NBER WORKING PAPER SERIES

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Working Paper 13335
http://www.nber.org/papers/w13335

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
August 2007

University of California - Davis. The authors are indebted to Stanley L. Engerman, Christopher Hanes, Paul Rhode, Gavin Wright, and seminar participants at the University of Kansas and the All-UC Group in Economic History for helpful comments on earlier drafts. Underlying regressions and data sets are available on our home pages: http://www.econ.ucdavis.edu/graduate/sgo and http://econ.ucdavis.edu/faculty/fzlinder.

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NBER Working Paper No. 13335
August 2007
JEL No. H52,H75,I22,N11,N31

ABSTRACT

How did a frontier nation filled with agricultural and mineral potential become a leader in education? How did a nation supposedly born of aversion to taxes and government become a pioneer in using property taxes to pay for much, and eventually most, of its primary schooling? The puzzle is best explained by a combination of schooling affordability, local autonomy, and especially political voice. We present two kinds of evidence: broad contrasts with Europe, and statistical investigation of the differences among U.S. counties in the mid-nineteenth century. Two political voice variables stand out as determinants of schooling among U.S. counties: The extent of local suffrage and the ability of Southern elites to dominate the electorate. Other standard explanations of the demand for primary education need to be revised. Past writers have overemphasized the passage of national and state laws. Contrary to another common view, cities lagged in school attendance, while the Northern countryside led the way, because political voice was more widespread in the small Northern towns.

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The world has long known that advances in knowledge are crucial to economic growth, that broad mass education advances knowledge, and that the United States has had one of the world's highest per-capita income levels since the nineteenth century. We have also believed that these familiar facts are linked. Ever since the British and others were struck by American technology exhibits at the Crystal Palace Exhibition in 1852, it has been natural to give American education much of the credit for this country's advances in knowledge and its prosperity.

As soon as we ask how the Americans became leaders in mass education, puzzles arise. Given the usual narrative flow, one would expect that the Founding Fathers wisely encouraged universal primary schooling from the very start. Yet their Constitution said essentially nothing on the subject, and most of them were not enthusiastic about involving the federal government in education. Jefferson's attempts to raise tax money for schooling all whites bore no direct fruit, either in his native Virginia or in the nation as a whole. True, the federal government helped fund education with earmarked land grants to the states. Yet the land grants were little used for schools in the early decades, especially in the new South.[i]

Two other facts that should have puzzled us further: Americans at the grass-roots level had developed their primary schools some decades before help arrived from above, and they did it largely by voting to tax themselves. How did education advance so soon in a country that resembled Russia in its rich opportunities in agriculture, forestry, and mining? How did a supposedly anti-government and anti-tax country spontaneously decide that schools should use property taxes, and not rely on private tuition alone? Why in North America, when several established European countries had already declared that their people should be educated, and had the established governments to finance and monitor schools?

America's peculiarly high fertility makes the puzzle even greater. At the start of the nineteenth century, the United States had more children per adult than did Western Europe.[ii] Common sense suggests that the relative abundance of children would have burdened any system attempting to educate them. Twentieth-century experience agrees, and our own analysis will find the expected negative effect of extra children on the

schooling of the average child. How did the Americans manage to pay for so much schooling per child when families were so large?

Fortunately, our pursuit of this puzzle is well guided by the work of other scholars. The field of education history has produced a vast literature, only some of which can be cited here. Most helpfully for present purposes, other economic historians have recently identified a similar puzzle, and have given tentative answers that we shall reinforce and extend here. A pioneering study by Albert Fishlow showed that primary school enrollments and funding were already growing as fast before the "common school revival" of the 1830s and 1840s as they were in that over-publicized era.[iii] Carl Kaestle and Maris Vinovskis have offered plausible interpretations and data improvements.[iv] Stanley Engerman and Kenneth Sokoloff have contrasted North America with the rest of the Americas in terms of schooling and suffrage, plausibly arguing that the greater equality of voting rights in North America was a key to the rise of schooling.[v] Claudia Goldin and Larry Katz have pointed to decentralization and democracy as two of the virtues that advanced American education for a century and a half, first in the rise of primary schooling and then in the high school revolution.[vi]

We present two kinds of new evidence suggesting that these economic historians have put scholars on the right path, and that some other views need to be revised. First we offer some simple but striking contrasts with Europe, to underline the distinctive position of the North Americans. Then we statistically explore and explain some of the differences among American communities' commitments to education. The early Americans (and Canadians) spontaneously developed public schools because a combination of factors raised both their private and their public demand for education. In the global context of the late eighteenth century and the early nineteenth, the North Americans had especially few (white) poor, had a broader democracy, and had a more decentralized form of government even in the colonial era.

The democracy theme also helps to explain why some areas led and others lagged in white schooling. Two political voice variables stand out as determinants of schooling: The extent of local suffrage and the ability of centralized Southern elites to dominate the electorate.

Other standard explanations of the demand for primary education need to be revised. The passage of national and state laws has been overemphasized by past writers. Contrary to another common view, we also find that cities lagged behind the Northern countryside in the spread of enrollments and attendance. Religion and ethnicity may also have played only minor roles in explaining the schooling differences among American whites, despite a long tradition of emphasizing the written Bible as a force for education.

How Early, How Local, How Public?

To capture the dawn of America's public schools requires looking first at the relative daylight of the mid-nineteenth century before peering back toward the statistical darkness of the colonial and early national periods. Table 1 reviews some international contrasts in enrollments from 1830 to 1850. By mid-century white children in the United States were already enrolled for as much primary schooling as children in any country other than Prussia, and most of that instruction was delivered in what were called public or common schools. It looks odd to see a decentralized government-fearing North America catch up with the country famous for having the world's most advanced education imposed from the throne down. Part of this international oddity is explained by noting that Prussian and German primary education was financed more locally, and more differentially among regions, than the old "state-building" literature had realized.[vii] Still, one wonders why it was a frontier continent that caught up with the leader.

Within the United States, states and regions differed greatly in the levels and growth of their commitment to schooling, as shown by Tables 2 and 3. School enrollment *levels* tended to relate positively to latitude and negatively to longitude. Enrollments were highest in the northernmost tier. Maine, New Hampshire, and Vermont led in this respect, at least from the 1830s on. From there the high enrollments seem to have spread west to Upper Canada and to Michigan.[viii] Correspondingly, the South had the least schooling for white children. The East-West pattern is also simple and robust: Children were more fully schooled in the East. Yet the *growth* of enrollments showed the opposite pattern. As Albert Fishlow has emphasized, there was a strong antebellum

convergence among white populations, with enrollment rates improving faster in the West and in the South.

Turning back into the statistical dawn, how far back should we date the rapid expansion of American primary schooling, how local was it, and how much did it depend on public money? These questions are all inherently quantitative, and their resolution calls for assembling more numbers like those presented by Albert Fishlow. To underline the need for deeper number mining, we should first emphasize that too much of the historiography of early education has fallen into the trap of dating the rise of schooling by the passage of schooling laws.

Both for other continents and for North America, many writers have reached too far back in dating the dawn of public schools, by focusing on the earliest laws calling for universal schooling. Such laws were usually ineffective because they simply mandated schooling without offering government money to pay for it. The historiography of German education has over-emphasized imperial edicts calling for mandatory community provision of universal education in the 1760s. Real progress waited half a century for the Stein reforms and local financing. Even in Meiji Japan, with its intense urgency of catching up in education, it took a third of a century before most children were receiving the four years of schooling decreed by the Education Act of 1872. The lag was even longer in the case of India. Lord Curzon, as Viceroy of British India in 1898-1905, mandated that all governments in India must educate all children, yet almost a century later, in the 1990s, about half of all Indian adults were still illiterate.[ix]

For America, one should similarly resist the temptation to cite the earliest colonial laws as a source of schooling progress. True, both Connecticut and the Massachusetts Bay Colony passed laws in the 1640s and 1650s mandating universal elementary schooling. Localities and parents were subject to various fines if they did not comply. Yet progress was limited in the New England colonies, as in England itself, partly because only basic literacy and religion were mandated and partly because so little funding was provided.[x]

By studying the earliest history of school laws in the independent United States, without hard numbers, one could also get the patterns wrong in two ways. One mistake would be to date progress from the passage of states laws allowing their localities to levy

taxes for local schools. That wave of laws *lagged behind* actual practice by years or decades, unlike the precocious colonial cases just mentioned. The only such state laws before 1820 were those of Connecticut in 1786, New Hampshire 1789, and South Carolina in 1811.[xi] Despite this last early law, the whites of South Carolina remained among the least schooled in America for the next two centuries. A more common disconnect with the law was the fact that local fiscal initiative actually preceded the arrival of state laws enabling localities to levy taxes for schools, as James G. Carter noted as early as 1824.[xii] The main exception was New York State, where the state government led others in encouraging and monitoring schools, even though they were still largely private, as Nancy Beadie has emphasized.[xiii] We suspect that the future quantitative history of this era will agree with Carl Kaestle's summary of the state of schooling at the time of the Revolution: "Nowhere was schooling entirely tax supported or compulsory.... Even the oft-cited Massachusetts school laws of the seventeenth century had insisted only that towns maintain schools, not that they had to be free. No one had imagined anything as comprehensive as the plans of the Revolutionary generation."[xiv]

Another mistake would be to date the support of public schools from the establishment of a state permanent school fund. The most impressive case is the large fund set up by Connecticut in 1795, out of proceeds from selling off its Western Reserve lands in Ohio. Yet it has been argued that the fund got poor results, partly because it crowded out local funding. More serious, most states receiving the "permanent school fund" money either sat on it for a couple of decades or, as in the case of Tennessee, siphoned the money away to non-education uses.[xv] This is not to argue that the new state funds played no role in promoting schools, but merely that their timing is not a reliable guide to the advance of schooling.

The contours of early American schooling can be drawn only very roughly, because schooling was a fluid, diverse, and voluntary experience before the Civil War, in ways that complicate our measurements. Students moved in and out of school on an irregular basis, blending work experience with further installments of school learning. They went to school more regularly in the winter and summer than in fall or spring, and responded to daily changes in work and weather. Children might begin their studies at three or four, and might be resuming them past the age of twenty, after long absences.

Such student transience has probably inflated some of the enrollment and attendance rates of Tables 1-3, certainly for the United States and probably also for other countries before full the late nineteenth century. There was probably some double counting of students who attending the separate summer and winter session, especially when they went to different schools.[xvi]

The eclecticism also extended to the nature of the teaching and the financing of schools. Teacher credentials and the curriculum were not at all standardized. The primary and secondary levels were not sharply divided from each other, even in the more public common-school system, and unregulated academies and grammar schools played a major role.[xvii] The state and national data-collectors coped with this diversity by grouping schools into two broad categories, the first being "public" or "common schools" and the second consisting of academies and "private and select schools." We shall follow the same rough but convenient distinction here.

Our view of the early rise of schooling and its sources of funds is clearer for New York State than for others, thanks to New York's passing a bill in 1795 setting up a permanent school fund. Twenty years later the state fund had accumulated enough to begin spending, and we have the benefit of annual reports from the New York Superintendent of Common Schools starting as early as 1815. Figure 1 plots the enrollment rates for the common schools, omitting private school enrollments. Even if the enrollment numbers double-counted, say, 20 percent of students, it is clear that attendance was already high by the 1820s. It would have been a bit higher if we could have counted all private schools in these early years. How early did all this schooling emerge, in New York and other states? Did schooling accelerate after the Revolution, as we suspect, or was it on a steady upslope dating from the early eighteenth century? We must be content for now with only the partial picture provided for New York and a few other states in Figure 1 and Table 1.

Who paid for the schooling? The numbers for New York reveal the kind of private-public mix suggested by qualitative accounts for all Northern states. Total demand for primary schooling advanced ahead of public supply, and venture schools and academies stepped in to fill the gap.[xviii] Figure 2 shows the breakdown of public school funding given by the official reports on New York's common schools. In New York

State, parents and other private sources paid for a little over half of the cost of their children's schooling up to 1839-1840, when the common schools got a fresh infusion of public money shown both in Figure 1 and in Figure 2. Of the public funds, more than half came from local taxes until mid-century.

