanation for Its Regional Variation. Working Paper. Hanover, NH: Dartmouth College Economics Department.

Bolton, C. C. 2000. Mississippi's School Equalization Program, 1945–1954: A Last Gasp to Try to Maintain a Segregated Educational System. *Journal of Southern History* 66:781–814.

Bond, H. M. (1934) 1966. *The Education of the Negro in the American Social Order.* New York: Octagon Books, 1966.

Briffault, R. 1990. Our Localism: Part I—The Structure of Local Government Law. *Columbia Law Review* 90:1–115.

Brunner, E., J. Sonstelie, and M. Thayer. 2001. Capitalization and the Voucher: An Analysis of Precinct Returns from California's Proposition 174. *Journal of Urban Economics* 50:517–536.

Cuban, L. 1984. *How Teachers Taught: Constancy and Change in American Classrooms, 1890–1980.* New York: Longman.

Cubberley, E. P. 1914. *Rural Life and Education*. Cambridge, MA: Riverside Press.
———. 1919. *Public Education in the United States: A Study and Interpretation of American Educational History.* Boston: Houghton Mifflin.
Davis, W. R. 1934. *The Development and Present Status of Negro Education in East Texas*. New York: Teachers College, Columbia University.
Dennenberg, D. 1979. The Missing Link: New England's Influence on Early National Education Policies. *New England Quarterly* 52:213–233.
Elazar, D. J. 1988. Land and Liberty in American Society: The Land Ordinance of 1785 and the Northwest Ordinance of 1787. *Publius* 18:1–29.
Ellsworth, C. S. 1956. The Coming of Rural Consolidated Schools to the Ohio Valley, 1892–1912. *Agricultural History* 30:119–128.
———. 1960. Theodore Roosevelt's Country Life Commission. *Agricultural History* 34:155–172.
Faragher, J. M. 1986. *Sugar Creek: Life on the Illinois Prairie.* New Haven, CT: Yale University Press.
Finkelstein, B. 1989. *Governing the Young: Teacher Behavior in Popular Primary Schools in Nineteenth-Century United States.* Philadelphia: Falmer Press.
Fischel, W. A. 2001. *The Homevoter Hypothesis: How Home Values Influence Local Government Taxation, School Finance, and Land-Use Policies.* Cambridge, MA: Harvard University Press.
———. 2009. *Making the Grade: The Economic Evolution of American School Districts.* Chicago: University of Chicago Press.
———. 2012. Do Amish One-Room Schools Make the Grade? The Dubious Data of *Wisconsin v. Yoder*. *University of Chicago Law Review* 79:107–129.
Fitzgerald, D. K. 2003. *Every Farm a Factory: The Industrial Ideal in American Agriculture.* New Haven, CT: Yale University Press.
Frantz, D., and C. Collins. 1999. *Celebration, U.S.A.* New York: Holt.
Friedman, M. 1962. *Capitalism and Freedom.* Chicago: University of Chicago Press.
Fuller, W. E. 1982. *The Old Country School: The Story of Rural Education in the Middle West.* Chicago: University of Chicago Press.
Gates, P. W. 1968. *History of Public Land Law Development.* Washington, DC: U.S. Government Printing Office.
Goldin, C. 1998. America's Graduation from High School: The Evolution and Spread of Secondary Schooling in the Twentieth Century. *Journal of Economic History* 58:345–374.
Goldin, C., and L. Katz. 2008. *The Race Between Education and Technology.* Cambridge, MA: Harvard University Press.
Gordon, N. 2002. Essays in the Economics of Education. Ph.D. diss., Harvard University.
Harlan, L. R. 1958. *Separate and Unequal: Public School Campaigns and Racism in the Southern Seaboard States, 1901–1915.* Chapel Hill: University of North Carolina Press.
Haurin, D. R., and D. Brasington. 1996. School Quality and Real House Prices: Inter- and Intrametropolitan Effects. *Journal of Housing Economics* 5:351–368.
Hess, F. M. 2012. Enforcing Conformity Is Risky. Room for Debate. *New York Times*, December 11.
Howell, W. G., and P. E. Peterson. 2006. *The Education Gap: Vouchers and Urban Schools.* Washington, DC: Brookings Institution.