Like New York, all states blended public and private money in the budgets of both "public" and "private" schools.[xix] Table 3 summarizes the financial blends shown by U.S. census data for 1850. For the Northern half-nation, public schools and public money loomed large, and enrollments were high. By contrast, free children in the South had lower enrollments, as Table 2 has already implied with its state detail. The Southern shortfall in enrollments was partly offset by the South's more generous inputs of private money per pupil. The 1849/50 data for the South reveal some patterns already noted by many historians: The region de-emphasized primary schooling and taxes, and channeled both private and public money into higher inputs per pupil, and higher levels of education, for the favored minority of whites.

Thus the early mix of funds was a half-empty and half-full glass. One could reasonably emphasize the long persistence of private tuition. On the other hand, there are two reasons for emphasizing the public half of the glass: The Northern states were ahead of Europe in the early reliance on public money and publicly run schools, and eventually every country that has developed universal primary schooling came to rely primarily on tax money.

Three Sources of American Leadership in Public Primary Schooling

If the emergence of high Northern levels of primary schooling, relying largely on public support, should be dated somewhere in the early nineteenth century, we naturally want to know why. Why did the early Americans have so much demand for schooling, and why the political preference for making it *public* schooling? Since the questions imply international comparisons, this section turns to broad evidence suggesting why North America seemed to differ from Europe. The next section will seek confirmation of this broad evidence in the differences among the communities of the United States.

In the trans-Atlantic contrast, three differences seem to have interacted with each other, and the whole is not just the sum of the parts.

More Affordable Schooling

Common Americans had higher labor incomes, and probably faced lower prices of schooling, than their counterparts in Western Europe. We present some evidence first on the income differences, and then on the cost of schooling.

Prosperity and education have always gone together. Parents in richer countries have always had a higher total demand for schooling, even after one has tried to control for the reverse influence of education on income. That being the case, the early rise of American education would seem less puzzling if only the colonial and newly independent Americans had been as rich as the Western Europeans. If they were already prosperous by the start of the nineteenth century, we would be less surprised to find that American parents found schooling more affordable than did parents in Europe.

Using GDP per capita to measure relative prosperity has led to an unresolved debate over just when the United States overtook the United Kingdom. Some argue for a catch-up by the 1850s, while others argue that Britain led until the turn of the century.[xx] The GDP issue is not easily resolved, given the severity of the index number problems with international comparisons of real incomes.

We suggest that a different approach to real incomes yields a clearer trans-Atlantic contrast, with a straightforward implication for the demand for schooling. Schooling has always been held back most severely for parents at lower income levels, who lacked creditworthiness and the ability to invest in their children for a distant return. Economists have consistently found that the social rate of return is higher for poorer countries than for rich, and higher for primary education than for tertiary (e.g. university) education.[xxi] Those in higher income ranks can afford to pay for schooling out of pocket or, failing that, they can borrow. Their enrollment problem is not severe, even though their demand for school quality remains sensitive to their income levels. The poor, by contrast, generally lack the ability to purchase any schooling at all. If the poorest of early white Americans were better off than the poor in other countries, they might

spontaneously demand more education -- even if the nation as a whole had a lower real GDP per capita than Britain or the Netherlands.

What we are now learning about real wages around the world suggests that North American white workers in standard occupations could indeed buy more of the basics of life than workers anywhere else.[xxii] Figure 3 offers a simple first clue, by comparing the amount of flour that three common kinds of workers could buy in Massachusetts versus England, the ostensible world leader in GDP per capita. For each of the three occupational comparisons, there is an historic pivot point around 1800, when the new American economy was recovering and Western Europe fell into a long-run trough in real wages. Before 1800, we have no evidence that workers in Massachusetts could buy more flour than workers in Mother England. After 1800, however, they clearly could. Carpenters in Massachusetts could buy more flour than English building craftsmen, and Massachusetts common laborers could buy more than English laborers, whether they worked in the building trades or in agriculture. Nor is this contrast confined to their ability to buy flour. The Massachusetts workers could also afford to buy more beef, more butter, more eggs, more sugar, more shoes, and more candles than English workers in the same occupations. They probably could also pay for more housing, more hides, and more wood, though they probably paid more for cloth. Workers who could afford more of most basic goods than workers anywhere else in the world would also have had a better chance to afford a few years of basic schooling for their children.

Schooling may also have been cheaper for those better-off workers in America. So say the initial Anglo-American data contrasts in Table 4.[xxiii] Contrasts in the costs of schooling are complicated, of course, by differences in school quality, length of school year, and the generosity of public subsidy. Nonetheless, schools seemed a bit cheaper in America than in England and Wales, both as a fee to be paid privately by parents and as a total annual cost per student. Let us compare the costs of schooling a child for 18 weeks in 1840s New York and 1830s Manchester. The total private and public cost of that much primary schooling in New York in 1841-42 was only 0.39 weeks of common labor earnings, with the parents themselves paying less than half as much. By contrast, 18 weeks of primary schooling cost 0.62 weeks of common labor earnings in Manchester 1834, and more than that later. Table 4 offers other contrasts for various types of

schools. In general, school was so much cheaper in New York than in England that we should doubt that the whole difference was explained by school quality.

How could schooling be cheaper in one country than in another, even when we are looking at the total costs shared by taxpayers, donors, and parents? Since school costs are dominated by teacher pay, one immediately wonders whether teachers were paid less in America than in England, relative to the earnings of common laborers. Panel B of Table 4 suggests an affirmative answer. Here again, as with fees, the comparison is complicated by differences in product, in this case the type of teacher. Still, it seems clear that on the average teachers were more affordable for common laborers and for parents of other occupations in New York than in England.

The most likely reason: The Northern states seem to have been world leaders in the feminization of teaching, a fact that may have made teachers less scarce relative to common laborers and other mostly-male occupations.[xxiv] Behind the leadership in supplying female teachers lay an early lead in female literacy as well. We can now compare the signature literacy of brides (and bridegrooms) on both sides of the Atlantic from the seventeenth century on. Already by mid-eighteenth century the young women of the Northern colonies/states were more literate than the young women of England, Scotland, and continental Europe, the leading possible competitors being women in Holland and Sweden.[xxv] A renewed exploration of the international history of educational supply is likely to feature Northern American women as world leaders in the supply of primary school teachers.

Voting and Voice

By itself, greater affordability would only help to explain a higher private demand for education, and would not explain why taxes would be paid. Bringing taxes and public schools into the trans-Atlantic contrast requires an exploration of the politics of taxes for schools.

Here too, ordinary white Americans had an advantage over common men in the European countries they and their ancestors came from: They had more political voice relative to local elites, and increasingly so over the first half-century of independence.

Figure 4 on male suffrage in England-Wales and the United States shows contrasts across the Atlantic resembling the contrasts that Stanley Engerman and Kenneth Sokoloff have found between North America and Latin America.[xxvi] So say both the pre-1860 shares of men entitled to vote and the shares that actually voted in the three countries of Figure 4. Before the 1880s the vote was much more strictly limited to those with substantial property in Britain than in America. Voting in France was similarly restricted. While full male suffrage legally arrived in the wake of the 1848 Revolution, it could not be used effectively until after Napoleon III was removed from office in the early 1870s. Other European countries also had to wait, usually until the twentieth century, before common workers had as much voting rights suffrage as white Americans. The earlier suffrage of middling American white citizens seems to have accelerated the rise of public primary schooling, through mechanisms we will model and test in the next section.

Local Autonomy

The third salient feature of North America was its relative decentralization of government. British policy tended to give towns more fiscal autonomy in the American colonies than in Britain. The Constitution reinforced this local autonomy, by using federalism and other safeguards to impede the exercise of central government authority. On the schooling front, local autonomy was often extensive even where a centralized state board kept accounts on all school districts. For New York State before 1850, we know that state law deferred to local autonomy in most decisions regarding funding. Even the state laws that were passed were confined to providing only partial support and little regulation of instruction or finance at the district level, at least until 1850.

We can see a reflection of this decentralization in numbers showing who paid for schools in Europe and North America in the 1870s. The United States and Canada (along with Italy and the Netherlands) stood out by having schools paid for by local governments, rather than privately or by higher levels of government. England and Wales was the main bastion of reliance on private tuition.[xxvii] The English and Welsh were trapped into centralization by Parliamentary rulings that put insurmountable barriers in the way of localities wanting to tax themselves for schools.[xxviii] These barriers help to

explain why England and Wales lagged in enrollments and school funding until a centralized fiscal solution was reached in 1891.

Local government autonomy may have expanded schooling more than other kinds of government expenditure. Economists have found that economies of scale in public goods are least evident in the case of basic education.[xxix] There is a lower minimum-cost point for spending on education than on, say, flood control or highways or national defense. This could have bred schools that were local *and* tax-based *and* efficient in the township orientation of rural America. Small towns might have achieved the most efficient scale with a single schoolhouse, using lower tuition to assure a minimum necessary attendance in a sparse countryside. Correspondingly, there were fewer other projects for public spending that could have competed against schools in the small-town budget debates. As we shall see, this conjecture draws support from the public school patterns across the counties of the United States.

Why Schooling Levels Differed: US Local Evidence for 1840-1850

Every dimension of primary schooling varied greatly among this country's towns and states before the Civil War. We should take advantage of this diversity, both to test our view of what made the whole country different from Europe, and to test more general theories of educational progress. Let us begin with an explanation of why some popular theories of the determinants of education *cannot* be tested in the laboratory of early America.

Some well established insights about education fail to explain the differences among American localities, even though they help to explain the overall demand for schools, and help to explain why North America was different. Our immediate task is to explain why these important truths are set aside in what follows.

Economists will naturally think that the decision to raised taxes for a local school will be driven by the durable insight published by Charles Tiebout back in the 1950s: People can shop for the local government they want by migrating toward a town that has an efficient mix of taxes and public goods, such as schooling. An equilibrium is

eventually established in which some towns have residents who prefer their higher taxes and better schools, while other towns have residents that prefer their lower taxes and poorer schools.[xxx] Surely this is true to some extent, and we often imagine that early American towns might have used schools as a part of an efficient strategy to bid up their own property values by attracting or retaining school-loving migrants. But which places? To embody the idea in a statistical test that will separate one American town from another, one must think of measurable proxies for residents' tastes for schooling and for the efficiency of local government. The Tiebout model adds nothing here.

Another common-sense idea, that schools build national values, was as popular with writers in the newly independent nation as it is with today's historians of education. Surely it was true that a more literate and numerate citizenry would make this democratic republic more harmonious and self-correcting. Today's economists agree, calling this an external benefit of education. It was presumably a force raising the demand for education in America relative to some other countries. Yet here again, as with the Tiebout model, there is no way to use the idea to differentiate among American towns in the nineteenth century, since few towns opposed education in order to breed traitors. The national values argument does not arm us with any variable that can explain why Washington County Maine spent four times as much per white child of school age as Washington County Georgia in 1850.

Another universal truth about the demand for education that fails to differentiate about American towns is the fact that higher-income populations demand more schooling. Granted, American towns did differ a great deal in their income levels. Yet two barriers block any statistical use of the income effect. First, we have no data on income levels at the town or county level for any time before the Civil War (though some could be worked up with generous research funding). Second, even with such data, any test of the income effect would stir up all the suspicions of simultaneity bias and reverse causation that have always complicated attempts to estimate the demand for education. It is better to accept a reduced-form approach that links education to deeper causes that affect both income and education. Our reduced-form strategy also sets aside the use of economic sectoral shares, such as shares of the local economy that are in agriculture or industry, again because we anticipate economists' traditional concerns about third forces

and reverse causation. Forces affecting education policy may also drive the local economy's comparative advantage in agriculture or industry.[xxxi]

If all these forces are set aside, what systematic forces will explain the wide differences around the country? Our featured explanatory variable is one of those forces that clearly separated North America from Europe: political voice. This greater democracy, which was more widely shared among white Americans as a whole, was distributed very differently across America's towns.

How might differences in the distribution of voice affect policy toward tax-based public schooling? A plausible answer is at hand, though it requires some care in viewing the political voice of different income ranks. Different economic classes see different net benefits of education, both private and public, for several reasons. Let us use Figure 5 to sketch some likely perceptions along the income spectrum from poorest to richest. The choice portrayed here is a crude one: no school at all, private school for your own child, or equal public school for all.[xxxii]

The poorest free men would have found it hard to afford giving up money, or giving up their children's time, for an education that may still leave their children with less economic opportunity than the children of higher-income families would enjoy. An example in early American history was the New England farmer who opposed free schools because "The Bible and figgers is all I want my boys to know."[xxxiii] Free public schooling would relieve them of the money cost, but the time costs and social antagonisms might keep some parents from accepting even free schools. Families to the left of Point C in Figure 5 might thus choose no school at all even if it were free, and might vote against free schools if they had the vote. They would probably have taken an even dimmer view of private schools, where they would have to pay out of pocket to put their children in a less familiar social setting.

Further up the income spectrum, the returns are higher, but so are the taxes. The property tax wedge in the early American setting would have started at some point in mid-spectrum and would have become an increasing burden the richer the household, as portrayed in Figure 5. The extreme top end, to the right of Point D, portrays the average view of a high-income group that would want to pay for private schooling even if they were also paying for public schooling through taxes. Between Points D and E is a group

that would vote against taxes and public schools, but would accept the public school for their own children if the vote went against them.[xxxiv] Finally, a broad middle group would definitely favor tax-based public schools.

Would the struggle between competing interests yield taxes and public schools? To describe plausible voting outcomes, we should not use a strict median-voter model. For one thing, if the poorest and the richest both opposed those in the middle, the definition of a median voter becomes vague. More importantly, political voice has never been so evenly distributed as the one-man-one-vote ideal, so there is little point in finding a 50-percent person on the graph. Political voice has always favored the wealthy, even in a context of universal suffrage. Spending on political campaigns is a luxury good, favoring the positions and candidates backed by the wealthy. Furthermore, in the United States before around 1890, the ballot was not secret, giving those with economic power a chance to intimidate and retaliate. Thus we can read two trans-Atlantic contrasts into Figure 5. First, in high-wage America, all the education-benefit curves were more elevated, making this country a leader in rejecting the alternative of no schooling at all. Second, the crucial votes in America were not as close to the right end of the spectrum as in other countries, leading to more positive votes for taxes and schools.

The Numbers Available

While the search for reliable numbers on very early American schools continues, we are fortunate to have usable county-level census information from the end of the dawn, that is from the middle of the nineteenth century. In 1840 and in 1850, U.S. towns and counties still differed greatly in those salient features that distinguished the country as a whole. They particularly differed in their local distributions of political power. While it was necessary to clean and cross-check the underlying census data in a number of ways, we have been able to use the ICPSR county-level data files collated by Michael Haines to run tests on these samples, each involving over a thousand U.S. counties:

(1) a cross-section of counties in 1840,

(2) a cross-section of counties in 1850,

(3) a pool of matched counties in 1840 and 1850, and

(4) a cross-section of net changes from 1840 to 1850.

We report results from the first two kinds of samples here, separately for the North and the South. A later section will introduce some limited "natural experiments" from Louisiana and New York to firm up the identification of the likely role of voting rights.

Having information on both public schools and private schools allows us to compare effects on public schooling with effects on total schooling. Such comparisons reveal the extent to which a force that creates more public schooling crowds out private schooling. On this large issue, a clear pattern will stand out. In most cases, the effect of each featured variable on public schooling is about the same as its effect on total schooling, with no net "crowding out." This striking result is possible because those who gathered our data in the early nineteenth century took care to distinguish public and private schooling.[xxxv]

Let us now explore the ability of different forces to explain why U.S. counties differed so much in the scale and character of their primary schooling, with the help of Tables 5 and 6. Noting that some of the measurable forces had their impact mainly at the local (county or district) level, while others operated through laws and budgets at the state level, we must take care to separate "fixed state effects" from local effects. Accordingly, Tables 5 and 6 display only results from regressions that have controlled for fixed state effects. We will then take the further step of explaining the state-level effects themselves, to extract further information about the underlying structure that shaped education across the land.

Political Voice 1: Voting Rights and the Voting Rate

Our featured political voice variable has two main components: the share of free men having the legal right to vote, and local elite dominance over voters.

Measuring the first political voice variable, the share of local men having the right to vote, is not as straightforward as it might seem. We use one main proxy measure, and test its apparent influence against other measures. Our main proxy in the 1840 and 1850 samples is the share of free men who actually used their vote in a presidential

election.[xxxvi] Later, using New York state data, we will look more directly at the franchise itself, i.e., the shares of men entitled to vote.

We have chosen to focus on the share of men entitled to vote and actually voting, rather than on the existence of state laws restricting the vote, because the latter offer less information than other scholars have hoped. The difficulty with binary measures of vote-restricting laws is to quantify the degree of restrictiveness. The laws themselves are too complex to summarize in a single restrictiveness index, and historians have found that actual practice varied greatly for any given state of the law.[xxxvii] Even with consistent application of fixed franchise rules, we would still need to know how many in each county actually met the qualifications. And in natural-experiment cases where the laws were suddenly changed, the actual franchise and voting rates moved more slowly.

We use the share of free men[xxxviii] who actually voted for president as a fair but imperfect proxy for the right to vote in local fights over schools and taxes. What share of a town or county's men actually voted on schools is the product of these three ratios:

(1) The ratio of men entitled to vote for president to those entitled to vote in local elections and referenda on school and tax issues. Fortunately, this ratio was effectively fixed at unity. Historians of local government find that the two rights were much the same in practice.[xxxix]

(2) The share of all men enfranchised to vote for president. This key component reflected a mixture of the restrictiveness of *state* franchise law, the *local* distribution of property holding and of taxpaying, and transient *individuals'* propensity to meet the residency requirements and to register.

(3) The willingness to vote, or the share of franchised men that showed up on presidential election day. This wavered, over time and across states, with the intensity of the presidential race.

Our voting-share proxy nicely captures the first two components, but the third is more problematic. Were variations in the turnout rate among franchised citizens largely voluntary? If so, then the decision to vote or not vote might have been swayed by local attributes that also affected the willingness to educate children. In this case, the voting

rate is not so exogenous as an influence on education. Alternatively, it may be that many declined to vote because they felt marginalized by the political process or were afraid to reveal their political preferences in an age when ballots were not secret. In this case, non-voting is akin to being denied the right to vote. We will later deal with these concerns in a number of ways, but the tests summarized in Tables 5 and 6 tentatively use the county-level voting *rate* as a measure of the distribution of voting *rights*.

As our simple model in Figure 5 allowed, the influence of the voting share on support for schools could easily be non-linear. Our tests allow for non-linearity by using a fourth-order polynomial in the voting share, with test statistics on the effects of specific changes in voting share. Here we report the effects of extra voting in the middle of the most common, and best sampled range, from 60 percent voting up to 80 percent voting.

At face value, the effects of the voting rate look strongly positive in the behavior of Northern U.S. counties in 1840 and 1850, as shown at the top of Tables 5 and 6. For every hundred white children ages 5-14, about 14 more of them would attend common schools in counties where 80 percent voted than in counties where only 60 percent voted. The same extra voting raised government support by 45 cents per child, a noticeable share of the grand average support levels reported in Table 3 above. Additional regressions on the 1850 data confirm that all of this impact of extra voting took the financial form of extra local taxes, rather than state taxes or endowments.[xl] These effects were roughly the same for total schools as for public schools alone, meaning that extra voting had no effect on private academies in the North. Extra voting, in other words, meant extra local tax support that did not "crowd out" any private support in the North.

In the South, by contrast, the same difference between 60 percent voting and 80 percent voting had much less effect on enrollments or on support per child. The effects are generally positive but not significantly different from zero. This null result held in the South even though the shares of whites that voted were as high in the South as in the North.

Political Voice 2: Centralized Power in the South

Political voice took different forms in the South. To interpret the differences in educational policy between the two regions and within the South, let us start with a simple reading of some further regression results for 1840 and 1850, before turning to the underlying institutional history.

The regressions behind Tables 5 and 6 show negative influences on education in the form of fixed state-level effects for the South, rather than systematic differences between counties. There is a general pattern to these fixed effects, as revealed by placing Table 7's simple explanations of state fixed effects next to the displays of county-level patterns of Tables 5 and 6, which hid those fixed state effects in the background. Looking first at the effects of slavery on white children's school enrollments, we find a negative effect only at the inter-state level (Table 7), and not in any difference between counties within a Southern state (Table 5). When we shift from enrollments to government financial support for schooling per white child, we find in Table 6 that a more slave-dominated state spent less government money, but much more private tuition, per white child. That might suggest an anti-subsidy form of elitism, in which the wealthy take the familiar view that schooling is a private matter. Table 6 adds an extra twist to the influence of local slavery: Among counties within a Southern state, a county's having more slaves meant *more* government money per white student in that county. Perhaps slave owners were able to divert state funds to their own children, and to supplement them with private tuition, while cutting overall support for education in a way that explains the lower educational attainments of Southern whites as a whole.[xli] So far, the regression clues suggest the sort of elitist imprint of slavery on education policy that past authors have described.[xlii]

What deeper political economy might lie behind the regressions' link between slavery and lower white enrollments at the state level? Historians have identified two Southern institutional tendencies that stood in the way of local school development: centralization of power throughout the region, and elitism in the laws governing membership in Southern legislatures. In both these institutional respects, the South resembled nineteenth-century England.

Throughout the South, power was relatively centralized, curiously so given the region's aversion to federal government and executive power. State legislatures

dominated, and seem to have appointed judges and county officials and even governors more often than in the North. County officials, in turn, retained power that might have devolved to townships.[xliii] The effect was much the same as in the case of Parliament's stifling local government taxes and services in nineteenth-century England: Localities had little freedom to raise their own taxes for schools or infrastructure within a larger polity that lacked their enthusiasm for such public goods.

The South also tended toward elitism in public office, though democracy was gaining over time and was stronger in the newer states. The most elitist laws of political representation were those in five states: North Carolina, South Carolina, pre-1851 Maryland, pre-1835 Georgia, and pre-1845 Louisiana all had stiff property requirements for serving in the legislature. Many Southern states also denied membership in the legislature to ministers, or bankers, or non-Christians, or duelists, or U.S. government officials. Virginia had its own gerrymandered system of representation, explicitly designed to deny voice to the yeoman western counties and favor the slaveholding east, with the result that state budgets were biased toward developing the eastern lowland counties.[xliv] The elitism has been aptly summarized by Ralph Wooster's studies of legislators and county officials throughout the antebellum South. As shown in Table 8, a voting majority of legislators owned real estate in every Southern state. In nine states, a majority were also slaveholders. The chances of being a state legislator were far greater for planters, slaveholders, and realty owners than for others. While Northern legislators were presumably also richer than the average citizen, Southern representation was impressively stacked toward groups that would have seen little direct benefit in paying taxes for schools.[xlv]

An additional mechanism might have translated the Southern propertied elite's aversion to taxes into lower votes for school funding. When the ballot was not secret, as it was not in the United States before around 1890, the local elite could also easily determine who its opponents were on political issues. While we lack smoking-gun evidence that wealthy slave-owners pressured other voters at election time, the open ballot did give them a chance to do so.[xlvi]

A combination of statistical results and institutional history thus inclines us to the view that centralized restraints on political voice in the South held back the schooling of

Southern white children of modest economic background. We cannot, however, give zero weight to the demand-side counter-argument that lower-income Southern whites wanted less schooling for their children and were politically passive for that reason.

The Age Distribution

Both in the North and in the South, the provision of schooling per child was also affected by the age distribution of the local population, in ways that accord with our expectations. Not surprisingly, communities with more school-age children per adult delivered less public and private schooling per white child. Tables 5 and 7 imply that, for each white man over 20, adding one child in the 5-14 age group would cut the enrollment rate, especially in the North. Presumably this strong result affects the competition for resources within the household and within local school budgets. A community with more children per adult had a harder time supporting the education of the average child.

Within the adult population, communities where the adults tend to be older might have had two opposing differences in the schooling of their children. The more commonly imagined negative effect turns out to have been offset by a positive effect of an older population, or rather a positive effect of the larger environment that an older population represents.