Hoyt, W. H. 1999. Leviathan, Local Government Expenditures, and Capitalization. *Regional Science and Urban Economics* 29:155–171.
Jorgenson, L. P. 1956. *The Founding of Public Education in Wisconsin.* Madison: State Historical Society of Wisconsin.
Kaestle, C. F. 1983. *Pillars of the Republic: Common Schools and American Society, 1780–1860.* New York: Hill and Wang.
Lassonde, S. 2005. *Learning to Forget: Schooling and Family Life in New Haven's Working Class, 1870–1940.* New Haven, CT: Yale University Press.
Leloudis, J. L. 1996. *Schooling the New South: Pedagogy, Self, and Society in North Carolina, 1880–1920.* Chapel Hill: University of North Carolina Press.
Linklater, A. 2002. *Measuring America.* New York: Walker.
Liu, G. 2006. Education, Equality, and National Citizenship. *Yale Law Journal* 116:330–441.
Madison, J. H. 1984. John D. Rockefeller's General Education Board and the Rural School Problem in the Midwest, 1900–1930. *History of Education Quarterly* 24:181–199.
Mann, H. 1847. *Report of the Massachusetts Board of Education.* Boston: Dutton and Wentworth.
Mann, H., and M. T. Mann. 1872. *Life and Works of Horace Mann.* Boston: Lee and Shepard.
Margo, R. A. 1990. *Race and Schooling in the South, 1880–1950.* Chicago: University of Chicago Press.
Martin, J. F. 1991. *Profits in the Wilderness: Entrepreneurship and the Founding of New England Towns in the Seventeenth Century.* Chapel Hill: University of North Carolina Press.
Motomura, H. 1983. Preclearance Under Section Five of the Voting Rights Act. *North Carolina Law Review* 61:189–246.
National Commission on School District Reorganization. 1948. *Your School District.* Washington, DC: National Education Association.
Oates, W. E. 1969. The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis. *Journal of Political Economy* 77(6):957–971.
Onuf, P. S. 1987. *Statehood and Union: A History of the Northwest Ordinance.* Bloomington: Indiana University Press.
Perlmann, J., and R. A. Margo. 2001. *Women's Work? American Schoolteachers, 1650–1920.* Chicago: University of Chicago Press.
Peterson, P. E. 2010. *Saving Schools: From Horace Mann to Virtual Learning.* Cambridge, MA: Harvard University Press.
Reese, W. J. 1995. *The Origins of the American High School.* New Haven, CT: Yale University Press.
Reynolds, D. R. 1999. *There Goes the Neighborhood: Rural School Consolidation at the Grass Roots in Early Twentieth-Century Iowa.* Iowa City: University of Iowa Press.
Smith, V. L. 2002. Vernon L. Smith—Biographical. In *The Nobel Prizes*, ed. Tore Frängsmyr. Stockholm: Nobel Foundation. www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2002/smith-bio.html.
Sonstelie, J. C., and P. R. Portney. 1980. Take the Money and Run: A Theory of Voting in Local Referenda. *Journal of Urban Economics* 8:187–195.

Strang, D. 1987. The Administrative Transformation of American Education: School-District Consolidation, 1938–1980. *Administrative Science Quarterly* 32:352–366.
Stratton, J. L. 1981. *Pioneer Women: Voices from the Kansas Frontier.* New York: Simon & Schuster.
Swift, F. H. 1911. *A History of Public Permanent Common School Funds in the United States, 1795–1905*. New York: Holt.
Taylor, H. C. 1922. *The Educational Significance of the Early Federal Land Ordinances*. New York: Teachers College, Columbia University.
Tiebout, C. M. 1956. A Pure Theory of Local Expenditures. *Journal of Political Economy* 64:416–424.
Tyack, D. B., and L. Cuban. 1995. *Tinkering Toward Utopia: A Century of Public School Reform.* Cambridge, MA: Harvard University Press.
Tyack, D. B., T. James, and A. Benavot. 1987. *Law and the Shaping of Public Education, 1785–1954*. Madison: University of Wisconsin Press.
Tyack, D. B., R. Lowe, and E. Hansot. 1984. *Public Schools in Hard Times: The Great Depression and Recent Years*. Madison: University of Wisconsin Press.
Vermont Department of Education. 1921. *The State Course of Study of Vermont: Part One for Rural and Elementary Schools*. Montpelier, VT: State Board of Education.
Wright, G. 2006. *Slavery and American Economic Development*. Baton Rouge: Louisiana State University Press.

COMMENTARY
Thomas Downes

William Fischel extends an argument that he has made for many years (Fischel 1989): to understand the evolution of local government structures and fiscal institutions, we must account for the fact that, for most individuals, the home they own is their primary asset. This realization underlies Fischel's (2001) homevoter hypothesis that local voters support proposals that will produce net benefits for them by increasing their property values. In this chapter, that idea leads to the argument that the promotion of land values played a significant role in creating the decentralized system of school district finance and governance still extant today.