It is natural to imagine that older adults, who will not be sending more children into the school system, would less favorably inclined toward raising taxes for schools. In 1851, one commentator in the New York debate over free schools thought so: "The childless, and those whose children have already received their education, deem it a hardship to be obliged to pay for the instruction of the children of their neighbors, and consequently vote against any appropriation."[xlvii] Yet the effect of an older adult population is not so clearly negative. Combining the men-over-40 results of Tables 5 and 6 suggests that in the Northern states an older population hired more teachers and had higher enrollments, but with private tuition and possibly less government support. In the South, there were no clear patterns. Overall, we tentatively suggest only that any negative lobbying effect of oldsters was apparently offset by the fact that an older community

tended to inherit more education infrastructure, and more teachers, because it was settled earlier.

Cities

Like many other writings, Ellwood Cubberley's *Public Education in the United States* pointed to the rise of "new social problems in the cities" as a source of the rise of public common schools. In this widespread view, the rise of immigrants, crime, industrialization, pauperism, and family breakdown in the cities convinced "two very dissimilar groups of people -- the humanitarians on the one hand and the new city laboring classes on the other -- [to unite] in a propaganda for tax-supported schools." [xlviii] At the level of propaganda, Cubberley was surely correct: Historians have had no difficulty in quoting both urban humanitarians and labor spokesmen who favored universal education in the cities.

Yet quantitative history finds the opposite pattern in average enrollments, and no clear urbanization effect when other variables are held constant. In the raw averages, large cities built fewer public schools than the countryside, with fewer teachers and fewer students per child of school age. What was higher in large cities was not the commitment to mass public education, but rather a greater emphasis on expensive and private education, so much so that expenditures per child of school age were higher in the cities than in the countryside.[xlix] True, the cities subsidized minimalist schools for the very poor, but in this was a less expensive alternative than universal schooling, which they were late in providing.

When we hold other forces constant, as in Tables 5 and 6, the net education effects of growing up in a large city are harder to distinguish from zero. That is, some other variable or variables in Tables 5 and 6 must be the reason why larger cities had lower enrollments and higher expenditures per pupil. That other variable appears to be the voting rate. Voting rates, and voter registration, were lower in the cities, partly because the population was more transient. When forced to compete against the voting rate in a large sample of counties, the urbanization rate loses out as an influence on education, and future studies should pay more attention to the local distribution of political voice.

Religion and Migrants

Communities' demand for schooling and their willingness to pay taxes were probably also shaped to some extent by their religion, their national origins, and whether they had a large share of migrants from other states.

We have explored the possible roles of religious membership in several ways, helped by the U.S. census of 1850. The one religious variable that seems to show a clear influence is the ratio of total religious accommodations (seating capacity) to county population. This is a positive influence on public school enrollments in both the North and the South (Table 5). Fuller religious accommodations also meant more private spending on education per child of school age in both regions (Table 6). The effect on local government spending differed by region however, with a probably positive effect of religion in the North and a negative effect in the South. Less clear than the effect of overall religious commitment is the effect of individual religions that dominated the individual county in the sense of having accommodations for over half its population. In some specifications, Roman Catholicism seemed to have a negative effect relative to Protestantism, but this effect was not robust. Nor did we find systematic differences in the commitments of different locally dominant Protestant denominations.

The 1850 census allows us to weigh the effects of migration on schooling. In this respect, as in so many others, the North and South differed. In the North, extra migrants from other states raised school attendance and the number of teachers, while extra foreigners may have had the opposite effect. In the South, none of these influences showed up, partly because white migration from other states and from other countries was smaller in the South. Receiving extra foreigners did raise total school expenditures in the South, however, presumably in the form of free schools for foreign children in Baltimore, Wilmington, and other immigration centers.

Some Closer Looks

A number of concerns about the large cross-sections of counties in 1840 and 1850 can be addressed with alternative data sets, particularly state-level data and national data featuring changes between censuses.

New York State, like the New England states, had some of the best early data at the level of towns, city wards, and counties. New York's data also offer a closer look at three forces not directly measured in the early national censuses. We illustrate these three extra insights with Table 9's results from the New York census of 1845.

First, it is clear in New York that the positive schooling effect of receiving extra migrants from other states was transmitted largely by the arrival of New Englanders. On this Yankee influence, quantitative analysis and narrative history now agree.[1] Looking at the geography of this effect finds it particularly strong in the far northeastern counties around Lake Champlain. This corner of the state might have been an education backwater were it not for the heavy inflows from New England.

Second, a reality check on New York data relieves some of our fears about using the voting rate as a proxy for voting rights. Starting from 1795, New York took special statewide censuses of the numbers of men legally entitled to vote. Table 9 uses 1845 data on the numbers franchised and gets the same strong positive effects that the larger samples got with the voting-rate proxy. Apparently, differences in counties' voter turnout did not introduce any distortions back in Tables 5 and 6.

A third use of the New York data takes advantage of that state's different measures of school attendance, as opposed to school enrollments. Table 9 confirms that the determinants are similar for each of these alternative ways of counting students.

A final concern is that the results so far may have introduced omitted-variable biases by leaning on spatial cross-sections of counties and states. Do we really know that changing the voting laws or changing the distribution of property and income would change schooling through their effects on the local balance of political power? Scholars rightly seek "natural experiments" or "event studies", in which the featured force changed suddenly and exogenously, so that any subsequent movement in the dependent variable (here schooling) clearly reflects this sudden change. We can offer only two of these natural experiments here.

First, a democratizing wave shifted Louisiana in 1845-1847 to universal white male suffrage and to universal schools. In this case, the decision-makers were the state legislators, not participants in town meetings. The new state constitution of 1845 in fact bundled its universal suffrage for white adult males with a self-instruction to draft a free school law. That law followed in 1847.[li] We were able to confirm its positive effect on enrollments with first-difference regressions of U.S. counties from 1840 to 1850. The same regressions did not, however, show any effect of the 1840s liberalization of voting rights in New Jersey and Connecticut. We note that the New Jersey and Connecticut changes failed to have a discernible effect not only on school enrollments, but even on the voting rate itself. We draw the lesson that the discrete changes in state voting laws might in many cases be mere markers along a path toward fuller voting rights, a path that the state was already following before the law was changed. Yet in Louisiana the link between franchise and schools was clearer.

Another natural experiment arises from New York's switch to universal manhood suffrage between 1821 and 1826. Property requirements for voting were repealed in 1821, and taxpaying requirements were repealed in 1826. Over that four year span the share of adult men who obtained their formal right to vote jumped from 66 percent to 83 percent, and the ratio of enrollments to the 5-16 population rose from 95.9 percent to 107.6 percent. We took advantage of the fact that liberalizing the franchise had different effects in different counties, depending on how property and taxable income were distributed in each county. Exploring the changes for each county from 1821 to 1836 (a state census year), we got various point estimates predicting that the 17 percent rise in the share of men franchised should have raised the enrollment rate by 1.7 - 8.5 percent of all children of school age. We cannot announce this as a firm finding because in most plausible specifications the underlying coefficient was not statistically significant. Nonetheless, the experience with New York's franchise liberalization of 1821-1825 at least hints at confirmation of the findings presented earlier on the basis of national census samples.

Conclusion

It is much easier to explain the early onset of public schooling in America if one focuses on the link between political voice and support for funding schools. Part of that political voice was channeled through the right to vote. On this front, our findings support the suggestion that Engerman and Sokoloff derived from their study of state-level correlations: "The movement for the establishment of public schools supported by local property taxes closely and successfully followed the expansion of the suffrage, which strongly suggests that the latter did indeed make a difference for policy."[lii] This paper has argued that the franchise, and the broader concept of political voice, helps to explain both America's head start and the differences among communities within this country.

The wider distribution of political voice inclined the rural North (and upper Canada) toward higher enrollments, more than toward high expenditures per pupil. In this respect the rural North differed from Northern cities, from the South, and from England, all of which had respectable expenditures per pupil but lower enrollment rates.

If the political voice effects seem to have been so strong in the antebellum era, what has happened to them since the Civil War? By the twentieth century they should have faded away, as suffrage became more universal and Southern planters and slaveholders' grip was weakened. The differences in politics and education did indeed fade away gradually, both for the North and for Southern whites. The lingering post-bellum exception was the effect of Jim Crow voting laws after the Civil War. As Robert Margo has shown, differences in black voting rights helped to explain much of the differences between Southern states in their degree of racial discrimination in school policy.[liii] Only from the 1930s on did blacks' education converge clearly and rapidly toward that of whites.

For Southern whites, both their education and the region's distinctive institutions converged very slowly toward the national standard. It took a century and a half for their enrollments to catch up. Political changes must have helped. Planters lost relative influence, both in the aftermath of the Civil War and in the region's industrialization across the twentieth century. The South's curious preference for more centralized government also faded gradually. As of 1902, it still existed to some extent, and it still correlated with lower public spending on education. Local school districts controlled only 13 percent of public education spending in the South versus 35 percent in the non-

South, while state governments controlled 33 percent in the South and only 22 percent elsewhere, the remainder being controlled by county government. By 1982, the differences had nearly vanished. All states have delegated the task of spending on primary and secondary education to local governments, though some still control that spending with statewide regulations.[liv] Thus convergence toward decentralization and democracy has accompanied convergence toward high enrollment rates.

Where should the research frontier be pushed hardest in the political economy of early American schooling? Our view is that we need more detailed research on how the decisions were made and how they affected schooling at the town level. Part of the extra research can be econometric, and it can include the use of town-level data, which are available but take time to process. Our main plea, however, is for studies of how the decision-making process really worked in town meetings and in state legislatures. We know that the issue of schooling was hotly contested, but we still need to learn how the crucial political pressures were applied.

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Table 1. School Enrollments per 100 Children Ages 5-14 in the United States and Europe, 1830-1850

	Public primary schools only			Public plus private schools		
	1830	1840	1850	1830	1840	1850
USA, whites		50.5	67.1		54.9	72.2
USA, whites in --						
6 Northeast states		96.4	98.7	105.8	103.6	105.5
2 Southern states		16.6	29.9	20.7	20.9	34.6
USA, all		45.3	56.7		49.2	61.0
England-Wales				27.4	35.1	49.8
Scotland			57.2			59.2
Belgium				34.6	52.6	54.9
Italy	2.8		12.4			
France		39.8	36.7	38.8	51.3	51.5
Norway	68.5	67.1	64.0			
Prussia	68.7	73.6	72.2	69.5	74.4	73.0

Sources and note to Table 1:
The sources are the 1840 and 1850 US censuses, Fishlow (1966, Table 1) for extrapolations to 1830, and Lindert (2004, vol. 2, Appendix Table A.1) for non-US.
The six Northeast states = ME, NH, MA, CT, RI, and NY.
The three Southern states = KY, SC, and VA.
For these nine states, we took Fishlow's (1966, Table 1) ratio of 1830 to 1840 enrollment rates.
The U.S. private enrollments include a small number of secondary-school academy students.

Table 2. Public School Enrollment Rate by State, 1840-1860

Enrolled pupils per 100 whites in the 5-14 age range

State	1840	1850	1860
Alabama	16.3	22.4	40.4
Arkansas	11.8	17.2	19.7
California		1.2	61.2
Colorado			0.0
Connecticut	97.3	93.5	92.4
Delaware	46.8	47.6	52.3
District of Columbia	11.8	23.3	10.4
Florida	13.9	14.1	9.2
Georgia	13.1	20.9	33.3
Illinois	26.5	49.7	100.8
Indiana	24.1	56.0	80.9
Iowa	13.9	52.5	93.5
Kansas			18.1
Kentucky	14.8	32.8	62.2
Louisiana	9.7	40.9	36.3
Maine	124.7	132.2	129.5
Maryland	22.0	31.7	28.6
Massachusetts	103.2	88.5	85.9
Michigan	53.2	101.6	113.5
Minnesota			80.8
Mississippi	16.5	21.0	30.5
Missouri	18.4	30.4	62.4
Nebraska			49.8
New Hampshire	125.6	110.5	109.2
New Jersey	58.9	67.3	74.5
New Mexico			1.1
New York	85.5	95.1	82.0
North Carolina	11.2	67.8	62.0
Ohio	52.7	89.8	100.2
Oregon		2.5	65.2
Pennsylvania	41.6	70.9	79.6
Rhode Island	74.0	77.2	73.7
South Carolina	17.7	23.0	26.5
Tennessee	13.1	46.2	60.3
Texas		18.3	29.9
Utah			52.8

Vermont	114.7	126.0	117.3
Virginia	18.1	27.2	30.7
Washington			56.9
Wisconsin	31.9	77.2	100.5
US Average	**49.5**	**65.6**	**74.5**

Regions	**1840**	**1850**	**1860**
New England	111.1	106.5	101.7
Middle Atlantic	66.3	82.8	80.3
ENC	41.2	74.3	97.7
WNC	17.9	35.7	71.8
South Atlantic	16.7	34.3	36.0
ESC	14.6	33.8	52.7
WSC	10.5	26.9	28.5
Mountain		0.0	17.5
Pacific		1.8	62.0
US Average	**49.5**	**65.6**	**74.5**

Sources for Table 2: Decennial Census Reports.
Note: Enrollment rates are the number of white and free black pupils in "public" (mostly common) schools, as a percentage of the free white population aged 5-14. Changing the population denominator to include free coloreds is possible, with some separate adjustments for the inconvenient age-group reporting of free coloreds. They were only a small share of the population, however, concentrated in Maryland and parts of Virginia.

Table 3. U.S. Education in 1849/50 -- A Census Snapshot

A. Fifteen Northern States	Public schools	Academies	Colleges	Total
Funds per pupil ($ per year)				
Endowment (fed, state, & private)	0.05	1.07	17.59	0.19
Taxation (mainly local)	1.50	0.09	0.00	1.41
Public funds (mainly state)	0.66	0.49	1.66	0.66
Private tuition & other	0.24	14.15	42.41	1.19
Total	2.45	15.80	61.66	3.45
Teachers and enrollments				
Funds per teacher ($ per year)	93	396	1052	127
Teachers per 100 pupils	2.6	4.0	5.9	2.7
Pupils per free child 5-14	0.82	0.05	0.004	0.87
Pupils per free child 5-19	0.58	0.03	0.003	0.61
B. Fifteen Southern States				
Funds per pupil ($ per year)				
Endowment (fed, state, & private)	0.08	1.16	15.69	0.51
Taxation (mainly local)	0.84	0.00	1.29	0.72
Public funds (mainly state)	1.23	0.37	13.37	1.31
Private tuition & other	2.52	18.44	50.69	5.73
Total	4.67	19.97	81.03	8.27
Teachers and enrollments				
Funds per teacher ($ per year)	141	427	1315	231
Teachers per 100 pupils	3.3	4.7	6.2	3.6
Pupils per free child 5-14	0.32	0.06	0.007	0.38
Pupils per free child 5-19	0.23	0.04	0.005	0.28

Source and notes to Table 3:
The source is the ICPSR electronic compilation of the 1850 census.
The fifteen Northern states are CT, IL, IN, Iowa, Maine, Massachusetts, Michigan, NH, NJ, NY, OH, PA, RI, VT, and WI.
The fifteen Southern states are AL, AR, DE, FL, GA, KY, LA, MD, MS, Missouri, NC, SC, TN, TX and VA.
The enrollments are "gross" enrollments, including all pupils of any age, not just in the age range at which the type of school is primary targeted.

Table 4. The Cost of Primary Schooling and Teachers, Relative to the Earnings of a Common Laborer in the U.S. and England, 1830s-1850s

Panel (A.) School fees: The number of weeks' earnings for a non-agricultural laborer required to pay for a child's schooling

(1.) New York State, average common school 1841-1842

	18 weeks
Public funds	0.22
Private tuition (rate bills)	0.16
Total costs	0.39

(2.) Manchester, England, 1834 (private cost = total cost)

	18 weeks
In 230 dame schools (reading, needlework)	0.40
In 116 common boys' schools	0.83
In 63 common girls' schools	0.94
In 86 evening schools	0.71
School-weighted average	0.62

(3.) In 971 reporting English and Welsh schools, 1858

	per ave. annual attendance
Government grants	0.17
Fees paid by parents	0.41
Other income of schools	0.57
Total income (cost) of schools	1.15

Panel (B.) Teachers' wages, relative to the earnings of common labor

(1.) Average Northern U.S. school teachers

	Male teachers	Female teachers	All teachers, weighted
1841	1.09	0.60	0.75
1841-1850	1.04	0.58	0.72
1851	1.07	0.61	0.74
1851-1860	1.26	0.72	0.88
1861	1.29	0.75	0.91

Table 4, continued

(2.) Manchester, England, 1834/1835	
In 230 dame schools (reading + needlework)	0.45
In 116 common boys' schools	2.14
In 63 common girls' schools	1.39
In 86 evening schools	0.66
School-weighted average	1.00
(3.) Staffordshire and Warwickshire Charity Schools, England 1827-1861	
1827	1.59
1835	2.08
1851	1.81
1861	2.12

Sources and notes to Table 4:

School fees, Northern U.S.: New York State Superintendent for Common Schools, *Annual Reports* to the State Legislature, divided by the average laborer's wage for Northern states, 1841, from Burgess (1920, p. 71).

School fees in Manchester 1834: Gt. Britain, House of Commons, "Education in England and Wales - Select Committee Report with Minutes of Evidence." *Sessional Papers*, 1835 (465), vol. VII, pp. 111-112.

Teachers' wages and laborers' wages in the Northern U.S., 1841-1861: Burgess (1920, pp. 32-33, 71). We have weighted Burgess's separate wage rates for rural versus urban and male versus female teachers by the 1860 non-South employment weights in Perlman and Margo (2001, p. 21).

Teachers' wages in Manchester 1834 are from the same pages of the 1835 *Sessional Papers* cited above. These are divided by the weekly earnings of non-agricultural common laborers used by Williamson (1982, the 2L series).

Teachers' weekly wages in Staffordshire and Warwickshire charity schools are from Williamson (1982, series 11H versus 2L).

School fees for England and Wales 1858 are from Great Britain, *Report of the Commissioners Appointed to Inquire into the State of Popular Education in England.* House of Commons, *Sessional Papers*, 2794-I, 1861.

The 18-week school year was the typical attendance in New York State in 1841-1842. Manchester in 1834 could have had a similar attendance, given the share of dame schools and evening schools. The specially sampled English and Welsh public schools in 1858 may have had an atypically long school year to qualify for annual grants based on the number of students attending 176 days.

Table 5. Influences on School Enrollments in U.S. Counties, 1840 and 1850

	Enrollments per white child in the 5-14 age group: Public common schools				Enrollments per white child in the 5-14 age group: All schools (pre-tertiary)			
Region	North	North	South	South	North	North	South	South
Year	1840	1850	1840	1850	1840	1850	1840	1850
The effect of raising the voting share --								
from 60% to 80%	**0.136** **	**0.096** *	0.026	-0.015	**0.143** **	**0.093** *	**0.034** *	0.0003
	(0.051)	(0.047)	(0.015)	(0.025)	(0.052)	(0.047)	(0.016)	(0.025)
Slaves per white man			-0.00010	-0.0033			**0.009** **	0.003
			(0.003)	(0.004)			(0.003)	(0.004)
Children 5-14	**-0.341** **	**-0.523** **	**-0.150** **	-0.054	**-0.368** **	**-0.558** **	**-0.193** **	-0.107
	(0.089)	(0.108)	(0.030)	(0.062)	(0.090)	(0.108)	(0.033)	(0.061)
Share of men over 40	**1.208** *	**1.753** **	0.197	0.143	**1.351** **	**1.882** **	0.292	0.230
	(0.476)	(0.461)	(0.137)	(0.295)	(0.484)	(0.457)	(0.149)	(0.294)
Free coloreds per white	**-3.884** **	**-4.154** **	**0.320** **	-0.271	**-3.704** **	**-4.160** **	**0.288** *	-0.250
	(0.871)	(1.001)	(0.102)	(0.177)	(0.884)	(0.993)	(0.112)	(0.176)
Urban share	-0.0017	-0.028	-0.103	-0.011	0.102	0.060	0.101	0.092
	(0.119)	(0.116)	(0.059)	(0.098)	(0.121)	(0.115)	(0.065)	(0.097)
Church accommodations		**0.140** **		**0.042** **		**0.154** **		**0.051** **
		(0.040)		(0.017)		(0.040)		(0.016)
Migrants from other states		**0.361** *		-0.064		**0.382** *		-0.010
		(0.160)		(0.088)		(0.158)		(0.088)
Foreigners		-0.275		0.046		-0.279		0.240
		(0.233)		(0.247)		(0.231)		(0.246)
Numnber of counties	452	517	655	751	452	516	655	748
Number of zeroes	18	15	71	36	17	13	60	24

Sources and notes to Table 5:

Tables 5-7 are based primarily on two ICPSR data files: Michael R. Haines, ICPSR02896-v2 (2004) and Jerome Clubb, William H. Flanigan, and Nancy H. Zingale, ICPSR08611-v1 (2006). Our edited version of the data is on our home pages.

Coefficient standard errors in parentheses.

* significant at 5%; ** significant at 1%

The regression type is tobit, censored from below at zero. All equations are highly significant.

The South consists of all states in the band running from from Missouri through Kentucky, Virginia, Maryland, and Delaware, plus states further south, but excluding Texas. The North consists of all states north of this band.

Children 5-14 = White children in this age band, per white male over 20.

Share of men over 40 = white males 40+ / white males 20+, a measure that reflects the age of a community and its infrastructure. This demographic variable also tends to be a positive influence on average wealth.

Urban share = the share of the county's population living in cities of 25,000 or more iinhabitants.

Religious membership = religious accommodations (seating capacity) of all kinds, per capita.

All regressions are also controlled for fixed state effects, geography variables, and (for 1850) local dominance by one religion.

The geography variables are binaries for: The county is on the Great Lakes, on the Atlantic

or the Gulf, on the Mississippi, or on the Ohio River.

Table 6. Influences on School Support, U.S. Counties in 1850

	Teachers or dollars per white child in the 5-14 age group					
	Public common schools			All schools (pre-tertiary)		
	Teachers	Gov't funds	All funds	Teachers	Gov't funds	All funds
Panel A. South						
The effect of raising the voting share --						
from 60% to 80%	-0.0011	0.28	0.16	-0.0007	0.18	0.58
	(0.0007)	(0.21)	(0.24)	(0.0007)	(0.22)	(0.37)
Slaves per white man	0.0002	**0.37** **	**0.45** **	**0.0006** **	**0.39** **	**0.64** **
	(0.0001)	(0.03)	(0.04)	(0.0001)	(0.03)	(0.06)
Children 5-14 as a share of	-0.0014	0.49	-0.31	**-0.0035** *	0.21	**-2.43** **
	(0.0017)	(0.52)	(0.57)	(0.0018)	(0.53)	(0.84)
Share of men over 40	0.0091	-2.18	-0.68	**0.0180** *	-2.08	4.28
	(0.0083)	(2.42)	(2.86)	(0.0086)	(2.52)	(4.19)
Free coloreds per white	-0.0015	0.53	0.74	0.0043	0.99	2.61
	(0.0050)	(1.43)	(1.66)	(0.0051)	(1.47)	(2.33)
Urban share	-0.0032	-0.55	0.93	0.0038	-0.68	**4.15** **
	(0.0027)	(0.79)	(0.89)	(0.0028)	(0.81)	(1.37)
Church accommodations	**0.0012** **	**-0.37** **	-0.005	**0.0015** **	**-0.32** *	0.15
	(0.0005)	(0.13)	(0.16)	(0.0005)	(0.14)	(0.24)
Migrants from other states	-0.0013	0.65	0.35	0.0001	1.21	0.80
	(0.0025)	(0.72)	(0.84)	(0.0026)	(0.75)	(1.29)
Foreigners	0.0013	**5.37** **	2.75	0.0102	**6.85** **	6.96
	(0.0070)	(2.03)	(2.32)	(0.0072)	(2.10)	(3.57)
Number of counties	752	757	706	752	757	612
Number of zeroes	36	143	36	24	134	24