The goals of this commentary are twofold. First, while I do not agree with all of the elements of Fischel's arguments, I applaud him for applying the ideas of public choice and local public finance to make the case that the school district boundaries we observe today are not "accidents," but instead are attributable to a combination of economic determinism and the role of initial conditions. I am sympathetic to this argument, since I have made a similar, though less eloquent, argument in a similar context (Downes 1996). That sympathy is what drives me toward the second goal of this commentary: to suggest the need for developing a more nuanced version of Fischel's argument.

Fischel correctly argues that the limited data available from the late nineteenth and early twentieth centuries cannot be used to evaluate his claim that the current pattern of school districts in the United States can be best understood as a result of the operation of the homevoter hypothesis. However, the case that "the present system" is not "the product of top-down efforts of the past" (124) can be made by citing both the historical record and the limited data that are available. As Fischel notes, throughout the nineteenth century state superintendents sought to exercise top-down control and to encourage consolidation, but the extent of centralization was limited. For example, in New York State, while the number of school districts declined in the antebellum period, there were still over 11,000 school districts in 1880, as compared to 695 districts in 2010. In California, both contemporary observers and education historians have noted that effective control was retained by local districts throughout the nineteenth century (Downes 1996). And in the post-Reconstruction period, many states followed the lead of the southern states in writing new constitutions that emasculated state governments, partly in response to the perceived ineffectiveness and corruption of those governments and partly with the intent of undoing some of the effects of Reconstruction (Aronson and Hilley 1986).

Does this historical record mean that centralization efforts were thwarted primarily by the efforts of local "homevoters" to preserve property values? Of that I am less sure. In the antebellum period, several dynamics worked against the centralization push. The Catholic school system grew rapidly during the antebellum period (Lazerson 1977). To what extent those served by Catholic schools

were supportive of or opposed to increased centralization is unclear, although advocates of central control were also proponents of the view that schools should serve as agents of assimilation (James 1982). In addition, states outside the South adopted constitutions that limited the power of state governments. Thus, in a number of states, public education grew and flourished at the same time constraints on state power were put in place. Observation of the dynamics of early-twenty-first-century local consolidation efforts throughout New England and the Midwest suggests that opposition to consolidation could just as easily be attributed to a desire to keep districts more homogeneous or to preserve local control as to an effort to maximize local land values (Downes 1996). It seems likely that such dynamics were also operative in the 1900s.

In addition, while I understand the utility of simple classifications such as the old South and the arid West in illustrative tables such as tables 5.1 and 5.2, I am not sure that any single story can do justice to the complex dynamics of public education in all the states in such large regions. In fact, a perusal of the classification choices behind these tables suggests that the simple classifications do not work well. Why is Missouri treated differently from Maryland and Kentucky? Why does the arid West not include Dallas, Austin, and Oklahoma City? Fischel's argument does not depend on tables 5.1 and 5.2, but the problems with those tables suggest the need for a more nuanced explanation that also accounts for some of the factors noted previously. Similarly, Fischel's argument that segregation led to overly large school districts in the South seems too simple in light of the diversity in districts per pupil in southern states. To what extent is this diversity in the South attributable to such institutional factors as the timing of the state constitutions?

Do these criticisms of Fischel's arguments mean that we should reject his conclusions? In my opinion, that would be absolutely the wrong thing to do. As Fischel argues, the structure of education we observe today was not the result of top-down decisions, and concerns about the impact of centralization on land values were, and still are, a reason for local opposition to consolidation efforts. Researchers and policy makers need to take to heart Fischel's arguments, but they also need to be aware that understanding the local dynamics of public education and governance requires accounting for other factors in addition to the desire of local residents to preserve home values.

REFERENCES

Aronson, J. R., and J. L. Hilley. 1986. *Financing State and Local Governments*. 4th ed. Washington, DC: Brookings Institution.

Downes, T. A. 1996. Do Differences in Heterogeneity and Intergovernmental Competition Help Explain Interregional Differences in the Private School Share? Evidence from Early California Statehood. *Public Finance Quarterly* 24 (July):291–318.

Fischel, W. A. 1989. Did *Serrano* Cause Proposition 13? *National Tax Journal* 42 (December):465–473.

———. 2001. *The Homevoter Hypothesis: How Home Values Influence Local Government Taxation, School Finance, and Land-Use Policies*. Cambridge, MA: Harvard University Press.

James, T. 1982. Public Versus Nonpublic Education in Historical Perspective. Project Report No. TTC-6. Stanford, CA: Institute for Research on Educational Finance and Governance, Stanford University.

Lazerson, M. 1977. Understanding American Catholic Educational History. *History of Education Quarterly* 17 (Fall):297–318.