Table 6. Influences on School Support, U.S. Counties in 1850, Continued

	Teachers or dollars per white child in the 5-14 age group					
	Public common schools			All schools (pre-tertiary)		
	Teachers	Gov't funds	All funds	Teachers	Gov't funds	All funds
Panel B. North						
Raising the voting share						
from 60% to 80%	0.0021	**0.45** **	**0.43** *	0.0021	**0.44** **	**0.63** **
	(0.0014)	(0.16)	(0.18)	(0.0014)	(0.17)	(0.24)
Children 5-14	**-0.012** **	**-1.31** **	**-1.59** **	**-0.014** **	**-1.49** **	**-1.91** **
	(0.003)	(0.36)	(0.42)	(0.0031)	(0.38)	(0.55)
Share of men over 40	**0.080** **	-1.40	**-3.80** *	**0.086** **	-0.85	-1.74
	(0.013)	(1.54)	(1.76)	(0.013)	(1.62)	(2.28)
Free coloreds per white	**-0.076** **	5.65	5.17	**-0.059** *	5.30	**10.55** *
	(0.029)	(3.34)	(3.77)	(0.029)	(3.51)	(4.82)
Urban share	**-0.007** *	**0.92** *	0.76	-0.0043	**1.01** *	**1.94** **
	(0.003)	(0.39)	(0.44)	(0.0034)	(0.41)	(0.56)
Church accommodations	0.0021	0.17	**0.36** *	**0.0026** *	0.20	**0.64** **
	(0.0012)	(0.14)	(0.15)	(0.0012)	(0.14)	(0.20)
Migrants from other states	**0.023** **	0.31	-0.22	**0.024** **	0.48	1.06
	(0.005)	(0.52)	(0.59)	(0.0046)	(0.54)	(0.76)
Foreigners	-0.0056	0.43	-0.51	-0.0045	0.29	0.82
	(0.0067)	(0.78)	(0.92)	(0.0068)	(0.82)	(1.19)

Number of counties	521	525	519	519	525	487
No. of zeroes	15	22	15	13	22	13

Notes to Table 6:

See also the notes to Table 5.

* significant at 5%; ** significant at 1%

School receipts of "government funds" consist of endowment income, local tax support, and other public funds (subsidies), in dollars per white child 5-14 rather than per pupil. Receipts of "all funds" include these receipts from government plus receipts from all "other" sources, consisting mainly of private tuition.

Table 7. Explaining the Fixed State Effects, 28 States in 1850

Rates per white child in the 5-14 age range

	Common-school enrollments	All school enrollments	Government fund common schools	All funds, all schools
Slaves per white man	**-0.11** **	**-0.10** **	**-0.31** *	**0.27** *
	(0.03)	(0.03)	(0.14)	(0.11)
Children 5-14	**-0.03** **	**-0.03** **	**-0.35** **	**-0.17** *
	(0.01)	(0.01)	(0.06)	(0.05)
Constant	**0.84** **	**0.83** **	**7.77** **	**3.23** *
	(0.33)	(0.33)	(1.61)	(1.32)

Notes to Table 7:

Coefficient standard errors in parentheses.

The dependent variables are the fixed state effects (relative to Connecticut) estimated from the All-U.S. county regressions corresponding to those for 1850 in Tables 5 and 6.

Each equation was significantand was each coefficient, for which * =significant at 5%; ** = significant at 1%

For the underlying regressions, see our home pages.

Table 8. Dominant Groups in Southern State Legislatures in 1850

	Percentages of state legislators who were --			**Relative odds for being a state legislator,**		
	Planters	Slave holders	Owners of real estate	Planters/ non-planters	Slave holders/ non-holders	Real estate owners/ non-owners
Alabama	33.6	**66.4**	82.8	26.2	4.2	
Arkansas	10.3	**53.6**	81.7	49.2	5.0	
Georgia	29.8	**69.7**	89.8	26.4	4.0	
Kentucky	14.9	**66.4**	87.0		7.0	
Louisiana	19.8	42.6	75.9	2.7	2.1	
Maryland	12.6	**56.3**	79.1	16.4	7.3	
Mississippi	30.3	**61.5**	84.4	5.7	3.1	
Missouri	1.3	35.9	82.1	0.1	3.6	
North Carolina	22.8	**51.5**	89.3	653.1	3.0	
South Carolina	53.5	**80.5**	93.1	8.2	9.3	
Tennessee	7.0	41.0	66.3		2.5	
Texas	5.5	38.8	85.9	36.6	2.3	
Virginia	22.9	**67.1**	82.9	48.7	5.6	
All states	**22.3**	**58.5**	**84.1**	**6.1**	**4.4**	**12.3**

Sources and notes for Table 8:

Wooster, *Lower South* (1969); Wooster, *Upper South* (1975); Carter *et al.*, *Historical Statistics* (2006), vol. 2; and Soltow, *Men and Wealth* (1975).

The designation “planters” in Wooster's text tables excludes “farmers”. Including farmers would make up a majority of state legislators in almost all cases, as shown in his appendices.

Relative odds of being a state legislator = (Legislators in this group / total group population) divided by (Legislators not in this group / total population of men not in this group)

Table 9. Influences on School Participation, the 59 Counties of New York State in 1845

	Public common schools		All schools	
	Enrollments and attendance per 100 children 5-14			
	Enrollment	Average daily attendance	Attending any ime in the year	Attending any ime in the year
Percent franchised to vote	**1.69**	**0.83**	**1.88**	**1.36**
	(0.33)	**(0.23)**	**(0.29)**	**(0.26)**
Children 5-14 as % of pop'n	1.14	0.34	1.00	-0.63
	(1.12)	(0.78)	(0.99)	(0.88)
Share of men who are over 4	27.27	-20.15	-47.12	-59.43
	(62.06)	(43.50)	(54.64)	(48.66)
Urban share	-0.075	-0.032	-0.011	0.075
	(0.098)	(0.069)	(0.086)	(0.077)
Percentage of New York State population that immigrated --				
from New England	**1.08**	**0.80**	**1.20**	**1.20**
	(0.36)	**(0.25)**	**(0.32)**	**(0.28)**
from other U.S. states	0.81	0.65	0.47	0.74
	(0.62)	(0.44)	(0.55)	(0.49)
from other countries	0.41	0.16	0.42	0.10
	(0.30)	(0.21)	(0.26)	(0.23)
Constant	-107.99	-27.22	-88.79	9.04
	(51.70)	(36.24)	(45.52)	(40.53)
Adjusted R squared	.629	.455	.674	.536
Std. error of OLS estimate	11.45	8.03	10.09	8.98
Mean of dependent variable	86.1	52.8	89.9	100.02

Notes to Table 9:

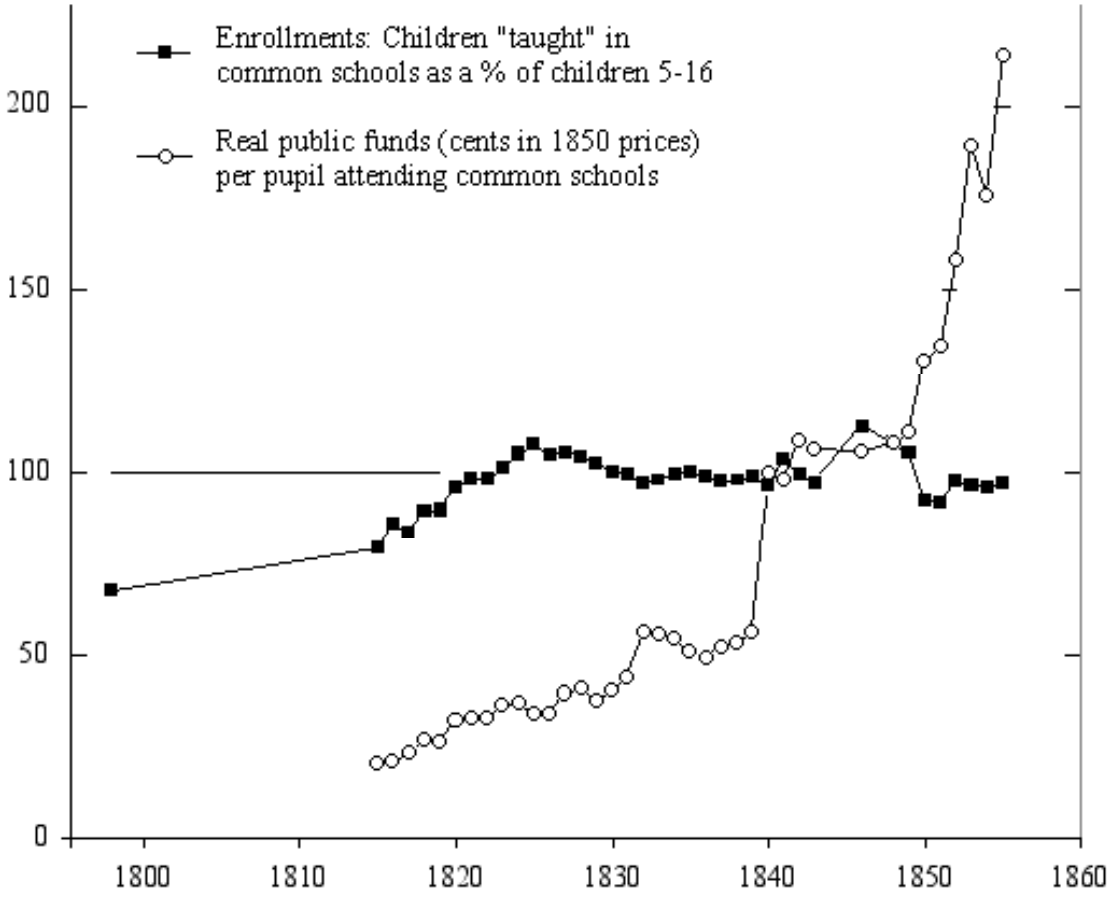
The source is the New York State Census of 1845.

See also the notes to Table 5.

The age-group and student denominators include free colored children, unlike Tables 5-7.

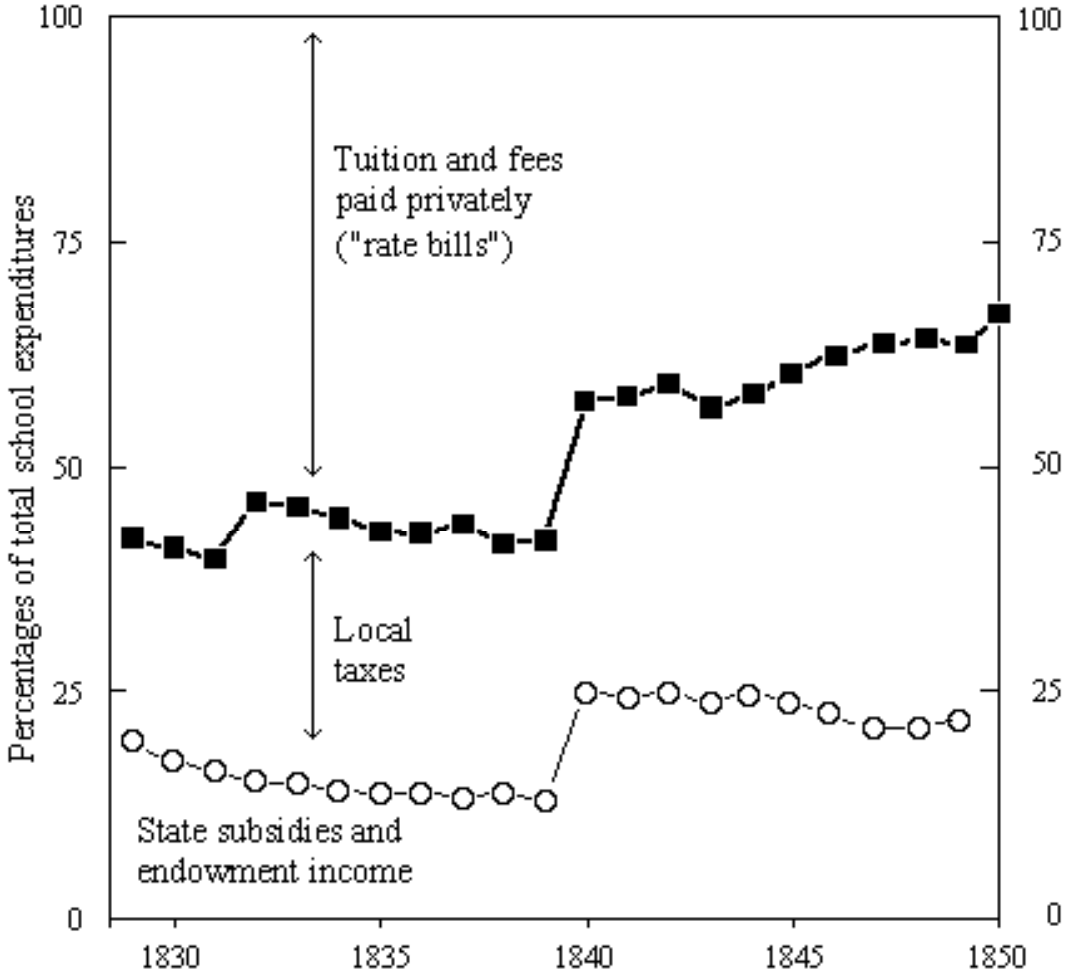
Free coloreds were 1.7 percent of the state population.

Figure 1. New York State Enrollments and Public Support per Pupil in Common Schools, 1798 - 1855



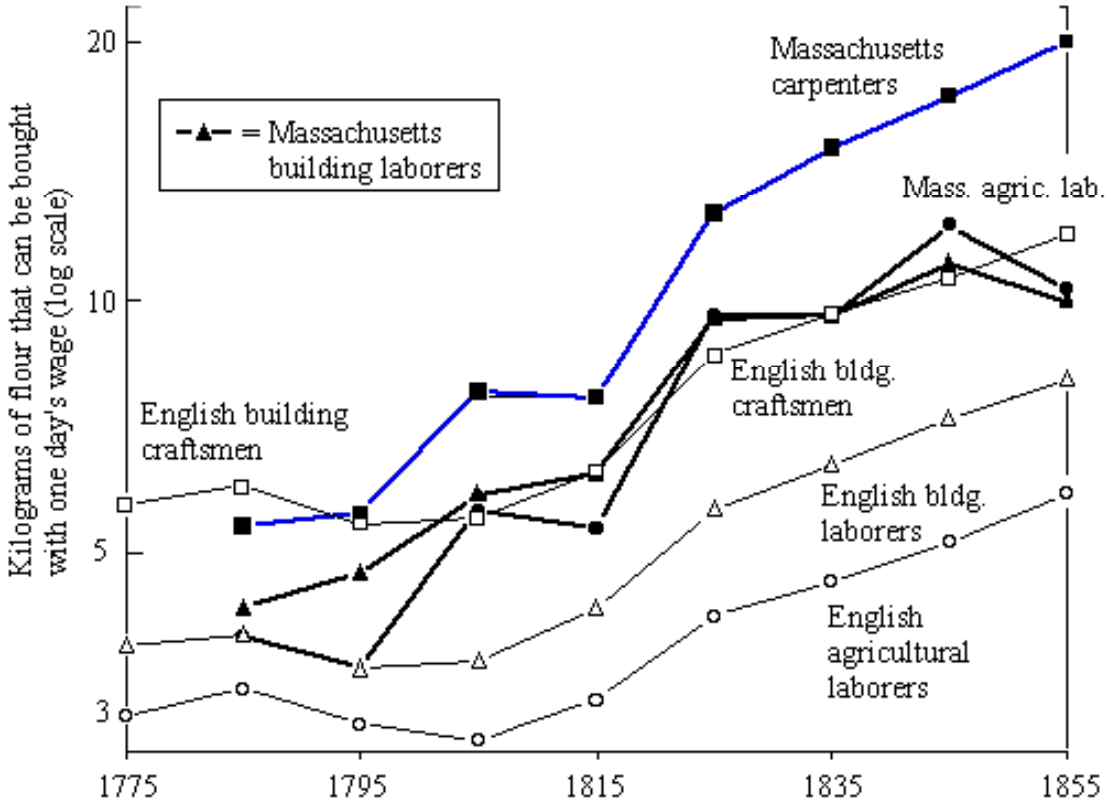
(Sources: Randall 1844, the *Annual Reports* of the New York Superintendent of Common Schools, and the U.S. urban consumer price index from *Historical Statistics of the United States, Millennial Edition.*)

Figure 2. Public and Private Shares of Funding for Schools, New York State 1829 - 1850



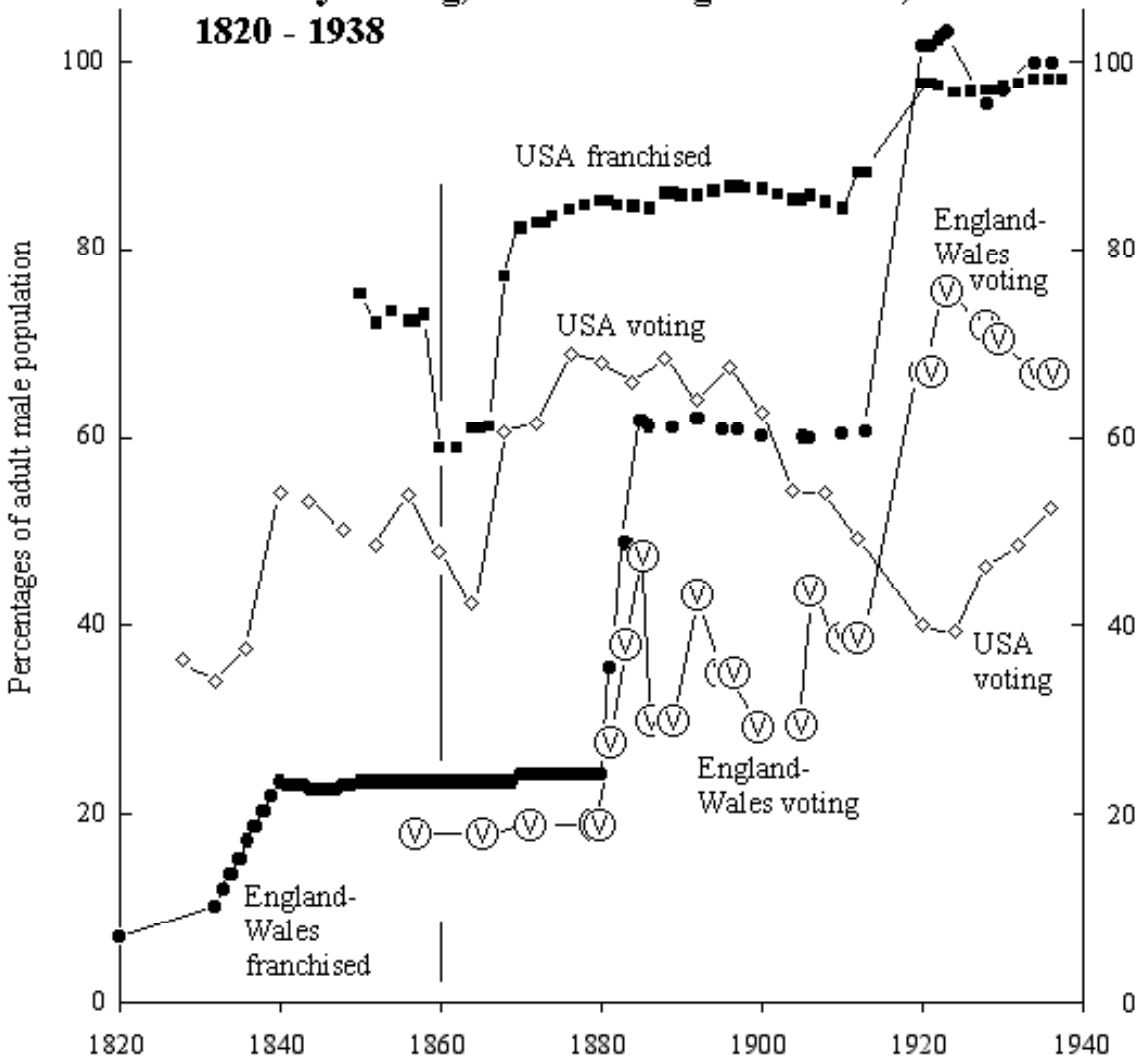
(Sources: Randall 1844, NY Sup't of Common Schools 1849, *American Almanac 1852*.)

Figure 3. Flour Wages of Workers in Massachusetts and in England, 1770s - 1850s



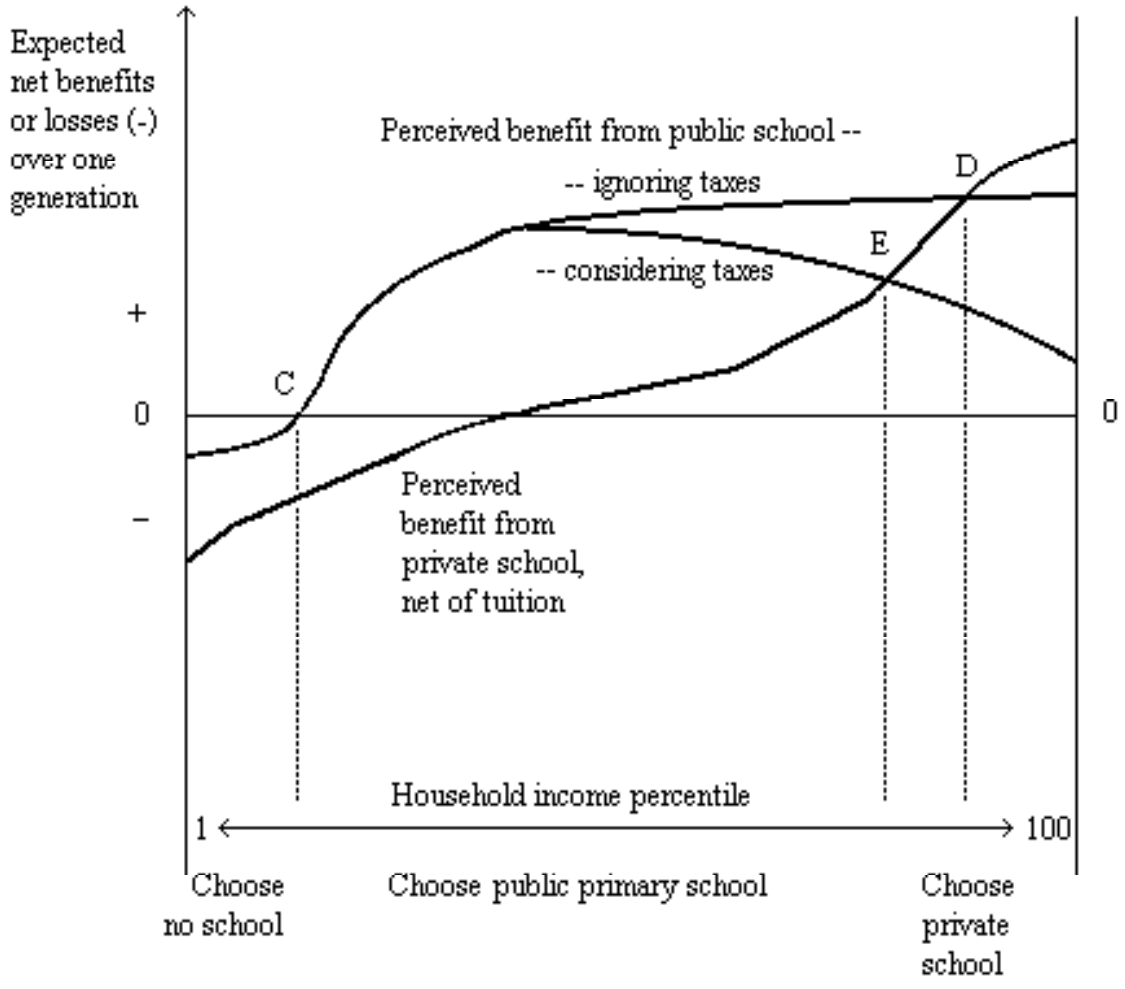
Source = http://gpih.ucdavis.edu, using series by Carroll Wright for Massachusetts and Gregory Clark for England.

Figure 4. Shares of Men Franchised to Vote, and Shares Actually Voting, USA and England-Wales, 1820 - 1938



(Women included after 1920 for USA and 1928 for UK, when they were franchised.)

Figure 5. Choosing between Private and Public Primary Schools for Different Income Ranks -- A Stylized Portrayal for Early America



ENDNOTES

[i] Cubberley, *Public Education* 1919, pp. 59-78.

[ii] In1830, children in the 5-14 age band were 27.5 percent of the US population, versus only 23.0 percent in England and Wales, 18.0 percent in France, 20.7 percent in Belgium, 21.7 percent in the Netherlands, and 21.3 percent in Norway, according to the historical statistics volumes of Brian Mitchell and the United Nations.

[iii] Fishlow "Common School Revival" 1966.

[iv] Kaestle, *New York City* 1973; Kaestle and Vinovskis "Quantification" 1974; Kaestle "Scylla" 1976; Kaestle and Vinovskis *Massachusetts* 1980; and Kaestle, *Pillars* 1983.

[v] Engerman, Mariscal, and Sokoloff 2002, Engerman and Sokoloff 2005.

[vi] Goldin and Katz 1997, Goldin 2001, Goldin and Katz 2003.

[vii] Lindert 2004, Volume 1, 115-122.

[viii] Upper Canada's enrollments seemed to have taken off only after the 1830s, though they had caught up to the levels of the Northern United States by 1870. Their institutional evolution was also quite similar to what is described here for the Northern states. See Glazebrook *Life in Ontario* 1968, pp. 82-89; Katz and Mattingly *Education and Social Change* 1975, pp. 3-81; Lewis and Urquhart "Upper Canada" 1999, especially pp. 168-173.

[ix] For a global history of the rise of enrollments, and the difficulty of forcing the march with laws or with Millennium Development Goals, see Clemens 2004. As Clemens notes, the process was even slower in the earlier history of America and Europe than in today's developing countries.

[x] Probably a better starting point, one suggesting actual practice rather than law, would be the evidence of a Dutch public schools in New Netherland starting in 1638. The schools were tiny and few, however, and their meager funding was a variable mix of public and private funds. Kilpatrick 1912; Finegan 1971, Chapter 1.

[xi] Cremin 1980, p.127.

[xii] Carter *Letters on the Free Schools* 1824.

[xiii] Beadie, "Toward a History of Education Markets;" Beadie, "Tuition-Funding in Common Schools;" Beadie, *Education and the Creation of Capital;* and Beadie and Tolley (eds.) 2002. We are indebted to Professor Beadie for pre-publication drafts of the first three of these writings.

[xiv] Kaestle, *Pillars*, pp. 4, 8.

[xv] Swift *Public Permanent Common School Funds* (1911); Knight, *Public Education in the South* 1922, pp. 145-155, 173-177. Dabney *Universal Education in the South* (1936), pp. 287-295; Knight, *Education in the United States* 1951, pp. 255-257.

[xvi] For more on the attendance practices, see Randall 1844, New York State Census of 1845, *Annual Report* of the Superintendent of Common Schools January 1849, and Beadie, "Tuition-Funding."

Actual attendance was lower than the enrollments, of course. Official figures from 1845 implied that for common schools the number in "average attendance" (averaged over several days) was 63 percent

of the number of the pupils "on teachers' list." Of those New York students attending at all, the average months of attendance (any time in the month) was 4.0 for 1842/43, 4.3 for 1847/48, and 4.5 for 1851/52.

Attendance in England and Wales was similar to the rates for New York. Specifically, David Mitch has reported an average attendance of about 68 percent of students enrolled in government-inspected schools between 1865 and 1875. Mitch, *Rise of Popular Literacy*, pp. 187-188. The Parliamentary sources cited in Table 4 add some attendance rates for Manchester 1834 and England and Wales in 1858, and *The Statistical Abstract of the United Kingdom* gives annual rates for inspected primary schools from 1854 on.

[xvii] The institutional variations are well sketched in Cubberley 1919, especially on Page 99; and the writings of Nancy Beadie cited above. Kaestle and Vinoskis 1983, pp. 28-33 summarize the pitfalls of data on enrollments and attendance.

[xviii] Beadie, "Toward a History of Education Markets."

[xix] Indeed, several states even used taxpayers' money to subsidize places of worship, a practice that was later prohibited.

[xx] Maddison 1995; Maddison 2001; Ward and Devereux "Measuring British Decline," 2003; Ward and Devereux "Relative British and American Income Levels" 2005.

[xxi] For a convenient summary of the global literature on rates of return to education, see Psacharapoulos and Patrinos 2002.

[xxii] This paragraph and Figure 3 are based on the real wage comparisons that are emerging in the Global Price and Income History project. The data sets are downloadable at http://gpih.ucdavis.edu.

[xxiii] The low price of schooling in New York state has also been noted by Nancy Beadie's research on tuition in antebellum Lima, New York ("Tuition Funding", forthcoming). Beadie suggests that parents could pay a child's annual tuition in the more subsidized common schools for about a dollar, which was about 1-2 day's wage rate for common labor in New York state. The tuition at a local private academy was about five times as much, presumably because of the academy's higher quality and lower subsidies.

[xxiv] As of 1860, women filled 71 percent of the teaching positions in the non-South sample drawn by Perlmann and Margo (*Women's Work?* 2001, p. 22). By contrast, they had only 39 percent of the Southern teaching jobs and also 39 percent in Great Britain's non-infant schools (46 percent if infant schools are included). At that time, French primary schools were just shifting toward employing more women than men: The female share of teachers in all primary schools, public plus private rose from 37% in 1843 to 54% in 1863. Male teachers continued to dominate in German cities as late as 1900. (U.S. Commissioner of Education, *Annual Report* of 1900-1901 (pp. 123-124, 1003).

[xxv] Compare the clues on signature literacy in Monaghan, *Learning*, 2005; Cressy, *Literacy*, 1980, Chapter 8; and the many studies cited there. Sweden's high literacy meant the ability to read the Bible but probably little ability to write or sign.

[xxvi] Figure 4's estimates are drawn from Cross-National Time-Series Data Archive, 1815-1999: [computer file]/CNTS, 2002, as borrowed on CD from UC Southern Regional Library Facility. The Americans

franchised to vote consist of all adult white males, and thus overestimate the numbers actually registered to vote.

On the Americas, again see Engerman, Mariscal, and Sokoloff 2002; and Engerman and Sokoloff 2005. The role of democracy and the fullness of suffrage has also been emphasized by Cubberley 1919, pp. 108-112; Goldin 2001; Goldin and Katz 2003; and Lindert 2004, Chapter 5.

[xxvii] Lindert 2004, Table 5.6.

[xxviii] Prest, *Liberality and Locality* 1990, pp. 1-17.

[xxix] See Fox and Gurley-Calvez 2007 on world patterns in the economies of government consolidation, and Lockwood and Barankay 2006 on Swiss education under federalism.

[xxx] Tiebout, "Pure Theory" 1956.

[xxxi] Readers interested in possible industrial influences on schooling should consult the tests offered by Alex Field "Massachusetts 1855" 1979 and Kaestle and Vinovskis 1980.

[xxxii] We cannot deal in Figure 5 with the issue of pauper schools, in which the rich debate paying taxes for schooling restricted to the poor. Nor can we deal with the quality margin, the choice of better versus worse schools. Both of these issues are addressed, however, in our statistical tests of Tables 4-6 below.

[xxxiii] As cited in Cubberley 1919, p. 133.

[xxxiv] Our portrayal oversimplifies, of course. At the top of the spectrum, the political impulses have been mixed in most any historical setting. Some would favor public schools on grounds of social peace and raising land values. Others would be anti-public because of taxes, the likely loss of local unskilled labor if it became educated, and the fear of insubordination. Yet Figure 5's simplification seems to capture the most important tendencies in how the views of income groups would differ.

[xxxv] In one case, our data providers failed to design the public-private distinction correctly, and were roundly criticized for that mistake. The 1840 census asked localities to report the number of pupils who were "at public charge." This question gave incurably misleading results in a setting where most schooling was financed both privately and publicly at the same time. Fortunately, the same 1840 census also included the clearer separate returns from public common schools, from private academies, and from universities. The 1850 census dropped the bad question and kept the useful ones, while also giving breakdowns of the public and private funding sources separately for publicly managed schools and for privately managed academies.

[xxxvi] The turnout for presidential elections has been consistently higher than the turnout for congressional elections in the alternative even-numbered years. It is therefore a closer approximation to the share that was entitled to vote.

[xxxvii] Porter 1918, Williamson 1960, Keyssar 2000, Engerman and Sokoloff 2005.

[xxxviii] Free colored men were still only a small share of all free men before the Civil War. In what follows, we focus on white men, and use the share of free coloreds as a control variable in our statistical work. It appears that the free-colored share had no clear effect on education policy behavior.

[xxxix] Randall 1844; Griffey 1936, pp. 51-55; Keyssar 2000, especially pp. 30-31.

[xl] Here "all" means an estimated share that did not differ statistically from 100 percent. We shall post the fuller set of regression results on our home pages.

[xli] Those who prefer to emphasize geography as a causal influence on institutions have a potential line of attack here. Slaves were found in warmer places: At the interstate level, the coefficient of correlation between the mean January temperature and slaves per white man in 1850 was highly positive (0.87). Would the warm South have had less educated whites than the North even without slavery? Was it cold weather that kept Northern children in school? Any such argument would have to explain why Southern whites have little education deficit today.

[xlii] See, for example, Kaestle "Scylla" 1976 and Wright 1986 and 2006.

[xliii] Einhorn *American Slavery* 2006, pp. 104-109, 218-230.

[xliv] Thorpe *Federal and State Constitutions* 1909, Green *Constitutional Development* 1930 (1969), Green *Democracy* 1946 (1966), Wooster *Lower South* 1969, Wooster *Upper South* 1975. On biased representation and public spending in Virginia, see Majewski, *House Dividing*, pp. 135-138.

[xlv] Wooster's tabulations show similar, though less extreme, biases in the allocation of county offices.

[xlvi] Daniel Crofts's in-depth study of Southampton County Virginia (1992, pp. 155-169) does show that localities tended to cluster into increasingly solid Democratic and Whig blocs as the rich and influential applied pressure before each election. The role of the open ballot is implicit. The link to school policy is not clear, however, except for the fact that all local government policy was in the hands of court officials not inconvenienced by electoral competition.

[xlvii] Benedict, T.H. "Report of the majority on the committee on colleges, academies and common schools" to the New York State Assembly, February 6, 1851, as reprinted in Finegan 1971, p. 450.

[xlviii] Cubberley 1919, pp. 106-107.

[xlix] That attendance was more universal in the Northern countryside than in the cities has also been noted by Kaestle (1983), Soltow and Stevens (1981), Vinovskis (1988) and Beadie, "Tuition Funding".

[l] Cubberley 1919, Cross 1950, Kaestle and Vinovskis 1974. The Yankee influence was made even more explicit in J. P. Foote's *The Schools of Cincinnati* 1855, as cited by Carleton 1906, pp. 111-112:

"A majority of the legislators of our State [Ohio] were, a few years before the establishment of our school systems, natives, or descendents of natives, of New England, and, in due time, they gave efficient aid to the enactment of the school law. In the middle and southern portions of our State, most of the first settlers were from Pennsylvania, and states further south... The early immigrants to Ohio from New England considered schools and churches as among their first wants... those from Pennsylvania considered them the last... while those from New Jersey, and the few from Maryland, Virginia, the other Southern states, had their views of education fixed upon so high a scale tht nothing less than colleges, or seminaries of the highest class could claim much of their attention, or seem to require any extraordinary efforts for their establishment."

[li] Cubberley *Public Education* 1919, pp. 249; Knight *Public Education* 1922, pp. 187-188; Dabney *Universal Education* 1936, pp. 362-368.

[lii] Engerman and Sokoloff 2005, pp. 908-909.

[liii] Margo, *Race and Schooling in the South* 1990.

[liv] The spending results for 1902 and 1982 are from Sylla, Legler, and Wallis, ICPSR file 6304, 1995. In 1902, the share of education spending done at the local district level had an interstate correlation of + 0.25 with an educational support ratio defined as (public expenditures per child in the 5-19 age range) / (state income per person 15-64).